California Preschool Curriculum Framework

Volume 2

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California Preschool Curriculum Framework

Volume 2

Visual and Performing Arts
Physical Development
Health

Publishing Information

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Notice

The guidance in the *California Preschool Curriculum Framework, Volume 2,* is not binding on local educational agencies or other entities. Except for the statutes, regulations, and court decisions that are referenced herein, the document is exemplary, and compliance with it is not mandatory. (See *Education Code* Section 33308.5.)

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A Message from the State Superintendent of Public Instruction

I am pleased to present the *California Preschool Curriculum Framework, Volume 2,* a publication I believe will be a major effort in working to close the school-readiness gap for young children in our state. Created as a companion to the *California Preschool Learning Foundations,* this framework presents strategies and information to enrich learning and development opportunities for all of California's preschool children.

Like the second volume of the preschool learning foundations, this installment of the curriculum framework focuses on three learning domains: visual and performing arts, physical development, and health. Topics include guiding principles (in particular, the vital role of the family in early learning and development); the diversity of young children in California; and the ongoing cycle of observing, documenting, assessing, planning, and implementing curriculum. The framework takes an integrated approach to early learning and describes how curriculum planning considers the connections between different domains as children engage in teacher-guided learning activities.

Chapters two through four focus on the learning domains. Each chapter provides an overview of a domain, the foundations for that domain, principles in planning curriculum, and curriculum strategies illustrated by vignettes. The strategies pertain to both the learning environment and teachers' interactions with children. These chapters offer key principles and a rich variety of ideas for early childhood educators to support the learning and development of preschool children. Principles and strategies for teaching children who are English learners are included.

Three themes are interwoven throughout this volume: early childhood educators need to be intentional in supporting learning in all domains, young children learn through play, and young children's families are their first teachers. As young children play, they express themselves through the exploration of art materials, dance, music, and drama; they constantly use their developing fine motor and gross motor skills; and they often show concern for their health and safety. Observation and documentation of young children's play gives insights into how to build on their interests and expand their learning. Early childhood educators also enrich young children's learning through ongoing collaboration with families. Together, early childhood educators and family members can create meaningful learning experiences for children in preschool and at home.

The framework speaks to new early childhood educators as well as experienced ones. It recognizes the best practices already used by preschool programs and provides new ideas that bring the preschool learning foundations to life for everyone responsible for the care and education of young children.

Tom Torlakson

TOM TORLAKSON
State Superintendent of Public Instruction

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Council for Exceptional Children/The California Division for Early Childhood (Cal DEC)
Council of CSU Campus Childcare (CCSUCC)
Curriculum Alignment Project (CAP)
Curriculum & Instruction Steering Committee (CISC)
Desired Results *access* Project
English Language Learners Preschool Coalition (ELLPC)
Federal/State/Tribes Collaboration Workgroup
Fight Crime, Invest in Kids California
First 5 Association of California
First 5 California Children & Families Commission
Head Start State-Based Training and Technical Assistance Office for California
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Learning Disabilities Association of California
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CHAPTER 1

Introduction to the Framework

Young children enter preschool with a sense of wonder and a love of learning. They have an insatiable appetite for knowledge when they have learning experiences that are engaging and enjoyable. Positive experiences in which children can make choices and explore help them feel competent and confident. How can we offer them engaging and enjoyable learning experiences that fuel their intellectual engines and build their confidence? How can we connect children's fascination with learning to the visual and performing arts, physical development, and health domains? How can we integrate learning in those three domains with learning in all other domains and make the most of children's time in preschool? With these questions in mind, the California Department of Education (CDE) developed this second volume of the curriculum framework for preschool programs, which include any early childhood setting where three- to five-year-old children receive education and care.

Like Volume 1, Volume 2 provides an overall approach for **teachers*** to support children's learning through environments and experiences that are:

- developmentally appropriate;
- reflective of thoughtful observation and intentional planning;
- individually and culturally meaningful;
- inclusive of children with disabilities or other special needs.

*In this document, a teacher is considered an adult with education and care responsibilities in an early childhood setting. Teachers include adults who interact directly with young children in preschool programs and family child care home settings, as well as those who provide special education services. In family child care, teachers may be referred to as caregivers.

The framework presents ways of setting up environments, encouraging and building upon children's self-initiated play, selecting appropriate materials, integrating learning experiences across domains, and planning and implementing teacher-guided learning activities. As much as possible, the writers of this document have used everyday language to describe curriculum concepts and strategies that pertain to the visual and performing arts, physical development and health. However, some technical terminology appears in the text. The use of technical terms reflects the need for precision of language and offers the reader the opportunity to connect practice to theory and abstract ideas. To aid the reader, technical words

that are highlighted in **boldface** are defined in the glossary at the end of this publication.

What children learn in the visual and performing arts, physical development, and health domains during the preschool years is presented in the *California Preschool Learning Foundations, Volume 2.*[1] As preschool teachers plan learning environments and experiences, the foundations provide the background information to:

- understand children's developing knowledge and skills;
- consider appropriate ways to support children's learning and development.

In essence, curriculum planning should offer children learning opportunities that are attuned to their developing abilities and connected with their experiences at home and in their communities. In the National Association for the Education of Young Children's accreditation criteria, it is stated that a curriculum includes the goals for the knowledge and skills to be acquired by children and the plans for learning experiences through which such knowledge and skills will be acquired.[2] A preschool curriculum typically defines a sequence of integrated experiences, interactions, and activities to help young children reach learning goals. In contrast, a curriculum framework provides general guidance on planning learning environments and experiences for young children. Thus, as a curriculum framework, this document provides:

- principles for supporting young children's learning;
- an overview of key components of curriculum planning for young children, including observation, documentation, and reflection;
- descriptions of routines, environments, and materials that engage children in learning;
- sample strategies for building on children's knowledge, skills, and interests in the domains of visual and performing arts, physical development, and health.

Three domains are the focus of Volume 2 of the CDE's preschool learning foundations and this volume of the preschool curriculum framework: visual and performing arts, physical development, and health.

California's Preschool Children

A fundamental consideration in planning curriculum for individual children is being responsive to the competencies, experiences, interests, and needs each child brings to the preschool setting. The state's preschool population includes children who are culturally diverse, speak a language other than English, possess different abilities, and come from diverse socioeconomic backgrounds. When teachers and other program staff partner with families, they make curriculum individually and culturally meaningful.

An increasingly prominent factor in the diversity of California's children is their early experiences with language. Language and literacy development contributes to young children's learning and long-range success in many different ways. Children who enter preschool with competence in a language other than English rely on their home language as they learn English. Building competence in English, while continuing to build competence in their home language, allows children to draw on all their knowledge and skills as they engage in learning in every domain. To support children with diverse early language and literacy experiences, the CDE has developed the

preschool English-language development foundations, the chapter in the *California Preschool Curriculum Framework, Volume 1*,[3] covering curriculum planning that supports English-language development; and the *Preschool English Learners: Principles and Practices to Promote Language, Literacy, and Learning*[4] (hereafter referred to as the PEL Resource Guide).

This second volume of the curriculum framework offers strategies aligned with the English-language development foundations, the first volume of this curriculum framework, and the PEL Resource Guide.

Socioeconomic diversity is another trend that requires attention. The percentage of children living in low-income homes is high; almost 20 percent live below the poverty level.[5] At the same time, the benefits of high-quality preschool are more pronounced for children from low-income backgrounds than for other population subgroups. Children from diverse socioeconomic backgrounds are more likely to benefit from preschool when the curriculum is attuned to their learning strengths and needs.

Children with disabilities or other special needs are another part of California's preschool population. Children with disabilities or other special needs benefit from learning in inclusive environments with typically developing children. Studies have shown that children in inclusive environments, with appropriate support and assistance, achieve more than children in segregated environments.[6] Inclusive environments benefit not only children with disabilities or other special needs, but also typically developing children. As the following information suggests, the diversity of young children means that each preschool program needs a flexible approach to curriculum in order to be responsive to all children who enter its doors.

Demographics

Compared with most other states, California has an extraordinarily diverse population of children, particularly those under the age of five. More than six million children were enrolled in California's K–12 schools in 2008–09; 49 percent were Latino, 27.9 percent were white, 8.4 percent were Asian, 7.3 percent were African American, and 2.7 percent were Filipino.[7] Similarly, among the over three million children from birth to age five living in California during 2008, 51 percent were Latino, 30 percent were white, 10 percent were Asian American, and 7 percent were African American.[8] This trend is anticipated to continue over the next several decades.

English learners

Data for the 2008–09 school year indicate that, in California, more children who are English learners are enrolled in lower grade levels than in the upper grade levels.[9] In its 2010 California Report Card, Children Now estimated that 40 percent of children in California's kindergarten classrooms are English learners.[10] Children Now also reports that, "Over one-third (38 percent) of California's zero-to-five population live in families where the most knowledgeable adult does not speak English well."[11] These families are referred to as living in "linguistically isolated homes."[12] In an earlier report, Children Now and Preschool California indicated that "young children living in linguistically isolated homes are less likely to be enrolled in preschool programs."[13]

The broad range of languages spoken by children in the state is clearly a significant factor in developing curriculum for preschool children who are learning English. During the 2008–09 school year, 84.8 percent of California children

in kindergarten through twelfth grade who were learning English spoke Spanish, followed by Vietnamese (2.4 percent), Filipino (1.5 percent), Cantonese (1.4 percent), Hmong (1.2 percent), and Korean (1.0 percent).[14] Many families may come from similar geographic regions outside the United States but may not necessarily speak the same language.[15] Preschool offers an important opportunity for children whose families speak a different language at home to learn English while continuing to learn their home language. Competence in two languages will allow children to become adults who can contribute to both the global economy and their local communities. Preschool programs can best support young children by planning curriculum that fosters English-language development and supports the children's continuing development of their families' language.

Socioeconomic status

The National Center for Children in Poverty documented that, in 2008, approximately 45 percent of children in California under the age of six lived in a low-income family.[16] In addition, compared with other states, California ranks 20th in the nation in the number of children under age eighteen living in poverty.[17] According to the National Center for Children in Poverty, younger children (birth to six years) are more likely to live in a low-income household than older children.[18] Young children of immigrant parents are 20 percent more likely to live in a low-income family than children with native-born English-speaking parents. Young African American, Latino, and Native American children in California are also more likely to live in very low-income families compared with white children.[19]

Children with disabilities or other special needs

In 2008, over 77,000 children in the birth-to-five age range, with identified disabilities, attended preschool in California.[20] This number does not include children at risk of a disability or developmental challenges. Children with disabilities represent the diversity of California's entire preschool population and necessitate unique educational considerations in the preschool setting. Three-, four-, and five-year-old children with identified disabilities have individualized education programs (IEPs) that are consistent with the CDE's preschool learning foundations. Under the Individuals with Disabilities Education Act (2004), all children must have access to the general curriculum and have their progress measured accordingly.[21] In California, the CDE's preschool learning foundations inform curriculum planning. Together, the foundations and curriculum framework offer a comprehensive approach to planning access to inclusive learning opportunities for all children.

Overarching Principles

Eight principles guide the development of all the volumes of the curriculum framework. Grounded in early childhood research and practice, the following eight principles emphasize offering young children individually, culturally, and linguistically responsive learning experiences and environments:

- Relationships are central
- Play is a primary context for learning
- Learning is integrated
- Intentional teaching enhances children's learning experiences

- Family and community partnerships create meaningful connections
- Individualization of learning includes all children
- Responsiveness to culture and language supports children's learning
- Time for reflection and planning enhances teaching

These principles guide the development of each volume of the preschool curriculum framework. Because they play a central role in the overall development of the curriculum framework, they are repeated in each volume. Explanation of the principles follows.

Relationships are central

Relationships with others are at the center of young children's lives. Caring relationships with close family members provide the base for young children to engage with others, to explore with confidence, to seek support when needed, and to view interactions with others as likely to be positive and interesting. Recognizing the power of early relationships, preschool teachers and programs build strong relationships with children and families. Just as important, preschool teachers nurture the social–emotional development of young children through those relationships. Research shows that healthy social–emotional development helps young children learn, for example, to sustain attention more easily, to make and maintain friendships, and to communicate needs and ideas. Under the guiding eye of teachers in close partnership with families, young children build their ability to engage in relationships with adults and other children. Preschool offers children a variety of opportunities for social interactions (with familiar adults, peers), group participation, and cooperation and responsibility. A climate of caring and respect that promotes nurturing relationships between children and within the community of families supports children's learning in all domains.

Play is a primary context for learning

Play is at the heart of young children's explorations and their engagement in learning experiences.[22] During play, children maximize their attention span as they focus on self-selected activities that they regulate themselves. When children make their own choices, engage other children in interaction, and spend time amusing themselves on their own, they learn much about themselves, their own capabilities, and the world around them. At the preschool level, play and learning should be seamless. Children need to be *engaged* to learn. As Zigler observes, children bring more than their brains to school.[23] When children's hearts, minds, and bodies are engaged, adults can help them learn almost anything they are ready to learn. In a program where play is valued, children's interests, engagement, creativity, and self-expression are supported through a balance of child-initiated and teacher-guided activities.

The environment reflects an appreciation for the value of pretend play, imaginary play, dramatic play, and physically challenging play. Play not only provides the context for thinking, building knowledge, being attentive, solving problems, and increasing social and physical skills, it also helps children to integrate their emotional experiences and internalize guidance from their teachers. For some children, it may be necessary to make special adaptations to create access to learning through self-initiated activities and play.

Learning is integrated

Learning engages young children in every possible way. Young children continually use all their senses and competencies to relate new experiences to prior experiences and to understand things and create meaning. Their learning is integrated while often having a specific focus. For example, during book reading, children use their knowledge and thinking abilities, emotional responses, understanding of language, physical skills, and the full range of experiences at home and in the community to make new connections and understand. Children come to preschool as experts about many things—among them, their families, their home language(s), and their belongings. When learning builds on what children know and allows them to expand their skills playfully, they are happy to participate in any learning experience or activity, to recite any rhyme, to count any set, and to take on any new, appropriate physical challenge. That is why offering children experiences that are personally meaningful and connected is so important. In addition, since children learn using all of their sensory modalities in an integrated way, it is essential to strengthen the modalities in which individual children need special help and build upon their areas of strength. Integrated learning is further described later in this chapter, in the section titled "Curriculum Planning."

Intentional teaching enhances children's learning experiences

Effective curriculum planning occurs when teachers are mindful of children's learning and are intentional in their efforts to support it. In the National Association for the Education of Young Children (NAEYC) publication titled *The Intentional Teacher,* Ann Epstein offers the following description:

> [T]he intentional teacher . . . acts with knowledge and purpose to ensure that young children acquire the knowledge and skills (content) they need to succeed in school and in life. Intentional teachers use their knowledge, judgment, and expertise to organize learning experiences for children; when an unexpected situation arises . . . they can recognize a teaching opportunity and are able to take advantage of it, too.[24]

With an understanding of early learning and development, the teacher supports learning in areas identified by California's preschool learning foundations. The intentional teacher is flexible in order to accommodate differences in children's learning strengths and needs. Intentional teaching strategies include planning learning environments, experiences, and routines, as well as spontaneous responses suggested by the moment-to-moment focus of the children.

Family and community partnerships create meaningful connections

Strong connections with families grow from respecting and valuing diverse views and the expectations, goals, and understandings families have for their

children. Programs demonstrate respect for families by becoming partners with them to exchange information about their children's learning and development and to share ideas about how to support learning at home and at preschool. Partnerships with families extend to the communities where the families live, come together, and support one another. Building connections to the surrounding community allows a program to become known and make use of community resources. Getting to know the community also gives teachers insights into the learning experiences and competencies that children bring to the preschool setting and informs efforts to make preschool meaningful and connected for children.

Individualization of learning includes all children

Each child is unique. Preschool teachers use their understanding of each child's blend of **temperament**, family and cultural experiences, language experiences, personal strengths, interests, abilities, and dispositions to support the child's learning and development. By recognizing and adapting to each child's individual development, teachers are able to offer learning experiences that are meaningful, connected, and developmentally attuned to each child. Creating an environment in which all children feel welcome is important. When children with disabilities or other special needs are included, the partnership with families is especially important. The family is the primary bridge between the preschool staff and special services the child may be receiving.

The family, teacher, and other program staff can team together and include other specialists in the preschool setting. Adapting to an individual child may mean modifying the learning environment to "increase a child's access, potential and availability for learning through thoughtful organization of materials and space."[25] Specifically designed professional support and development opportunities, as well as specialized instructional strategies, can help teachers deliver individualized education and care to meet the needs of all the children in a program.

Responsiveness to culture and language supports children's learning

Responsive preschool programs create a climate of respect for each child's culture and language when teachers and other program staff become partners and regularly communicate with family members. They work to get to know the cultural strengths each child brings to preschool. An essential part of being culturally and linguistically responsive is to value and support each child's use of home language, for "continued use and development of the child's home language will benefit the child as he or she acquires English."[26] Equally important are nurturing interactions with children and their families in which "teachers attempt, as much as possible, to learn about the history, beliefs, and practices of the children & families they serve."[27]

In addition to being responsive to the cultural history, beliefs, values, ways of communicating, and practices of children and families, teachers create learning environments that include resources such as pictures, displays, and books that are culturally rich and supportive of a diverse population, particularly the cultures and languages of the children and families in their preschool setting.[28, 29] Community members also add to the cultural richness of a preschool setting by sharing their art, music, dance, traditions, and stories.

Time for reflection and planning enhances teaching

Preschool teachers are professionals who serve an important role in society. In nurturing the development of young children, teachers engage in an ongoing process of observation, documentation and **assessment**, reflection and planning, and implementation of strategies in order to provide individualized and small-group learning experiences. As increasing numbers of children with diverse backgrounds, including with disabilities, participate in preschool programs, it is essential for collaboration, teaming, and communication to extend the benefits of preschool to all children. Curriculum planning requires time for teachers to reflect on children's learning and to plan strategies that foster children's progress in building knowledge and mastering skills. Preschool programs that support intentional teaching allocate time in teachers' schedules to allow them to reflect and plan both individually and as a team. With appropriate support, teachers are able to grow professionally through a continuous process of learning together and exploring ways to be responsive to young children's learning interests and needs.

Organization of the Framework

This preschool curriculum framework builds on the *California Preschool Learning Foundations, Volume 2*, which describes the knowledge and skills that preschool children typically demonstrate with appropriate support in the following three domains:

- Visual and performing arts
- Physical development
- Health

In this introduction, curriculum planning for these domains is presented in an integrated manner. Within this integrated approach to planning learning activities and environments, each specific domain is the focus of a chapter. Each chapter provides a look at integrated curriculum

through the lens of the particular domain addressed by that chapter. For example, Chapter 3, "Physical Development," highlights how vocabulary development relates to children's physical development. Information on strategies to support children's learning may appear in more than one domain chapter because the same strategy or similar strategies apply to multiple areas of growth and development. In essence, this curriculum framework is designed to allow the reader to examine the breadth and depth of each domain in the context of integrated learning.

The domain chapters begin with an overview of principles and strategies for supporting preschool children's learning and presents information about environments and materials that promote learning. Each domain is divided into strands that define its scope. In each chapter, the strands are introduced, along with a "Bringing It All Together" vignette, "Engaging Families" to support home–school connections, and "Questions for Reflection" to encourage teacher reflection.

Each strand is further divided into substrands. Each substrand section includes:

- a brief overview of the substrand;
- sample interactions and strategies (e.g., conversations, activities, experiences, routines) for helping children make progress in the specific area of learning identified by the substrand;
- vignettes that illustrate the strategies in action. (It is important to note that the interactions illustrated by the vignettes might take place in any language; individual children would appropriately engage in such communication using their home language.)

The sample strategies presented range from spontaneous to planned. Some sample strategies focus on how teachers build on children's interests during interaction and instruction. Some rely on planning and teacher initiation, and some reflect a combination of teacher planning and spontaneous responses to children's learning. Taken together, they offer a range of ways in which early childhood educators can support children's learning and development. The sample strategies are intended to include a broad range of teaching approaches as well as to reflect a variety of ways to address the individual needs of a diverse group of children. However, the sample strategies are neither exhaustive nor meant to be used as recipes to follow. Rather, they are starting points, or springboards, for teachers as they plan and implement their own strategies. It is noteworthy that some strategies for one domain can just as easily be used to support learning in another domain.

The fact that many strategies overlap across domains reflects the integrated nature of young children's learning. For example, the physical development chapter recommends the general strategy of reading stories to children and then inviting them to act out the stories in ways that incorporate challenges to balance their bodies in different positions and to move from position to position. Of course, reading a story and then acting it out would also promote language and literacy learning, English-language development, drama learning, and dance learning as well as learning in all other domains addressed by the preschool learning foundations. Specific strategies in this section include placing patterns in the environment—for example, footprints that children can step on from one to the other or an obstacle course based on fire safety. Yet, having patterns in the environment may sound more like a strategy

for the mathematics domain, and focusing on fire safety may sound more like a strategy for the health domain. However, such curricular strategies will surely promote learning in all domains.

Each domain chapter includes "Teachable Moments" to address the balance between planning for children's learning and being spontaneous and responsive when a child or a small group of children may be absorbed with solving a problem or excited about a new idea or may show emerging understanding of a concept. Planning creates the context for teachable moments. In various places, this framework offers information on "Planning Learning Opportunities." Intentional teaching includes planning interactions, activities, environments, and adaptations. Teachers plan such learning opportunities based on their observations and assessments of children and what they learn from the children's families. When teachers plan learning opportunities, they have in mind how the children might respond. But plans need to be flexible so that teachers can be responsive to how the children actually engage in learning. Teachers observe the children and listen for teachable moments made possible by the plans.

English-Language Development and Learning in All Domains

The English-language development foundations and recommended curriculum strategies address the need to give additional, focused support to preschool children whose home language is not English. As Chapter 5 of Volume 1 of the *California Preschool Curriculum Framework* states, "Children who are learning English as a second language

form a substantial and growing segment of the preschool population served by California state child development programs."[30] Children's progress with learning English varies greatly from child to child. Some children enter preschool with practically no experience with English. Other children have some experience with English but still do not possess the basic competency necessary to demonstrate knowledge and skills outlined in other domains when the curriculum is provided mainly in English. And there are other children learning English as a second language who may be fairly sophisticated in their understanding and use of English.

Given the great variation among children who are learning English as a second language in preschool, their knowledge and skills in the English-language development domain are described at the *beginning, middle,* and *later* levels. In other words, the English-language development foundations reflect a continuum of second-language (English) learning regardless of an individual child's age. This continuum shows that children who are learning English while also developing their home-language abilities use their knowledge and skills in their first language to continue to make progress in all other domains. Children who are English learners also vary greatly in the

level of proficiency in their first language, which, in turn, influences their progress in English-language development.

In an integrated curriculum, the key to supporting all children is to plan learning activities and environments based on an ongoing understanding of each child's interests, needs, and family and cultural experiences. For young children who are learning English, this approach means focused attention to each child's experiences in acquiring a second language and an understanding of how to use a child's first language to help her understand a second language. In applying an integrated approach, teachers take advantage of every moment to provide children with opportunities to communicate with greater understanding and skill while engaged in play or in adult-guided learning activities. The curriculum framework for English-language development is based on a number of key considerations for supporting children who are learning English in preschool settings. Chief among these considerations are:

1. Children who are learning English as a second language possess a home language on which effective teaching strategies can be based.
2. Children who are learning English as a second language may demonstrate language and literacy knowledge and skills in their home language before they demonstrate the same knowledge and skills in English.
3. Children who are learning English as a second language may need additional support and time to make progress in all areas that require English knowledge and skills; therefore, the English-language development curriculum framework presents strategies to support children who are learning English in particular ways so that teachers can both scaffold children's learning experiences and utilize multiple modes of communication (e.g., nonverbal cues).
4. The English-language development foundations and curriculum recommendations focus mainly on language and literacy learning, which is, by nature, language-specific; in addition, children who are learning English will demonstrate competence in other domains in their home language (e.g., visual and performing arts, physical development, and health).
5. An intentional focus on the process of learning English as a second language is necessary at all times in an integrated approach to curriculum in early care and education settings.

The level of additional support and time English learners need to demonstrate the knowledge and skills described by the foundations in domains such as visual and performing arts, physical development, and health will be influenced by the children's development in both their first language and English. The language the child speaks at home, as well as the

amount of rich experience the child has in the home language, will likely affect the amount and type of support the child needs. For example, if a child's home language and culture include learning traditional dances at an early age, the child may understand and use complex vocabulary in the home language related to dance movements. This experience may foster learning about dance in the preschool program. Or a song in Spanish about washing hands may help a child whose home language is Spanish to understand the importance of basic health routines. Regardless of home language, individual children may make progress with some foundations earlier than with other foundations. For example, older preschool children may need additional time to make progress in drama learning when it involves acting out a story with a lot of dialogue in English.

The California Department of Education's DVD titled *A World Full of Language: Supporting Preschool English Learners* highlights the importance of a climate of acceptance and belonging as the starting point for giving children who are learning English as a second language additional support. In effective programs, intentional efforts:

- focus on the children's sense of belonging and need to communicate;
- allow children to participate voluntarily;
- create opportunities for interaction and play with peers.

Children need to feel comfortable with everyone in the preschool setting and with use of their home language and nonverbal communication to express themselves while learning and trying to use English. As Chapter 5 of Volume 1 of the *California Preschool Curriculum Framework* states: "Language is a tool of communication used in all developmental domains. Children who are English learners need to be supported not only in activities focused on language and literacy, but across the entire curriculum." All children, particularly children at the *beginning* and *middle* levels of English-language acquisition, may show knowledge and skills in other domains, such as the visual and performing arts or mathematics, using their home language. The preschool Desired Results Developmental Profile (DRDP) recognizes this possibility by considering children's demonstration of knowledge and skills in their home language as evidence of developmental progress.*

Because first- and second-language development varies among English learners, the English-language development foundations and the language and literacy foundations are to be used in tandem with the curriculum framework. It is recommended that, when planning curriculum for all areas of learning, teachers begin by reading and considering the English-language development foundations and the curriculum framework guidance as they gauge each child's current comprehension and use of English. Teachers then develop a plan for how to integrate and use the suggested activities or strategies to support areas of

*It is important to use the appropriate Desired Results instrument. For children who are typically developing, the Desired Results Developmental Profile (DRDP) is the appropriate instrument; visit http://www.wested.org/desiredresults for more information. For children with disabilities receiving preschool special education services, the appropriate instrument is determined by the Individualized Education Program (IEP) team, which includes the family and the child's preschool teacher. All three-, four-, and five-year-old children with an IEP who receive preschool services, regardless of instructional setting, must be assessed using either the DRDP or DRDP *access*. The DRDP *access* is an alternative version of the DRDP with measures that have an expanded range for assessing preschool-age children with disabilities. Visit http://draccess.org for more information.

learning that take into consideration the diversity of English learners. Intentional teaching requires an ongoing awareness of the home-language development of each child as described in the English-language development foundations, as well as an understanding of the English learner's ability to use English in activities suggested in the other chapters of the *California Preschool Learning Foundations, Volume 2*.

Universal Design for Learning

The guidance in this curriculum framework applies to all young children in California, including children with disabilities or other special needs. In some cases, preschool children with disabilities or other special needs demonstrate their developmental progress in diverse ways. Recognizing that children follow different pathways to learning, this framework incorporates a concept known as *universal design* for learning. Universal design provides for multiple means of representation, multiple means of engagement, and multiple means of expression.[31] *Multiple means of representation* refers to providing information in a variety of ways so the learning needs of all children are met. For example, it is important to speak clearly to children with auditory disabilities while also presenting information visually (such as with objects and pictures).

Multiple means of expression refers to allowing children to use alternative ways to communicate or demonstrate what they know or what they are feeling. For example, when a teacher seeks a verbal response, a child may respond in any language, including American Sign Language. A child with special needs who cannot speak may also respond by pointing, by gazing, by gesturing, by using a picture system of communication, or by using any other form of alternative or augmented communication system.

Multiple means of engagement refers to providing choices in the setting or program that facilitate learning by building on children's interests. The information in this curriculum framework has been worded to incorporate multiple means of representation, expression, and engagement.

Although this curriculum framework presents some ways of adapting or modifying an activity or approach, it cannot offer all possible variations to ensure that a curriculum meets the needs of a particular child. Of course, the first and best source of information about any child is the family. Additionally, there are several resources available to support inclusive practice for young children with disabilities or other special needs. The resources, Web sites, and books listed in the *California Preschool Curriculum Framework, Volume 1*, appendix D, are recommended for teachers' use.

Curriculum Planning

Curriculum planning to support children as active meaning makers

Preschool children possess an amazing capacity to organize vast amounts of information. When we watch a preschooler alone in play, in play with friends, or engaged in a conversation, we see a mind actively working to make meaning.

Preschool children experience the world and build knowledge in an integrated manner, during simple moments of play and interaction with objects and with other people. They constantly gather

information and strive to make sense of it. Their minds take in words, numbers, feelings, and the actions and reactions of people, creatures, and objects and integrate new information into an increasingly complex system of knowledge. Effective curriculum for young children engages their active minds and nurtures their search for meaning and understanding.

Integrated curriculum

Research studies clearly show that young children construct ideas, concepts, and skills in everyday moments of play and interaction with others. For young children, learning is a dynamic process that happens whenever they encounter the world around them. Young children actively, purposefully, and energetically seek to figure out what new objects and materials are like and how they work. Play describes children's dynamic push to discover, to uncover, to figure out, and to make sense of the world. Play deserves careful consideration, because play and learning often mean the same thing. Indeed, play can be a rich context in which children construct ideas, skills, and concepts. During play, children discover and integrate new ideas, refine their thinking, and master emerging skills. Observing children at play is akin to observing scientists at work—children analyze, design, test, experiment, and negotiate ideas and strategies in order to figure out new and better ways of doing something.

Imagine four young children—eager and engaged in play amidst an assortment of wooden blocks. They may appear to be "just playing"; however, upon closer inspection, this moment of play reveals a web of ideas, theories, and hypotheses under construction, as well as an energetic debate. We may observe that the children are negotiating how to connect the blocks to make roads that will surround their carefully balanced block structure. The structure has walls of equal height, which support a flat roof, from which rise 10 towers, built using cardboard tubes. Resting on each tube is a shiny, recycled jar lid, each one a different color. Two children are figuring out between themselves when to add or take away blocks in order to make a row of towers that increases in height. As we listen and watch, we witness the children building a foundation for addition and subtraction. To make each wall just high enough to support a flat roof, they count aloud the number of blocks they are using to make each wall, showing an emerging understanding of the math concept of cardinal numbers. When they hear the signal that lunch is about to be served, one child finds a clipboard with pen and paper attached, draws a rudimentary outline of the block structure on the paper, and then asks the teacher to write, "Do not mess up. We are still working on our towers."

In this moment of play, children explore concepts foundational to math, science, literacy, language, the arts, and history–social science. For example, they build concepts of number, quantity, pattern, equality, print, representation, and conflict negotiation. The learning is integrated, purposeful, and self-motivated, with children developing important skills in a project they initiated. With thoughtful planning, and by observing and listening to the children's play, teachers set the stage for this learning. As part of curriculum planning, they made sure that the block area was well organized and stocked with engaging materials. As a result, the block area holds its usual basic inventory of materials, but it also holds objects such as cardboard tubes,

recycled jar lids of different colors, and a clipboard with pen and paper that are new and challenging to the current group of children, to provoke more complex ideas and theories and thereby support integrated learning.

Children learn many concepts and skills within purposeful play and projects. As stated earlier, play is a guiding principle for early childhood learning and teaching. Preschool curriculum means teaching in a way that supports young children in building concepts and skills in an integrated way as they gather information, experiment with it, and confront problems within the natural course of play and interaction with others. Rather than being a series of fact-filled lessons, each intended to teach a specific skill or concept, effective curriculum for young children supports their natural, inquisitive nature as they investigate the surrounding world. For example, young children are eager to investigate language—how it works and the power it holds to engage others. They explore art media with rapt attention—diving in to explore the unique physical properties of each medium (e.g., pencils, paint, or clay)—and begin to figure out what they can do with each one. With the eagerness of a scientist, they explore and experiment with objects from both the natural world and the physical world. With a passion no less intense than that of a debate team, they exchange ideas and strategies with others and orchestrate increasingly more elaborate pretend play with peers and adults. Children's play reflects the foundations of each academic content area—visual and performing arts, physical development, health, language, math, and science. In the early childhood period, children construct their knowledge by forging new connections in the brain that underlie ideas, skills, and concepts related to multiple academic disciplines.

To support young children's learning, teachers may use a variety of strategies (e.g., interactions, **scaffolding**, explicit instruction, modeling, demonstration, changes in the environment and materials, and adaptations, which are especially important for children with disabilities).[32] By adapting the physical environment, the materials, and the planned activities, teachers support individual children's strengths and abilities and guide their learning. For example, to support the learning of a child who relies on a wheelchair for mobility, teachers ensure the classroom furnishings are arranged so that the child always has clear pathways and access to all **interest areas** and that the tables and shelving are set up to allow the child to see, reach, explore, and manipulate all the learning materials. Only when teachers provide such adaptations do all children enjoy equal access to the play materials and the opportunity to actively construct ideas and skills with other children.

Integrated curriculum sometimes begins with a project or an investigation that has a specific focus of interest and that draws together the children, their families, and the teachers in pursuing this interest over a period of time. A project or an investigation holds possibilities for children to develop ideas and skills related to multiple academic disciplines. For example, as children gather materials for a project, they might use their emerging concepts of number and quantity. Or during the project, teachers might invite children to dictate stories about what occurred, giving children a chance to tell a story in a sequence and to experience print, letters, and words. Or children might have the opportunity to create and solve problems in the project, negotiating

complex ideas with the help of others—an early lesson, for example, in history–social science or health and safety. The following vignette from a class of three-and-four-year-old children illustrates integrated curriculum in a project that extends over time. This vignette recounts how children make evident to the teachers their interests; how the teachers document children's ways of exploring and making sense of the experiences; and how the teachers invite children, their families, and even the community to participate with them in a project to explore fresh food from the garden.

In this project, both parents and teachers wanted to find ways to support children's health and nutrition, a desire that emerged during a presentation at a parent meeting on nutrition and obesity prevention in young children. Many of the parents were surprised to learn that "picky eating" is a stage that can evolve into long-term resistance to eating fruits and vegetables and that one way to prevent children from becoming resistant is to encourage them to try a variety of fresh produce.

An idea that emerged from the discussion was to give children a series of opportunities to explore and taste fresh fruits, vegetables, and other edible plants in their natural, preprocessed state. Parents and teachers together began to think about the varied smells, textures, colors, and tastes of locally grown fruits, vegetables, and edible plants that young children could explore. Reflecting on different possibilities, the teachers became curious to see what children would do if given the chance to explore root crops such as carrots, beets, or onions that still had stems and leaves attached. Teachers shared this idea with children's families through a note near the sign-in sheet. Soon after the note was posted, one of the parents brought in big bunches of fresh mint that she was ready to remove from an overgrown section of her yard. Other families responded to the note by offering to bring in cucumbers, apples, and lemons from local gardens or farmers markets. Teachers began to anticipate the ways in which children might build emerging skills, concepts, and ideas in exploring these plants. Follow-up discussion with families helped both the teachers and the families think about assessing the ways in which children were learning. The project began with a question: "How might we give children an opportunity to get to know fresh fruits and vegetables grown in a garden?"

The environment as curriculum: Interest areas to support children's play and child-initiated learning

The play environment of a preschool setting is a primary source for early childhood curriculum. Well-stocked play areas, often called interest areas or activity areas, provide young children with a vast array of possibilities for learning. Driven to explore novel objects, people, and events, young children relate to well-planned play environments just as scientists relate to their laboratories or artists relate to their studios. When teachers thoughtfully organize the space into small, well-stocked interest areas, young children use such spaces like mini-laboratories or mini-studios. In each interest area, children find familiar materials and novel materials, the latter added as a way to pique new interest or to add challenge

and complexity to the learning within children's play.

Children enter these play areas and explore what they might do with the easily accessible materials. As children play, they form theories about what they can make the items do. They experiment, invent, and devise theories to make sense of their experiences, all embedded in their play. Play-based interest areas, both indoors and outdoors, each with a distinct focus, are designed to offer a basic inventory of materials with which children can apply emerging skills and develop concepts while they play.

As teachers plan curriculum, they consider ways to provoke more complex and coherent ideas by adding materials to an area. When adapting the curriculum to support all learners, teachers modify the play space or the materials available in the play space to make sure that each child in the program has access. Such ongoing additions and changes to the play spaces are essential to curriculum planning. By thoughtfully planning the interest areas and allocating long blocks of uninterrupted time for self-initiated play, teachers provide children with important opportunities to develop many foundational concepts and skills. Examples of interest areas in a preschool environment include the following:

Dramatic play area
Block area
Art area
Book area
Writing area
Math area
Science area
Family display area
Music, movement, and meeting area

The project of exploring food from the garden illustrates how teachers use interest areas as contexts for curriculum.

The teachers saw the pretend play area as a good location for adding play props related to fresh foods from the garden. They collected many artificial fruits and vegetables and placed them in the pretend play areas, both inside and outside the classroom. They hoped the items might elicit conversation about the fresh foods and vegetables that might already be familiar to the children.

Teachers also looked through their book collections and checked out books from the library in order to stock the book/story area, the pretend play area, the art area, and the science area with books that had clear, detailed photos and illustrations of the same fruits and vegetables. Finally, teachers clipped from magazines photos of fruits and vegetables from the garden and of people harvesting some of them. The photos were then laminated and backed with a few hook-and-loop fastener strips, and placed near the flannel board in the book/story area.

Teachers also added items to the science area. For example, one parent brought in small squash and green grapes still attached to the vine. The teachers thought these and other

items would be good specimens for children to explore in the science area. The items sparked so much interest in the children that teachers posted photos of children exploring the vines as well as a note to families and others who might have access to other foods that grow on a vine, branch, or stalk. Radishes, carrots, beets, turnips, kohlrabi, and many more were listed as possibilities for children to explore. As items were brought in, they were placed on a "lab table" in the science area, a place where children could freely explore them to discover what they were like in their natural state in the garden. As the project unfolded, teachers added possibilities for pretend play to the outdoor sand area, gathering together small shovels, rakes, baskets, wagons, and plastic melons and root crops, as well as a few real root crops—carrots, beets, and turnips with tops—some donated by families and some purchased from the farmers market and "replanted" in the sand. The interest areas, both indoors and outdoors, literally blossomed with foods from the garden.

The environment as a context for curriculum includes interest areas that are both indoors and outdoors. Interest areas not only hold novel items added as part of an ongoing project, but they also provide resource materials for children's exploration and investigation. The following episode from the investigation of fruits and vegetables illustrates how the environment functions as a context for curriculum.

Teachers placed baskets of pretend root crops and some real turnips and carrots, with leafy tops, near a large area of dirt and sand. When children discovered them, they began to busily plant and harvest them. At one point in the play, two children decided they needed signs to mark where they had buried the plastic potatoes and onions that had no leafy tops. They knew exactly where to find sign-making materials—in the outdoor writing area. Here teachers regularly stocked clear bins with recycled cardboard, notepads, and paper. On nearby shelves, children had ready access to clipboards, pens, pencils, and adhesive tape.

The Daily Schedule

Child-initiated play and teacher-guided activities represent two distinct contexts for learning.

Child-initiated play

In the above examples, teachers added many novel items to the interest areas in hopes of provoking children's thinking and learning in new directions. These novel materials held possibilities for children to develop greater understanding of foods from the garden. Teachers also made sure that, within the schedule of the day, children had ample time to experiment, invent, work together with others, and potentially incorporate the new materials into their play. A daily schedule with ample time for children to initiate their own play in well-developed interest areas is critical to the teaching and the learning. Young children need ample time to engage in play, in the company of peers, in order to develop their ideas, to pose problems, to try out solutions, and to negotiate and exchange ideas. When children initiate, organize, and develop their own play in the interest areas, it is child-initiated learning. At times, children choose to play

alone, but frequently, child-initiated play takes place in small groups of their own choosing.

Teacher-guided activities in small groups

In addition to schedulig ample time for children to initiate play in well-supplied interest areas, teachers allow for time to organize and guide specific activities for children. Such teacher-guided curriculum activities are clearly distinct from child-initiated curriculum activities.

Teacher-guided activities take place in two contexts—small group and large group. A small group would consist of one teacher working with a group of four to eight children. A large group is typically a gathering of all the children in an early childhood setting. Each context serves a different purpose and requires different preparation and teaching strategies.

For some aspects of the curriculum, teachers may choose to organize an activity with a small group of children (typically four to eight children). Although initiated and guided by the teacher, an effective small-group encounter of this nature should still be rich in possibilities for children to contribute and negotiate ideas with each other. Teacher-guided small-group activities work best in quiet spaces away from distractions of the full group. They provide a manageable context for children to discuss and explore ideas and experiences. The teacher listens to children's ideas, helps orchestrate the give-and-take of ideas among children, and poses ideas or problems for children to wonder about, explore together, or even solve. Away from the distractions of a large group, a small group allows teachers to easily observe, listen, and converse with children, as well as note how individual children think, express ideas, relate with others, and use their emerging skills.

Such teacher-guided conversations can enrich children's learning in all domains, particularly the children's language learning and vocabulary development. In addition, teachers can intentionally guide the development of specific skills by planning small-group activities (e.g., songs, games, shared reading) for short periods of time that playfully engage children in using specific emerging skills—such as sound and sound-pattern recognition. In programs with children who are English learners, small groups can be a time to foster learning between children (peer learning). The CDE's PEL Resource Guide provides several suggestions for promoting peer learning[33] and for providing individual children with scaffolds that help them engage in new and more complex thinking.

Small-group activities provide several advantages over large-group activities. While working with small groups of children, teachers can readily observe, listen, and document children's developmental progress. During small-group activities, teachers can also individualize the curriculum and use questions or prompts to scaffold each child's thinking in more complex ways. The following example

from the project in which children investigated foods from the garden illustrates the way in which teachers use small groups as a context for curriculum.

Teachers planned a series of small-group "tasting" experiences as a way to discover which fresh fruits and vegetables the children might know, like, or dislike. The teachers predicted that the tasting experiences might be some of the children's first encounter with a few of the fresh garden items in their "natural" state. In addition, as children's families heard about the project, the teachers hoped to suggest other fresh fruits and vegetables that would possibly be unfamiliar to some children at school.

The teachers launched the project by sending letters to the children's families, to the organizer of a local farmers market, and to a nearby grocery store. They asked for donations of fresh fruits and vegetables, as much as possible, in their natural state from the garden. The letter explained the project goal—that children would have a chance to explore fruits and vegetables in their natural state directly from the garden. They also shared their hope that children who may have little experience with a garden or a harvest might experience nutritious and delicious fresh foods directly from the earth rather than from a store. Teachers emphasized that the food items would not be wasted. Children would be experiencing not only nutritious food and plant science, but they would also be experiencing the full flavors and beauty of fresh fruits and vegetables while exploring where the items came from, cutting into them and tasting them. The teachers also invited donations of pruned foliage and branches as well as of full plants pruned from the garden, so that children might have an opportunity to explore and experiment with plants in their natural state—from roots, to stems, to leaves, to flower, to fruit. The teachers emphasized that the donations were to be the result of excess plantings, prunings, and weedings, without compromising, in any way, a family's food supply or financial resources.

The teachers were amazed and gratified by the overwhelming and generous response to their request for fresh produce, which included many samples of edible plants with root and stems attached. The tasting experience was planned as a small-group activity, with fresh cucumbers as the focus of exploration. One of the teachers had brought in two varieties of cucumbers from her garden. On a table in the science area, she placed a basket containing eight cucumbers. (The science area, separate from other interest areas in the classroom, provided a good place for a small group of children to freely explore cucumbers in their natural state.) The teacher prepared the table carefully. Near the basket of cucumbers, she placed a folded index card, on which she had printed in large letters, "Cucumber," on each side. A small photo of a cucumber was glued next to the printed word cucumber. *The teacher had also located a book that had photos of vegetables, and she propped this book upright on the table, open to the page with the photo of the garden-fresh cucumber. Three small baskets in the center of the table contained serrated knives, small cutting boards, napkins, and magnifying glasses. Near the table*

edge was a clipboard with a "Waiting List," attached and next to that item a short stack of white paper and a basket of black, fine-tipped felt pens.

During play time, four children found their way to the science area, and, once each child found a seat, the teacher invited each one to take a cucumber from the basket to examine. The teacher took a magnifying glass from the basket, and several children did the same. They began to peer closely at the cucumbers. One child chose to look at the photo of the cucumber. She ran her finger over the photo as she looked intently at it. Then she put down the book, picked up one of the whole cucumbers, and ran her finger over the long, curved edge. With a surprised look on her face, she announced to the group, "It's bumpy!" The child next to her fingered the skin of her cucumber and chimed in, "Yeah, mine is bumpy, too!" Another child, Jake, whose cucumber was noticeably more curved than the others, announced, "Mine's all twisty."

The teacher looked around the table and added, "Wow! When you look at each of our cucumbers, they are all the same in some ways and different in other ways, too, aren't they? Look how different yours is from mine, Jake. Yours has a curve to it." As the teacher spoke, she ran her hand along the outer surface of the curved cucumber and then held up the straight cucumber, adding, "And mine is straight. You know, it might be fun to get some drawings of the cucumbers so we could show the other children at group time what we discovered about cucumbers—that some are curvy, some are bumpy, and some are straight. I made sure we had some paper and pens here to draw the cucumbers in case some of you would like to do that. It would be fun to tell the other children later about what we discovered."

Then the teacher pulled the basket of pens so it was close by Jake and said to him, "Jake, it would be great to have a drawing of your cucumber. I brought the big-handled pen that you like." Jake, whose grasp and hand muscles lack the strength of most children, pulled a slightly modified pen from the basket of fine-tipped felt pens. (The teacher had enlarged the handle of the pen by wrapping it with thin Styrofoam and then taping it.) Jake started to draw his cucumber. Another child watched him and then began drawing on a separate piece of paper. As they drew, long lines appeared on the papers, lines that resembled the outline of the cucumbers.

After quietly watching the children explore and draw for a while, the teacher asked, "I wonder what's inside these cucumbers?" One child replied, "Food!" Another child suggested, "Seeds!" The teacher printed each word on a card—food and seeds. Then she asked, "Would you like to find out what is inside?" The teacher paused to gauge the children's interest and, on seeing their faces light up, she pulled the basket of knives to the center of the table and continued, "What will you need to do in order to see what is inside?" In no time, the children had knives in hand, ready to slice into the cucumbers. Closely watching the children, the teacher said, "Before you cut into all these cucumbers, I have an idea. I will cut thick slices from this big cucumber and give one slice to each of you to cut into

smaller pieces and taste. The skin of the cucumber can be kind of tough, and this will make it easier for you. We'll keep the other cucumbers whole, because then we can store them and use them later." As children began to cut the cucumbers, they tasted pieces. The teacher encouraged them to describe the experience by asking, "What does it taste like? Have you ever tasted anything like this?"

While the children cut, tasted, and explored the cucumbers, the teacher took several photos, including a photo of the curvy cucumber, the bumpy cucumber, and the straight cucumber. She would later mount each photo on green paper before laminating it onto an index card. She chose green because it corresponds to the color used for vegetables on the food pyramid chart, which is posted on the wall near the meal tables. Her plan was to add one cucumber photo card to a file of photos, organized by color according to the federally recognized food groups. This card file was kept on a low shelf for children's use in the writing interest area. The teacher planned to bring the other photos, along with the children's drawings to group time the next day, so that the children could report to the others about experiences with the cucumbers.

Whether child-initiated or teacher-guided, children's encounters with materials in interest areas provide teachers with excellent opportunities to observe how individual children build concepts and skills and how they negotiate ideas with others. Observing such moments of play and interactions provides teachers with ideas for how to extend children's exploration and learning through future encounters with related materials that add novelty, challenge, and complexity in every domain. For example, the fruit and vegetable project included opportunities for fine motor development, learning about health and nutrition, exploration of visual art, language and literacy learning, and science learning.

Teacher-guided activities in large groups

Another context for teacher-guided activities is the large group. A large group—typically a gathering of the entire class—works well for singing, acting out songs and stories, playing games, sharing experiences with each other, telling stories, building a sense of community, and organizing the daily schedule and activities. Storytelling is one of the more popular large-group experiences, one that has rich potential for adding to children's understanding about the world around them. Storytelling allows teachers, children, family members, as well as storytellers from the community to tap into and build children's knowledge and experiences in meaningful ways. Large-group time is also a good time for teachers to let the entire group of children know what new experiences will be available in the interest areas or what will happen in small groups that day. Large-group gatherings at the end of day provide

opportunities to review noteworthy happenings and to anticipate what will be available tomorrow.

During the "tasting" experiences of the fruit and vegetable project, teachers used the large-group gathering to support children's learning about foods that came directly from the garden. However, the curriculum plans for large-group gatherings were quite different from the plans for small-group activities. For example, during the weeks-long course of "tastings" in small groups, the teachers used large-group time to introduce a song about picking up fruits and vegetables from the market. This song quickly became a favorite, one that children regularly requested. The teachers decided to build on this interest by creating a simple movement experience and game. They found photos of the fruits and vegetables named in the song and printed and then laminated them. As children arrived for group time, each received one of the photo cards. The children held their cards as they danced and sang the song about the food market. As each food item was mentioned in the song, the teacher encouraged the children with the matching photo cards to hold their cards above their heads. Afterwards, one of the teachers invited the children to name the vegetable or fruit on their cards. As the teacher collected the cards, he explained that, after group time, the children could find the cards in the dramatic play area, where they might also be able to find these same fruits and vegetables in the storage baskets of pretend things, along with a few real food items.

The teacher then brought out a basket of small, round lemon cucumbers, one with the fuzzy vine still attached. He asked if anyone knew what these items were in the basket. Among the guesses were apples, lemons, and potatoes, but no one guessed that they were cucumbers. The teacher then said, "I have a surprise for you! Even though you may not know what these are, in a few minutes, I think you will. So, I need some of you to help me. Remember how yesterday some of you got to taste some cucumbers at the table in the science area? Those of you who did this, please join me here, because I have something you may want to tell the others about." The teacher held up, one by one, the drawings of the cucumbers the children had done. Then he showed the close-up photos of the whole cucumbers they had explored the prior day. As he did so, he said, "I wonder if those of you who did these drawings and those who got to cut and taste at our tasting experience yesterday can tell the others about these wonderful drawings and photos." With great excitement, the six children who participated in the cucumber tasting told what they had done, proudly identifying the photos and drawings as cucumbers. When the children finished talking, the teacher added, "Do you remember that I had a surprise for you? These vegetables in my basket are also called cucumbers, and they are from the garden, too. However, they are called lemon cucumbers. How do you think they got that name? I am going to pass the basket around, so you can feel their fuzzy skin. Also, I left this cucumber attached to the vine so you can see how it grows. Feel the fuzzy vine that supports the baby cucumber as it grows." As group time came to an

end, the teacher invited anyone who wanted to cut and to taste the lemon cucumbers to meet him at the outside science table for a lemon-cucumber tasting. He also said that tomorrow, when they played the farmers market song, someone would get to hold a new photo card of the lemon cucumber while dancing.

Daily routines as curriculum

Curriculum plans include ideas for involving children in daily routines and making routines an important context for learning, in general, and for social–emotional development, in particular. Daily routines provide natural opportunities for children to apply emerging skills, take on responsibilities, and cooperate. Teachers integrate engaging learning opportunities into the everyday routines of arrivals, departures, mealtimes, nap times, hand washing, and setup and cleanup, both indoors and outdoors. Children eagerly apply emerging skills as they contribute to the daily routines—when they are helpers who ring the bell for coming inside; when they count how many are ready for lunch; when they move a card with their photo and name from the "home" column to the "preschool" column of a chart near the room entry; when they put their name on a waiting list to paint at the easel; or when they help set the table for a meal, making sure that each place has a plate, utensils, and a cup. Such routines offer opportunities for children to build language skills, to learn the rituals of sharing time with others, to relate one action in a sequence to another, to coordinate emerging fine and gross motor skills, and to learn and practice health and safety procedures. Over the course of the project involving fresh foods from the garden, the teachers planned ways to extend children's learning within the daily routines.

The teachers decided to add "snack helpers" to the helper chart, one day a week. As snack helpers, four children each week were invited to prepare for the class a fresh fruit or vegetable snack. The teachers planned one snack a week by using fresh fruits or vegetables from the garden, some of which were donated by those who had gardens and others were purchased. The intent of the teachers was that the children would work with the fruit or vegetable in the natural state, the way it comes from the garden. Prior to preparing the snack, the teacher coached the children in washing their hands; in putting on plastic gloves after taking a seat at the snack preparation table; and in slicing and counting the food pieces according to serving size. On the day when apples were available for snack, the teacher reminded the children that three slices of apple is about a half serving. With close supervision from the teacher, the snack helpers sliced, counted, and placed apple snacks into paper cupcake holders, until a count of 20 servings was reached. The snack helpers sliced the remaining apples into in a bowl for hungry children and counted out additional servings.

The Curriculum-Planning Process

Planning preschool curriculum begins with teachers discovering, through careful listening and observation, each child's developmental level. Observation is an essential teaching skill. When teachers mindfully observe, they discover how individual children make meaning

in everyday moments of play and interactions, and how they can deepen their relationships with children.[34] Observation for the purpose of assessing individual children's learning means carefully watching and listening, with thought and reflection. In doing so, teachers find evidence of individual children engaged in making meaning. It may be evidence that pertains to individual children's emotional, social, cognitive, or physical development. If the evidence is clear and significant, teachers hold it in memory with, for example, a note, a photo, or a sample of a child's work. The evidence will often relate to the descriptive levels of the DRDP, which provides a full range of measures of children's developmental progress. Teachers working on the investigation of fresh food from the garden found various ways in which the children's engagement in learning about food from the garden related to children's developmental profiles.

As children cut and tasted fresh fruits and vegetables from the garden, teachers noticed children's growing interest in finding and extracting seeds from the fruits and vegetables. Initially, children had found seeds in items such as apples and oranges, but in time they also began to recognize them in foods such as cucumbers and bananas. Even during meals, teachers noticed children delighting in the discovery of seeds in a fruit or vegetable and treating them as treasures—saving seeds on napkins to share with teachers and family members. Teachers helped children find and label jars for the seeds. The jars became agreed-upon places where any child could deposit seeds. Several parents shared that their children had been collecting seeds at home. These parents also said their children wanted to bring the seeds to school. Teachers responded with a written note inviting all families to collect and bring seeds to school for the seed jars.

The seed collection became an exciting part of the investigation of fresh food. There were many opportunities for children to use developing skills and concepts as they collected seeds. Teachers suggested to parents that, before their child placed seeds into the collection jar, they encourage their child to count the seeds. Near the entry area, teachers hung a clipboard with a form where the child's family member could write a note and record the child's count of the number of seeds added to the jar during arrival or departure. Next to the number was a space where the child was invited to sign his name, whether as a scribble, a letter, or a full signature. Teachers pulled small handfuls of seeds from the filled jars and mixed them together on trays for a small-group activity. The children were invited to sort the seeds—by shape, color, or size—or to make designs and patterns of their own choosing from the distinctly different seeds. For example, some children transformed the mixture of peach, pomegranate, and orange seeds into shapes, faces, and flowers.

As teachers observe children's play and interactions, children reveal evidence of their emerging skills and ideas. Such evidence, recorded as a written observation or a photo, is used in a child's portfolio to demonstrate developmental progress. As teachers observe children's play and interactions, they also discover ways to extend experiences in order to support children in building more complex

and coherent ideas. The next steps in curriculum planning emerge as teachers reflect on how they might expand children's thinking, language, and interactions. From observation, reflection, and documentation, teachers not only gather evidence of children's progress in learning but also generate curriculum plans within ongoing cycles of mindful observing, listening, documenting, and reflecting on what might come next.

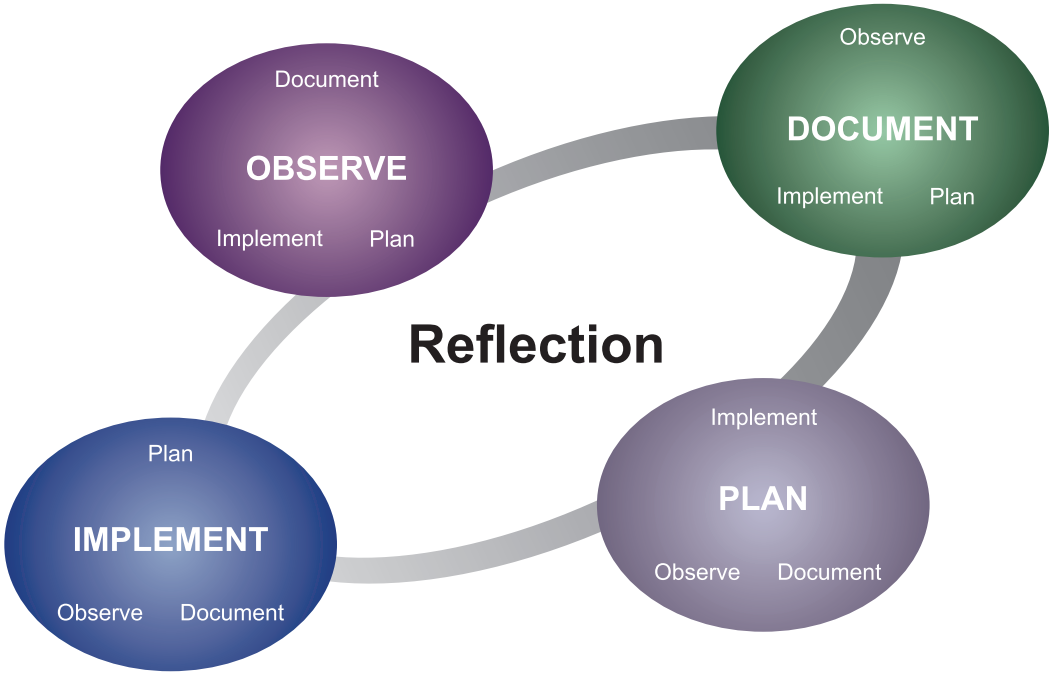
The Curriculum-Planning Cycle

Observe, reflect, document

Observation means being present with children and attentive as they play and interact with others and the environment. This mindful presence is different from participating in children's play or directing their play. Whether for one minute or five, an attentive, mindful presence means waiting to see what unfolds in order to gain a complete picture of children's play. A teacher who observes children as a first step in supporting learning discovers small scientists at work—experimenting, comparing, making assumptions, forming theories about what things are like or what they can do, testing ideas, and, over time, building mastery of a wide range of concepts and skills.

When several baskets of strawberries were donated, the teacher set up the tasting table with the strawberries and a children's book with large photos of fruit, including one with a close-up shot of a strawberry. After checking to see if the small group of children agreed

The Reflective Curriculum Planning Process



that the strawberries were considered fruit, the teacher reminded the children of their prior discovery about fruits—that they have seeds. Excited by the prospect of finding seeds, children began to cut open the strawberries. To their surprise and dismay, children were unable to find a single seed inside the strawberries. Suddenly, Victor, one of the older children, announced with a sly smile, "It's hiding. I see the seeds, but they are hiding!" The teacher caught his look and added, "Hiding, you think. So the rest of us will have to keep looking? This is puzzling, isn't it?" Victor's smile widened, as he said to the others, "You have to find it! You have to guess!"

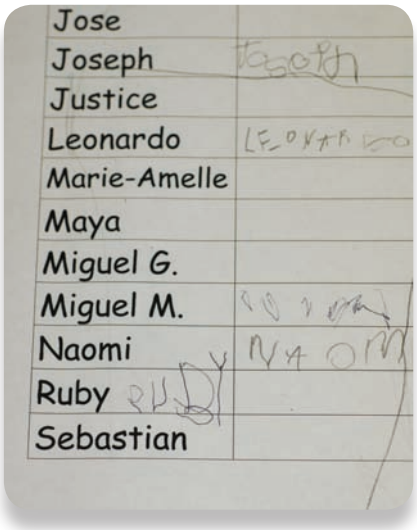
The teacher pulled the nearby book to the center of the table and said, "I wonder if we could find some information about strawberry seeds in our book?" As she began to read from the book, she came to a section that explained how strawberry seeds live on the outside of the strawberry. The children were in awe of the fact that they had been eating seeds all this time without even thinking about it.

Antonio, a child in the group who is learning English as his second language, ran to the bookshelf and returned and handed the teacher a favorite storybook titled The Little Mouse, the Red Ripe Strawberry, and the Big, Hungry Bear. *Antonio pointed to the illustration on the front cover—a large red strawberry, dotted with yellow spots. In this book, a mouse tries to protect his giant strawberry from the big, hungry bear.*

The teacher began to read the story, and children gathered in close to follow along. Celia, whom teachers have noted rarely sits still for book readings, was listening intently and, in the middle of the story, she suddenly announced, "I know! The mouse can grow the seeds to get another strawberry! Then they can both have strawberries." Smiling, the teacher agreed, "You're right! That's one way for both the mouse and the big hungry bear to have strawberries."

Many things were of interest to the teacher during the children's exploration of strawberries. She had listened to children's ideas and observed their responses. As the activity came to a close, she made a mental note to record this observation as a written anecdotal note after small-group time was over.

Documenting means gathering and holding evidence of children's play and interests for future use. A common form of documentation in early childhood settings is a written note, often referred to as an **observation anecdote**. Anecdotal notes, along with other forms of documentation—photos, video recordings, and work samples—serve a dual purpose. First, they hold memories of a teacher's observations of children's expressions



of feelings, thinking, and learning. Documentation can provide a useful guide as teachers determine what might be the next steps in day-to-day curriculum planning. Second, anecdotal notes and other evidence can be used to support a teacher's periodic assessment of a child's progress toward reaching competencies measured by the DRDP. In the small-group activity in which children were invited to explore the fresh strawberries, the teacher had several reasons for wanting to write down in a clear, vivid anecdotal note what had happened. In Celia, Antonio, and Yuri's classroom, the teacher thought about the process in the following way:

The events and conversations during our exploration of fresh strawberries revealed good evidence of how Celia, Antonio, and Yuri were using their emerging skills and concepts to explore the strawberries. I wanted to make sure I had an accurate depiction of what each did or said because I saw what occurred as clear illustrations of how each was building understanding and competence. By writing one clear anecdote, I can easily copy it and place it in each child's portfolio. When I update Victor's portfolio, this anecdote will serve as evidence of his ability to solve problems. When I update Celia's portfolio, I can use it to demonstrate not only her ability to solve problems, but also her improved ability to persist in following the story. And when I update Antonio's portfolio, I can refer to it as evidence of his language comprehension. During this one activity, each child has revealed evidence of different emerging ideas and concepts that relate to measures of the DRDP.

Reflect, discuss, plan

As teachers reflect on children's play, they review ideas for possible next steps in the curriculum; that is, ways to sustain and add complexity to children's learning. The teacher's reflections on the interactions that occurred during the children's exploration of fresh strawberries suggest several possibilities.

Aside from documenting evidence of children's developmental progress, my written note will be a useful way to share with my co-teachers and the children's families what happened. With this information, they can engage in thinking with me about an idea for a follow-up activity that we might do on another day. I wonder if we might have the children act out this story during large-group time. They could do both versions—the original version and Celia's new version, the one in which the mouse plants the tiny strawberry seeds to grow more big, red strawberries.

Documentation supports teachers in planning the next steps in the curriculum. Teachers might discuss among themselves what a photo or an anecdote of children's play reveals. They also engage the children's families in thinking about the documentation. At times, teachers also read such stories back to the children, as a way to engage the children in thinking about a possible next step. Documentation serves as a springboard for developing ways to explore more deeply a topic that has engaged the interest of the children, the teachers, and the families. Further exploration might include, among other things, materials to add to interest areas, related books to read in either large- or small-group

gatherings, or activities to do in small groups. With clear ideas or objectives in mind, teachers plan curriculum that includes strategies to enhance the learning of all children in a group, as well as strategies to support the learning of individual children. In the investigation of food directly from the garden, there were many opportunities for teachers to plan and implement curriculum prepared for the whole group and curriculum individualized for particular children. In every case, the curriculum came out of a process of observing, listening, reflecting, documenting, discussing ideas, planning, and implementing, which, in turn, launched another cycle of observing and listening in order to find out what children did in response. The following example of the process illustrates how teachers used documentation from a prior experience to launch a new experience.

During tastings of fresh fruits and vegetables, children had ample opportunities to represent their observations through drawings. During a weekly planning meeting, teachers wondered whether children might be ready to use a new art medium to represent experiences. Many of the children's drawings of the fresh fruits and vegetables had been posted in the science area, the art area, and the writing area, some taped up by children themselves. Teachers decided to photocopy some of these drawings, as well as others that they had already placed in children's portfolios.

A teacher leading the large group showed copies of the drawings to the children and asked, "Does anyone know what these are?" Some children excitedly began to recount memories from the tastings. The teacher comments, "Yes, some of you recognize these drawings as ones you made when you tasted strawberries and cucumbers. I have made copies of them, so now we have more than just one of Jake's drawings of a cucumber. Help me count how many of Jake's drawing we have now." Together, the teacher and the children counted from one to four, and the teacher finished with another question to the group, "Okay, we counted them, so now we have how many copies of Jake's drawing?" He paused to let the children answer, and indeed a chorus of "four" came from most children in the group. "Four copies of Jake's drawing and four copies of Yolanda's drawing, too. And of Josiah's, and of Thuan's, so we have lots of drawings. And do you know what I am going to do with them?" Again, he paused, looked around the group of expectant faces, and continued, "Well, I am thinking that today we can put these copies of your drawings in the art area. That way, if you choose to play in the art area, you will find these drawings along with something else."

He picks up a paint cupholder that has six small cups of watercolor paint, each a shade of yellow, red, or green. He also showed the children a basket

of fresh strawberries and cucumbers, along with the color photos of the cucumber and the strawberry taken during the tastings. The teacher then said, "I wonder if any of you might like to paint these drawings." Again, he paused to give the children a chance to respond and continued, "So, those of you who would like to paint the drawings, you will find these watercolor paints on the table in the art area. Oh, by the way, what do you notice about the colors that we put in the paint cups today?" He paused, curious to see if any of the children noticed how the colors matched the colors in the actual cucumber and strawberry. He then commented, "It will be fun to see what the drawings look like after you add color."

Implement

Once a plan is written, teachers implement it, but the planning continues even after an activity or experience is under way. As children encounter the activity or the materials placed in an interest area, the teachers check to find out how children respond to the materials they have prepared. To do so, teachers, once again, observe, reflect, and document. The curriculum planning is a continuous cycle, as teachers watch to discover children's responses to the planned curriculum and evidence of their developing skills and concepts during the planned learning encounters. As with every phase in the planning cycle, teachers would do well to approach this one with a sense of wonder. They may be surprised and amazed by what children actually do in response once they engage with the materials or activity. To hold in memory significant parts of what they observe, teachers record notes, take a photo, or keep a work sample, labeling and dating each. They can reflect on these documents later, along with parents and even with the children, as a way to assess the impact of the curriculum plans, to generate plans to further support children's learning, and to assess individual children's learning. For example, during such discussions, the following questions might be considered:

- Are children responding as we had predicted, or were there surprises?
- What do the children's responses tell us? How might we name the children's interest(s) or intention(s)? What concepts and ideas are the children forming in their play?
- How might children who are learning English collaborate in small groups with children who already speak English in order to learn from one another?
- How are the children showing evidence of progress that relates to the measures of the DRDP?

Partnering with families in curriculum planning

Throughout the study of foods from the garden, teachers and families together discussed how the investigation was going and what might be the next steps. Families became active participants, along with their children and the teachers, in generating the curriculum. The following episodes from the project illustrate ways in which families became involved.

A few families brought in samples of fruits and vegetables grown in their garden; others committed to bringing in whole plants, as they were ready to pull them from the garden at harvest. The hope was that the children might use these items in pretend play and might be inspired to "plant" them in the sandbox. The team of

teachers working with the youngest group decided to surprise the children by planting whole carrot, beet, and tomato plants, pulled directly from the garden, in the sandbox for children to discover and harvest. The classroom of older children discovered an uprooted, end-of-the-season tomato plant, still bearing a few green tomatoes, ready to explore on a table in the science area. An important link to keeping families engaged in the work were photos and clear, simple notes describing children's work—posted in the hallways and near the sign-in sheets as well as in locations in the classrooms where children might invite their parents to visit.

In this way, teachers and families were able to review and reflect together on the learning offered by these experiences and to continue to generate new possibilities for exploration. When one parent read the documentation of children cutting and tasting the cucumbers and read the comments describing the surface as bumpy, she was reminded of a vegetable common to her culture yet unfamiliar to many families in the school community. This vegetable, called "fuzzy melon," has a distinct furry surface texture. She brought in several fuzzy melons for the children to explore and compare with the cucumbers, both inside and outside the classroom.

When teachers share documentation of children's experiences and learning with the children's families, they invite the children's families to reflect together with them on children's learning and on ideas for expanding the curriculum. Family members offer unique insights and important input for curriculum development. They also help teachers understand the expectations, values, and beliefs that influence children's behavior and their ideas. Discussions among teachers and children's families about class projects add much to the curriculum plans. Such discussions become a conduit for the exchange of resources and ideas, from home to school and from school to home. Projects or investigations jointly planned with families can bridge children's experiences at home and in the community with their experiences at school.

Connections: A fertile ground for making meaning

The investigation of foods from the garden illustrates how teachers can help children connect with and learn about the world around them. A project-oriented approach also gives children an opportunity to apply emerging skills and concepts—what will become the foundation for language, literacy, science, history–social science, mathematics, physical development, health knowledge and skills, and the arts—in activities that are meaningful to them. The curriculum allows children to construct more complex ideas about experiences that genuinely interest

them, which helps them build connections in their rapidly developing brains.

Young children's experiences at home, with their families, and in their communities are a powerful source of meaningful connections that support their learning. Curriculum for young children does not reside solely within the walls of the early childhood environment. Teachers and children's families together co-create curriculum. Teachers nurture in the children a desire to know more about the world around them, and in family members a desire to join in as participants in developing ideas for curriculum. When a dynamic exchange of ideas and information occurs between home and school, a curriculum emerges that is tailored to the community and responsive to the history, interests, and values of the families and their cultures. The investigation of fresh fruits and vegetables from the garden provides examples of ways in which teachers and families co-create the curriculum.

Once the investigation of fresh fruits and vegetables from the garden was under way, the teachers from the four-year-olds' room wondered whether they might tap the life experiences of the families for stories that related to fresh fruits and vegetables from the garden. The teachers decided to place a photo documentation of the children's cucumber-tasting experiences near the classroom's entryway. They added a note and a clipboard. The note was an invitation for families whose home language was other than English to write down in their home language the name for cucumber (or a similar vegetable eaten in their culture). Once gathered, the teachers added these names to the laminated photo cards of cucumbers stored in the food box in the writing area. If a family had described a vegetable that was similar but distinct from the cucumber, they were invited to bring a picture of this vegetable, or even the vegetable itself, for children to compare with the cucumber. On another occasion, the teachers left a note asking families to consider sharing a story of a fresh fruit or vegetable that held a special memory in their lives. Nathan's mother brought in a picture of grapes growing on a vine, with the following message written on the back, "Grapes are one of my favorite fruits. When I was a little girl, I remember going into my backyard and eating them off the grapevine." Nathan's teacher brought this picture and story to the large group and invited Nathan to help tell this special story as she read it to the group.

Children bring much knowledge with them from their home and their community when they enter a preschool program. For example, children may come to preschool with knowledge of many stories that come from their family experiences. Their teachers may observe the children playing out these stories in the dramatic play area or outdoors in the play yard. These stories, however, remain unrecorded until teachers invite children to narrate them so that the teacher can put them in print. Once a child's story is put in print, the child comes to see himself as an author, one whose story can be read and reread to others. Stories can generate a wealth of possibilities for teachers, family members, and children to partner together in documenting what goes on in their lives, both at home and at school. Whatever the topic of a project or investigation, story dictation can serve an important role. In planning the investigation of fresh fruits and vegetables from

the garden, the teachers and family members might ask:

- Would the children be interested in seeing their family stories written down, and would such experiences help them increase their awareness of print in the world around them?
- What strategies or adaptations for family storytelling might engage a child who is nonverbal?
- For children who are learning English as their second language, might it be easier to make the connection between spoken words and print if they could dictate their stories in their home language to family members or community volunteers?
- What topics may be interesting and engaging for children to dictate? What kinds of questions might be used to invite children who may have never dictated a story before or whose home language is something other than English to dictate a story? Might asking children about how their family helps them get ready for preschool encourage them to tell a story that has meaning for them? Or for a child who likes to draw pictures, might inviting her to describe what is going on in her drawing be a way to introduce her to the idea of dictating a story?
- How might the activity be adapted to accommodate children with disabilities or other special needs?

These questions may open doors to new topics for exploration by teachers, children, and their families. When we embed children's learning in the context of their own lives and construct curriculum that reflects and builds on the best ideas and interests of children, families, and teachers, we make everything more meaningful and understandable for children. We also engage them emotionally, generating an experience that builds thinking and reasoning while making learning pleasurable and a source of joy. The key is to discover which connections are meaningful to each child. Doing so requires observing and listening to what it is that engages the mind of the child. What we discover prepares us to support young children as they actively make meaning and construct more complex ideas and skills while engaged in play, exploration, and interactions with others.

Implementation of the Framework

The concepts and strategies require thoughtful planning and implementation. They are grounded in evidence-based practices that have evolved in the field of early childhood education over decades. The ability to apply a broad understanding of early learning and development in the preschool setting takes time and experience. For teachers to gain the knowledge and skills necessary to approach curriculum as this framework envisions, opportunities for professional development are essential. The CDE's preschool learning foundations and the preschool curriculum framework offer well-researched documents informed by practice that can be used for both preservice and in-service professional development. Those two documents are part of California's Preschool Learning System, along with program guidelines, the PEL Resource Guide, professional development activities, and the Desired Results assessment system. With appropriate professional development, preschool administrators and teachers can use this curriculum framework to guide their planning and implementation of environments and experiences that allow all young children to prosper during the preschool years.

Endnotes

1. California Department of Education, *California Preschool Learning Foundations, Volume 2* (Sacramento: Author, 2010).
2. National Association for the Education of Young Children (NAEYC). 2008. NAEYC Early Childhood Program Standards. http://www.naeyc.org/academy/standards/ (accessed November 30, 2008).
3. California Department of Education, *California Preschool Curriculum Framework, Volume 1* (Sacramento: Author, 2010).
4. California Department of Education, *Preschool English Learners: Principles and Practices to Promote Language, Literacy, and Learning.* 2nd ed. (Sacramento: Author, 2009).
5. National Center for Children in Poverty, *California: Demographics of Poor Children* New York: Columbia University, Mailman School of Public Health, 2009). http://www.nccp.org/profiles/state_profile.php?state=CA&id=7 (accessed February 18, 2010).
6. M. J. Guralnick, *Early Childhood Inclusion: Focus on Change.* Baltimore, MD: Paul H. Brookes Publishing Company, 2001.
7. California Department of Education, *Students by Ethnicity State of California, 2008-2009* (Sacramento: Author, 2009). http://ed-data.k12.ca.us/profile.asp?Tab=1&level=04&report (accessed February 18, 2010).
8. Children Now, *California Report Card 2010: Setting the Agenda for Children* (Oakland, CA: Author, 2010). http://www.childrennow.org/uploads/documents/reportcard_2010.pdf (accessed February 18, 2010).
9. Ed-Data. 2009. State of California Education Profile. http://www.ed-data.k12.ca.us/Navigation/fsTwoPanel.asp?bottom=%2Fprofile.asp%3Flevel%3D04%26reportNumber%3D16 (accessed February 2010).
10. Children Now. *California Report Card 2010: Setting the Agenda for Children.* Oakland: Author, 2010. http://www.childrennow.org/uploads/documents/reportcard_2010.pdf (accessed February 18, 2010).
11. Ibid., 26. http://www.childrennow.org/uploads/documents/reportcard_2010.pdf (accessed February 18, 2010).
12. Children Now, *Children in Immigrant Families: A California Data Brief* (Oakland, CA: Author, 2007).
13. Children Now and Preschool California, *Kids Can't Wait to Learn: Achieving Voluntary Preschool For All in California* (Oakland, CA: Children Now and Preschool California, 2004).
14. California Department of Education, *Number of English Learners by Language, 2008-09.* (Sacramento: Author, 2009). http://dq.cde.ca.gov/dataquest/LEPbyLang1.asp?cChoice=LepbyLang1&cYear=2008-09&cLevel=State&cTopic=LC&myTimeFrame=S&submit1=Submit (accessed February 18, 2010).
15. California Department of Education, *Preschool English Learners: Principles and Practices to Promote Language, Literacy, and Learning,* 2nd ed. (Sacramento: Author, 2007).
16. National Center for Children in Poverty, *California Early Childhood Profile.* http://www.nccp.org/profiles/pdf/profile_early_childhood_CA.pdf (accessed February 2010).
17. U.S. Census Bureau. 2006. *2006 American Community Survey: United States and States- R1701. Percent of Children Below Poverty Level.*
18. A. Douglas-Hall and M. Chau, *Basic Facts About Low-Income Children: Birth to Age 6* (New York: National Center for Children in Poverty, 2007).
19. Children Now, *California Report Card 2006–2007: The State of the State's Children* (Oakland: Author, 2007). http://publications.childrennow.org/publications/invest/reportcard_2007.cfm (accessed July 14, 2008).

20. California Department of Education, *Special Education Enrollment by Age and Disability: Statewide Report* (Sacramento: Author, 2008). http://dq.cde.ca.gov/dataquest/SpecEd/SpecEd1.asp?cChoice=SpecEd1&cYear=2008-09&cLevel=State&cTopic=SpecEd&myTimeFrame=S&submit1=Submit&ReptCycle=December (accessed February 19, 2010).
21. Public Law 108-446; 118 Stat. 2647 (H.R. 1350). "Individuals with Disabilities Education Improvement Act of 2004."
22. J. Van Hoorn and others, *Play at the Center of the Curriculum,* 4th ed. (Upper Saddle Creek, NJ: Pearson Education, Inc., 2007).
23. E. F. Zigler, "Giving Intervention a Head Start: A Conversation with Edward Zigler," *Educational Leadership* 65: 8–14.
24. A. S. Epstein, *The Intentional Teacher: Choosing the Best Strategies for Young Children's Learning* (Washington, DC: National Association for the Education of Young Children, 2007).
25. California Department of Education, *Prekindergarten Learning and Development Guidelines* (Sacramento: Author, 2000).
26. California Department of Education, *Preschool English Learners: Principles and Practices to Promote Language, Literacy, and Learning.* 2nd ed. (Sacramento: Author, 2009), 43.
27. California Department of Education, *Prekindergarten Learning and Development Guidelines* (Sacramento: Author, 2000), 45.
28. J. E. Hale-Benson, *Black Children: Their Roots, Culture, and Learning Styles,* Rev. ed. (Baltimore, MD: The Johns Hopkins University Press, 1986).
29. B. Y. Terrell and J. E. Hale, "Serving a Multicultural Population: Different Learning Styles," *American Journal of Speech-Language Pathology,* 1: 5–8.
30. California Department of Education, *California Preschool Curriculum Framework, Volume 1* (Sacramento: Author, 2010), 178.
31. Center for Applied Special Technology (CAST). Universal design for learning. http://www.cast.org/udl (accessed June 8, 2007).
32. R. A. McWilliam, M. Wolery, and S. L. Odom, "Instructional Perspectives in Inclusive Preschool Classrooms," in *Early Childhood Inclusion: Focus on Change.* Edited by M. J. Guralnick (Baltimore, MD: Paul H. Brookes Publishing Company, 2001).
33. California Department of Education, *Preschool English Learners: Principles and Practices to Promote Language, Literacy, and Learning,* 2nd ed. (Sacramento: Author, 2009).
34. J. R. Jablon, A. L. Dombro, and M. Dichtelmiller, *The Power of Observation,* 2nd ed. (Washington, DC: National Association for the Education of Young Children, 2007).

Bibliography

California Child Care Resource and Referral Network (CCCRRN). *2009 California Child Care Portfolio.* Oakland, CA: Author, 2009.

California Department of Education. *Assessing Children with Disabilities Who Are English Learners: Guidance for the DRDP Access and the PS DRDP-R for Children with IEPs.* http://draccess.org/ (accessed November 18, 2010).

———. *Prekindergarten Learning and Development Guidelines.* Sacramento: Author, 2000.

———. *A World Full of Language: Supporting Preschool English Learners.* DVD. Sacramento: Author, 2007.

———. *Inclusion Works! Creating Child Care Programs That Promote Belonging for Children with Special Needs.* Sacramento: Author, 2009.

———. *Preschool English Learners: Principles and Practices to Promote Language, Literacy, and Learning.* 2nd ed. Sacramento: Author, 2009.

———. *Students by Ethnicity, State of California, 2008-09.* Sacramento: Author, 2009. http://ed-data.k12.ca.us/profile.asp?tab=1&level=04&ReportNumber=16&fyr=0809 (accessed October 18, 2010).

———. *Number of English Learners by Language, 2008-09.* Sacramento: Author, 2009. http://dq.cde.ca.gov/dataquest/LEPbyLang1.asp?cChoice=LepbyLang1&cYear=2008-09&cLevel=State&cTopic=LC&myTimeFrame=S&submit1=Submit (accessed October 18, 2010).

———. *California Preschool Curriculum Framework, Volume 1.* Sacramento: Author, 2010.

Center for Applied Special Technology (CAST). *Universal Design for Learning.* Wakefield, MA: Author, 2007. http://www.cast.org/udl (accessed October 26, 2010).

Children Now. *California Report Card 2010: Setting the Agenda for Children.* Oakland, CA: Author, 2010. http://www.childrennow.org/uploads/documents/report-card_2010.pdf (accessed October 18, 2010).

———. *Children in Immigrant Families: A California Data Brief.* Oakland, CA: Author, 2007.

Children Now and Preschool California. *Kids Can't Wait to Learn: Achieving Voluntary Preschool for All in California.* Oakland, CA: Author, 2004.

Douglas-Hall, A., and M. Chau. *Basic Facts About Low-Income Children: Birth to Age 6.* New York: National Center for Children in Poverty, 2007.

Epstein, A. S. *The Intentional Teacher: Choosing the Best Strategies for Young Children's Learning.* Washington, DC: National Association for the Education of Young Children (NAEYC), 2007.

Garcia, O., J. A. Kleifgen, and L. Falchi. "From English Learners to Emergent Bilinguals." In *Equity Matters: Research Review,* No. 1. New York: The Campaign for Educational Equity, 2008.

Guralnick, M. J. *Early Childhood Inclusion: Focus on Change.* Baltimore: Paul H. Brookes Publishing Company, 2001.

Hale-Benson, J. E. *Black Children: Their Roots, Culture, and Learning Styles* (Revised edition). Baltimore, MD: The Johns Hopkins University Press, 1986.

Karoly, L. A., and others. *Prepared to Learn: The Nature and Quality of Early Care and Education for Preschool-Age Children in California.* Pittsburgh, PA: Rand, 2008.

McWilliam, R. A., M. Wolery, and S. L. Odom. "Instructional Perspectives in Inclusive Preschool Classrooms." In *Early Childhood Inclusion: Focus on Change.* Edited by M. J. Guralnick. Baltimore, MD: Paul H. Brookes Publishing Company, 2001.

National Association for the Education of Young Children. NAEYC early childhood program standards and accreditation criteria. Washington, DC: Author, 2008.

National Center for Children in Poverty (NCCP). 2009. California Early Childhood Profile. New York: Columbia University, Mailman School of Public Health. http://www.nccp.org/profiles/pdf/profile_early_childhood_CA.pdf (accessed October 18, 2010).

National Center for Education Statistics. *English Language Learner Students in U.S. Public Schools: 1994 and 2000* (issue brief). 2004. http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2004035. (accessed November 18, 2010).

———. *The Condition of Education.* 2006. http://nces.ed.gov/programs/coe/2006/ (accessed November 18, 2010).

Pew Hispanic Center. *Statistical Portrait of Hispanics in the United States, 2006.* Washington, DC: Pew Research, 2008.

———. U.S. Population Projections: 2005–2050. Washington, DC: Pew Research, 2008. http://pewhispanic.org/reports/report.php?ReportID=85 (accessed November 18, 2010).

Play: It's the Way Young Children Learn. Oakland: Bay Area Early Childhood Funders (pamphlet). http://www.4children.org/images/pdf/Play_pamphlet_eng.pdf (accessed November 18, 2010).

University of California Linguistic Minority Research Institute (UCLMRI). *The Growth of the Linguistic Minority Population in the U.S. and California, 1980–2005.*

U.S. Census Bureau. 2006. *2006 American Community Survey: United States and States- R1704. Percent of Children Under 18 Years Below Poverty Level in the Past 12 months.*

Zigler, E. F. 2007. "Giving Intervention a Head Start: A Conversation with Edward Zigler," *Educational Leadership* 65 (2007): 8–14.

CHAPTER 2

Visual and Performing Arts

The visual and performing arts are as natural to young children's lives as language and play are. The arts build skills such as problem solving and critical thinking; they bring parallel opportunities for the development of language/communication, mathematics, and the development of social and interpersonal skills. The following activities are often referred to as children's play: scribbling with a crayon, pretending to be a pirate or a bird, humming bits of a tune, banging on a drum, or swaying to music. But, as the *California Preschool Learning Foundations, Volume 2* clearly points out, these behaviors in fact show elements of artistic expression and creation that support continuous development of artistic skills. They also show the hallmarks of children's abilities to express themselves through symbols and aesthetic images.

Such a developmental perspective supports this curriculum framework for the visual and performing arts. Making simple and repetitive marks on paper are a foundation for *visual art*; the simplest melodies and rhythms support learning in *music*; engaging in **dramatic play** by pretending to be another **character**, perhaps in a make-believe land, is essential to ***drama***; and moving even slightly to the **beat** or mood of music becomes *dance*. This chapter of *Volume 2* points to environments, materials, and practices that can help children progress in their artistic skills and knowledge during the preschool years.

Much of children's development in the visual and performing arts during the preschool years proceeds naturally and needs only fertile soil, along with time, to grow. Children *initiate* many behaviors and routines when they simply go about their play. They practice many skills along the way, and supportive physical and social–emotional development occurs as children progress from ages three to five. At the same time, their drawings become more mature and expressive, their **pretend** characters and **settings** become more complex and social, their musical expression skills grow with their muscular coordination and abilities to discern beat, tone, and **melody**, and the movements they coordinate with music or simply orchestrate in silence gain in surety and expressive complexity.

A primary responsibility of the preschool teacher is to let such natural developments occur. Child-initiated artistic activity is valuable not only because it is so enmeshed with a host of developments for children, but also because children cherish ownership of much of what they do. Children follow their hearts and minds to what interests them and to areas where they experience increasing mastery. They draw as they will and may not be interested in exactly what thing,

animal, or person the creation represents. They may hold firm to their idea of how to draw a tree, behave like a bear, or sing like a bird; it often becomes important for teachers and other adults to avoid critiquing such expressions (except where the child may solicit advice). Teachers would do well to let the child experiment with, and perhaps revise, her expressions as the need occurs or as maturing views of the world and its possible representations take hold.

Along with child-initiated art, a complementary perspective needs reinforcement. This perspective recognizes the ways that teachers can and should support young learners in their development. An element of this scaffolding is creating conditions in the preschool program in which interesting and important connections between the arts and other developments can take place. Capitalizing on language and communication opportunities is another example; placing children in settings where cooperation is important and where cooperative dispositions and skills may grow is yet another. Some art activities can help children become aware of and reflect on differences among people, become exposed to diverse art forms from different cultures, and create a common platform of learning for children between home and school. These considerations will set the stage for children's growth and interest in the arts.

Many vignettes in this chapter present examples of situations where child-initiated activities unfold and how teachers can best take advantage of them. Other situations involve teacher-planned actions for important purposes—to spark actions and reactions on the part of children, to ensure full inclusion of children in the early childhood setting, to bring about specific language learning in a formal, planned way, or to capitalize on an organic development presenting itself no matter how it came about.

Two sections describe a productive context in which the visual and performing arts can be brought to the preschool. As with other chapters in this publication, this chapter describes what are considered *guiding principles* that apply to teaching preschool-age children and learning in the visual and performing arts. Some principles are drawn from knowledge of teaching and learning; others are directed specifically to instruction and learning in the arts. Guidance is provided about *materials and environments* that serve to support development in the arts in preschools. Clearly, the environments and materials should support the choices children typically make to pursue visual art, music, drama, and dance. Environmental conditions and material provisions also need to support what teachers wish to bring to artistic activities in their classrooms.

Finally, each of the four strands features discussions. A *research highlight* brings to life an area or topic in the research literature relevant to the strand—visual art, music, drama, or dance. A sample *developmental sequence* in children's drawing also illustrates the strand. Notes about encouraging *family involvement* in the arts with children and some questions for *reader reflection* close the sections.

Guiding Principles

This section describes general principles for preschool teaching and learning in the visual and performing arts. Each is applicable in some way to learning in any of the arts disciplines. Some principles are derived directly from contemporary theories of learning and child development. These include the importance of teachers "knowing" their children and providing instructional activities that tap into their prior levels of knowledge and preparation for those activities. Some principles, such as the first one below, point out general attributes of children as learners, particularly their keen, almost innate, enthusiasm for the arts.

The principles also include statements about the importance of exploration in pursuing the arts; after all, children's creative expression will be more authentic when it is not dictated by adult rules or standards. When allowed this freedom, children will pursue not so much quests for right answers in art, but rather for expressions that are right for them or pleasing. This principle certainly does not suggest that teachers, parents, and caregivers are not valuable participants in the creative process. Their role is to scaffold learning; they do this by providing structure to activities, mediating potential problems, and inspiring and encouraging children's progress. In this manner, adults can make the arts rewarding to all children, including those with special needs.

Beyond helping to build artistic skills, reflection and modification are important to the creative process. These opportunities in the arts also build skills such as problem solving and critical thinking; the arts bring parallel opportunities for the development of language/communication, mathematics, and the development of social and interpersonal skills. In the same vein, the arts have applications to learning in many disciplines and to aspects of social–emotional development. Observant teachers can capitalize on the arts to foster such development.

The arts can be pursued even with meager budgets and free materials. Children benefit from high-quality learning experiences and high-quality materials—both as vehicles to encourage exploration and as symbols that demonstrate adult caring for children's welfare.

- **The arts are inclusive of all children.**
  The arts allow all children to participate in a meaningful and significant way and can help in developing a collaborative preschool environment. All individuals, including children with disabilities or other special needs, can find the arts satisfying and enjoyable. Accomplished artists with disabilities—Henri de Toulouse-Lautrec, Chuck Close (Wylie Coyote), Frida Kahlo, and Itzhak Perlman, among others—can serve as inspiration to all child artists, especially those with a shared experience of a disability.

- **The arts are a language that is common to all.**
  Arts education is an opportunity to improve communication and embrace understanding between children of different linguistic, cultural, and socioeconomic backgrounds, and between children with different abilities. Children will flourish from using the arts as a means of self-expression. Additionally, arts education may serve as a scaffold to help children build verbal language skills. A prop and shared experience can create a point of shared meaning among children and in teacher–child interactions.

- **The arts promote dispositions for learning.**
  Most young children enter preschool with a love of drawing, pretending, listening to music, humming and singing, and moving. They have a natural curiosity about the arts and a desire to be involved with and play through the arts. Daily time devoted to learning in the arts, the learning environment, adult–child interactions, and the curriculum design support and develop children's dispositions for lifelong engagement in arts-related activities.

- **Children make their own meaning.**
  Children are unique in their own artistic interests and abilities; they process, construct, and assimilate information and skills according to their own desires. Original, imaginative expression is a natural occurrence when children engage in the arts. However, appropriate amounts of adult intervention or scaffolding are often necessary to reinforce, promote, extend, or redirect learning. When provided with time for exploration, an appropriate environment, modeling, and encouragement, children will grow to value their own expressions and interpretations.

- **Children are capable of creating original art in all its forms.**
  Preschool children have an impressive capacity to be inventive and skillful in their creations. Often this is observed at play. A child may portray the character of a grandmother with powerful persuasion or create a sculpture from material found in the home. These are examples of natural, creative expression that can be nurtured in the school and home environment.

- **Children learn about human connections, beauty, and appreciation of the arts.**
  The arts speak to human beings' need to make connections between intellect and emotion and to find beauty in the ordinary. The arts are critical in any educational program, as they present situations to children, families, and teachers in which there is no approved standard or answer; people can discover their own sense of beauty and order. When a child is exposed to the arts—when he or she comes to love the art object or art making because of a deep, personal knowledge of it—the child will appreciate and value the arts in a unique way.[1]

- **The child's work is play.**
  Children progress through various developmental stages and thrive in safe, playful environments. Well-designed arts curriculum accommodates children's developmental needs and provides various types of social interaction and play-oriented approaches to learning.

- **Children are active learners who thrive when challenged appropriately.**
  Developmentally appropriate activities and materials are crucial to the young child. Art making can be messy, but children of all abilities progress in the arts through experiential, hands-on activities. An effective curriculum is therefore a container large enough to hold a broad range of methods, experiences, and definitions of success for all children, teachers, and preschool settings.

- **Arts experiences for preschoolers are more about process than product.**
  If children engage in art, that is what matters—regardless of the end result or product. Predetermined performance goals or levels tend to hinder originality and potentially cause stress for children.[2] The process may sometimes seem messy and the result undistinguishable, but the child will likely take much joy in the experience and pride in her accomplishment.

- **The arts reinforce the integrated nature of learning.**
  The arts are a unique way of knowing, but they also support learning across the curriculum. Engagement in the arts can be an effective means through which important early childhood skills and dispositions are developed—such as empathy and cooperation, curiosity in and knowledge about linguistic and cultural differences, ease with differences among people, vocabulary, symbolic understanding, and math-related concepts such as number, size and **shape.** Because children learn holistically, the arts should be presented in a way that is integrated with other domains of learning. Artistic expression and products connect to other domains in the preschool curriculum, and these connections can be emphasized at strategic times during arts activities.

- **Cultural competence is approached through art.**
  The arts are a part of all cultural traditions. The arts can help children reflect on their own cultures and origins as well as those of others. Some strategies included as part of this framework will aid preschool teachers in reflecting on the cultures and interests of the children's families and teachers. Through the arts, families and community members learn about and understand what goes on in preschools for their children and may devise at-home activities that embrace multiple cultures, abilities, and ways of learning. When children see and experience the artistic efforts and creations of families from diverse cultural backgrounds, it promotes positive connections between home and school. All children are empowered by sharing each other's family art traditions.

- **The arts are motivating and engaging for learners.**
  Unique to the arts, for many children, is the feeling of success during the process of creation, which often results in the pursuit of art experiences. Success in the arts is not typically measured by a tangible product or a preconceived outcome, but through the experience and process. Early successes lead to future success and can create feelings of competency and confidence for children. The arts are a means to explore, take risks, communicate, and define personal perspectives and preferences regardless of culture, developmental status, or ability.

- **Art can nurture the nurturer.** Learning in the arts provides the opportunity for teachers, along with the children in the program, to take part in artistic growth. The arts—especially in the preschool environment—are experimental, and teachers can enjoy the freedom and flexibility to offer arts experiences around interests that add to the feeling of joy and excitement in learning for all participants. Since children have a propensity for imitation, more than anything else, a teacher who is excited about the arts can potentially inspire children of any culture, language, or ability to become excited about art making.
- **The arts provide a unique means for families to interact.** Parents and families, because of special bonds and trust, are in a position to encourage, enrich, and support their child's artistic opportunities, development, and education. They can contribute to the child's learning in the arts in many ways. This framework presents ideas for family activities in the arts in each strand. In addition, families are a rich resource for the preschool program. They have songs, stories, games, and many other talents to share. When children in the same early childhood setting come from diverse cultural and ethnic backgrounds, the gains from family involvement can be even more pronounced.

Environments and Materials

Most materials necessary to support preschoolers' learning in the visual and performing arts are inexpensive and easy to obtain and can often be shared across art domains. In fact, by rotating **props**, books, masks, and the like, teachers reinvent them in novel ways. Who would have suspected that the feather duster from the prop box would make such a wonderful peacock tail? This section presents possible materials for each of the four domains (a useful but not exhaustive list) and suggestions for creating a preschool environment to support learning.

There are basic needs in each art domain in order to create an exciting and enriching learning experience.

- Dance and movement require only space in a room and benefit further from music and **costumes** of modest scope and cost.
- Many things handy in a preschool environment can serve as props for dramatic play and drama,* where imagination can turn almost anything into something else.
- Visual arts largely involve drawing, painting, and creating **two-** and **three-dimensional** works of art. These

*In this chapter, the terms *dramatic play* and *drama* are used. *Dramatic play* refers to children's spontaneous engagement in play, whereas drama refers to guiding children's activity in a structured presentation or actually providing explicit instruction in which children act out a drama.

activities commonly make use of natural materials in addition to typical art supplies, such as, crayons, pencils, finger paints, watercolor paints, moldable dough, construction paper, and sufficient drawing or painting paper to provide the inspiration for children's creations. Children need flat places to draw and paint—tabletops, the floor, or outdoor surfaces, such as fences.

- It is important that music not be limited to prerecorded songs. Music is an active process. Music may be a little more demanding of specialized materials. A variety of **rhythm** instruments, such as wooden blocks, bongo drums, or hollow, hardwood boxes, can be used by children; little instruction is necessary. When these materials are not available, clapping hands and stomping feet can keep rhythm. Other musical instruments that may extend this collection include recorderlike wind instruments, shakers, stringed plucking devices, and so on.
- Adaptive materials may be necessary to ensure that activities are accessible for all children. (Examples of adaptive materials are provided in the "Suggested Arts Materials" on page 122, and strategies for their use are included in each domain.) These materials, along with good planning on the part of the preschool teacher, will allow children with disabilities or other special needs to participate in art activities with a feeling of enjoyment and accomplishment.
- Materials that may serve as props for pretend play, or costumes that reflect the cultural backgrounds of the children in the preschool program, are good to have on hand.

Physical environments that support learning in the visual and performing arts begin with sufficient, appropriate space. The few basic materials described above, and space for the use of materials and movement of the children, are all that is required of the environment. For example, costumes, proplike objects, and art supplies, along with a designated workspace accessible to children, can help encourage learning while creating an aesthetically pleasing physical environment.

Scheduled time for arts activities, with an organized flow of necessary preparation and cleaning up (or possibly winding down of excited children), will also help facilitate learning. Teachers quickly learn—often through trial and error—the importance of allowing sufficient time for an art experience. The arts can also be woven into other areas of the curriculum throughout the day.

An effective environment for teaching and learning in the visual and performing arts for the preschool child considers:

- **The suitability, accessibility, safety, amount, and variety of materials.** This precaution refers not only to traditional child-safe art supplies, but also to fabrics for draping and costuming, construction paper, tape, string, various sizes and shapes of blocks, pillows, and other child-safe items that can be imagined and used as props. The choice of materials is based on

their suitability and sustainability in relation to the multicultural makeup of the children and the abilities of the learners in the group. Families are often eager to contribute to the classroom. They may have cultural artifacts that will delight children or a musical recording that their child dances to at home. See "Suggested Arts Materials" (page 122) for ideas about materials that young children may use and enjoy in the arts program.

- **The aesthetics of the early childhood environment.**
  The arts embrace aesthetics—the beauty of a drawing or painting, the pleasing sound of a musical passage or rhythm, the enticing look of fabrics used creatively in drama and dance. Children benefit from an aesthetic environment in which they can play or work. A well-organized room offers access to materials, sufficient open space, and walls and shelves in neutral colors, suited for displaying artwork.

- **Sufficient open space for movement, dance, and theater play.**
  Space is also needed for group gatherings (e.g., on a rug) to reflect on works of art and performance activities. The child playing alone primarily uses objects, such as **puppets** or toys, to tell a story when engaged in **fantasy play**, and this can take place anywhere. A group of children engaged in fantasy play typically pretend as themselves rather than through objects. This type of play often takes place in a **role play** area with an open-ended theme, such as a market, bus, pizzeria, or train station. These children may want to travel around the room on their journey. When the teacher is involved in the fantasy play, a large section of the room and various props are often used.

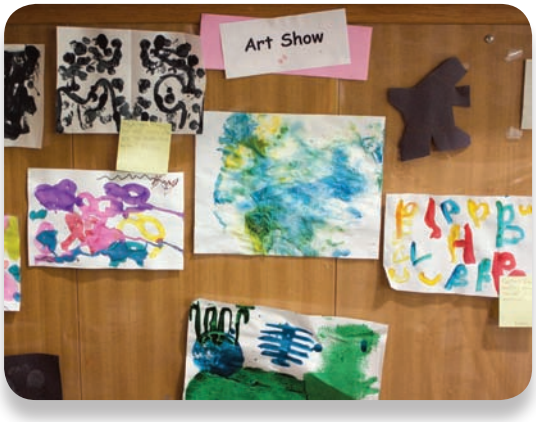
- **Support for children's drawing skills.**
  Support for the earliest learners starts with providing a safe space, basic drawing materials and tables, and time in the day to create, experiment, and perform in a nonprescriptive, open-ended manner. Children learn to draw during times of independent interest in the action of drawing. For this purpose, an area with pencils, crayons, markers, and paper should be available during child-initiated play. Chalk and chalkboards also work well for beginning drawing. Easels placed in various positions can encourage different kinds of drawing and painting. Many children combine drawing and emerging writing in the writing center. As children progress, opportunities to draw from life or the outdoors using lapboards or large clipboards are valuable.

- **Indoor and outdoor environments for creating art.**
  Children will find inspiration from variety. Can anyone imagine Monet painting his garden from a room with no windows? Choices of materials and settings will allow children an array of opportunities to paint in varying light or perhaps explore new movement at the park or in the auditorium.

- **Art that is displayed at the eye level of the children.**
  The children's own art, examples of visual art, or photographs of performing artists or children engaged in movement or musical activities are all displayed in an aesthetically pleasing manner. Children will likely enjoy being given the opportunity to choose their own works of art for display. An environment with a neutral background is ideal, so that the children's art is highlighted. Digital photographs of children's art can be taken and sent home or be used in a class art book.

- **A well-constructed environment for social and collaborative learning.** The various abilities, cultures, and languages will provide valuable diversity for the individuals, as well as the class, as they share new experiences while learning in the arts. The children will draw ideas from each other and assist their friends. The teacher can facilitate a collaborative learning environment by designing the space for children to interact easily and find needed materials. It is important to have plenty of materials for all the children. They also need to learn the routines for sharing and cleaning up materials.

Art can include all children. A teacher will find families and specialists helpful in providing ideas on how to involve children with disabilities or other special needs in art activities. Teachers can also communicate with the children themselves regarding their comfort with trying an activity. Before beginning an activity, the teacher can say, "Sophia, do you want to try this?" just as naturally as asking any other child to try to write the first letter of his name.



Summary of the Strands and Substrands

The visual and performing arts domain is presented in four familiar disciplines or strands:

Visual Art. The visual arts domain includes the practice of drawing, painting, sculpting, and assembling collages in two or three dimensions. Preschool visual art is process-based and open-ended, allowing children to explore by using a variety of materials. The product is not the focus, though the children will likely view their creation as a masterpiece!

Music. Preschoolers love to listen to music as well as sing along and move with music. Music learning in preschool is a time to make new discoveries. Preschoolers can engage in music making, performing rhythms, musical sounds and passages with a variety of instruments, or simply sing along to a favorite tune.

Drama. For preschoolers, this domain involves both spontaneous dramatic play and teacher-structured drama, each of which inspires the other. Preschoolers are naturally inclined to engage in **solitary**, parallel, and group **play**, and draw on these experiences when acting out situations and using props (with teacher guidance). Similarly, engaging in drama feeds children's imagination and inspires dramatic play. A goal in dramatic play and drama for preschoolers is unleashing the child's imagination. Thus, the focus is on children's creative engagement in drama rather than on actual performance or "the theater."

Dance. The dance domain for preschoolers is interested in the creative and often expressive use of movement. Movement is explored in all its range (e.g., small and large, fast or slow, hopping or marching) and for various purposes, such as learning math or language skills, or for the joy of moving. Dance can be a nonverbal tool for expressing ideas, telling stories, or communicating emotions. It is often rhythmic and accompanied by music. Requiring thinking, social interaction, and physical exercise, dance is a motivating way for preschoolers to engage in learning.

The substrands appearing under each discipline, with one exception, are:

1.0: Notice, Respond, and Engage
2.0: Develop Skills
3.0: Create, Invent, and Express

The exception shown below occurs in the Drama strand. Here "Develop skills" and "Create, invent, and respond" substrands are combined into one substrand, namely substrand 2.0, *Develop Skills to Create, Invent, and Express Through Drama.**

*In contrast to visual art, music, and dance, basic skills in dramatic play develop from the outset through acts of expression, invention, and creation. So these substrands are combined in the Drama strand.

Please refer to the map of the visual and performing arts foundations on page 118 for a visual explanation of the terminology used in the preschool learning foundations.

Curriculum Framework for the Visual and Performing Arts Disciplines

The four disciplines are treated in succession. The primary intention is to provide examples of children engaging in the arts or involved in activities where turning to an arts-related activity could enhance learning. The presentation model generally involves a rich situation described in a brief vignette, followed by the identification of a "teachable moment" implied or explicitly visible in the vignette. These descriptions are followed by specific teaching and learning strategies that could capitalize on the teachable moments identified.

These vignette, teachable moment, and strategy triads are presented alongside of, or embedded in, descriptions of more general strategies aimed at a considerable range of preschool learning goals.

Visual Art

Developing Curriculum in the Visual Arts

Preschool children often have a natural fascination with the process of creating visual art. Making marks, squishing clay, and using a brush to apply color are activities that attract most young children. In groups where children speak multiple languages and may not share common words, visual art can create connections and a way of communicating. Art can become a way for people to connect across cultures to their common humanity; an appreciation for it may begin in preschool. Inviting families into the environment to share works of art from the home is an opportunity to build a bridge to the home.

Young children are naturally creative. The visual art framework is designed to encourage creativity; open-ended projects emphasize the process of working with visual materials. In other words, the curriculum is not focused on encouraging a child to produce, for example, a specific painting, but rather to practice using a brush on paper without a set outcome.

1.0 Notice, Respond, and Engage

This substrand describes children's interest and enjoyment in the visual arts (for example, in drawing, making sculptures, or painting). To notice is to orient attention to something. To respond is to interact with the materials and methods of an art form. This response may be subtle (for example, a glance, a smile, or stopping an activity). To engage is to sustain attention and interest over time.

Teachers should encourage beginning learners to discuss works of art and communicate feelings and opinions about them in their own language. Exposure to **abstract** and **representational** art by artists from different cultures and periods of history is important. Teachers show children pictures of art or actual works of art and encourage them to notice the shapes, colors, **textures**, feelings, and subject matter of the work. In addition, finding out about the children's likes and dislikes is helpful. Both "like" and "dislike" responses are accepted. Questions—such as, "How does this make you feel? Why? What is happening in the picture? Can you think of any words to describe the picture?"—may encourage discussion.

Children begin to notice and respond to shapes that are in pictures, paintings, and sculptures. In order to recognize shapes and orientations in visual art, children need to acquire the vocabulary of shape and perspective in their own language. Teachers can help children recognize and develop a deeper understanding of shapes by encouraging children to explore shapes and their attributes. Teachers provide them with opportunities to represent, build, perceive, and compare shapes. For example, parents and teachers can encourage children to use shape names in everyday interactions, engage children in conversations about different shapes, and provide them with opportunities to manipulate, create, and represent shapes in a variety of ways. In addition, teachers can create play situations in which children naturally learn and explore shapes. For more information about strategies related to shapes as well as positions in space, see chapter 6, "Mathematics," in Volume 1 of the *California Preschool Curriculum Framework*.

VIGNETTE

Roberto and Minh, two four-year-olds, sit beside each other outdoors and draw on propped-up drawing boards. Roberto uses a black crayon to draw lines back and forth across the board, covering other shapes beneath. As he draws, he begins to make the sound of a siren. He says, in his home language, "Here comes the fire! Call the engine and the doctor! There's a person inside!" He then makes siren noises along with his marks, making darker marks as the sirens wail louder. Minh pauses, looks at his barely started sketch, and then softly adds siren noises of his own while scribbling red crayon marks. Roberto's drawing becomes a tangle of dark marks. Minh's drawing is a red-line rectangle of sorts.

TEACHABLE MOMENT

Like many drawings by young children, Roberto's drawing is not about making a picture of an object or how things are supposed to look. His drawing is about actions and events that go through time, and the interaction between the children is an affirmation of their social bond. They are declaring to one another that they both know how to play at being sirens. The interaction is the pretext to more complex imaginative play: the beginning creation of a shared scenario via drawing. In addition, the children use drawing and art to explain and understand events that may be disturbing for them. The role of the provider in this case was simply to create a space with materials for drawing and to encourage the children to use them.

VIGNETTE

Ms. Cheng is showing children how colors can be mixed to create other colors. While pouring some yellow paint on the plate, she says "What is this color?" "Yellow!" shout the children. Knowing that some children speak other home languages, Ms. Lin asks "Milagros, how do you say yellow in Spanish?" "Amarillo," *Milagros answers. "Samantha, how do you say yellow in Mandarin?" "Huang!" Samantha answers. Ms. Cheng pours out some blue paint and asks the same set of questions. As she moves on to mix the two colors, they turn into green. This time, without prompting, some children shout, "Green!" others say,* "¡Verde!" *and others say,* "Lu!"

TEACHABLE MOMENT

In this vignette, Ms. Cheng turns a color-mixing activity into a chance to learn and reinforce some color terms. More importantly, by asking Milagros and Samantha to name these colors in their home language, she drew them closer to the activity. For more information about strategies to support children who are English learners, see the *California Preschool Curriculum Framework, Volume 1*, chapter 5.

Interactions and Strategies

Encourage engagement with art at all levels. Recognize the "action drawing" that occurred in the first vignette and view it on the children's terms. Make comments or questions that stress the different ways that similar or identical things can be represented through drawings and perhaps explore each child's "thinking" about what they have drawn. Encourage mutual respect for the individual choices involved. In the first vignette, Roberto is creating a free-flowing and abstract representation of possible actions and events in time and space and is beginning to tell a story. Minh is participating in the experience with his drawing as well. To the children, the marks represent a complex, imaginative jumble of moments and objects, and they are working on extending their capacity to think beyond the concrete.

Provide opportunities for children to reflect on their own work and sometimes their own actions, through communication with peers and the teacher, and to reflect on the works of peers in encouraging and positive ways. Facilitate positive and respectful interactions. Encourage children to talk in their own language about what they have drawn. In describing or communicating about their work, children develop their vocabulary and perception of art. The use of terms to describe color, shape, relative size (e.g., *bigger, smaller*), and the positioning of objects in space (e.g., *in, on, under*) encourages children to think about their art with more depth. Encourage discussion of particular works by the group, especially with older preschoolers. The following vignette illustrates how a teacher might discuss the drawing experience with the children.

The provider observing Roberto and Minh waits until they finish drawing. She communicates to Minh, "You and Roberto really seemed to enjoy coloring today. Tell me about your drawing." Minh replies, "It's the fire truck. I saw fire trucks come to our street." The provider responds, "Wow, that is interesting. Is that why you used the color red?" Minh replies, "Yes, and Roberto made the smoke." Roberto claims, "That is not smoke. That is the siren sound."

Respect individual developmental, cultural, and linguistic differences, and encourage children to respect them. Children may respond to art in a wide variety of ways depending on individual preferences, developmental differences, and cultural background. For example, a child who is from a house where messy projects are strongly discouraged may have trouble engaging in a finger-painting project. Other children may have sensitivities to different textures and need an opportunity to observe or participate in other ways. One way to encourage a group to notice and respect cultural differences in works of visual art is to invite families to bring a favorite work of art from home into the preschool. Model acceptance and respect for whatever families choose to bring.

2.0 Develop Skills in Visual Art

This substrand refers to the basic skills needed to invent and create through visual art. Examples of skills include the ability to draw a line or circle, to use a paintbrush, to choose and mix colors, and to combine materials together to create an **assemblage**.

VIGNETTE

Maya, a five-year-old, and Carla, a four-year-old, have an argument over taking turns with the dollhouse. Maya calls Carla a name. Ms. Moniz, the teacher, talks to the children and asks that they draw a picture of what they think happened. Maya draws two figures with a jagged, zigzag line extending from the mouth of one figure and calls the picture "mean words." Carla draws a figure sitting in a house.

TEACHABLE MOMENT

In this interaction, not only did the children develop their drawing skills and engagement, they also practiced their social–emotional skills. The practice of drawing an event charged with emotion allowed Maya to reflect on her actions calmly and to process the effect her words had on another child. In addition, she was able to take an event and express it in a single line. This develops her ability to imagine how to express herself in a creative and abstract manner. Carla, in her description of her picture, is focused on being "in a house" or in possession of the dollhouse.

Interactions and Strategies

Provide children simply with a means and place to make marks (e.g., a crayon and paper), and they will begin with the same basic images. Children progress through several stages of drawing in succession, regardless of when drawing is introduced. First, children make sets of vertical lines. They subsequently progress to repeated circles and crossed lines; then they typically begin to add lines that make their circles appear as tadpoles and then human beings. Children in a single preschool group typically represent a variety of these stages when they enter preschool; do not expect all children to achieve the same level of representation in drawing at the same time. Encourage progression from mark-making to representational drawing by providing materials and undisturbed time to use them independently.

Encourage communication around shape and form to aid children's drawing skills. Drawing from life can help children begin to represent things they see as drawings. Engage children in conversations about the shapes of different parts of an object or design to increase their knowledge and awareness of different shapes. It may encourage them to use

and combine different shapes in creating their own picture or design. For example, children may learn to draw a beetle after seeing one and noticing what shapes make up the form of the beetle. See the "Developmental Sequence of Drawing" on page 56 for more information. Naming shapes connects with curriculum in the mathematics domain.

Help children acquire painting skills through practice with the tools. In the beginning, simply show children how to make a mark with paint and a brush without dripping paint in unwanted places. For example, show the child how to remove excess paint from a brush before touching it to paper. Learning how to grip and manipulate tools for visual art reinforces skills that prepare children for writing.

Stimulate children's interest in color and application of paint through other forms of painting. Teach children about colors and paint by spraying color onto a mural wall or providing paint-stamping activities. Encourage children to try mixing colors. Isolate the skill of using a brush to make marks by giving the children time to paint with only water; children often find this fascinating.

Create opportunities for children to work with dough, clay, or wet sand. Creating sculptures begins as a **tactile**, sensory experience. Children will naturally find ways to ball-up or flatten sculpture materials or roll them into coils using their hands. Demonstrate the skill of rolling coils against a table or rolling clay into a ball. Encourage communication about the different designs that emerge (that the coil looks like a rope, green bean, noodle, or a snake!), and name the two- and three-dimensional shapes they form (e.g., rectangle, circle, pyramid). Children may want to

make multiple shapes and squeeze them together to create a work of art, representational or abstract. Strength gained in the hand muscles by learning to sculpt reinforces fine motor skills needed in kindergarten for writing.

Provide only the *malleable* material, without tools, during children's initial explorations of sculpting so that children have a chance to explore through touch. Activities that encourage open-ended creativity and exploration by using clay and hands can be prepared. A good example of a tactile clay activity is a push-pot. Prepare several Ping-Pong-sized balls of clay for each child. Then, demonstrate how to push the center down with a finger and pinch the sides to open the "pot." Set the pot down on the table until the bottom is flattened and the pot stands. Encourage children to experiment with different fingers, and then allow them to discover different ways of stacking pots or sticking them together.

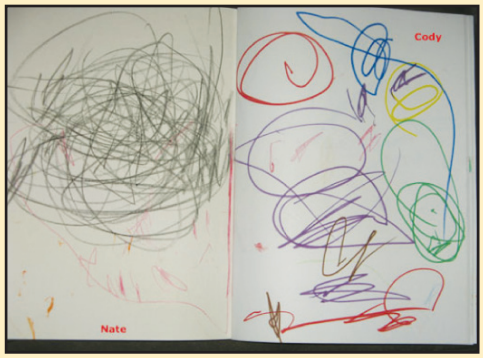
Communicate to a group of linguistically and culturally diverse children through sculpture techniques by using nonverbal methods. Some key beginning sculpture techniques can be demonstrated easily using body language. *Opening a solid* is the technique of poking the clay or dough simply made from flour, then pulling apart, and smoothing until

there is an opening through the sculpture. *Pulling protuberances* means gently pulling the clay or dough out to varying lengths and in different curves, then smoothing them. Encourage children to experiment with these techniques. Showing children photographs of abstract or nonobjective sculpture (i.e., sculpture that does not represent a particular object) may allow them to view the techniques they are mastering with greater pride and purpose.

Introduce tools after observing that children have had many "hands-on" opportunities to explore clay and dough sculpture. Children enjoy using basic tools or other items to imprint or sculpt dough or clay. For example, using a crayon to poke eyes into the coil-snake may interest them. Or simply creating repeating patterns by pressing an object (e.g., fork, comb, potato masher) into clay or dough may also intrigue preschool children. Provide time for children to become absorbed in this type of activity; then engage them in open-ended conversation about their creations. A slightly more advanced tool is a roller of some kind. For example, demonstrate how to roll a slab of dough or clay with a small rolling pin, and then the slab can be picked up and folded, bent, or wiggled into a wave or another shape.

Developmental Sequence of Drawing

When provided with tools and a supportive environment, children from ages three to five progress more rapidly in the visual arts than during any other two-year period prior to adulthood. Creativity and imagination are at their apex at age four-and-a-half years; most experienced preschool teachers will attest to this. The arts are a natural outlet for the creative thinking of a preschooler, and learning is rapid.

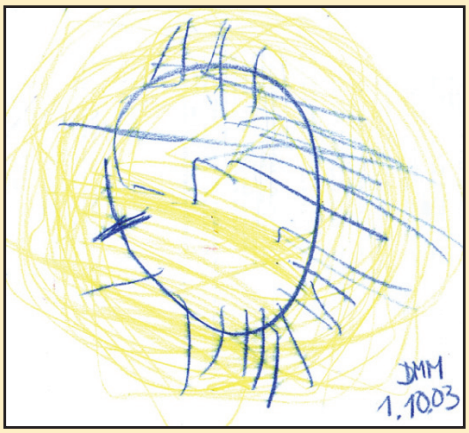


Early, nonrepresentational mark-making

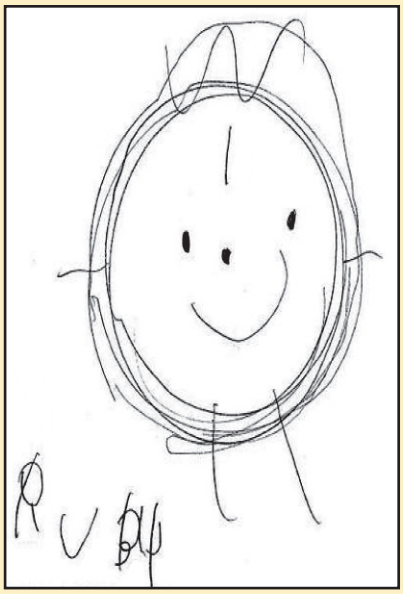
The progression of children's drawing ability is the most documented in the visual arts. When children are given a means and a place to make marks, they begin with series of vertical lines and move on to *mandalas* (i.e., repeated circles). The mandalas soon sprout legs and arms, then faces, and more detailed features such as hair, fingers, or eyes. Harvard University Professor Howard Gardner refers to this process as "the birth of the potato person."[3] This research has become so well-known that medical doctors will now check on children's intellectual progress by asking the child and parent how detailed the child's human-figure drawings are (rather than asking about letters and numbers)

Developmental Sequence of Drawing (continued)

at the four-year and five-year checkups. Because children speak multiple languages and progress differently around writing skills, the question about drawing is more relevant and telling for this age group.



A mandala becomes an early representational drawing of a sun.



The emergence of the "potato person": a first effort at representing a person

The painting progress of children is not as well-documented as their drawing progress. In general, children begin by simply experimenting with brushstrokes and the process of applying paint to a surface. Children's first paintings are usually solid sections of a single color, two colors, or three colors at the most. The brushstrokes begin to change directions, and shapes emerge. Finally, children begin to attempt representational paintings. The subject matter of such paintings varies depending on the child, the teacher, and the environment.

A more advanced drawing: person wearing "sparkly shoes"

In general, experts agree that the first sculptures made by children are flattened media, coils, and balls. Progression from that point depends on the tools provided and the experiences the teacher chooses to emphasize and encourage.

3.0 Create, Invent, and Express Through Visual Art

This substrand describes how children use their skills to participate, express, invent, and create through the arts. Preschool children spend much of their time creating, inventing, and expressing themselves, and they use various means and approaches to do so.

A strong preschool art program encourages creativity by allowing children to choose what they want to make (i.e., content), how they want to go about making it (i.e., process), and what it will end up looking like (i.e., product). For some children, simply keeping a safe, neat, accessible art area available is enough. Others need subtle encouragement; for example, teachers may communicate, "Did something special happen this weekend? What was it? Would you like to paint that?"

Planning art activities with a predetermined product robs children of the opportunity to explore, discover, invent, and creatively experiment on their own. Whenever possible, activities should be open-ended. This is an area where communication with families is important. Some parents want to see craft products made by children rather than open-ended, child-directed drawings, paintings, and sculptures. Inviting families into the preschool space for an art show and stressing the learning goals of the program may be helpful. See the "Research Highlight" on page 59.

Visual art activities should capitalize on young children's need for sensory-motor exploration and physical development. For example, when working with sculpture, children need space to pinch, pound, pull, roll, flatten, and punch the clay. When painting, children need a large stand-up easel for sweeping arm movements. Children with different physical abilities may need spaces to create art that accommodate their needs and make the work comfortable for them.

VIGNETTE

Cecilia is four. Cecilia's provider, Nate, has set up red paint and white paint for the children to mix together and experiment with ***tints*** *of red. While finding out about different shades of pink, Cecilia wonders about other colors. She asks Nate, "How do you make yellow?" Nate shows her all the paints she can use and suggests that she use small amounts as she experiments. After mixing several different colors to try to make yellow, Cecilia tries yellow and white and makes several tints of yellow. Finally she reaches a conclusion and says to Nate, "To get yellow, you only mix yellow."*

TEACHABLE MOMENT

In this example, the provider, Nate, allowed Cecilia to discover the concept of a primary color through her own curiosity and experimentation. Nate did not simply tell her at the beginning, "Yellow is not made by mixing other colors"; he allowed her to discover this on her own so that she could really learn the concept. The activity, to begin with, was process-oriented, as the children were not being asked to create a specific product. As the children experimented, the provider simply set up an interesting process to engage the children in their own exploration.

Research Highlight: Visual Art

Is it art? What is the difference between "art" and a mere scribble? Preschool parents may be as interested in this question as the puzzled adult viewing modern, abstract art at the local gallery. One sense of art stressed in this curriculum framework is that the visual and performing arts aim at the joys of free expression and the pleasures of seeing and creating images. Art instruction at the preschool level is also concerned with basic, first steps that can lead to more advanced artistic skills.

Differing views prevail concerning the *child artist*. One approach seeks *artistic significance* in a child's work—perhaps a *genius* or a *prodigy* is emerging. A contrasting view dismisses the child artist by labeling his artwork "haphazard" and its occasional glimpses of clever expression and beauty as "accidental."

Over the years, the work of Nelson Goodman and Howard Gardner at Harvard University's Project Zero has helped to demystify children's art. Those scholars view art through the lens of *cognition* rather than through a value-driven critique of aesthetics. Art is a cognitive activity, requiring thinking, problem solving, communication, and intent. And learning in art is frequently tied to learning in language as well as culture.

For Goodman, the classical question *What is art?* is transposed into a less-familiar question: *When is art?* As Goodman suggests, art "occurs" when its *symbol*s are functioning aesthetically.[4] The aesthetic functions of symbols include expressiveness (conveying meaning or feeling), susceptibility to multiple readings, and repleteness (full or abundant rendering). These ideas de-emphasize judgments of beauty or merit; Goodman's *artistic creator* is the individual with sufficient understanding of the properties and functions of certain symbol systems to allow her to create works that function in an aesthetically effective manner.

And what of preschool-age children? Rhoda Kellogg's documentation and classification of hundreds of thousands of children's drawings from 30 countries testify to children's ability to use symbols at an early age, often depicting qualities of the artist as defined by Goodman. Children's art is frequently expressive, conveying emotion, feeling, action, and story. Children's art may be more or less replete—with abundant renderings of objects or symbols at times, with vague, sketchy treatments at other times. Young children are not very likely to plan and create works with multiple readings—this ability belongs to more mature developmental stages and can emerge in adolescence.

Appearing commonly in drawings of children, especially those of two- or three-year-olds, is the *mandala*, a term used to designate symbolic representations that include a circular motif typically incorporating a crosslike figure.[5] For the child, the mandala is a well-balanced, pleasing form that lies en route to genuine representation. The contrasting, superimposed elements of the circle and cross are precursors to the figure's metamorphoses to rounded figures with legs, arms, and facial details.[6]

According to Gardner, the conditions suggested by Goodman, though helpful in thinking through the puzzles of children's art, nevertheless leave the debate about art created by children *in a state of relative limbo*. The preschool teacher's role is to introduce children to a range of constructive symbolic media and provide them with the *faith that the child's own vision and ability to give form to vision are worthy*.[7] The preschool teacher can view children's art without an eye or plea for realism; rather, the gaze might borrow from Paul Klee, who, when discovering his childhood drawings, described them in a 1902 letter to his fiancée as *the most significant ones* he had yet made.[8]

Interactions and Strategies

Support exploration and discovery. A fundamental strategy applicable to teaching and learning in widely differing contexts is shown in the interaction of Cecilia and Nate in the previous vignette and teachable moment. It illustrates the importance of "discovery" types of learning—letting children experiment or muddle through a problem or issue to find answers for themselves. Nate provides support, or scaffolding, when Cecilia comes to an important conclusion that has a more general application: some colors may behave like yellow, as a primary color.

Give children the time and space needed to explore creativity. Ample blocks of time are needed to encourage sustained involvement with the artistic and creative processes. Some children will not be able to complete their work in a single block of time and will want to continue into the next day. Create a safe place for works in progress. Some children will impulsively finish in a few minutes; encourage these children to continue their involvement. Children also benefit from frequent and repeated experiences.

Provide a comfortable environment in which children can practice art. Interesting visual art activities capitalize on young children's need for sensory-motor exploration and physical development. For example, when working with sculpture, children need space to pinch, pound, pull, roll, flatten, and punch the clay. When painting, children need a large stand-up easel for sweeping arm movements. In addition, teachers and providers need to be open to any creations children produce, as children with diverse cultural backgrounds make meaning in diverse ways.

Furthermore, teachers need to take children's cultural backgrounds into consideration when trying to interpret children's creations. A child's free creation can be misinterpreted if teachers look at it devoid of the cultural context. It is important for teachers to know the cultural context, and the curriculum framework is probably the most effective venue for this message.

Bringing It All Together

It is springtime. The children have returned from a walk outdoors with handfuls of yellow flowers. The teacher places the flowers in a cup in the middle of the painting area and asks the children the color of the flowers. Then he asks, "What shapes do you see in the flower?" The children say, "Circles!" "Lines!" "Squares!" The teacher says, "Really? Where?" The children point at different parts of the flower. The teacher brings out brushes and paint and asks the children if they would like to paint the flowers. Many of the children sit down and begin to work with the materials, producing all kinds of images. When a child has too much paint on the brush, the teacher assists in showing the child how to wipe paint from the brush on the side of the paint container. As the children finish, the teacher encourages the children to talk about their paintings and then places them in the drying area. Some children finish quickly, and others become absorbed and work for a very long time. Some want to try several times on new paper. A few children attempt to represent the flowers in their paintings, and others experiment with the movement of the brushes and the mixing of color on the paper.

Visual art activities bring opportunities for the development of language and mathematical concepts. By asking children what shapes they see in the flowers, the teacher encourages children to observe and describe the flower (before painting it) and to recognize the shapes of leaves, petals, and stems. Opportunities to talk about shapes of objects and describe their attributes develop children's ability to identify and know the names for different shapes and to use shapes in creating their own drawings.

One of the most important ideas implicit in the curriculum presented here is that making crafts with children is not the same as teaching visual art. Activities in this strand should be open-ended. There should be many possible results or outcomes to the children's work in this area; teachers should focus on the process of doing the activity, not on the end product. An art lesson is not the same as having all the children make an object that looks the same. An art lesson focuses on, for example, what happens when paint is applied to paper of different textures, not on having everyone paint the same picture. Activities should be experimental and exploratory for the children, allowing them to create.

Programs serving children who may not have equal access to the dominant language or customs can create culturally inclusive curriculum by offering arts-based activities across the curriculum.

In general, children will be excited about visual art if their teacher is excited about teaching it. Providers should be empowered to structure their own creative activities in this area. When in doubt about where to start a visual art program or activity for the day, simply bring out paint and brushes, or crayons and some paper, and have the children give it a try; then communicate with the children about the images they create.

Research shows that creativity in humans peaks at approximately 54 months of age (four-and-a-half years old). Encouraging the practice and development of visual arts capacities is one way teachers can extend and develop creativity in preschool children.

Engaging Families

Families should be encouraged to bring their own visual art to share with the classroom. In addition, teachers may want to communicate with parents about the goals of the program and lessons whenever possible. Bringing parents into the preschool program to see the children's arts display or sending art home is helpful. The following suggestions may be made to parents:

- ✔ Try drawing, painting, and sculpture with the child at home.
- ✔ Notice and talk about works of art seen in the environment (or at home) when spending time with the child.
- ✔ Notice and talk about shapes and colors in works of art and in the environment. For example, families may take a walk and see how many different shapes of leaves they can find.
- ✔ Bring the child to an art museum or areas in the community with public displays of art, such as murals or mosaics and sculptures in parks.
- ✔ Be open-minded and encouraging about works of art that are sent home from the preschool setting.
- ✔ Ask parents to bring art from home, and respect and be open to what different families bring.

Questions for Reflection

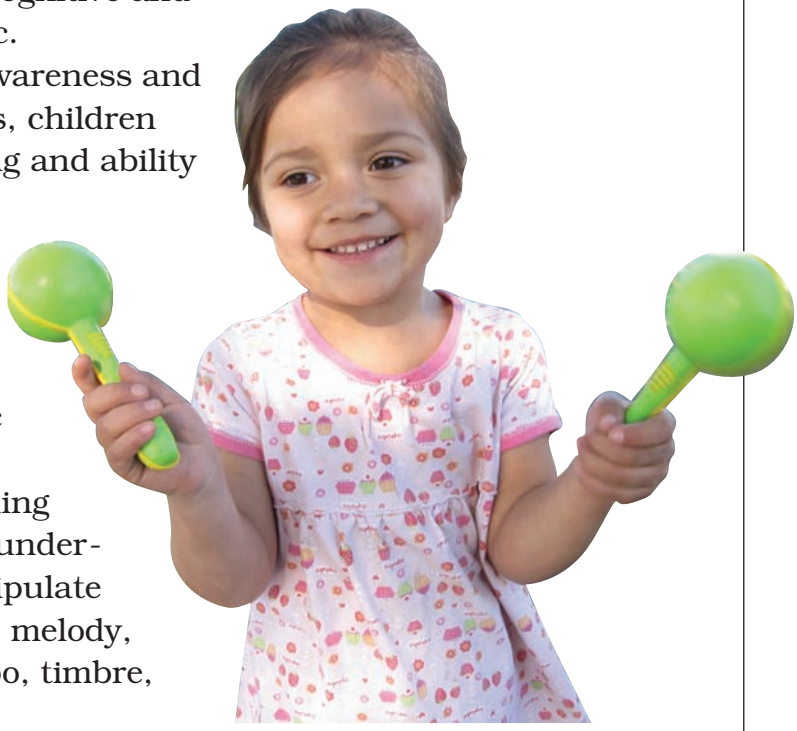
1. How can you provide more time and opportunities to work in the visual arts domain?
2. How can you ensure that the preschool environment supports focused, uninterrupted work on art projects from time to time?
3. Where can you get more information on ways to accommodate children with special needs in the visual arts?
4. How can you represent a wide variety of cultural backgrounds in the visual arts program?
5. How can you draw upon the diverse cultural experiences of the children and their families to enrich visual art learning experiences?
6. In the area of visual arts, to what extent do you offer open-ended activities?
7. How do you display children's art and store works in progress?
8. How can you integrate the visual arts program to support learning in other areas?
9. How will you provide an environment that is aesthetically pleasing?
10. How will you connect with all parents and families around the visual arts program?

Music

Developing Curriculum in Music

As preschool children progress through stages of musical growth (i.e., substrand 1.0, Notice, Respond, and Engage; substrand 2.0, Develop Skills in Music; and substrand 3.0, Create, Invent, and Express Through Music), interactions and strategies must provide developmentally appropriate experiences that are meaning-centered,[9] allow for learning differences, and promote diversity. Similar to fundamental elements found in other art forms, music is also made up of unique, essential, defining parts such as **beat**, **rhythm**, and **tone**; **pitch** and **melody**; **form**; **dynamics**: loudness/softness; **tempo** or speed; **timbre**; **articulation**; and **style**. These **elements of music** should be included in the objectives for cognitive and psychomotor learning in music.

When children develop an awareness and knowledge of musical elements, children progress in their understanding and ability to control the elements for personal musical expression. Although early childhood music education is primarily about introducing the child to musical sounds and holistic experiences that are of the highest quality, enriched learning occurs when the child has an understanding of and ability to manipulate the music elements of rhythm, melody, form, loudness/softness, tempo, timbre, articulation, and style.



1.0 Notice, Respond, and Engage

Three- and four-year-old children clearly notice and are aware of musical and nonmusical sounds. They are curious about environmental sounds and musical instruments in the classroom and will respond with actions related to music they hear. They might invent dancelike movements when they hear lively music or create their own made-up songs as they play. Although their singing response to music may be delayed during music time, they often can sing an entire new song to their parents when they are picked up at the end of the day. As children become more engaged in musical activities, they may request favorite activities and songs to be played repeatedly. Because children begin to use their language more fluently around age three, it is important to encourage them to talk about the music they hear and make. See the "Research Highlight: Music and the Brain," on page 71. The following discussion will focus on tempo, dynamics, pitches, rhythm patterns, timbre, connecting music to other subjects, and an exploration of substrand 1.0.

VIGNETTE

Several four-year-old children are singing and playing "Engine, Engine Number 9" while traveling around the tables like a choo-choo train.[10] *Margie, the train engineer, decides to speed up, but the other children do not notice because she gives no signal. After the train breaks apart from uncontrolled speed, Emil decides he wants to be the conductor who gives the signal for stop and go and fast and slow. The children begin to watch him, and he gives both a verbal cue and a strong wave of his hand to start and stop the train. His signal helps them keep the train traveling at the same speed, without breaking apart.*

TEACHABLE MOMENT

This song game provides an opportunity to follow up on the idea of fast and slow or gradually slowing or speeding up tempos in music. Children understand that these are normal speed changes for a train, and the teacher can scaffold this understanding to speeds in music. Trains also seem to become louder or softer as they travel closer or farther away from the listener, just as marching bands sound gradually louder or softer as they travel in a parade. Finally, musicians also use conductors to signal stop and go, speed (i.e., tempo) and loudness and softness (i.e., dynamics) in music.

Interactions and Strategies

Find ways to expose children to music being conducted and performed. Live performances, age-appropriate music videos, short recordings, and demonstrations provide opportunities for children to see a conductor and become aware that there is a relation between the conductor's actions and the music.[11]

Provide children with an opportunity to conduct the group by singing or playing instruments. Use a small conductor's baton and possibly a conductor's tux costume jacket. Model some tempo and dynamic changes; show them how to stop and start sounds with gestures, then invite them to conduct.

Provide a conductor's listening and play area. Place the baton and several recordings of different tempos and dynamics in a dedicated listening area. Later, invite children to show their peers what they conducted. Help them label what they hear and see with appropriately sized manipulatives (e.g., large train, small train for loud and soft; big lion and small kitty for high and low).

Invite live musicians for the children to conduct; encourage the child conductor to stop and start, go faster and slower, and give arm gestures for louder and softer sounds.

Include storybooks on conductors and orchestras, such as Richard Scarry's *Best Storybook Ever!* or *Berlioz, the Bear* by Jan Brett. Children also enjoy conducting music with flashlights in a darkened room.

Extend learning about different ways to lead a music group. Provide activities and examples of other ways musicians play together. For example, use drum activities in a circle time where the leader signals the other players to start and stop with certain drum patterns, rather than a baton. Or, have a string quartet or duet visit the preschool and explain to the group how musicians know when to stop and start.

Make connections between home and activities in the preschool program. For example, many families make music together. Encourage children to share songs (some have been passed down through generations), cultural nursery rhymes, tapes, and musical play gestures from their activities at home.

VIGNETTE

It is raining outside. Miriam and Pablo, both age three, begin clicking and tapping their fingers on the window glass to imitate the rain hitting the window. Pretty soon, all the children are making different kinds of rain sounds on the window. After a few minutes the rain comes to a stop, and the children are invited to circle time.

TEACHABLE MOMENT

Natural, environmental sounds can be a springboard for discussions about sound. In this scenario children notice that rain makes sound. This is an opportunity to introduce the idea of the "tone colors" (i.e., timbres) of sound—sounds have distinct qualities, just as colors do. Each object makes distinct sound, which can be recognized and labeled. Help the children explore and discover the unique sound of musical instruments. Collect, or have the children collect, a selection of musical instruments in the center of the circle time. Suggest, "Let's play a listening game with our eyes closed." "What kind of rain sound can you make with the instruments in the circle?" "When it's your turn, choose one instrument and make some loud or soft rain sounds—we will close our eyes and try to guess which instrument you used to make your rain sounds." Ask which instruments they thought made the best rain sounds and help them describe what the instruments are made of or the sound produced (e.g., metal-ringing, shakers, wood-clicking). Extend this activity to make the sound of a thunderstorm by using body percussion.

Interactions and Strategies

Provide music areas where children can experience instruments or musical activities as individuals or in a small group. Focus the child-centered activity on musical learning, such as high and low, loud and soft, fast and slow. Extend or link the music area to other activities, such as transportation, nature, math, and science. Include adaptive materials to accommodate special needs.[12] For resources for working with children with disabilities or other special needs, see appendix D of the *California Preschool Curriculum Framework, Volume 1*.

Make instruments with the children, such as rain sticks, shakers, and drums.[13] Display their instruments and invite the children to listen, identify, and label the different sounds. Use their newly created sounds in storytelling or singing (e.g., "Rain, rain, go away").

Incorporate books related to music. Books can be used to address diversity in music making (e.g., books about musicians from diverse backgrounds). Storybooks with CD or audiotape musical accompaniment can promote talk of imagery in music and provide opportunities to integrate music and movement.

Incorporate chant games and songs related to sound production. Introduce activities in which the child can improvise and label their own soundscape, then scaffold discussion about rhythmic patterns, or qualities of the sound. For example, use the **chant** game, "Whether it's cold, or whether it's hot, It's going to be weather, whether or not" to give form to a weather composition. In this activity everyone chants the poem, then one child plays some weather sounds, then the group asks, "What kind of weather was that?" The child labels her weather, "Rain, snow, thunder," or whatever she thinks it was. The teacher might ask, "Were the rain sounds fast or slow? Did they have a pattern that we can clap?" Or, "Was your thunder long or short, loud or soft?"

Encourage children to create simple rhythm patterns. Use name chants and small hand drums to model and help the child begin hearing how many sounds are in their name, (e.g., "Bee, Bee, Bumblebee, Can you play your name for me?"). When the child hears his name played on the drum, have him echo it back, then ask, "How many syllables are in Chang's name? . . . How many are in Cecelia's name?" "Now, let's make a rhythm pattern with those two names." Gradually, the child expects to be asked, "How many different sounds or syllables did you hear?"

VIGNETTE

The children have been learning an "echo" song that requires loud and soft singing. One group sings "hello," in a loud ***voice,*** *and the other group echoes "hello" in a softer voice.*[14] *They learn that echoed sounds do not sound as loud as the original sound. Later, Juan and Michael are playing a singing game with pretend cell phones. Juan asks Michael to sing like a bumblebee. Michael sings a few high, scratchy sounds. "I can't hear you very well on this phone. Can you sing it better?" Juan requests. Michael clears his voice and tries again. "You sound like a flea!" comments Michael. Michael lowers his voice and grumbles and buzzes like a bumblebee. "I can hear you better now; that's a bee sound!"*

TEACHABLE MOMENT

Four-year-olds Juan and Michael may have overheard their parents complaining about poor sound quality or low volume on wireless cell phones or home phones. They have also shown that one person's voice can sound intentionally different by going from a flea to a bee on the same "instrument," namely Michael's voice. Teachers can follow up with ideas about how sound travels, how sound is produced, or how phones plugged into a wall work. An old telephone may be brought to class so children can see and talk about the connection cords. Have the children experiment with their own sounds by using a simple piece of cotton string, approximately two feet long. With a partner, each child wraps an end of the string around her index finger, then pulls it tight between them and plugs that finger into her own ear.

With the other hand, each child takes a turns plucking the string or dragging a finger on the string. If the string is dragged by one child while the other plucks, the pitch will change. Ask, "What did you hear? Was the sound short or long, or did it sound scratchy? Did the sound change when one person dragged their finger and one person plucked?" If the teacher plays guitar or has other stringed instruments, she can demonstrate and discuss how sound changes by using just one string of the instrument. The guitar string also sounds different when plucked in the middle (mellow tone) versus plucked near the bridge where the string attaches to the top of the guitar (high, scratchy sound).

Interactions and Strategies

Set up a "Science of Sound" area where children can explore and experiment with building sounds. Demonstrate how to make telephones out of two paper cups and string, or supply a set of glasses into which different levels of water can be poured and then played as a xylophone. Have the children change the levels of water and then describe how the sound changed. Or, have them build sound tubes from coffee cans to discover how sound becomes lower as the tube is lengthened (see "Teacher Resources" on page 119 for suggestions). If they make musical instruments such as plastic egg shakers or small boxes with different contents (e.g., sand, gravel, crushed walnut shells), invite them to use their instruments in other musical activities, such as keeping the beat while singing, or adding sound effects to stories.

Invite local professional musicians or family members to demonstrate and talk about their instruments and the sounds made. Many local orchestras and chamber music groups conduct outreach activities that introduce children to different types of music or instruments. Use information from the family volunteer form to identify special talents and then invite volunteers to play.

Incorporate the use of Web sites of children's music and other age-appropriate software (if available), to engage children's interest in sound. Many of these sites have "Teacher Rooms" with extensive follow-up activities for various age groups. See "Teacher Resources" for ideas.

VIGNETTE

A small group of three-year-old children are watching a spider on the playground. Tanish asks the teacher for a box to catch the spider. The teacher tells Tanish it is probably best for adults to take a look before anyone tries to catch the spider. By the time the teacher gets to the outdoor play area with Tanish and the box, the spider has escaped. Some children are disappointed because they were hoping to put the spider in their science area. However, not all the children want to catch the spider and some are afraid of it. The teacher tells them she has "just the solution for the missing spider" and invites them inside to play some spidery music.

TEACHABLE MOMENT

Most young children are fascinated by insects, spiders, snakes, and animals. This situation invites the opportunity to introduce related music activities based on the theme of spiders. A small unit that includes the progressive song "Spider on the Floor" is a fun way to "play" with plastic spiders as the children also learn body parts and language concepts.[15] In this song, the spider is "on" the floor, then moves "up" the leg, tummy, neck, face, hair . . . but then it jumps "off" and the song starts over. It is fairly simple to sing this song in many different languages, as well. Add to this the poem and movement activity "Crisscross applesauce, spiders crawling up my spine," or the traditional finger play song "Itsy Bitsy Spider," which supports the practice of eye–hand and small motor coordination, Additionally, many instrumental examples of the tarantella dance can be used to imitate how the tarantula moves.[16] Some children may not want to play with plastic spiders. Encourage the children to discuss their feelings about real spiders and pretend spiders.

VIGNETTE

After singing Frère Jacques (Brother John) with the children in English and French, a child says, "In Chinese, this song is about two tigers. One doesn't have eyes, and the other doesn't have a tail. But they run really, really fast." Then he sings for the other children.

TEACHABLE MOMENT

Many children's songs have versions in different languages. For example, this French song, which has been rated as one of the preschool favorites, has been translated into many languages. Some translations have maintained the original meaning (e.g., Spanish and English on the following page), some other languages have used the tune but changed the verses (e.g., Chinese on the following page). Another example is the "Happy Birthday" song. On occasions when children need to sing "Happy Birthday" to one of their

peers, encourage them to sing it in any language that they know. Singing is an enjoyable way to expose children to diverse languages and cultures. For more information about strategies to support children who are English learners, see chapter 5 of the *California Preschool Curriculum Framework, Volume 1*.

"Frère Jacques"

French
Frère Jacques, Frère Jacques
Dormez vous? Dormez vous?
Sonnez les matines, sonnez les matines
Din din, don, din din, don.

English
Are you sleeping, are you sleeping?
Brother John, Brother John
Morning bells are ringing, morning bells are ringing
Ding ding dong, ding ding dong.

German
Bruder Jakob, Bruder Jakob,
Schlafst du noch? Schlafst du noch?
Horst du nicht die Glocken, horst du nicht die Glocken?
Ding dang dong, ding dang dong

Italian
Fra Martino, campanaro,
Dormi tu? Dormi tu?
Suona le campane, suona le campane
Din don dan, din don dan.

Spanish
Martinillo, Martinillo,
¿Dónde estás? ¿Dónde estás?
Sueñan las campanas, sueñan las campanas
Ding dang dong, ding dang dong.

Dutch
Vader Jacob, Vader Jacob
Slaapt gij nog, slaapt gij nog
Alle klokken luiden, Alle klokken luiden
Bim, bam, bom, bim, bam, bom

Chinese
两只老虎，两只老虎，
跑得快，跑得快，
一只没有耳朵，一只没有尾巴，
真奇怪，真奇怪!

Interactions and Strategies

Include a variety of songs that related to a particular topic area. Introduce songs or music related to the current curriculum unit or subject of study. Well-crafted contemporary and traditional songs exist for most subjects in early childhood (e.g., "I Am a Pizza" for a Food Unit;[17] "Itsy Bitsy Spider" for a Spider Unit;[18] "I've been working on the railroad," for a Transportation Unit). Songs are also used as a vehicle for introducing numerical concepts. Songs with number-related content are common for practicing counting and introducing concepts of addition and subtraction, such as "There were 10 in the bed," or "Five Little Monkeys." Many songs have verses in different languages, such as "Twinkle, Twinkle Little Star."

Use music storybooks and connect to related topics. For example, in the book *It's a Wonderful World* by Ashley Bryan,[19] the illustrations are rendered as cutout paper puppets, in a style similar to Matisse's late period cutout shapes. The art style can be connected to learning about an important visual artist. Further, since the music and the book are based on Louis Armstrong's version of the song "It's a Wonderful World," it is also a bridge to learning about jazz music, Louis Armstrong, and the role of African Americans in this uniquely American music. Finally, in an environmental or social studies unit, this book describes "a wonderful world." The children can make their own cutout version of "trees that are green" or "red roses, too." Literacy is reinforced as they learn to sequence the text and perform the story on a puppet theater **stage**, adding dramatic play to the lesson.

Research Highlight: Music and the Brain

The relationship between music and language processing has been examined on a neurophysiological (or brain structure) level in several studies.[20] Various techniques reveal that both words and music tones cause similar activity in specific regions of the brain. It has been shown that the primary auditory regions and supplementary motor areas respond similarly to linguistic and musical sounds.[21] Further, research suggests that correlations exist between music training and both reading acquisition and sequence learning. One of the central predictors of early literacy, phonological awareness, is correlated with both music training and the development of a specific brain pathway.[22] Apparently, across the literature on neuroscience and music, a great deal of attention is given to thought and research on emotional responses to music.

2.0 Develop Skills in Music

This section focuses on and is divided into the musical skills of singing, moving, and playing musical instruments. Listening is woven into all of these skills. Music skills with three- and four-year-old children develop along a continuum. When singing, three-year-olds are usually able to sing a recognizable song when starting on their own pitch, and they become better at matching pitches when singing with others. They enjoy improvising and making up songs to accompany their play and are able to use their voices expressively (e.g., loudly and softly). By age four, they enjoy a wide variety of songs and are better at singing in tune when they sing in their own **range**.

This age group is also skillful at making up songs, but it still has difficulty singing or imitating most of the popular/commercial songs heard on radio, television, or in movies. When listening, three-year-olds can recognize correct and incorrect melodies and rhythms of songs; they are not always able to reproduce what they hear. They like to play matching or sound-identification games, and enjoy listening to shorter instrumental music. By age four, children become more competent at showing their awareness of beat, tempo, dynamics, melodic movement, and structures of musical form. They can follow the sequence of a musical story or song and are able to focus on longer listening selections.

Most children love to move; therefore, singing, listening, and playing are typically expressed in movement. Children in the three- to four-year-old age range begin to show a sense of musical phrasing and expressiveness when moving or improvising. They gain coordination to tap rhythms, handle instruments and mallets, and maintain steady beat when accompanying their own music. Both age groups often like to use manipulatives and props when moving, listening, and singing.

Singing

Singing interactions between and among the children and adults should consist of or allow for improvisational experiences, exploratory vocal play, and structured activities. It is important for the adult to provide meaningful and positive feedback to the young singer and provide both large-group and free-choice singing activities.[23] Appropriately challenging songs, a supportive environment, and constructive feedback can build the child's self-confidence. Singing can become an impetus for positive social–emotional interactions in the child's peer community. Further, singing supports learning in all domains. Singing songs reinforces learning new vocabulary, sequencing of events, contextual word meaning, pronunciation, and fluency.[24] It also provides a springboard for learning numerical concepts, counting, and for creating and reading songs notated with teacher- or child-designed icons, which represent the child's understanding of the song.

VIGNETTE

Anonya and Lawrence, both of whom are four-and-a-half years old, are in the dramatic play area with hand puppets. The puppets are talking to each other. The children invite Ms. Tracey into the puppet conversation. Ms. Tracey puts on the kitty puppet and sings a made-up tune, "Poor little kitty cat, doesn't have a name, poor little kitty cat, oh what a shame . . . . Anonya, can you sing her name?" Anonya sings her name, "Fluffy," and Miss Tracey sings, "Lawrence, where does Fluffy live?" The singing game continues until all the puppets are named and put back in place. Ms. Tracey asks what they thought about their puppet songs. She encourages discussion by mentioning what she noticed.

TEACHABLE MOMENT

The teacher has been invited into play and is able to encourage and extend spontaneous singing in group play. The teacher provides the children with the opportunity to talk about their own songs and gives positive feedback on their songs. This approach promotes children's self-reflection and self-confidence related to their singing voice and ability to invent songs.

Interactions and Strategies

Dramatize poetry and nursery rhymes as a fun way to explore and develop vocal inflection and pitch capabilities in the young singer. One example is to use the nursery rhyme "Jack be nimble, Jack be quick, Jack jumped over the candlestick . . . WOOOOoooooowoop!" On the last word make the voice go up and down like a roller coaster by starting in a low voice, going up high, then sliding back down to low for the "woop." As a starter, invite the children to imitate a slide whistle—these are inexpensive and can be found at a local music store. Many other nursery rhymes are suitable for vocal play, as is imitating sounds from nature and the community. Vocal play also warms up the vocal muscles needed for the more exact task of singing songs on pitch.[25]

Encourage children to be playful and spontaneous when singing—they often sing made-up songs as they play alone or with other children. To encourage children to create their own improvised songs, start with short **phrases** (in the child's home language when possible) or playfully sung stories. Model the activity by singing a question in a sing-songish voice; then ask the child to sing an answer. For example, while the children are pretending to walk around the forest, the teacher sings, "We're going to the forest. Hope the wolf's not there: Wolf, are you there?" One child, hiding behind a pretend tree, sings, "Yes, I am here." The other children sing, "What are you doing?" Then the wolf gets to make up an improvised answer about what he is doing. This is repeated for three answers, and then the next child gets a turn.

Provide children with opportunities to hear songs about animals and make animal sounds. Help children discrimi-

nate and make different sound effects by inviting them to create sound effects for the animals in traditional songs, such as "Mi chacra (My Farm)"—"Vengan a ver mi chacra que es hermosa, Vengan a ver mi chacra que es hermosa, El pollito hace así: pío pío! El pollito hace así: pío pío! (Come and see my farm, which is so beautiful. Come and see my farm, which is so beautiful. Little chicken goes like this: peep, peep! Little chicken goes like this: peep, peep!)." Emphasize how each animal has a distinct and recognizable sound (i.e., timbre or tone color), just as people have distinct voices.[26] Guide the child to judge how loud the animal sound should be (e.g., "Are cows louder than baby chicks?"). Extend the experience by adding musical instrument sounds and dramatic play props. Reinforce vocal play by placing books in the music and library areas that stimulate vocal play or the addition of sound effects (i.e., "Dear Zoo"; "Have You Seen My Cat?"; "The Three Bears"). On another day, play a sound-discrimination game, with the children's eyes closed. Use different instruments, recorded animals' sounds, street sounds, and familiar voices in different moods and invite the children to guess the sound or the person.[27]

Use songs that have movements or gestures that accompany the words. Sometimes these gestures assist in the pitch or rhythm (e.g., arms up high for a higher note, clapping out the syllables). Many children first imitate the physical motions and then move on to singing. Using sign language for some of the words can also expose children to another language.

Minimize use of recorded music when the goal is singing. Recorded children's music is a good way for the teacher to learn new songs. However, the recorded songs often move quickly and do not have enough repetition for young children who are learning to sing. It is more effective to sing the song "a cappella" (without accompaniment) or to use a simple accompaniment such as a guitar or autoharp. In that way, the teacher can match the children's pace, encourage their participation, and repeat the song multiple times. Additionally, since teachers may have a different vocal range from the children, it is important that the teacher find a way to get the starting note in a singable **key**, usually between middle C and A. A pitch pipe, keyboard, or other instrument can be used.

Playing Musical Instruments

Children's play environments should include musical instruments that are safe, durable, and of excellent sound quality. A number of manufacturers specialize in children's musical instruments, and their equipment may be purchased online. See "Teacher Resources" on page 119 for more information. It is important that musical instruments be treated as instruments rather than as toys. Equipment should be properly maintained and displayed so as to be available for children's use. When interacting with the instruments—as the child's play partner—the teacher should demonstrate the proper use and care of the instruments and oversee safe play. Both exploratory and structured activities should be planned so that children have the opportunity to touch, hear, and manipulate the sounds of the instruments. Because musical instruments are designed to be played in a certain way, it is important for the teacher to model proper playing techniques and functions of the instruments. Providing positive feedback to the children is also important. Encourage children to analyze and make comparisons about the different instruments' sound qualities and potential uses.

VIGNETTE

Five children are in a carpeted area that they have chosen today for free play. This area is outfitted with musical instruments and becomes the Music Center. Today, two of the children "share" a drum, pushing it back and forth as they take turns tapping it. The other three are exploring individually, moving from one instrument to another depending on what is available. Jasmine, a five-year-old, arrives at the center and addresses the group: "Will you help me with my song?" After repeating her request and getting no response from her peers, Jasmine picks up a pair of maracas and begins to sing, "Twinkle, Twinkle, Little Star." The other children begin watching Jasmine with smiles but do not alter their individual approaches to "sound exploration." Clearly, there is no cohesion in the music being produced by these six children. Without finishing her song, Jasmine drops the maracas and begins to walk away. The teacher intercepts Jasmine and asks her, "Would you like some help to do your song?" With an affirmative nod from Jasmine, the teacher walks her back to the Music Center and addresses the group: "Who would like to help Jasmine with her song?" All five children say, "Me!"

The teacher picks up a tambourine and begins playing a steady beat suitable for Jasmine's song. Jasmine retrieves her maracas and, along with the other children, begins to imitate the teacher's rhythm. Keeping the rhythm going, the teacher says, "I like that rhythm! Now let's help Jasmine sing her song!" All begin to sing "Twinkle, Twinkle, Little Star" while keeping their sounds and rhythms going with the instruments. Suddenly, although they are neither keeping the rhythm nor singing perfectly on pitch, the children find the experience musically satisfying.

TEACHABLE MOMENT

"Free" exploration of the sounds of musical instruments is fun and developmentally appropriate but does not necessarily guarantee "music." Music, by definition, is "organized sound," and even a simple, steady rhythm (known in music as a "pulse") performed on so-called "rhythm instruments" provides authentic musical organization. Preschool children, who typically have already had several years of *hearing* music, have now become physically capable of functioning as *music makers*. However, they are not usually socially mature enough to organize themselves as a coherent musical group. A teacher who steps in to serve as a "music leader" is not depriving young children of independent creative development. Conversely, she empowers the children with a deeper understanding of their potential as music makers—a behavior they value. High levels of musical satisfaction can be experienced by three-, four-, and five-year-old children

together when teachers, in the role of "music leader," rhythmically guide them in using their instruments. The family of percussion instruments (e.g., drums, maracas, claves, tambourines, sandpaper blocks) is musically analogous to the traditional set of oversized crayons: they allow young children to be immediately successful in a culturally salient communication behavior. The difference between the crayons and the musical instruments affords the children a highly desirable balance: the crayons provide a mode of creative, individualized expression, whereas the instruments provide a mode of creative social, community-based expression.

Interactions and Strategies

Make instruments for outdoor musical play. Sustainable, recycled materials can also be used as instruments for outdoor musical play, and their use reinforces learning about the reuses of items found in the environment. In addition to developing the child's concept of finding uses for recyclable items, appropriate recycled materials can be collected to create a percussion ensemble. Begin by having the children collect metal or plastic cans and containers of all shapes and sizes from home (e.g., coffee cans with lids). Coffee-can drums can be held between the legs and then played with the hands, or they may be played with mallets made of inexpensive chopsticks with cork beater-heads. After the children have exhausted their own ideas for creating sounds, use "Call and Echo" and "Call and Answer" activities to lead the musical play. To create rhythm patterns, use the rhythm from new or familiar words to build a rhythmic ensemble. For example, the teacher-leader plays the drum as he calls out to the children, "What's your name?" Each child, in turn, says, "My name is ____," while playing the rhythm of her name on her drum. Challenge the children to play multiple names around the circle—until they can play all the names without stopping. Eventually, expand the drum activity into an ensemble that accompanies a song in which half the ensemble plays one child's name, such as "Jose Morales," and the other half plays another child's name, such as "Tommy Jones-Rest." When the two names are played (or locked in a groove) together, add a song or a poem on top of the rhythm. To enrich the ensemble, add more instruments found in the environment (e.g., strung,

dried seed pods or bottle caps as shakers, recycled plastic containers with sand or gravel added, old wind chimes).

Moving to Music

Children's musical play naturally centers on movement and singing. As such, explorations and learning in music cross over to support developmental and creative movement and dance in the early childhood program. Music and movement activities reinforce concepts and skills shared with dance, (e.g., such as rhythm [steady beat, even, uneven]; time and tempo [fast, slow, gradually changing]; space and pitch [high, medium, low]; **energy** [light, medium, strong]; repetition and contrast; volume [loud, soft, gradually changing]; articulation [connected, disconnected]; form [order of events]). Because young children are still acquiring movement skills and repertoire, as the child plays simple song-and-movement games, creates dances and movement sequences, or participates in traditional dances, it is appropriate for the teacher to model, explain, and make suggestions about how movements can be made. Children should have the opportunity to demonstrate and express their own ideas and analyze movements of others, as well.

VIGNETTE

While acting out the musical story "In the Hall of the Mountain King," some children act out the character of a troll. They walk stiffly, not always expressing the rhythmic character of the music. After the music ends, a discussion ensues about trolls and how they might walk. The teacher shows a variety of troll pictures; points out the length of their arms, posture, and weight; and then invites volunteers to demonstrate their new "troll" ideas. He gives positive feedback for ideas that match the character of the music. Even the teacher demonstrates some troll movements and asks, "How did I hang my arms when I was a troll? Did I take giant steps or small steps? Did the music tell me how to move? Why?"

TEACHABLE MOMENT

Children need multiple opportunities to build their repertoire of movement ideas to time the movements to music. When the children are invited to improvise movements and to observe and model movements of others, they not only gain control over their own bodies, but also learn to analyze and refine their performances.

Interactions and Strategies

Incorporate freeze-and-move games as a fun, simple way to help children develop control of the body in space and to learn and practice fundamental locomotor movements. Use a hand drum and mallet for sound cues. To begin, set up some guidelines: everyone must stay in his or her own space while moving, trying not to bump into anyone else; keep movements slow and provide enough space so that children will be able to keep from bumping into each other (e.g., have them draw an imaginary bubble of space around themselves), including children who may be in wheelchairs. When they hear the basic drum beat, they move forward in unison with the drum, making paths of straight lines, curved lines, zigzags, or squares. When the drum stops, they must stop and freeze. After they have mastered moving forward, use the stick part of the mallet on the side of the drum frame to cue moving backwards on each drum click. Use a slower tempo for moving backwards.

When they have mastered basic walking, add cue words and a bouncing, skipping, or giant-step beat on the drum. Children with limited mobility may want to express these additional movements with their arms, hands, or upper body. Next, after they have mastered forwards and backwards, add spinning to their movements. A good spinning sound cue is to scrape the fingernails in a circular motion on the drumhead. Keep it slow and have the children stop and change directions occasionally. Extend the movements to high, middle, and low spaces, as well. Use this fundamental activity, and similar games, to develop the child's ability to move with control. Once they have learned to move in a group, expand to less-structured movement activities. If a child in the group has limited mobility, he can move (as he is able), help with the drum, or work with a partner.[28]

Invite young children to move through instrumental program music, or music that "tells a story." Numerous well-known children's classics are suited to structured or exploratory activities (e.g., "Circus Music" from Rodeo; Prokokieff's *Peter and the Wolf*; Tchaikovsky's *The Nutcracker Suite*; Saint-Saens' *Carnival of the Animals*; "The Sorcerer's Apprentice" from Walt Disney's *Fantasia*). Begin with exploratory, unstructured movement ideas using a selection such as "Kangaroos" from *Carnival of the Animals*. Before listening to "Kangaroos," use picture books of kangaroos to invite discussion and elicit prior knowledge of how kangaroos move. Have the children share and demonstrate their ideas; invite them to make comments on how they want to move, or what they see. Ask, "How does the kangaroo hold its front legs when moving?" "What kind of sound matches the movement of the kangaroo?"

Next, move to a more structured activity by asking, "Can you pretend to be a kangaroo, then move, and freeze like a kangaroo when you hear the drum beat start and stop?" On another day, introduce the recorded music. Ask if anyone can guess the name of the animal in the music. After they have figured it out, or have been prompted with hints, invite them to find their own special place in the Australian "outback" and become a kangaroo. Their task is to move like a kangaroo in time to the music, then freeze in a "kangaroo" statue when the music stops. Provide the opportunity to try this several times. Developmentally, this activity requires careful listening as it promotes large muscle and locomotor coordination.

With repeated listening, the children make gestures timed and subtly matched to the music. On another day, have them draw a listening map of the number of times the kangaroo jumps in the music. They can share their **music map** with another child as the music plays, thus creating a musical score of what they heard.[29] Equally important, they are creating and reading symbols.

Engage children in movement through danceable storybooks and help them learn basic steps and musical styles of dance. One dance-a-storybook is *Giraffes Can't Dance*.[30] In this story, Gerald the Giraffe cannot dance. When he attends the big jungle dance, all the other animals are doing their special dances: the warthogs waltz, the baboons do the reel . . . there are tangos, cha-chas, and several other dances. Gerald feels very sad and wanders off to an eventual happy ending. A strategy that works with this book is to prerecord 20-second audio clips of the different dances and play them as each dance comes up in the story (see "Teacher Resources" on page 119). In this way, the children not only see a picture of the dance, they hear the music. Next, give the children an opportunity to explore dancing to the different audio clips; demonstrate some of the dance steps in a simplified manner. After they have had fun trying out the dances, add more structure to the activity by dividing them into various dance groups and placing them in different corners or areas of the room. When the baboon group hears the reel, only they come into the center to dance; next, another group's music is heard and the baboons retreat, and so on until each group has had a chance to demonstrate a dance. Finally, mix up the order of the music so each group is required to memorize "its" music and not come out to dance on some other group's music. This gamelike activity exposes the children to seven different styles of dances and music and reinforces careful listening.

Create music forts. The idea of being in a "conductor's cave" is fun to children. To create this kind of play space, throw a large white sheet over a table, tucking the ends under the legs. Inside the fort, add some instrumental music (e.g., "1812 Overture" by Tchaikovsky, "Stars and Stripes Forever" by Sousa, "Fifth Symphony" by Beethoven, "Star Wars" by John Williams), a cassette or CD player, and a flashlight. Turn out the lights, play the music, and invite the child inside the fort to conduct the music with the flashlight on the white sheet. Not only is the child conductor fascinated with the music, the children on the outside of the fort are fascinated by watching the flashlight. Add "follow the bouncing flashlight" movements for the "watchers." It keeps both the conductor and the listener engaged.

3.0 Create, Invent, and Express Through Music

Three-, four-, and five-year-olds are quite enthusiastic about musical experimentation. They enjoy creating different sounds on instruments and with their voices, and they delight in uninhibited, expressive movement. Helping and encouraging three- to four- year-old children to create, invent, and express themselves musically can be an eye-opening experience for the teacher. Until the child "externalizes" what she is thinking about in regard to what is heard, seen, or imagined musically, adults have no idea what is going on in the child's mind or how she is processing musical thought. When the teacher gives the child an opportunity to create her own music and invent symbol systems, the child is able to express musical meaning on her own terms, then communicate this meaning to others.[31] Interactions ought to be both exploratory and structured. Use both teacher- and child-designed music icons. The long-term goal is to decode, write, and create with traditional symbols, but to get there children need to first create their own musical meaning and forms. Much like the progression of babble to spoken word in language, musical communication develops from simple to complex structures.[32, 33, 34]

VIGNETTE

A few children are lying on the floor looking at the big book Dear Zoo by Rod Campbell.[35] Soon they begin acting out the story, at which point the teacher offers them some instruments to add as sound effects. The teacher asks, "What kind of sound does an elephant make? Maybe we can add sound effects for the animals." Then the teacher removes himself from their activity. After some discussion, they choose instruments and try out a few different sounds, finally opting for a variety. The teacher invites them to perform the sound effects and movements for the group, as he reads the book. Other children listen, watch, and applaud. On another day, other children try the idea.

TEACHABLE MOMENT

In this situation, the teacher facilitates enrichment of a literacy–drama activity by making instruments available and suggests a loose structure on which students build their own musical ideas (i.e., their creative work is scaffolded by the teacher). The children have the opportunity to gain hands-on experience with the instruments, make judgments and choices about musical sounds, and process and perform the activity for others.

Interactions and Strategies

Encourage children to invent accompaniments with musical instruments. One way to introduce the proper use and possible function of an instrument is for the teacher to use various instruments in song accompaniments or as sound effects when reading books. For example, preschoolers enjoy "playing" to the storybook *Jump Frog, Jump.*[36] Musical sound effects can be added each time the repeated text "Jump frog, jump!" appears. Demonstrate the use of a small hand drum on the word "jump," and a long scrape on a *guiro* (i.e., a long, notched gourd and scraper) on the word "frog," then have the children play the accompaniment as the book is read. If xylophones are available, the "frog" can also be made to jump on the xylophone bars using mallets. Later, extend this idea to nursery rhymes and other poetry. For example, add instruments to "Hickory, Dickory, Dock." Basic rhythm sticks can be used to keep the beat or rhythm of the words on "Hickory, Dickory, Dock." Next, use stepwise, ascending notes on the xylophone or step bells to play "the mouse ran up the clock"—this teaches the concept of higher and lower pitches. When the clock "strikes one," play the triangle for one stroke. Then use the xylophone/step bells to play "The mouse ran down." Finish with the rhythm sticks on the last line, "Hickory, Dickory, Dock."

Provide opportunities for independent and group play through musical play kits, which can be stored in a music area. The kits can focus on instrumental play, vocal play, listening, or reading and writing music. Collect and label each kit in a large or jumbo-sized zip-lock plastic bag, or store each kit in a clear, appropriately sized plastic container. A variety of kits can be assembled from items in the preschool setting or from lessons already taught. To get started with indoor, sustainable materials, make a musical shaker activity by creating maracas or shakers out of small, empty boxes filled with popcorn and covered with plastic adhesive paper, or make them out of plastic eggs that are filled with something shakable and then super-glued together. Add other shaker-type instruments, and an audio recording of "Shake, Rattle, and Roll," if available. Expand this kit to include the book and recording of "Shake My Sillies Out"[37]—these materials support literacy and vocal development.

VIGNETTE

Miss Alaya has just seen and heard four-year-old Juni singing in her home language as she was putting together a puzzle. "Oh, Juni—I love that song. Can you go to the music table and put it down on a piece of ***staff paper*** *for me?" Juni agrees and goes to the music table, where the markers and staff paper are located.*[38] *She spends about one minute making her composition, then brings it back to Miss Alaya, who invites Juni to sing it. Juni sings, and Miss Alaya says, "This is fabulous! Look at all those long and short notes you used. Let's put it up on the display board so everyone can see it."*

TEACHABLE MOMENT

Not only is Juni recognized for her singing ability, she has been guided to put her creative work down on paper and share it with others. She has constructed meaning and externalized her creative thinking process, which becomes the basis for further discussion about music symbols, long and short sounds, and high and low notes. Displaying Juni's work adds value and recognition to her effort.

Interactions and Strategies

Display child-notated compositions. Three- and four-year-olds recognize and understand the meaning of short and long sounds, high and low sounds, and phrases. They are also able to invent symbols or icons to represent the sound they hear. Begin composition activities with child-created songs maps. For example, a simple song map can be done to a song such as "Here we go *Looby loo*." After the children have had the opportunity to sing and move to the song, give each of them a large piece of blank newsprint paper. Now, as they sing the song, model how they can use their finger to draw the song on the paper. Have them begin drawing when the music begins and stop when the music stops. Help them to use visual thinking strategies as the song is modeled—to watch and notice how the sound moves up and down or stays the same as they sing. After they sing and practice drawing with their finger a few times, they then use a crayon to draw the song using one long, connected line. This song notation is then shared with the rest of the children, with the composer directing the score. This activity introduces the idea that music can be notated—that it moves through time—and that it has phrases. By age four (and depending on prior experience), they can move on to use more-structured iconic notation, such as long and short dashes cut out of poster board, or they can use short and long wooden dowels to construct long and short sounds.

Have the children draw pictures of songs. Children construct meaning when they have the opportunity to symbolize what they hear in a song or a piece of instrumental music. For example, in the song chant "Looking for Dracula,"[39] children enjoy creating pictures of what happens in the story. They can sequence the entire story.

Use musical forms that allow for structured musical play or freely spontaneous musical responses. Several music education methods include songs and poems that allow for free play or child-created additions.[40] Simple **drone** accompaniments (repeated simple beats [e.g., "droning on and on"]), paired with open, improvisational "spaces," are suitable for children ages four and above.[41]

Integrate child-improvised music dues with books, poems, and creative-movement activities. Use poems or stories that contain sound cues that children can improvise or make on their own. Poems and books about the weather, seasons, nature, and objects that emit sounds can be used to prompt spontaneous sounds from the children as suggested by the text of the book or poem. This strategy works well with nursery rhymes, too.

Bringing It All Together

The young child's "work: is play. As such, a major goal in the early childhood music curriculum is for children to enjoy and construct meaning about their musical experiences through various forms of play. *Provide opportunities for independent and group musical play*—at planned and unplanned music times. Further, as with other early childhood curricular areas, manipulative play is also essential in music. *Manipulatives help young children construct meaning*, whether the manipulatives are puzzle pieces, blocks, puppets, musical instruments, or objects shown on **shadow screens.**

> *Mr. Paul's group of four-year-olds has been creating an aquarium mural. They have drawn plants, sand, and coral and have just added colorful drawings of the fish. Many children look carefully at the fish, positioning them to swim up and down. Yazmin comments on how they glide through the water.*

The child's comment invites questions: "Can you move like a fish?" "How do fish move?" This provides an opportunity to build and label movement vocabulary, such as "gliding," "smoothly," "floating," and adding songs and chants about fish.[42] To extend the experience into an integrated arts lesson, have the children study picture books of tropical fish, then draw and color their own fish on poster board. Their fish can then be made into stick puppets with dowels attached for a musical shadow play to the music "Aquarium" from Saint-Saens' *Carnival of the Animals*. To create the shadow screen, stretch a piece of muslin over a wooden frame of approximately 18 inches by 24 inches. Paint the muslin with watered-down ocean-water colors. After it is dry, shine a light through the back of the screen for an appearance of water. The children can hide behind the screen and manipulate the puppets according to the music.

Next, provide planned opportunities for singing throughout the day. *Singing is a joyful activity that builds community, social interaction, and self-esteem.* Set aside time each day for group singing—this builds a repertoire of songs that the whole class knows. Group singing can be done at various times, not only while "sitting in circle." Singing outside, singing in small groups, and singing while waiting are all opportunities to incorporate music into the children's day. To begin, choose songs with a narrow **pitch** range so the children can easily match pitch. While the children learn a song, or as they need it, indicate how the pitch moves up and down by using your hand to show different pitch levels of the song. Make a chart of all the known songs. Add a picture, or other representation, along with the words. Even if the children cannot read the list at first, eventually they will learn to recognize the words. When appropriate, use recordings of child voices singing. Recordings should be of excellent quality. As mentioned earlier, limit the use of prerecorded music for singing. Also, avoid the use of constant background music; recorded music should have a purpose when used.

Keep in mind that *children move to learn.* Just as children tend to sing spontaneously, so they tend to move during work and play. Singing games, creative movement, simple folk dances, and planned movement activities help the

child internalize and express the musical elements of high and low, short and long, fast and slow, and so on. Music is sound set in time and motion and should be experienced in the body.

Observe, assess, and encourage improvised, spontaneous musical play. Children come to preschool with different levels of ability and interest in singing and playing musical instruments; many sing naturally all day long—in play and at work—while others hardly utter a sound. Take notice of the child's interest in singing and of his or her growing ability to match some pitches. Be aware of the quality of the sound (e.g., raspy, clear). Play sing-songish games during individual and group interactions. Sing directions, names, poems, conversations, or make up pitched sound effects to go with stories or with puppet play. Encourage a wide variety of vocal sound effects to exercise/stretch the vocal cords.

Because children learn holistically, music learning should be woven into the early childhood environment and integrated with other curriculum areas. Make connections to other disciplines so learning is *permeable.* Use storybooks, poems, sound experiments, rhythm-math blocks, dramatic play, art, and puppet materials to reinforce concepts from other domains. For example, through singing and expressing music with different instruments, children may learn about mathematical concepts related to numbers and patterns. Repetition of phrases in music signals patterns in the music; children's songs frequently involve counting. If there is a music teacher or knowledgeable volunteer available, this is an opportunity to collaborate.

When children's disposition and curiosity for engaging in musical activities are nurtured, understanding and valuing typically follow. Time is needed to talk

Research Highlight: Music

The following points about music and development in early childhood come from *Start the Music Strategies,* a collaboration by MENC (the National Association for Music Education), the National Association for the Education of Young Children, and the U.S. Department of Education. The points were developed by reviewing the research and professional literature.

- We know that music is among the first and most important modes of communication experienced by infants.
- As young children grow and develop, music continues as a basic medium not only of communication, but also of cultural expression and self-expression.
- As preschool children not only listen to music, but also learn to make music by singing and playing instruments together (and responding to music in a variety of ways), they create important contexts for the early learning of vital life skills such as cooperation, collaboration, and group effort. Music in an educational setting also begins to teach young children to make judgments about what constitutes "good" music, helping them develop the rudiments of an aesthetic sense.
- Music contributes to "school readiness," a foundational education aim of the American people for all our children.
- When children develop musical skill and knowledge they are developing basic cognitive, social, and motor skills necessary for success throughout the educational process, and in life itself.

Source: *Start the Music Strategies*. Reston, VA: National Association for Music Education, n.d.

about music: provide time for processing, analyzing, and discussing musical thought on the child's terms. Label experiences—and help children do the same—with child-appropriate vocabulary. Display their achievements through informal presentations and musical exhibits in the classroom.

Engaging Families

- ✔ Often, families may be unaware of the important role they play in their children's music education. From the child's birth, families are usually the best providers of music and musical engagement in the home. The family setting is where generations of songs are passed along and preserved.
- ✔ Encourage children to bring their favorite songs and music from home. These selections can bridge and invite participation in other music activities.
- ✔ Whether singing to the child, playing personal music instruments, listening to music in the home and car, encouraging the child to sing, taking the child to community concerts, or attending family–child music classes, it is often the family who provides the child with enriched musical opportunities. Therefore, the teacher's role is to inform families of the benefits of music to the child's intellectual and social–emotional development.[43, 44, 45]
- ✔ Teachers can advocate greater family involvement. They send song sheets home with the child, share information about a community concert, invite families to come to the preschool program and play music instruments, present small music "informance" presentations for families, and simply talk about the child's interest and participation in music activities.

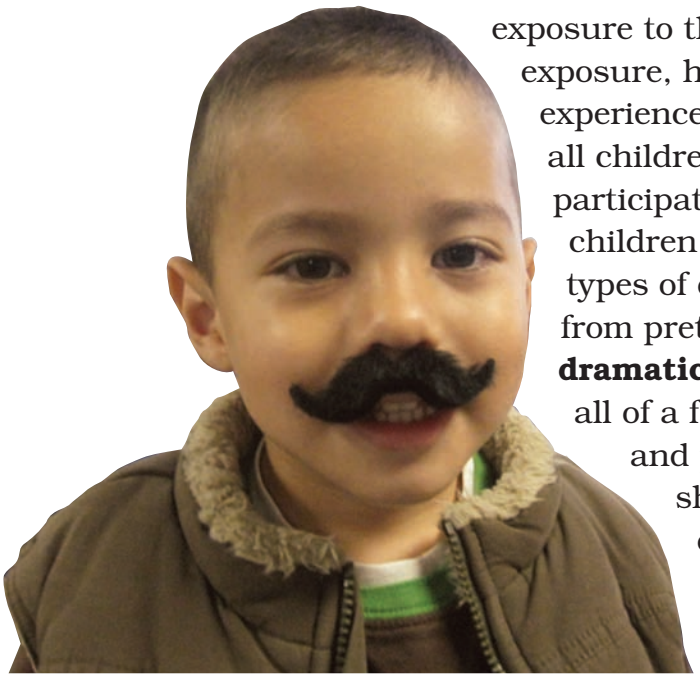
Questions for Reflection[46]

1. What musical skills and knowledge are required to provide developmentally appropriate music experiences in your program? How do you become more skillful? More knowledgeable?
2. In what ways can you integrate music into other curricular areas?
3. How does music, especially singing, promote literacy and language development?
4. If the child's "work" is play, what is the role of a music interest area—what should it contain and how should it be used?
5. What music resources are available in the community for program enrichment?
6. In developing the child's disposition and curiosity about music, what role can families and the school take? How can you be an advocate for the child's music education?

Drama

Developing Curriculum in Drama

Drama is a valuable part of the preschool curriculum. Typically, children ages three to five first experience **drama** by participating in **dramatic play** at home and in the early childhood environment. Dramatic play is the foundation for the development of drama.* This play typically progresses from the time a child is 36 months old, when he or she engages almost exclusively in **solitary play** and in watching others play; to the equal time engaged in solitary, **parallel**, and **group play** at 48 months; and to primarily group play with some solitary and parallel play at 60 months.[47] Because of circumstances beyond their control, some children may arrive at school with limited exposure to these areas. Regardless of prior exposure, however, all children bring experiences that can enrich drama, and all children are capable of enjoying and participating in drama. Preschool-age children enjoy participating in various types of dramatic play and drama, from pretending to cook a meal in the **dramatic play area** to acting out part or all of a favorite story with their teacher and peers. During preschool, drama should be about the process of creating and exploring rather than an end product, such as a rehearsed play or other formal performance.



*In this chapter, the terms *dramatic play* and *drama* are used. *Dramatic play* refers to children's spontaneous engagement in play, whereas *drama* refers to guiding children's activity in a structured presentation or actually providing explicit instruction in which children act out a drama.

In addition to being fun and enjoyable, drama has numerous benefits for preschool-age children. When participating in dramatic play and drama with others, children must work together to decide a plot, choose characters, and act out a situation or story. Completing these tasks gives children valuable practice in interacting with others. Reflection on a dramatic play or drama experience also enhances self-awareness by helping children to think about their actions and choices.

Drama is also a great way to create a culture that embraces and celebrates all children. Preschool children who struggle with learning or have special needs may excel at pretend play and will benefit from the social interaction that occurs as children pretend with one another in drama. Children from a variety of cultural and linguistic backgrounds will likewise benefit from interaction with peers through drama and can be encouraged to share with other children the ideas and words they value during this time.

Further, the use of drama integrated with other arts domains can enhance learning. For example, children may sing a song about fish while dramatizing an ocean journey, learn a cultural dance related to their story drama, or imitate with their bodies figures seen in a painting. Drama may also help foster learning within academic domains. There appears to be a particularly promising connection between drama and literacy. Children who participate in drama by acting out stories, scenes, or ideas as a supplement

to literacy activities have been found to perform better on measures of **story understanding**, reading achievement, and writing than their peers taught through traditional nonperformance-based methods.[48] Drama also provides ample opportunity for problem solving. Moreover, listening to and enjoying drama experiences exposes children who are English learners to English while participating in dramatic play. Drama provides practice with the new language in nonthreatening and fun ways. All children can participate in drama, including children with special needs, when the appropriate accommodations are made. Moreover, a wide variety of subject matter can be incorporated into drama, making it a powerful way to provide access to other areas of curriculum for all children.

1.0 Notice, Respond, and Engage

Children benefit not only by engaging in **role play** or extending and acting out a story, but also from reflecting on their participation in dramatic experiences of all types. When children have ample opportunities to participate in diverse drama activities coupled with teacher-guided conversations about the experiences, they will develop a drama-based vocabulary, preferences about drama, and an emerging knowledge of dramatic structure.

VIGNETTE

A day after reading and discussing "The Three Billy Goats Gruff" during story time, Mr. Longfeather watches as a group of four-year-old children in his class pretend to be goats. The three children portraying the goats are trying to get into the "castle" as Juan, who is acting as a troll, stands guard. Mr. Longfeather is pleased to see that the children are using several objects he placed at the dramatic play area as props and scenery. Juan is clearly having a great time, and laughs as he uses a deep voice and makes funny "troll" faces.

After dramatic play time is over and the class has gathered on the rug, Mr. Longfeather listens as the children excitedly recount and describe what they did during dramatic play. "Juan was a funny troll," says Kim. Juan adds, "And I used a walking stick." The teacher responds, "That's right, Juan. When you were the troll, you were using the paint stick as a 'prop.' A 'prop' is a thing actors use while pretending. I heard your deep troll voice and saw your scrunched troll face. I noticed that you were laughing as you made the faces. Did you enjoy making the faces?" The children ask if they can keep their "castle," made from large blocks and fabric, in the dramatic play area. Mr. Longfeather agrees.

TEACHABLE MOMENT

The teacher, Mr. Longfeather, provided the children with an opportunity to use an enjoyable story as inspiration for dramatic play. He read to them and discussed *The Three Billy Goats Gruff* and then set out open-ended props for the children to use. After the play episode, the children share their thoughts, and Mr. Longfeather contributes when he sees an opportunity to foster learning. He models proper use of drama vocabulary through his use of the word *prop* when talking about Juan's use of the paint stick and offering a simple definition of *prop*. Mr. Longfeather models how to express interest in and preference for participating in a dramatic work when he describes how Juan used his face and voice to portray the troll. In doing so, he provides children with a template for noticing and expressing their own ideas and observations about their dramatization and connects dramatic play to drama.

Interactions and Strategies

Use a drama-based vocabulary. Developing a drama-based vocabulary will enrich children's overall vocabulary and give a deeper meaning to children's dramatic play and drama. At three to five years of age, children are able to understand and use a variety of drama-based vocabulary words. The appropriateness of a potential vocabulary word can be determined by how useful the word is to children's play. For example, it is very likely that costumes will be used in a variety of drama situations, but **blocking** (i.e., the positioning of **actors** on **stage**) is too advanced and unnecessary for preschool dramatic play. *Act, actor, audience, character, clap, costume, imagination, movement, pretend, prop, puppet,* ***scenery***, stage, and ***voice*** are appropriate words for preschool-age children to use and know.

Encourage the proper use of drama-based vocabulary. Young children learn many new words by hearing them used repeatedly in context. Facilitate children's comprehension of drama vocabulary by using these words while talking about drama. One way to model use of vocabulary words is to provide commentary when going into a role: "Now I am going to pretend to be the troll. I will put on this cape for my costume." Also, expose children to drama vocabulary when describing what other children are doing or through casual conversations with children and supplement the in-context use with simple explanations of words. For example, "I see that Narita used the blue fabric to make the river for our drama scenery. The scenery is what we use to show the place where our drama is happening."

Presenting new vocabulary with visual, auditory, tactile, and other types of support is also helpful, particularly for children learning English. Giving new vocabulary in the child's home language provides additional support for children who are English learners. Also, consider using pictures that depict words or sing along to help children understand and remember these words. For more information about strategies to support children who are English learners, see chapter 5 of the *California Preschool Curriculum Framework, Volume 1*. Many other common strategies for teaching vocabulary to preschool-age children, such as a sign or games, can also be employed to teach drama-specific vocabulary words. For example, a teacher might create with the children a sign for drama or say, during a game of I Spy, "I spy . . . a red prop in the dramatic play area."[49] These suggestions can be particularly successful for children with special needs. Consult the child's IEP and talk to the child's family or a learning specialist for appropriate accommodations as needed. For resources for working with children with disabilities or other special needs, see appendix D of the *California Preschool Curriculum Framework, Volume 1.*

Encourage and model the expression of interests and preferences. When teachers or other adults show and share their interests and opinions related to participating in drama, they foster children's abilities to express and explain their own interests and preferences. A teacher may mention that, "I enjoyed pretending to be Mirandy's grandmother in the story because she reminded me of my grandmother." Such statements allow children to see how one forms a preference (I enjoyed/I noticed /I liked . . . because . . .). Encourage and nurture

children's abilities to make observations and express interests and preferences by making reflection a regular part of dramatic play and drama. After an episode of play, ask children to tell why they chose to do something or what they found interesting. Children who are learning English may choose to draw or sketch a favorite moment. Art is an excellent medium to offer after a drama activity. Children will become accustomed to expressing their opinions and will begin to do so on their own. For children to be able to express their preferences and interests in drama, it is helpful to expose them to a wide variety of drama experiences.

Drama for preschoolers can take place in various settings: the dramatic play area, book corner, block area, or even outdoors. Experience with a number of varied drama experiences over time will help give children the background knowledge needed to express their opinions. It can be fun to take photos of the children at various points in the experience to facilitate discussion and sharing of interests. Occasional videotaping can also allow children to enjoy their own performances and comment on what they enjoyed.

Scaffold and encourage children during and after participation in drama to build their understanding and use of plot. Preschool children participate in drama in a variety of forms and settings. For all types of drama, including dramatic play, help children develop their knowledge and use of plot by highlighting and emphasizing narrative structure through exposure to books, stories, or performances or through other strategies such as asking targeted questions, giving suggestions, or stepping into a role to help propel the action. Such scaffolding, which gives children the support they need to recognize and extend the plot in a role play, will differ based on the ages and developmental levels of children. Three-year-olds may find it beneficial to talk through the events of a role play with an adult, while a group of five-year-olds may simply need the impetus of a teacher's request to "help me solve this mystery" to inspire fruitful plot development.

In addition to scaffolding, soliciting input from and encouraging children to take the lead in developing the story lines and events that make up their drama work are beneficial. This idea of children as leaders is important because drama is most fulfilling and exciting when outcomes are not predetermined and are arrived at by the participants. Simultaneously providing scaffolding as needed and encouraging children to determine the events in the drama will give children a strong background knowledge of plot and invaluable experience in plot creation.

2.0 Develop Skills to Create, Invent, and Express Through Drama

Drama is a powerful medium that is not only enjoyable but also has been linked to numerous social and educational benefits. Engagement in role play as part of both dramatic play and drama helps children cultivate skills such as changing their posture or voice to portray a character. Children not only gain the tools needed to participate effectively in these two types of drama experiences, they also begin to understand and interpret the world in new ways. Importantly, all children are able to participate in drama in meaningful ways. Children learning English are given the opportunity to develop vocabulary appropriate for a variety of situations in the nonthreatening world of pretend, while children with special needs are given the opportunity to interact with their peers in a safe environment when the appropriate accommodations are made. Preschool-age children participate in different types of drama activities ranging from solitary play (a type of dramatic play) to various types of dramas, including teacher-initiated narratives based on a story. Each type of drama activity is unique and beneficial.

VIGNETTE

Ms. Sanchez watches as Anna and Li Ming, both almost four years old, play in the dramatic play kitchen area. Although both children have played here together many times, they continue to engage primarily in parallel play. Ms. Sanchez wants to see the girls start to interact more with each other during their play sessions. She feels this will lead to more complex play and give the children opportunity to develop social skills such as compromise and cooperation. Ms. Sanchez continues to observe as Anna handles a bowl while "making noodles," and Li Ming moves pans on the stove to "cook bok choy and gai-lan." She walks over to them and says, "I bet that if you put your foods together, you could make a delicious stir-fry dish. Wow, that sounds good, doesn't it?" Both Anna and Li Ming seem intrigued but remain quiet and still.

Ms. Sanchez ties a scarf around her hair, then takes out a metal bowl, and, changing her voice slightly, announces, "I'm Grandma, and I have an idea. Let's put your noodles and your vegetables together in this wok to make a yummy meal." The teacher uses gestures to make sure both girls understand her suggestion, especially Li Ming, who is learning to speak English. When Li Ming begins to dump her mixture into the pretend wok and gestures to Anna to do the same while making her request in Mandarin, Ms. Sanchez backs away and continues to observe from a distance. She is pleased to see that the children extend the story together, "frying" the foods and adding spices as they "cook." Later, Anna pulls on the teacher's sleeve, "Grandma, here's your supper." Donning the scarf, Ms. Sanchez steps into character again, asking Li Ming to help set the table.

She makes a mental note to recognize later the way the girls took turns sharing the kitchen utensils and then sharing their food. The following week, when other children want to play "cooking," Li Ming and Anna are eager to participate. Once again Ms. Sanchez takes on various roles to encourage dialogue and introduce problems into the improvised drama.

TEACHABLE MOMENT

In this vignette, Anna and Li Ming are engaged in the beginning stages of **sociodramatic play**, a type of play in which children, with at least one or peer or adult, pretend to be someone other than themselves or pretend to do something they are not really doing. Sociodramatic role play takes place in parallel play and group play contexts. Children engaged in this type of play perform things they already know in settings they are familiar with.[50] Children typically act out realistic, domestic scenes and engage in pretend activities such as putting a doll to bed, sharing a meal, or playing doctor. In the early childhood setting, it is common for most children's sociodramatic play to take place in the dramatic play area.

Adult intervention can enhance children's role playing abilities, when it is appropriate to do so (See the "Research Highlight: Drama" on page 94). In this play episode, Ms. Sanchez's decision to intervene is based on careful observation of the children's past and present play. From her notes, the teacher knows the two girls do not typically engage in cooperative sociodramatic play; instead, they usually prefer to work side by side. In the interest of enhancing their play through increased interaction, Ms. Sanchez chooses a drama technique called **teacher-in-role** to intervene from the outside by offering a suggestion about how the girls could work together. This technique also allows her to model the use of voice and costume to portray character. When necessary, the teacher-in-role also steps in as a participant and begins to co-construct the narrative with the children; that is, the teacher and children work together to create the story, as in their cooking role play. As soon as the girls show interest in interacting with each other, Ms. Sanchez steps away to give control back to the children, ultimately letting them direct the play episode. She uses this same method in the extended role play—entering only when an opportunity for learning arises. This technique allows the children to continue to engage in the meaningful peer-to-peer interaction offered by pretend play as they develop a co-constructed narrative together.

Ms. Sanchez also uses effective strategies, such as connecting words to real objects, to facilitate the dramatic play of children with limited English. The use of such strategies prepares children for more complex language use and literacy development. Li Ming, who recently moved from China, gains experience in using English and likely learns new words. She constructs the meaning behind these words while also continuing to use her native language of Mandarin to communicate. This dramatic play episode, like most other play episodes, contains action as a form of communication, allowing the girls to understand each other despite language difference. The teacher notices their interaction and plans to recognize and thus reinforce proper sharing behavior.

Interactions and Strategies

Observe role play. Observing children engaged in dramatic play and drama enables the teacher or other adult to recognize what interests children, how their role play is developing, the children's level of interaction with others, and the language(s) children are using with one another during role play. Quality observation of drama consists of noting the types of activities and settings used; the type of pretend play engaged in by particular children (e.g., does the child use an object for something other than intended or ascribe roles to others?) and the complexity, duration, and content of this play; whether play takes place in a solitary, parallel, or social context; and the level and language of communication between children engaged in play or drama.[51] Such thorough observations will yield helpful information to the teacher dedicated to improving drama experiences and fostering children's social–emotional development through drama (See the "Research Highlight: Drama" on page 94). These observations are especially important for teachers of children who are English learners, who may be hesitant to engage in cooperative role play.

Step in or model when needed. Although role play is often thought of as something children can do with little supervision, teacher involvement is a vital component of quality dramatic play and drama (see the "Research Highlight: Drama" on page 94). Smilansky advocates the importance of modeling, **verbal coaching** (i.e., helpful suggestions and comments), and teaching children in different types of dramatic play because, as in the last case, children may come to school without any experience in this area.[52, 53] Working with children in these ways can also be an opportunity to enhance language, as children begin to extend dialogue and offer solutions to problems or conflicts within the plot. When children are introduced to a new theme or new materials in the dramatic play area or during a drama, adult guidance can help them understand the materials and the possibilities available to them. Further, a well-timed intervention by an adult can redirect and refresh a drama episode that is becoming repetitive. Adult involvement may take various forms: offering a comment, suggesting

a new direction, or offering additional props—including materials that speak to other areas of development (e.g., paper, writing instruments) for use in the role play. Teachers may also join in the play by entering a role play as a character, bridging dramatic play and drama in the process.

Model and note appropriate ways of using drama materials. Model ways to share props and costumes as often as needed, particularly at the start of the year or when new drama opportunities are introduced. Taking turns and using an object together are strategies that can be practiced by children. When children demonstrate sharing behavior during dramatic play or drama, comment on the behavior and explain why the behavior was appropriate. For example, "I noticed that Jimmy and Kiko both wanted to use the horse puppet, so they agreed that

Research Highlight: Drama

It is important that children be given the opportunity to make decisions and determine the course of action during dramatic play and drama. It helps cultivate social–emotional skills such as taking initiative in one's learning. However, teachers should look for opportunities to participate often in children's play. The teacher's participation adds an important dimension to children's play. Research suggests that young children derive greater benefits from dramatic play when the teacher or other adult is involved—that is, monitoring and assisting children in engaging and fruitful play, rather than just observing passively.

Ann Podlozny looked at numerous studies that examined the role of children's participation in drama in their ability to understand stories.[54] In the 17 studies that she examined, children listened to a story and either acted it out or listened to the story a second time. Podlozny found that children not only displayed greater story understanding and recall when acting out the story rather than just hearing it, but that story understanding was greatest when the teacher or other adult was in-role, working with the children during the drama.

In another study, Robert Fink looked at how teacher involvement in role play affects children's abilities to understand that people and objects retain original qualities when others are added (conservation), that the physical world stays the same even if one's view changes, and that people take on multiple roles within a group (perspectivism).[55] In Fink's study, children were assigned to one of three groups. The first participated in dramatic play with teacher support, the second participated in dramatic play without teacher support, and the third group did not participate in dramatic play. After four weeks it was found that the group that participated in dramatic play with teacher support not only outperformed both other groups on measures of conservation and perspectivism, but they also showed higher levels of imagination when observed during dramatic play.

There are numerous social and educational benefits for children when they engage in dramatic play and drama, and evidence suggests that teacher involvement may enhance these benefits. Although it is important and valuable to allow children autonomy (independence) and the ability to make decisions and choices while engaging in play, frequent observation and guidance are important. See "Interactions and Strategies," "Teachable Moments," and the vignettes in this section for suggestions and descriptions of how adults can enhance children's engagement in dramatic play and drama.

Jimmy would use it for the first part of the story and then it would be Kiko's turn. By sharing the puppet, both children got a turn!" Watch for conflicts and be ready to assist children in working out a compromise. Help children learn proper care of the props and costumes, such as hanging up the costumes, storing the hats on the shelf, and brushing the wigs. Teach them that part of playing with the materials involves caring for them and storing them properly for future use.

Provide adaptations to support the participation of children with disabilities or other special needs. All children are able to participate in and benefit from drama if teachers make appropriate accommodations as needed. This may include the use of strategies such as preteaching (for instance, introduce a new theme one-on-one to a single child at the dramatic play area before introducing it to the whole group) and repetition (e.g., review what "sharing" looks like each day before role play begins) for children who need more time to learn or retain information. Use pictures, sign language, and other multisensory enrichment to support new language and concepts in drama activities. For children with physical disabilities, a space designed for movement (i.e., where ramps are used the area is clutter-free) and easy-to-use objects and costumes will be helpful in allowing the child to experience drama to the fullest. When the drama requires large motor activity (e.g., jumping frogs), a child with limited mobility can mimic the movement with her/his hands or a puppet or be given a special role (e.g., "We need a caring bird to guard our eggs while we fly away to look for worms"). Also, refer to the child's IEP or other education plan, talk to the child's family or specialist, or see "Teacher Resources" on page 119 for additional strategies and ideas.

VIGNETTE

Mr. Perry reads aloud half of "Adelita: A Mexican Cinderella Story," a tale unfamiliar to the five-year-olds in the class. He stops reading at the point where a big fiesta will take place. He suggests that they use the story for a role play and wonders aloud what part of the story they should use. Some of the children ask if they can act out what happened at the fiesta, and Mr. Perry agrees. Before beginning this fantasy role play, Mr. Perry and the children go over how they should act and why. He also asks the children to find some props around the room to use at the fiesta while offering assistance to children seeking suitable objects. Mr. Perry informs the children that when he puts on the poncho, he will become the leader of the mariachi band. He demonstrates that when he takes the poncho off, he will be Mr. Perry again. Mr. Perry lists some key words used for the fiesta role play and asks the children, "Who knows how to say these words in Spanish?" Mr. Perry then encourages the children to use these Spanish words in the role play.

TEACHABLE MOMENT

In this vignette, Mr. Perry's class prepares to begin a **story dramatization,** a process in which children are invited to act out, extend, and/or change in some way a story that their

teacher has shared. Many teachable moments in story dramatizations occur when a story is half-told, such as when the teacher uses a book or story as a starting point—but not a blueprint—for an episode. This provides enriching opportunity for creativity and problem solving. Children must think of ways the story can continue and eventually end as they act out the story.

In the situation described above, Mr. Perry provides a learning opportunity for the children as he reads a book and suggests they participate in a role play. He encourages the children to take initiative when he asks for suggestions about the content of the drama. Before beginning the role play, the teacher and children discuss behavior expectations and their rationale, which will help reduce the chance for conflict and misunderstanding in the imminent drama. Mr. Perry also establishes that he will step in and out of role, as designated by the poncho, thus allowing him to monitor and shape action when appropriate. Moreover, Mr. Perry encourages the children to use props to enhance the experience. Recognizing that the children are five years old and generally able to choose appropriate props on their own, he allows them to make choices about which props to use, offering help when appropriate (see the "Research Highlight: Drama" on page 94). Finally, Mr. Perry shows the children that he values diverse homes and cultures when he asks, "Who knows how to say these words in Spanish?"

Use costumes, props, and scenery to inspire dramatic play and drama. Preschool children enjoy dressing up as part of drama activities. Visit second-hand stores and ask for donations of used clothes and fabric remnants from families to build an inexpensive supply of dress-up clothes. Clothes from a different era or way of life can be just as inspiring as something fantastical. The clothes may need to be adjusted so that they are safe for preschool use. A variety of fabric pieces is best for draping, wrapping, and tying around children to create costumes. This encourages creativity, and children enjoy making their own creations. Dramatic play and drama are also enhanced by props.[56] When children are three years old, their play is often inspired by the items used, so realistic props are appropriate. At four and five years of age, children enjoy using more ambiguous props and scenery that can serve a variety of purposes. They are also capable of finding or making their own. For example, children may move chairs in the classroom to make a car or line blocks around the carpet to create a boat. They may also create items during visual art activities that they can use during drama activities.

Moreover, the number of themes for drama is limitless. Using stories or field trips as inspiration can yield exciting scenarios. Teachers can also use drama to integrate other areas of learning, thus bridging the gap some children may feel

between themselves and more abstract areas of the curriculum. For example, if the teacher has recently read to children a story set in outer space, children could pretend to be astronauts to explore their new knowledge. Children may create a rocket ship from large boxes or blocks and items such as furniture draped with fabric, pictures of planets and stars, and even plants can be used to fashion various locations in the dramatic play area. Change the scenery or encourage children to do so when play appears to become repetitive or children seem restless. Children benefit from the inclusion of their own and other cultures. Include a variety of culturally diverse fabrics, costumes, props, and scenery, taking particular care to reflect the backgrounds present. Drama materials and environments should be accessible to children with special needs. This includes the use of easy-to-handle props and costumes, open spaces, and ramps for access as needed.

Facilitate children's engagement in drama by first discussing expectations. Discussing with children behavior expectations (e.g., "We agree to treat others kindly"), role-play conventions (e.g., "We will pretend we are in the story of The Little Red Hen. Some of us will pretend to be animals, but we will all be able to talk to each other"), and the teacher's role (e.g., "When I put on this hat, I'll be the farmer") will ease and improve the process of making a drama. Going over expectations beforehand gives children information needed to understand the drama and to understand where the boundary between pretend and real lies. Encourage children to help with rule making. When children are involved in creating expectations, they will be more likely to follow those expectations, particularly if the children not only take the time to decide what goes in, but why.[57]

Move in and out of role. The teacher or other adult may participate in a drama, both in and out of role. When in role, they take on the attitude and behaviors of a character or characters in the narrative. It is imperative to hold a prop or wear part of a costume to signify being in role, and this convention should be established with children before play begins to avoid confusion about the teacher's status. When in role, guide the action directly by asking questions of the children in role or moving the action along. Just as important as the time spent in role is the time spent out of role. Release or remove the signifying prop or costume to indicate out-of-role status. While out of role, check for understanding and encourage reflection from children, both of which are necessary for a meaningful drama experience. Children will also need help coming out of role. Establish a routine for the end of drama activity (e.g., "When we put our monkey tails back in the basket, we are not monkeys anymore; we are children again." "When the music stops, and we open our eyes, we won't be at the fiesta any more, we'll be back in our classroom"). See the "Research Highlight: Drama" on page 94.

Encourage and allow initiative. Teacher involvement enhances children's engagement in dramatic play and drama and is important, but it is also important to recognize that children thrive when activities are self-initiated.[58] Encourage children to make decisions and direct the course of events in a narrative as much as possible without losing the learning outcome. By providing children with opportunities to make choices while participating in a drama and accepting the choices, teachers create a welcoming atmosphere in which children are excited to share things from their lives and cultures.

Bringing It All Together

Several children begin arranging the dramatic play area of their preschool program to be a preschool itself. They excitedly call out their plans to play the teacher, the assistant teacher, the parents, and even themselves. As their teacher, Ms. Jackson, observes the activity, she notes that three children are evident leaders of this enterprise: Peter, Emma, and Jamila, all about four years old. The other children take an interest in this development and look in on the preparations without participating much—they occasionally toss in ideas or suggest the odd prop. Emma interrupts the proceedings by pronouncing, "Come sit down on the rug, class. I'm the teacher, and you are my children!" Peter and Jamila say nearly in unison, "No, I'm the teacher!" Some of the remaining children express a preference for who should be the teacher, including themselves.

As the project begins to fall to some grumbling and squabbling, Ms. Jackson steps in and says, "This looks really great—you're building the whole classroom in just one corner of the room. I'll bet you'd all like a chance to be the teacher. So let's figure out how that can work." Jamila says, "How do we tell who is the teacher?" Seizing a large plastic capital T from the alphabet box, Emma says, "With this!" The teacher nods her head and says, "That will be helpful because the word "teacher" starts with the "t" sound. Peter adds, "The person with this yellow T will be teacher for a minute and show the class something a teacher does. And we'll take turns." As the children finish organizing the dramatic play area, Ms. Jackson sits down next to Lulu and Alejandro, who are just beginning to learn English, to help them understand the plan and participate.

This episode illustrates several key points about drama in the preschool setting that have been described in this section.

In the anecdote, the teacher gives children the opportunity to engage in child-initiated role play by providing them with a designated play area, props, and time to play. It has been emphasized throughout this section that dramatic play is a bridge to drama and has numerous benefits for children, ranging from academic to social. It is important that teachers value dramatic play and drama as part of the curriculum by including it in the daily schedule, designating spaces for drama exploration, and through other similar means.

This story also highlights numerous strategies to ensure that children's experience with drama is fruitful. Giving children the freedom to make decisions about dramatic play encourages self-initiative, creates a welcoming environment, and makes the experience more enjoyable. Observing and stepping in when needed helps ensure that dramatic play is purposeful; proper behavior gives children a model in future situations; giving extra support to children who are English learners promotes their inclusion.

When she later reflects on this dramatic play episode, Ms. Jackson may decide that other strategies outlined in the Drama strand would prove useful in helping children work together during dramatic play as well, such as discussing with children the importance of cooperative behavior before participating in dramatic play or drama begins or by recognizing children who act cooperatively.

Engaging Families

Drama presents numerous opportunities for family involvement.

Families may share their oral traditions with the children in the preschool class or with the entire school. Many families come from cultures with a rich history of oral storytelling. Teachers may seek stories that have been passed down from generation to generation and incorporate them into children's drama activities.

Teachers can:

- ✔ Share with families through verbal communication, a newsletter, or other means what their children are doing in drama in the classroom and let families know that the teachers would like to hear about the child's dramatic play at home if the families are willing to share, with the understanding that some families may not value dramatic play. Be open to talking with families that may be unsure about the importance of drama and pretend play. Teachers can explain the benefits of drama and how it is used in the program, topics which are covered throughout this section.
- ✔ Invite families to the classroom, care center, or other location to watch or participate (if families feel comfortable doing so) in a variety of dramatic experiences with their children.
- ✔ Include family members in drama, when appropriate. They might join in a celebration that concludes a story dramatization or perhaps take on the role of "news reporters' who have come to learn about the children's recent adventures. This is an excellent way for them to see how their children are enjoying and learning from drama and provides a recall opportunity for the children.
- ✔ Value the diverse histories and traditions of which children are a part. Encourage families to share their oral traditions with the children. Many families come from cultures with a rich history of oral storytelling. These stories, which have been passed down from previous generations, can be incorporated into children's drama activities and create meaningful, integrated learning experiences for children.

Teachers can suggest to families the following strategies and ideas to bring them into the learning process:

- ✔ Embrace dramatic play at home. Provide materials that can be used as props and costumes that children can use in their own creative play. Space and time are also needed for play. This will encourage the child to engage in pretend activities. Showing interest in the child's play, being available to play with the child, or encouraging the child's siblings or other family members to do so will enhance the level of engagement in dramatic play. (*Note:* Teachers may want to make available some props and costumes that families can borrow for this purpose and provide a list of household items that can be reused as props and costumes for children's dramatic play.)
- ✔ Incorporate dramatic play into a variety of activities, such as reading books or going on family outings. A new story or trip to the zoo may inspire role play. Encourage the child to use her or his experiences when engaged in pretend activities.
- ✔ Consider taking on a role from the child's favorite story and engaging the child in dramatic play.

- ✔ Encourage the child to reflect on episodes of dramatic play. This will help the child develop self-awareness and thoughtfully consider his actions and choices.
- ✔ Donate to the class items that can be utilized in dramatic play and drama, such as used kitchen appliances, fabric remnants, or outgrown clothes. Consider donating items that reflect your home culture and items that the child may enjoy sharing with his or her peers.

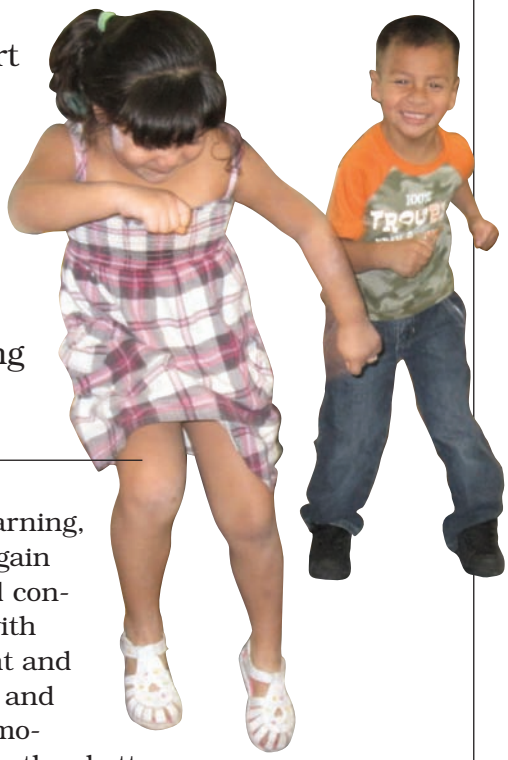
Questions for Reflection

1. Participation in dramatic play and drama is natural and enjoyable for children. Do you have any worries or fears about helping the children in your care participate in dramatic activities? What will you do to overcome these worries? Alternatively, what positive experiences have you had with drama, and how can you use these to improve children's own experiences with drama?
2. How will you balance the need to encourage children to take initiative and make their own choices during dramatic play and drama while remaining involved and guiding children to engage in fruitful pretend activities?
3. How can establishing expectations and reflecting on choices that children made help children as they engage in dramatic activities?
4. What steps will you take to ensure that dramatic activities in your classroom, or other care setting, include and embrace a variety of cultures and languages?
5. What steps will you take to ensure that children with special needs are able to participate fully in dramatic play and drama?
6. How will you set up your classroom, or other care setting, to promote fruitful dramatic experiences for all children?
7. How can you use drama to enhance learning domains such as literacy and social–emotional development?
8. How do children benefit when they gain knowledge of drama vocabulary and the ability to express preferences about drama experiences?
9. What community and family resources are available to enhance drama experiences for your children?
10. What do you enjoy most about drama that you are excited to share with children?

Dance

Developing Curriculum in Dance

Dance and movement are an inherent part of life and are as natural as breathing. Dance is an elemental human experience and a means of expression. It begins before words are formed, and it is innate in children before they use language to communicate. Movement is a natural human response when thoughts or emotions are too overwhelming or cannot be expressed in words.



Children move naturally—they move to get around, to express a thought or feeling, and they move because moving is joyful and comforting.[59] They learn **movement patterns** as readily as they learn language. Like language, movement patterns are embedded in young children's cultural experiences. Words, which are abstract symbols, will gain meaning through experience with what the symbols stand for.[60] Dance can provide children with this concrete experience as they learn movements and qualities of movements, such as wiggle and dart, or use movement to act out a scene in a story. As well, dance—as do all the arts—provides ripe opportunities to share across cultures, with music and dance from the children's cultural traditions at home.

Dance can serve a variety of learning purposes, such as physical development and language acquisition. As part of this learning, children gain increased confidence with movement and language and benefit emotionally as they better understand their body and use newfound skills to communicate with others.[61] See the "Research Highlight: Dance" on page 102. Teachers and families will likely observe these developments, along with others, as dance enhances children's learning. However, although these positive outcomes are important, the children's immediate experience will highlight the primary reason to learn dance: for the joy of movement and appreciation of an art form.

Of course, children may not have the opportunity to experience the benefits of

movement and dance if it is not taught at school. Preschool teachers are expected to be versatile, but teaching dance may test their limits. This does not need to be the case. Children will follow the teacher's willingness to explore. When joining children in movement activities, feel open to sharing that you are nervous because you have not hopped or wiggled since you were four years old. They will be excited with your efforts, and this exploration will be rewarded by a renewed sense of excitement for teaching as children are engaged in active learning. Importantly, begin with simple activities such as acting out movement and vocal sounds from a story in a book. Time is needed to integrate the many strategies outlined in this strand. In addition, take advantage of the many professional development opportunities offered by local arts organizations (see the "Teacher Resources" section on page 119 for more information).

A reasonable and useful hypothesis based on the effect of human emotion on the physical being would be to reverse the order of cause and effect. It might be said that participation in movement—especially creative, expressive movement—creates flexibility in posture and physical expressiveness and would produce a positive effect in a child's emotional well-being and development. In plain words, if someone is feeling down, he or she may benefit from doing a couple of leaps or cartwheels. The continued repetition of healthy movement patterns will in turn create positive *background emotions*, which may reinforce each other to benefit one's physical and emotional health.

Research Highlight: Dance

Research supports the inclusion of dance in a preschool curriculum for a number of reasons, not the least of these being the social–emotional benefits gained from dancing at an early age.

In *The Feeling of What Happens,* neuroscientist Antonio Damasio describes the body *as the theater for emotions* and considers emotional responses to be responsible for profound changes in the body's (and the brain's) landscape. Damasio creates three distinct classifications for emotions based on the source of the emotion and the physical response to the emotion: *primary, secondary,* and *background* emotions. The primary emotions are the familiar emotions recognizable in preschoolers and adults alike: happiness, sadness, fear, anger, and surprise. Damasio describes *secondary emotions* as *social* emotions, such as jealousy or envy when a child is eyeing a friend's toy or feelings of pride when accomplishing a difficult task. And of particular interest in a discussion of dance are the background emotions—much like moods. These refer to indications that a person feels *down, tense, cheerful, discouraged, or calm,* and others.

Background emotions do not use the differentiated repertoire of explicit facial expressions that easily define primary and social emotions; they are also richly expressed in musculoskeletal changes, for instance, in subtle body posture and overall shaping of body movement.[62] Movement and dance are natural vehicles for expression of these emotions.

1.0 Notice, Respond, and Engage

Preschool children will naturally be oriented to movement exploration. The emphasis for preschool dance is not on imitating the teacher; rather, the goal is to encourage children to use their natural instinct to explore. Free play alone, however, is insufficient for developing movement skills.[63] The challenge for the teacher is to produce complexity and variation in environments, with tasks and activities in which children can engage in movement and sustain focus without being overstimulated.[64] Through interaction and exploration in dance, over time, and with the use of dance vocabulary, children will demonstrate abilities to improvise with movement and execute more challenging dance skills.

VIGNETTE

Sammy, a four-year-old in Ms. Huang's class, pulls a top hat off the hat rack and begins to perform controlled balances high on the balls of his feet. Two other children become interested in this performance, and suddenly three children are using hats as creative props to stretch high into the air, with their arms, as they rise up on their toes forming a chorus line; Sammy continues to play the lead, placing a hat on a foot and balancing on one leg like a bird; the other children imitate. The movement progresses to a balancing game, and the children occasionally tumble to the floor, giggling. Ms. Huang observes the movement game for several minutes and notices the children have taken to making the same shape of the lifted bird leg. She recognizes the children's imagination by commenting on their creative play with the hat; she then suggests to Sammy that he attempt to bring his leg behind him (in a pose resembling a ballet arabesque) while keeping the hat balanced on his foot. The trio becomes more focused with their balances and inventive with the shapes, moving the legs from the front to back and even experimenting with lowering the torso while lifting the leg.

TEACHABLE MOMENT

Dance for preschool children usually will not resemble a traditional dance class in which choreographed steps are silently performed. In this vignette, a child is initiating engagement in a movement activity and thereby attracts his peers' interest. Ms. Huang recognizes Sammy's leadership abilities by suggesting he begin experimenting with new movement. Her intervention does not render the activity teacher-centered, but it does serve to focus the children so the activity does not result in a dangerous jumble of children falling on top of each other. By performing Sammy's "hat dance," the children *tried on* another dancer's movement in addition to creating their own. If a child with limited mobility

is in the class, then the teachable moment might also include encouragement for the child to participate by using the props. This might involve upper-body movement—stretching the arms upward with the hat—and performing twists from side to side. The teacher in this vignette capitalizes on children's eagerness to do something a peer is enjoying, as well as their need to have recognition and support from an adult. Although the children appear to be playing, they are developing balance and body awareness, skills that are important in dance and physical development (see chapter 3, "Physical Development").

Interactions and Strategies

Help children to become enthusiastic participants in learning dance. Some children will refuse to or be hesitant to engage in movement activities. Reluctant children can be drawn into dance over time. Experiment with various ideas, and you may discover that a child is eager to move with maracas or perhaps roll on the floor. Provide frequent encouragement by calling out individual names and remarking on an inventive movement or a skillful leap, and, most important, laugh with the children so they are reminded that movement is joyous and fun.

Warm up! Even though preschool bodies are much more resilient than adult bodies, they should still be gradually prepared for any vigorous activities. A warm-up might be a game that resembles Follow the Leader, but is called Do Like Kyla,[65] as inspired by the children's book by Angela Johnson in which a young girl follows the lead of her older sister. The teacher can begin as the leader and gradually call out children to be the leader by saying, "Do like Johan. Do like Stephanie . . ." Children may start out sitting and performing stretches, such as clasping the hands behind the back or bending forward. Or the children can stand and perform movements in place such as small hops, swings of the legs, or jumping jacks. Many children will initially not want to take the "Kyla" role. The teacher can suggest movements for the timid leader and may also have the class count aloud so that children will hold stretches for at least four to eight counts (see the *California Preschool Curriculum Framework, Volume 1*, chapter 4, "Language and Literacy").

Be aware of cultural norms that may influence children's participation. Depending on a child's religion or culture, certain movement activities may be inappropriate or prohibited. For example, a common feature of creative dance is to have dancers make physical contact with each other in various forms, such as with the feet, head, hands, or other body parts. However, in some cultures, people do not touch each other or make physical contact.[66] For most children, dance activities requiring touch will not be problematic; however, accommodations should be made when needed. Simply have a child mirror a partner rather than

hold hands. Teachers can be creative as they establish a comfortable, supportive atmosphere for all children.

Create learning environments and routines. The preschool environment should be organized to support flexible learning situations. Children benefit from free exploration and guided exploration. *Free exploration, despite the literal meaning of the term, has an element of guidance built in by the teacher, who provides the right environment or appropriate comment.*[67] This provision might be the design of the space, or music and costumes that are supplied. For example, the space may be transformed into a jungle setting constructed from colorful butcher paper, stuffed giraffes and elephants, and world music, such as Putamayo's *African Playground.*[68] See the "Teacher Resources" section on page 119 for additional suggestions of materials. Teacher involvement might be a comment praising an agile interpretation of a zebra galloping, or a suggestion such as, "How does the monkey stretch?" to guide exploratory movement. On the other hand, guided exploration areas are able to accommodate small groups or the whole class. Children need to be taught and continually monitored in routines that support learning in both of these environments.

Use children's prior knowledge. Children have generally experienced many of the elements of dance (see table 2.1, "Elements of Dance," on page 106) outside preschool. This may be from exposure to dance in their home culture or from active play with siblings or friends, or from using dance terminology (e.g., big, fast, arm) in other contexts. Dance uses a vocabulary that is scaffolded with nonverbal cues, which makes it mostly accessible to children at this age. Moreover, for children who are learning English, acting out language will help in language learning. A teacher's inquiry, "Who likes to swing on the swings?" will likely get enthusiastic responses of, "I do!" A child can then be asked to show how his body can demonstrate a swinging movement. An alternate strategy to encourage a verbal response from children is to have them stand with their arms relaxed by their sides. The teacher circulates through the classroom gently pushing children's upper arms until their arms swing forward and back like a pendulum. Subsequent questions might be: "What is your arm doing?" "What other parts of your body can swing?" "How can you swing faster?" "Slower?" "Can you travel through space with a swinging movement?" For more information about strategies to support children who are English learners, see chapter 5 of the *California Preschool Curriculum Framework, Volume 1.*

Structure learning activities so children are active participants. Young children will be frustrated if asked to merely observe a sequence of movements or frequently be required to wait for their turn. Developmentally and culturally appropriate movement programs for young children are designed so that all children are active participants, not passive listeners or observers.[69] Structure

dance experiences so children are almost always participating. Allow children to begin movement immediately. The movement may be a walk followed by other movements, **rhythms**, or spatial orientations as the teacher's voice directs. A drumbeat or pause of the music indicates "stop" and signals dancers to hold a shape and begin moving again only after hearing another recognizable drum or music signal.

If large, open space is not available, then have children perform movements in unison while sitting on the reading rug. Activities such as "Head and Shoulders" can be performed sitting down and can incorporate many of the elements of dance (see table 2.1, "Elements of Dance"), such as bend, stretch, twist, high, and low. Insert dance vocabulary into the lyrics: for example, "bend low to touch your toes; twist to the side to touch your partner's knee." Begin slowly while adding one or two movement variations and then gradually speed up once children have mostly picked up the actions. If it goes well, the children will be giggling as they attempt to keep up with the rhythm.

Introduce the learning of a dance skill by using imagery. The bodily movement skills of *collapse* and *suspend* can be taught after an enjoyable activity of blowing bubbles. Have children observe and then discuss the movement qualities of bubbles. Point out bubbles that float, gently fall, lightly land on a child's forehead, and, of course, *pop.* For younger preschool children, keep movement simple by incorporating a single skill, such as falling. Children practice the skill using soft, collapsing bubble movements in place or by traveling. Older preschool children can likely manage several skills

Table 2.1 Elements of Dance

	Body	Space	Time	Energy
There are many ways to describe each dance element. Teachers and children can add their ideas to this chart.	**Body Parts:** Head, torso, shoulders, hips, legs, feet **Body Actions:** *Nonlocomotor* Stretch, bend, twist, circle, rise, fall Swing, sway, shake, suspend, collapse (*qualities of movement)* *Locomotor* Walk, run, leap, hop, jump, gallop, skip, slide	**Size:** Big, little **Level:** High, medium, low **Place:** on the spot (**personal space**), through the space (**general space**) **Direction:** forward, backward, sideways, turning **Focus:** Direction of gaze or facing **Pathway:** curved, straight **Relationships:** in front of, behind, over, under, beside	**Beat:** Underlying pulse **Tempo:** Fast, slow **Accent:** Force **Duration:** Long, short **Pattern:** A combination of these elements of time produces a rhythmic pattern	**Attack:** Sharp, smooth *(qualities of movement)* **Weight:** Heavy, light **Strength:** Tight, loose **Flow:** Free-flowing, bound, balanced, neutral

in this exercise; these may include finding round, bubble shapes; floating and suspending their movements; collapsing and rising; and of their own volition or with teacher direction, suddenly exploding their bubble with a jump and shape change. As a free-exploration approach, bubbles may be placed in the movement area with music for the child to explore by blowing bubbles and moving or dancing among the floating bubbles of friends. Vary the music to encourage variety in movement: Use "Pop Goes the Weasel" for a playful effect; or, for more lyrical movement, try "I'm Forever Blowing Bubbles," performed by John Kellette.[70]

Draw on children's interests in dance making. If children are to become totally involved in an experience, it must feel as if it is theirs.[71] Ask children what *they* want to dance about (or draw upon stories students tell during sharing time). Responses might include lightning, monsters, bears, or an infinite number of ideas or images in a child's imagination. Questions should try to lead children to find variety and form in their creation. What is the shape of the thing? What kind of movement might it do? How does it change shape during movement and stillness? What is the shape of the ending?[72] Challenge children to move beyond imitation by encouraging them to explore diverse movements. For example, the prompt, "How would a bear walk on hot concrete?" will encourage children to be a bear without singularly repeating a lumbering, heavy-footed movement.

Incorporate dances that can be performed without moving the entire body. If a child has limited movement due to a disability or other condition, she can generally move some parts of her body and experience dance making. Modifying instruction involves *creativity* and *common sense* as well as a belief that *all children can learn.*[73] It is important for the teacher to provide clear verbal instructions and alternatives for movement, when needed. The teacher can assist a child using a wheelchair, or other mobility equipment, with locomotion as appropriate. Extra time may be needed for a child to complete a movement. Some modifications of movement may not be useful, so be prepared to work with the child, family, and specialists to explore alternatives. There are some professional dance troupes that incorporate individuals with differing abilities into their performances, and that may inspire new thoughts about dance (see "Teacher Resources" on page 119).

2.0 Develop Skills in Dance

A principal prerequisite for developing skills in dance is increased self-awareness on the part of the child. A developed sense of self will lead to an awareness of others, along with an overall sense of the relationship of self to others, resulting in an ability to move within a defined space. This awareness will increase a child's ability to control movements and coordinate body parts to work cooperatively, gradually creating an ability to perform more complex movements in a rhythmic manner. This progression reflects fundamental skill building in dance and also aids in a child's physical development (see chapter 3, "Physical Development").

Strategic planning by the teacher will help children enjoy learning as they develop dance skills. Teachers may refer to table 2.1, "Elements of Dance" (on page 106), and consider what skills the children are prepared to learn and how the skills can be incorporated into an enjoyable learning activity. Many practical considerations determine what activities can be conducted in the classroom. If space is limited, consider whether furniture can be moved or the activity can be taught outdoors, in an auditorium, or other available open space. Creative teachers can overcome limits in space, time, or materials to offer dance activities. Children can practice **nonlocomotor movements** while sitting on the reading rug, using the arms, legs, and torso in a variety of movements. Adding a song, nursery rhyme, or story will help inspire children in their exploration of movement.

VIGNETTE

Mrs. Kovalenko has a painting of each child's footprints, with feet parallel. The paintings are arranged in a circle to indicate where dancers stand during the ***warm-up****. The children practice nonlocomotor movements by isolating various body parts. The concept of personal space is still new to the children. While children are "shaking out" their arms, Simone begins to bump into a child next to her. Mrs. Kovalenko taps the drum three times, signaling the dancers to freeze. It is suddenly apparent to Simone that she is not in "Simone's space," and she hurries back to "her" footprint. Mrs. Kovalenko chants in a singsong voice, "Look for your feet. Stand on your feet, hop on your feet, stretch your arms wide to the side. Raise your arm high to the sky. Lift your leg . . . Did you whack a tree? (She calls out random names of objects or children) No? Then you're dancing in your space." She then calls out various children's names and has them demonstrate personal space by stretching out arms and legs without making contact with anyone.*

TEACHABLE MOMENT

Chapter 3 of the *California Preschool Curriculum Framework, Volume 1* contends that thoughtfully designed classroom experiences tend to develop the idea of the *self*.[74] Dance provides many opportunities to nurture social–emotional development, as is illustrated in this vignette and the teaching strategies

employed by Mrs. Kovalenko (see the "Research Highlight: Dance" on page 102). The teacher encourages self-regulation by initiating the freeze and allowing Simone to notice that she is no longer on her footprint, and Simone quickly returns to her space. Mrs. Kovalenko then uses a new movement activity to playfully remind everyone to be aware of personal space. The activity can be resumed with children keeping the lesson in mind, and the activity can be extended with children moving through space when they are able to demonstrate the ability to be aware of their movement in relationship to those around them. Warm-up can be performed while seated, with children shaking their hands and feet, stretching arms up, and then hugging the body while twisting (washing machine). Explore vocal sounds along with the movements. In the early stages of introducing movement, this "warm-up" will be adequate as a complete dance activity.

Interactions and Strategies

Establish spatial boundaries. Children tend to cluster together and want to dance in the same space. Teaching children the idea of personal space and general space is important in order to avoid conflicts or injuries. The concept helps children develop self-awareness and self-regulation skills. General space can be designated by defined boundaries created by cones or lines on the floor. Preschool children will need a special lesson and continual reinforcement to learn the concept of personal space, or *bubble.* Initially, focus on teaching personal space with movement in a fixed spot marked by a sticker or tape on the floor. Children should be able to stretch out arms and legs without *popping another dancer's bubble.* Gradually, children will learn to travel in space with other dancers maintaining their bubble. Initially, this is best taught in small groups for short periods of time (i.e., eight to 12 counts of movement). In class, discuss how unused space can be used and remind children that dancers are not to bump into each other. It may be necessary to frequently bring children back to a sitting position and then progress to a standing position and locomotor movements, as the children seem ready to move safely and appropriately throughout the general space. Some children need more reminders than others in learning about personal space, especially mixed-age groups of children.

Plan movement activities appropriate for various developmental stages and skill levels. The preschool foundations (in dance) suggest that children at 48 months of age begin to be aware of their own body and others in space. Their awareness advances so that at around 60 months, children are able to coordinate movement with others when moving in space.[75] For the teacher, this developmental process requires flexibility in planning and developing expectations for children. This flexibility is illustrated in a simple exploratory activity (children role-playing ice-skating). It may fit in with a thematic unit on winter or after reading *A Snowy*

Day by Ezra Jack Keats (see *California Preschool Curriculum Framework, Volume 1,* chapter 4, "Language and Literacy").[76] Children at the earlier developmental stage will be challenged with making sliding body movements in a forward direction while moving in relationship to others. Those at a more mature developmental stage may incorporate more skills in executing a variety of body movements (sliding, turning, jumping) at different speeds and in varying directions in space, while dancing in a clear spatial relationship to other children. To conclude this exhilarating activity, teachers have children role-play snow angels (lying on the floor and flapping their arms and legs) and then lead them into a quiet state of relaxation as they rest on their backs. A gymnasium or other large space is ideal for this activity. Skating movements can also be practiced as children file out to meet their families at the end of the school day.

Encourage variety in children's movement. Children will tend to limit their movement to forward movement performed in one level plane. To support the exploration of spatial relationships, discuss with children: "What moves close to the ground?" "What moves in the air?" "What about in between?" Likely responses will include caterpillars, dogs, and birds. Based on children's responses, begin to encourage them to use dance steps moving in various directions, with different **levels**, and along varying pathways. "Show me what a caterpillar shape looks like." "How does a caterpillar move?" "Does it skip?" "No! It crawls!" "Can it crawl backwards?" "Can you make a caterpillar using a partner?" (The teacher can guide students to line up and sit one behind the other with knees bent and feet flat on the floor. The children hold each other's waists and lean forward and back.[77]) "What happens when a caterpillar changes into a butterfly?" (This lesson can be integrated with the reading of an illustrated book such as Eric Carle's *The Very Hungry Caterpillar.*[78]) (See the *California Preschool Curriculum Framework, Volume 1*, chapter 4.)

Teach rhythm using traditional movement games. A variation on hopscotch can teach the locomotor movement of hopping while children learn rhythm patterns. Clap or drum various rhythms (begin with a steady four-count rhythm) while children perform the hopscotch. As the children gain mastery, longer balances can be used and the children can add arm movements so that the game begins to more closely resemble a dance. This is also a game in which children can self-direct or co-direct the action: The drum is beat by the mover, who synchs movement with the rhythm, or alternately by a second child determining the rhythm for the mover. An adult can assist the child to keep a steady **tempo** and count (i.e., *1, 2, 3* or *1, 2, 3, 4*). A three- to five-year-old is not expected to be able to use percussion devices to sustain a consistent rhythmic tempo; this ability usually appears at around age seven or eight.[79] When children with delays in motor development are included, they may be able to hold the drum, step rather than hop, or simply clap or tap to the rhythm.

Use the "echo" as a helpful rhythm exercise. The echo is a classroom management tool used in many preschool programs. Clap or drum a rhythm and have the children "echo" their response with a clap. Use it during transitions or to recapture children's attention and focus. Challenge children to keep the rhythm and repeat the pattern while clapping, snapping, stomping, or tapping various parts of the body. This exercise develops not only their rhythm, but also their ability to recognize and repeat a pattern.

3.0 Create, Invent, and Express Through Dance

This substrand emphasizes an important element that is inherent in all the substrands. By design, preschool movement programs emphasize process rather than product. Making and performing a dance are often one and the same activity. *This is particularly so for children whose dance is dancing, and dancing is the dance.*[80] The dance vocabulary and skills introduced in the previous strands give children a springboard to use for their personal creative expression in dance. Without this vocabulary the tendency will be for children to overuse the same movement and movement patterns. The teacher's role in this substrand is to provide structure or scaffolding to help children create, invent, and express through dance. Proper structure might be achieved by setting up an environment to support creativity and by providing an architecture or story for movement, as is illustrated in the following vignette.

VIGNETTE

The children perform dance sentences, a technique creating a subject and a predicate through the use of the body and movement. Mr. Martin displays a slow-tempo ("turtle") card, a nonlocomotor movement ("bend") card, and a locomotor movement ("roll)" card. Alejandro voices, "La tortuga rueda de espalda (The turtle rolls on its back)." Alejandro then performs a slow forward bend and then a roll onto his back, holding the shape. Mr. Martin smiles and along with the children gives Alejandro a "round of applause," clapping his hands in a circle. Speaking with the children in Spanish, he asks if anyone has a "wish." Maria shares that she has a pet turtle and that if it is on its back it will kick. During the second performance, the children say the sentence chorally as Alejandro dances. The "turtle" character appears to be more fully developed and the movement more confident, with Alejandro's arms folding overhead as he tucks in his head, followed by frantic kicks of his legs at the end to demonstrate the turtle being stuck on his back.

PLANNING LEARNING OPPORTUNITIES

This short exercise combines language development (English and possibly another language) with learning a movement skill. The teacher makes the improvisational dance a slightly more formalized product, with a beginning and end, by inviting Alejandro to repeat the short sequence. As well, Alejandro is given artistic license to characterize the turtle with his movement and narrate with his home language. Frequent opportunities for acting out concepts can occur during math and language instruction. The children will likely be eager to participate and will, over time, learn how to comment on what they observe (as Maria demonstrates

in this vignette). These movement exercises can help the teacher assess children on a large variety of skills, including vocabulary, listening skills, and math (e.g., counting the number of hops and recognizing shapes in movement, such as the triangle pose). (See the *California Preschool Curriculum Framework, Volume 1,* chapters 4 and 6). A simpler version of the activity described in the vignette is to have pictures of children performing basic movements such as hop, turn, or kick. The teacher or other children can use vocal direction to ask a child to move fast, slow, backwards, and so on.

Interactions and Strategies

Integrate dance with literacy development. Movement in storytelling is an excellent activity for improving comprehension skills, especially for children who are English learners. This activity can be modified for use with many children's stories or poems and may focus on various literary elements (e.g., character, setting, dialogue, imagery, conflict). For example, read aloud *Caps for Sale* by Esphyr Slobodkina.[81] After the reading, lead children through a verbal summary of the story. Choose one part of the story, such as the peddler yelling at the monkey and the monkey responding by mimicking the peddler. Then have children play out that part by using dance. Divide the children into two groups, peddlers and monkeys. Use body movements (e.g., stretch, shake, stomp, and collapse) paired with body parts (e.g., head, arms, feet, and legs) for the peddlers to demonstrate and the monkeys to imitate. For example, the peddlers stomp right foot, stomp left foot, and shake right arm. The monkeys repeat the movement. The teacher initially will need to be an active participant in this activity and may say, "Peddlers, stomp and stomp. Monkeys, can you stomp using your fists? Stomp and turn?" The children switch roles, and the peddlers explore new movements using different body parts. (See the *California Preschool Curriculum Framework, Volume1*, chapter 4, "Language and Literacy.")

Use props. Props can be valuable for movement exploration. Much of Western dance is performed with the lower body, with attention given to legs and feet. In many other traditional dances, such as those of India and Korea, movement is focused in the shoulders, arms, and hands. The use of props can encourage upper-body movement. One example is the holding of a *chang-ko* drum as it is

slung over the shoulder in a Korean drum dance. The use of the *chang-ko* contributed to the unique shoulder movements that are characteristic of traditional Korean dance.[82] Musical instruments, scarves, hula hoops, and other various props can encourage diverse impromptu executions of upper-body movement, such as the drum provided for Korean dancers. For more prop suggestions, see "Suggested Arts Materials" on page 122.

Use play. A game of Stick Together encourages children to be inventive in dance movements and work cooperatively. Music, especially from the children's cultural communities, will challenge children with its diverse rhythms and sounds while children free dance (i.e., improvise movement). As the music stops, call out a command such as, "Back to back" or "Head to head," and children respond with matching partners or as a group. Periodically, call out "Stick together!" Children combine in partners or groups to make inventive shapes.[83] Reinforce creativity by having other groups observe and recreate shapes that are inventive. Games that are too active for the indoor environment can be taught to a small group of children during outdoor play. There should be options for how they can spend their play time. Over time, more children will become interested and join the movement game.

Provide costumes and music to inspire improvisational movement. Adults move differently based on their dress, whether it is shorts and flip-flops or a skirt and high heels. Children are no different. Costumes encourage creativity and expression in movement. They can be used to exemplify the cultural heritage of children (such as a *kanga,* or colorful garment worn in East Africa) and, when combined with music, will begin to take

the form of simple and gradually more complex dances. As well, offering choices in costumes and music representative of the children's cultural communities will encourage children to learn more about their own and others' culture. Children can construct masks from paper templates with adult assistance. Costumes can be assembled from a basic headband with attached materials; for example, pipe cleaners and stiff fabric or cardstock ears may be fashioned to produce, respectively, bumblebee antennas and a cat. Music to accompany these costumed dances could include *The Flight of the Bumblebee* by Nikolai Rimsky-Korsakov, and the clarinet solo of "the cat" from Sergei Prokofiev's *Peter and the Wolf.* An additional idea for costumes is to provide children with fans—and long skirts, if possible—for a flamenco-style dance with guitar accompaniment (as well the accompaniment of clapping and stomping). Complex **choreography** is not needed to have children "make dances." The costume and children's play alone will begin to take the form of a dance. However, with minimal direction, the teacher can gradually encourage children's **improvisation** to become more formalized into a dance with a beginning, middle, and end. This may develop from

the teacher voicing suggestions, such as "Then what did the bumblebee do? How does the bumblebee end her dance?" For additional suggestions on props and costumes, see "Suggested Arts Materials" on page 122.

Use dance to communicate feelings. Provide children with a "feeling word" (e.g., *surprise, anger, sadness, confusion*) and request a shape to express the feeling: *Show me anger in a shape* (not only in facial expression). Then have the children translate the same feeling into a locomotor or nonlocomotor movement. *You are turning and you are confused.* Over time, children will be able to create a short movement phrase to express a feeling or series of feelings. Consider planning an appropriate music selection to accompany each feeling (the library is an excellent source of sound recordings that can accompany dance). This *feeling dance* encourages physical expression of emotion as well as meaning making for children, building their English (and possibly home language) vocabulary. (See the *California Preschool Curriculum Framework, Volume 1*, chapter 3).

Use movement to introduce and reinforce concepts from other domains. Math concepts can be introduced through movement. Clapping, jumping, and tapping can be used to introduce number, quantity, and different patterns. The concept of patterns, for example, can be presented in different formats, including movement and sound. Vocabulary can be enriched through movement as well. The experiencing of *moving over, under, around,* and *through* helps make prepositions come alive. Expressing patterns through different modalities (e.g., kinesthetic, tactile, auditory, and visual) provides different learning modes and helps ensure that pattern experiences are accessible to all children, including those with disabilities or special needs. For resources for working with children with disabilities or other special needs, see appendix D of the *California Preschool Curriculum Framework, Volume 1*. Art, music, and movement provide numerous opportunities for children to *duplicate, extend* and *create* patterns (see the *California Preschool Curriculum Framework, Volume 1,* chapter 6, "Mathematics").

Bringing It All Together

Mr. Soto leads the children in a lively singing and dancing performance of Juanito (Little Johnny).[84] *The children shake and twist their bodies while clapping their hands as they sing. "Juanito cuando baila, baila, baila, baila. Juanito cuando baila, baila con el dedito, con el dedito, ito, ito. Asi baila Juanito." (When little Johnny dances, he dances, dances. When little Johnny dances, he dances with his pinkie, with his pinkie, pinkie, pinkie. That's how little Johnny dances.) In the first verse, they wiggle the pinkie back and forth; in the second, they shake the foot and then wiggle the pinkie. Each time a new verse is sung, a movement is added until the children's bodies are in motion, from head to toe! Even Matthew, who is generally reluctant to dance, picks his knees high up and waves his arms exuberantly. Mr. Soto changes the character of the song to Mateo, and Matthew dances into the center of the circle.*

This final vignette emphasizes that there is no single way to use dance in the early childhood setting and that the key component to using dance activities in the classroom is enthusiasm. The teacher contributed his enthusiasm to Matthew's newfound interest in dancing, and Matthew in turn relished being the center of attention.

Even though this activity resembles play, there is an underlying goal for the children to explore various body movements, while possibly incorporating additional skills, such as rhythm, attack, and levels of movement. The lyrics suggest movement of body parts, and children are given freedom to move. For example, when the verse indicates shoulder movements, a child can shake the shoulders, move them up and down, or alternate moving the right and left shoulder forward and back. In *The Arts and Human Development*, Howard Gardner differentiates play from an aesthetic activity, where the latter involves a goal to achieve.[85]

The strategies, as part of the Dance strand, can help children in preschool settings enjoy dance outside the preschool experience and beyond the preschool years.

Engaging Families

The following strategies may be suggested to families for use at home. They represent the ways a child can share movement learning with family members. By sharing dance, deeper impressions and enjoyment will often be experienced by the participants, much the same as enjoying a special meal with family.

- ✔ Invite parents to the preschool program for a parent–child dance event. It could be for a brief time at an open house or a mini-session in which parents dance with children during the regular preschool day.
- ✔ Families can turn on music at home and move with their children. Encourage families to establish regular dance times during their daily routines at home.
- ✔ A family member can partner with a child in simple acrobatic movements, such as lifting her up and down, directing her to walk up mom's or dad's legs, or suspending a child in

the "airplane," an action in which the adult is on the ground with the child's belly balanced on his or her feet. This activity is especially pleasurable when narrated with simple observations of what the child is doing along with occasional sound effects.

- ✔ Tap or clap to the rhythm of songs and encourage children to do the same.
- ✔ Simple dances can be incorporated into daily routines: A hugging dance can send a child off to school; a swinging dance may be performed walking down the sidewalk; and a rocking dance while waiting in the doctor's office makes the time fly. Child and parent can alternate roles (i.e., the child rocks the parent, and the parent then rocks the child).
- ✔ Take advantage of community dance offerings. Local dance groups, and often professional, high-caliber dance companies, offer free summer performances. Community centers frequently have movement programs such as "Mommy and Me Yoga" or a variety of children's dance classes.
- ✔ Provide materials and environments for siblings to play movement games. These might include a jump rope, hula hoops, a Twister mat, or play space for relay games or circle games. Used car tires or simple chalk drawings can map out an obstacle course for children to hop, crawl, and climb through.
- ✔ Families can share their dance traditions with the school. They can participate in a sharing time in the classroom, send music or props to school; or pass down dance or movement games to their children who can then play them with friends.

Questions for Reflection

1. What environments and routines have you changed or could you change to support dance activities in your preschool program?
2. How can you maximize children's enthusiasm for learning about movement?
3. How do you work with children with special needs so they are able to participate successfully in movement activities?
4. In what ways have you or can you represent a variety of cultures by teaching dance?
5. How is dance integrated into your curriculum to support learning in other areas?
6. What instructional strategies do you use to make dance a challenging and rewarding aesthetic experience for children?

Concluding Thoughts

The arts take on different meanings and expressions for individuals and communities. Therefore, this chapter recognizes that the arts will materialize and thrive in ways individual to each child and to the early childhood setting. This curriculum framework serves as a starting point and reference for teachers and child care providers to shape how the arts can be orchestrated or simply unleashed, as well as integrated, with other early learning experiences. Each arts strand (visual art, music, drama, and dance) is given attention; suggested teaching strategies, interactions, and environmental supports are illustrated with vignettes. However, within each strand there are numerous opportunities to weave two or more of the four art forms into the learning environment. More importantly, there are opportunities to integrate the arts in the other domains such as physical development, science, mathematics, and language and literacy.

Articulated in the Guiding Principles and embedded in the subsequent strands is a well-founded belief that the arts support children's learning and development. This belief applies to the growth of artistic skills and to developments less apparent in connection to learning in the arts. These developments include progress in the social–emotional substrands of cooperation and self-regulation, which grow as children negotiate with peers about their roles in making art and in artistic play and as children reflect on their preschool experiences more generally.

As art becomes an integral component of the preschooler's day, the teacher will observe the children's growing enthusiasm for art as well as demonstrations of natural artistic capabilities. The collaborative, expressive, and exploratory qualities of the arts encourage families and communities to share in and contribute to the child's learning. The many strategies, examples, illustrations of developmental patterns, and insights of researchers offered in this chapter will help the teacher capitalize on what adults and children together bring to the learning process. The benefits of shaping clay, drawing, imagining, pretending, making music, and moving the body support the development of the whole child. Children with rich arts involvement in preschool experiences become adults full of possibility.

Finally, it is essential to keep in mind that teachers serve diverse groups of children. The interactions between the home and school are mutual and mutually important. Diversity is an essential quality of human existence, and the visual and performing arts provide excellent opportunities to learn, understand, and express diversity.

Map of the Foundations

Domain → **Visual and Performing Arts**

Strand → **Music**

Substrand → **1.0 Notice, Respond, and Engage***

Age

At around 48 months of age	*At around 60 months of age*
Foundation → **1.1** Sustain attention and begin to reflect verbally about music; demonstrate familiarity with words that describe music.	**1.1** Verbally reflect on music and describe music by using an expanded vocabulary.
Examples → **Examples**	**Examples**
• Selects the book *Ben's Trumpet* and says, "I can play the horn just like they do at the Zigzag Club." • Picks up a music triangle and communicates, "I can make it ring three times." • Communicates, "I'm playing the drum." • Asks for the pair of maracas during singing and dance time.†	• Communicates, "That sounds just like "Happy Birthday to You" when teacher introduces the song "Good Morning to You." • Imitates tooting a horn or bowing a violin. • Demonstrates or says, "I'm the conductor." • Communicates, "I know that song; that's the one my grandma sings to me," after hearing the first few seconds of a compact disc (CD).

Includes notes for children with disabilities →

*Children who are deaf or hard of hearing will not notice, respond, or engage with music in the same way as peers who hear music. They may respond to vibrations, certain tones, or volume.

†Maracas are heard in many forms of Latin music and are also used in pop and classical music. They are characteristic of the music of Cuba, Puerto Rico, Colombia, Venezuela, Mexico, Jamaica, and Brazil.

Teacher Resources

Visual Art

Art Junction (http://www.artjunction.org/index.php)
An online collaborative space for sharing art experiences in the classroom. Includes a section called "art sparkers" that provides lesson ideas for encouraging creativity in children.

Cambodian Contemporary Arts
Pictures, artist profiles, and examples of crafts by Cambodian artists.

¡Del Corazón! (http://americanart.si.edu/education/corazon/index.cfm)
This Web site features a collection of resources, materials, and examples of art by Latino artists living in the United States.

Federal Resources for Educational Excellence (http://free.ed.gov/subjects.cfm?subject_id=1)
This Web site also offers free downloadable images of famous works of art.

Metropolitan Museum of Art, Publications for Educators (http://www.metmuseum.org/explore/classroom.asp)
This Web site features printable files (PDFs) covering art from many cultures and areas of the world. The files were designed for classroom use.

NGA Classroom (http://www.nga.gov/education/classroom/)
This Web site is the National Gallery of Art's virtual classroom. A good source for classic paintings, it also includes a lesson-planning tool for cross-curricular use of visual art. Although most lessons are tailored for older children, this is a good resource for ideas, inspiration, and printable images of paintings by famous artists.

The Story of the Masks (http://www.umista.org/masks_story/en/ht/index.html)
This Web site is a virtual museum created to teach children about the culture and form behind the masks of the native people from the Northwest Coast (the state of Washington, British Columbia, and Alaska).

Virtual Museum of Contemporary African Art (http://www.vmcaa.nl/vm/)
This Web site features virtual projects, displays, and links to other sites covering contemporary African art.

Music

The following Web sites provide interactive musical environments for children of various ages, and information about music for adults. Review and select activities based on appropriateness for the age of the child.

CreatingMusic (http://www.creatingmusic.com/)
This is an online creative music environment for children of all ages. Children can compose music, listen to musical performances, and play with music games and puzzles. The "Music Sketch" pad is especially fun for three- to five-year-olds.

Dallas Symphony Orchestra Kids (http://www.dsokids.com/)
This interactive site provides games and exploratory activities related to the orchestra. The "Picture Paint" activity is fun for five-year-olds.

eHow.com, "How to Make a Homemade Rain Stick" (http://www.ehow.com/how_2080854_make-homemade-rain-stick.html)
This Web link provides instructions for making a rain stick with a mailing tube, tape, sand, lentils, dried beans, popcorn kernels, and other simple materials.

New York Philharmonic Kids (http://www.nyphilkids.org/) and KUSC Creative Kids Central (http://www.classicalkusc.org/kids/)
These sites provide excellent musical information for teachers. The interactive sections are appropriate for school-aged children.

San Francisco Symphony Kids (http://www.sfskids.org/templates/splash.asp)
This interactive site can be used effectively to introduce children to orchestra instruments. The site has good sound clips and pictures of instruments, but it is text-intensive, so guided instruction is necessary.

Sesame Street (http://www.sesamestreet.org/home)
The game modules at this Web site include interactive experiences with children's songs, such as "Twinkle, Twinkle, Little Star," "Wheels on the Bus," and many other favorites. The link to the "Twinkle, Twinkle, Little Star" keyboard game is http://www.sesamestreet.org/game_player/-/pgpv/gameplayer/0/965910b5-486c-11dd-bf7b-df62be721a24 (accessed May 27, 2011).

The following Web sites provide information on age-appropriate musical instruments and recordings.

Lynn Kleiner's Music Rhapsody (http://www.musicrhapsody.com/home.php)
Musical play kits, recordings, and several preschool music curriculum books.

Music for Little People (http://www.music-forlittlepeople.com/)
This Web site offers recordings and instruments, including world music selections.

Peripole-Bergerault, Inc. (http://www.peripolebergerault.com/)
This company was founded by music educators and produces many different types of musical instruments.

Rhythm Band Instruments (http://www.rhythmband.com/)
This company offers a wide range of musical instruments and resources, including software, publications, and video clips that address music activities for early childhood settings.

West Music (http://www.westmusic.com/)
Instruments, recordings, musical props, method books, and children's music picture books.

The following organizations provide print resources for program building, policy development, and pedagogy in music education.

National Association for Music Education (http://www.menc.org/)

National Association for the Education of Young Children (NAEYC) (http://www.naeyc.org/)
Among the resources offered by the NAEYC is Music in Our Lives: The Early Years, by Dorothy McDonald. The publication is available through the NAEYC Web site.

Zero to Three (http://www.zerotothree.org/)
Getting in Tune: The Powerful Influence of Music on Young Children's Development, is a brochure that discusses how exposure to music enhances children's social–emotional development. The brochure is available through the Zero to Three Web site.

Drama

Benson, Tammy R. 2004. *The Importance of Dramatic Play.* Discussion on the importance of dramatic play and how to incorporate it in the classroom. http://www.pbs.org/teachers/earlychildhood/articles/dramaticplay.html (accessed February 9, 2010).

Choo, Carolyn Marie. 2009. *Humpty Dumpty Preschool Lesson Plans: Drama Extensions from Nursery Rhymes in the Early Years.* Provides a list and description of drama activities related to the nursery rhyme Humpty Dumpty, which could be used by teachers as a template for creating drama lessons based on other rhymes or stories.

Davis, Jessica. *Drama in the ESL Classroom.* Web site where preschool teachers can find ideas about how to use drama with children who are English learners. The "Process Drama" tab of the site provides information and resources that are most relevant for young children. http://esldrama.weebly.com/index.html (accessed February 9, 2010).

Faull, Jan. "Brain Play: Why Preschoolers Need to Pretend." An article that discusses the benefits of role play and offers suggestions for enhancing role play. Useful for families as well. http://familyfun.go.com/crafts/crafts-by-type/educational-craft-activities/learning-projects/brain-play-701255/ (accessed February 9, 2010).

Haliburton, Amy, and Sara Gable. 2009. *Preschool Children and Pretend Play.* Describes the benefits associated with dramatic play and how to create a supportive environment for dramatic play. http://missourifamilies.org/features/childcarearticles/childcare7.htm (accessed February 9, 2010).

Pearson Education, Inc. M*usic, Dance, and Drama for Preschoolers.* Provides suggestions for drama, music, and dance activities.

Especially good for in-home sociodramatic play. New York: Family Education Network. http://fun.familyeducation.com/music/dance/37373.html (accessed February 9, 2010).

Dance

Arts for Learning (http://www.arts4learning.org/default.aspx)
Arts for Learning is a searchable Web library of materials related to arts education.

AXIS Dance Company
AXIS Dance Company is a well-known, innovative ensemble of performers based in Oakland, California. The company includes performers with and without disabilities.

Berkeley Public Library (http://www.berkeleypubliclibrary.org/)
The library's Web site offers numerous resources on art, music, and the performing arts.

California Dance Education Association (http://www.cdeadance.org/index.html)
California Dance Education Association (CDEA) is a nonprofit professional organization dedicated to the artistic and educational advancement of dance as a discrete art form. The organization is the representative body for linking the interests of dance educators, dance artists, dance-related professionals, and students and serves as a liaison to and representative of local, regional, state, and national arts organizations.

California Institute for Dance Learning (http://www.ca-institute-dance-learning.org/)
The California Institute for Dance Learning (CIDL) is a professional development institute with the mission of "bringing all children to dance." CIDL provides comprehensive education and support for dance teachers and is a conduit for action in the creation, expansion, and improvement of high-quality, standards-based dance learning for all children.

Dalcroze Society of America (http://www.dalcrozeusa.org/index.html)
The Dalcroze method incorporates rhythmic movement, aural training, and improvisation.

Gayle's Preschool Rainbow (http://www.preschoolrainbow.org/book-themes.htm)
This Web site provides a list of early childhood and preschool education picture books recommended for both classroom teachers and parents. Books are listed according to early childhood education themes and include both classic and new titles for young children.

Kimbo Educational (http://www.kimboed.com/index.aspx)
Kimbo Educational offers "music and movement CDs and DVDs for children."

Los Angeles County Arts Commission (http://www.lacountyarts.org/)
The Commission's Arts for All program was designed to help school districts implement arts education and restore dance, music, theatre, and visual arts to the core of K–12 education. This Web site provides resources for educators, community stakeholders, and policymakers.

Los Angeles Public Library (http://www.lapl.org/index.html)
The Los Angeles Public Library has an "Art, Music, & Dance" Web page with links to local and national art resources. Visit the site at http://www.lapl.org/resources/inet/art.html (accessed February 9, 2010).

National Dance Association (http://www.aahperd.org/nda/index.cfm)
The goal of the National Dance Association is to promote quality dance programs in the areas of health, physical education, recreation, and dance.

National Dance Education Organization (http://www.ndeo.org/)
This organization provides professional development, leadership, support services, research, and advocacy for artists, educators, and administrators in dance education, across all genres of dance.

Dr. Robert F. Smith: "Celebrating Cultural Diversity Through Children's Literature" Annotated bibliographies of multicultural children's books that are appropriate for kindergarten through grade six. Cultural groups currently listed include African Americans, Chinese Americans, Latino/Hispanic Americans, Japanese Americans, Jewish Americans, Native Americans, and Korean Americans.

Suggested Arts Materials

Strand	Found or Recycled Objects	Basic	Enhanced	Natural Environment	Adaptive Material
Visual Art	Old magazines for cutting and assemblage	Tempera paints, construction paper, chunky crayons, tray watercolors	Tube watercolors and palette; watercolor paper	Sticks, rocks, and pinecones for sculpture; clay and natural materials for pressing	Thicker handles on some materials; easel that can be adjusted to an appropriate height
Music	Pots, pans, metal or plastic cans, spoons, chopstick-beaters with cork stoppers for rhythm Glass jars filled with different levels of water for a water xylophone Pieces of 12" dowel for rhythm sticks; shakers made of plastic eggs filled with different materials	Rhythm sets with shakers and simple drums Singable books; glove puppets for nursery-rhyme songs; song maps made of paper or fabric; selection of CDs, CD player, and headset for personal listening	Single-note resonator bells; child-sized xylophones; multiple-sized hand drums; ethnic instruments; child-sized guitar or ukulele; small electronic keyboard; recorder/flute; music software; music videos; songbooks	Rhythm blocks made of small tree limbs; homemade wooden or stone xylophones suspended on a garden hose; wind chimes made of natural objects	Thicker handles on some materials; instruments in a fixed position (such as a drum on a stand) For children with reduced hearing ability, instruments that resonate and vibrate allow for touching or holding.
Drama	Scarves, sashes, and fabric remnants varying in size, color, design, and texture for a costume area; include strips of furry fabric to be used as animal tails. Wooden spoons, paint sticks, paper towel and wrapping paper tubes, yarn, and boxes can work as nonrepresentational props where children create meaning.	Large and small blocks; stuffed animals; dolls; wooden or plastic fruits and vegetables	Puppets; textual props such as menus and signs; large pieces of blue, green, yellow, brown, and floral fabric to depict rivers, grass, dirt (for "planting" vegetables), and flower gardens; headbands with various types of animal ears sewn on	Wood, tree cookies, and other materials for building; pinecones, feathers, smooth stones, and pebbles	Consider props that are easy to use and handle (e.g., oversized objects and items without many complicated pieces). Adapt clothing and fabric by removing buttons, enlarging openings, and so on for ease of wearing.
Dance	Boxes, wheels, chairs, hula hoops, balloons, umbrellas, scarves, and other found objects can be used for choreographic variety. Costumes can be assembled from fabrics or donated by families or the community.	Open rug space; outdoor environment with defined dance space	Piano, drums, maracas, tambourines, claves, triangles, cymbals, woodblocks, or music system A local dance troupe may donate children's costumes that are no longer used in productions.	Palm leaves, feathers, sand, water, and sticks can be used in movement activities.	If a child has a prosthesis, he or she can decide whether to dance with it on or off. If a child uses a wheelchair, props can be useful to extend what the body can do; a few possibilities are balloons tied to a stick, crepe paper streamers, and scarves.

Endnotes

1. H. Broudy, *Enlightened Cherishing: An Essay on Aesthetic Education.* Urbana, IL: University of Illinois Press, 1972.
2. B. Andress, *Music for Young Children.* Fort Worth, TX: Harcourt Brace College Publishers, 1998, 15-16.

Visual Art

3. H. Gardner, *Artful Scribbles: The Significance of Children's Drawings.* New York: Basic Books, 1980.
4. H. Gardner, *Art, Mind, and Brain: A Cognitive Approach to Creativity.* New York: Basic Books, 1982, 60.
5. H. Gardner, *Artful Scribbles: The Significance of Children's Drawings.* New York: Basic Books, 1980, 38.
6. Ibid., 53.
7. J. H. Davis, 2005, *Framing Education as Art: The Octopus Has a Good Day.* New York: Teachers College Press, 70.
8. As cited in L. Camhi, "When Picasso and Klee Were Very Young: The Art of Childhood," *New York Times,* June 18, 2006. http://www.nytimes.com/2006/06/18/arts/design/18camhi.html?pagewanted=1&_r=1 (accessed September 10, 2009).

Music

9. B. Andress, *Music for Young Children.* New York: Harcourt Brace, 1998, 40.
10. M. L. Reilly and L. F. Olson, *It's Time for Music: Songs and Lesson Outlines for Early Childhood Music* (Van Nuys, CA: Alfred Publishing, 1985).
11. Music videos, such as *Carnival of the Animals, Peter and the Wolf, and The Nutcracker,* also show the conductor at work in the performance. A variety of these videos can be reviewed at http://www.westmusic.com.
12. Many musical instruments are built to accommodate special needs; the teacher can also make adaptations. See http://www.adaysworkmusiceducation.com/ for instrument holders, wheelchair trays, adaptive mallets and beaters, pick assists, and other grasping aids. Also see Remo's circular drum tables that accommodate wheelchairs. http://www.westmusic.com/ProductDetails.aspx?prodid=255987.
13. eHow, Inc, *eHow How to Do Just About Everything: How to Make a Homemade Rain Stick.* 1999-2010. http://www.ehow.com/how_2080854_make-homemade-rain-stick.html (accessed February 9, 2010).
14. Lynn Kleiner, "Hello Song," in *Kids Make Music! Twos & Threes!: For Parents and Their Children,* compact disc, New York: Warner Brothers Music, 2000.
15. A rendition of this song activity can be found in V. Luthey, P. Miller, and J. Ray, *Language Through Music.* La Canada, CA: LTM Music, Inc., 1998.
16. For a recording of tarantella music, see http://www.emusic.com/album/Various-Artists-Azzurra-Music-TARANTELLA-MP3-Download/10862345.html.
17. For a recording of "I Am a Pizza," see C. Diamond, "I Am a Pizza," compact disc, Vancouver, BC: Hug Bug Records, 1985.
18. For a recording of "Itsy Bitsy Spider," see M. Leeman, B. Bos, and T. Hunter, "Itsy Bitsy Spider," in "We've Been Waiting for You," compact disc, Turn the Page Press, 1999.
19. G. D. Weiss, and B. Thiele, *What a Wonderful World.* Illustrated by A. Bryan. New York: Atheneum Books for Young Readers, 1995.
20. For a current review of research on arts and cognition, see *Learning, Arts, and the Brain: The Dana Consortium Report on Arts and Cognition.* Organized by M. Gazzaniga. Edited by C. Asbury and B. Rich. 2008. http://www.dana.org/news/publications/publication.aspx?id=10760 (accessed March 16, 2010).
21. J. R. Binder and others, "Function of the Left Planum Temporale in Auditory and Linguistic Processing," *Brain: Journal of Neurology* 119, no. 4 (August 1996): 1239–47.

22. *Learning, Arts, and the Brain: The Dana Consortium Report on Arts and Cognition.* Organized by M. Gazzaniga. Edited by C. Asbury and B. Rich. New York: Dana Press, 2008, iv.
23. Shy or reluctant singers sometimes remain silent in a large group setting but are willing to sing in a smaller group setting during free choice time. It is important to provide both types of settings.
24. National Institute of Child Health and Human Development, *Report of the National Reading Panel: Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction.* NIH Publication No. 00-4769. Washington, DC: U.S. Government Printing Office, 2000.
25. For an extended discussion of research on children's singing capabilities, see J. Kim, "Children's Pitch Matching, Vocal Range, and Developmentally Appropriate Practice," *Journal of Research in Childhood Education* 14, no. 2 (March 2000): 152–60.
26. Regionally and culturally, there are different names for farms and different sounds for animals. See M. R. MacDonald, *The Farmyard Jamboree.* Cambridge, MA: Barefoot Books, 2005 or M. R. MacDonald, *Algarabía en la Granja.* Cambridge, MA: Barefoot Books, 2009 for variation in English/Spanish.
27. Peripole Music Company manufactures early childhood music exploration kits. See http://www.peripolebergerault.com/earlyChildhood.asp.
28. West Music at http://www.westmusic.com is a supplier of adaptive musical instruments and music therapy products for early childhood.
29. For ideas on song and music mapping, see P. D. Bennett, *RhymePlay: Playing with Children and Mother Goose.* Van Nuys, CA: Alfred Publishing, 2010.
30. G. Andreae, and G. Parker-Rees, *Giraffes Can't Dance.* New York: Scholastic, Inc, 2001.
31. Information on Mary Helen Richards' approach to music education can be found in P. Bennett, "From Hungary to America: The Evolution of Education Through Music," *Music Educators Journal* 74, no. 1 (September 1987): 36–45, 60.
32. E. V. Clark, *First Language Acquisition.* Cambridge, UK: Cambridge University Press, 2003.
33. M. H. Richards, *Aesthetic Foundations for Thinking: Part I, Action.* Portola Valley, CA: The Richards Institute of Education and Research, 1977.
34. A. Gopnik, A. N. Meltzoff, and P. K. Kuhl, *The Scientist in the Crib: What Early Learning Tells Us About the Mind.* New York: HarperCollins, 2001.
35. "Books with a Beat!" Session presented at the University of Utah Arts in Education Outreach: Music and Literacy Conference, Salt Lake City, Utah, September 2009. R. Campbell, *"Dear Zoo."* London: Campbell Books Ltd, 2007. In this interactive book the zoo keeps sending the wrong animals. The eight animals can be represented by classroom instruments. Use a big drum for the elephant, a slide whistle for the giraffe, a bass xylophone for the lion, finger cymbals for the camel, maracas for the snake, bongos, for the monkey, a guiro for the frog, and a tambourine for the puppy. Children enjoy adding movement for each animal.
36. R. Kalan, *Jump Frog, Jump!* New York: Greenwillow Books/HarperCollins, 1981.
37. Raffi, *Shake My Sillies Out.* New York: Troubadour Learning/Crown Publishers, 1987.
38. Giant staff paper and music stamps are available at http://www.westmusic.com.
39. C. Diamond, 1985, "Looking for Dracula," English Song Card (11" X 17") *10 Carrot Diamond.* Rancho Palos Verdes, CA: Bubble Rock.
40. See E. Bisgaard, and S. Gulle, *Musicbook 0: Pulse, Pitch, Rhythm Form, Dynamics* (Wilhelm Hansen edition). Edited by T. Aaron. St. Louis, MO: Magnamusic, 1976; J. M. Feierabend, *First Steps in Music for Preschool and Beyond: The Curriculum.* Chicago: GIA Publications, 2006; and K. Forrai, *Music in Preschool.* Translated and adapted by J. Sinor. Budapest: Corvina Press, 1990.

41. G. Keetman, Elementaria: *First Acquaintance with Orff-Schulwerk* (Mainz, Germany: Schott, 1983). http://www.aosa.org.
42. "Slippery Fish" by Charlotte Diamond, or the chant: "Five Little Fishies" by John Feierabend. C. Diamond, "Octopus," in 10 Carrot Diamond, compact disc, Vancouver, BC: Hug Bug Records, 1985. J. M. Feierabend, "Five Little Fishes Swimming" in *The Book of Fingerplays and Action Songs: Let's Pretend* (Chicago: GIA Publications, 2003).
43. National Association for Music Education, *Start the Music Strategies.* Foreword and Introduction. 2000. http://www.menc.org/resources/view/opportunity-to-learn-standards-for-music-instruction-grades-prek-12 (accessed February 23. 2010).
44. National Association for Music Education, *Start the Music: A Report from the Early Childhood Music Summit.* 2000. http://www.menc.org/resources/view/start-the-music-a-report-from-the-early-childhood-summit (accessed February 23. 2010).
45. National Association for Music Education, *Start the Music Strategies.* Foreword and Introduction. 2000. http://www.menc.org/resources/view/start-the-music-strategies-foreword-and-introduction (accessed February 23. 2010).
46. *Opportunity-To-Learn Standards for Music Instruction.* Music Educators National Conference. 1994. http://www.menc.org/resources/view/opportunity-to-learn-standards-for-music-instruction-grades-prek-12 (accessed February 23, 2010).

Drama

47. P. Monighan-Nourot, B. Scales, and J. L. Van Hoorn, *Looking at Children's Play: A Bridge Between Theory and Practice* (New York: Teachers College Press, 1987), 78.
48. A. Podlozny, "Strengthening Verbal Skills Through the Use of Classroom Drama: A Clear Link," *Journal of Aesthetic Education* 34, nos. 3–4 (2000): 239–75.
49. "Language and Literacy," in *California Preschool Curriculum Framework, Volume 1* (Sacramento: California Department of Education, 2010), 119.
50. L. Hendy and L. Toon, *Supporting Drama and Imaginative Play in the Early Years* (Buckingham, UK: Open University Press, 2001), 14.
51. P. Griffing, "Encouraging Dramatic Play in Early Childhood," *Young Children* 38, no. 4 (1983) 14.
52. S. Smilansky, *The Effects of Sociodramatic Play on Disadvantaged Preschool Children* (New York: Wiley, 1968).
53. L. Hendy, and L. Toon, *Supporting Drama and Imaginative Play in the Early Years* (Buckingham, UK: Open University Press, 2001), 15.
54. A. Podlozny, "Strengthening Verbal Skills Through the Use of Classroom Drama: A Clear Link," *Journal of Aesthetic Education* 34, nos. 3-4 (2000): 239–76.
55. R. S. Fink, "Role of Imaginative Play in Cognitive Development," *Psychological Reports* 39 (1976): 895–906. As summarized in *Critical Links: Learning in the Arts and Student Academic and Social Development.* Edited by R. Deasy. Washington, DC: Arts Education Partnership, 2002.
56. L. Hendy and L. Toon, *Supporting Drama and Imaginative Play in the Early Years* (Buckingham, UK: Open University Press, 2001).
57. Ibid., 34.
58. "Social–Emotional Development," in *California Preschool Curriculum Framework Volume 1* (Sacramento: California Department of Education, 2010), 74.

Dance

59. *Standards for Learning and Teaching Dance in the Arts: Ages 5-18: Standards: An Overview* (Bethesda, MD: National Dance Education Organization, 2005).
60. S. W. Stinson, *Dance for Young Children: Finding the Magic in Movement* (Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance, 1988), 19.
61. L. Yovanka and A. Winsler, "The Effects of a Creative Dance and Movement Program on the Social Competence of Head Start Preschoolers, *Social Development* 15, no. 3 (2006): 501–19.
62. A. Damasio, *The Feeling of What Happens: Body and Emotion in the Making of*

Consciousness (New York: Harcourt Brace, 1999), 51–53.
63. R. McCall and D. Craft, "Preschool Movement Programs: Designing Developmentally Appropriate, Inclusive Curricula and Games" (paper presented at the annual meeting of the American Alliance for Health, Physical Education, Recreation and Dance, Orlando, Florida, March 2000), 1.
64. B. Spodek, *Handbook of Research in Early Childhood Education* (New York: The Free Press, 1982), 91.
65. A. Johnson, *Do Like Kyla* (New York: Orchard Books, 1990).
66. H. P. Wang, "A New Approach to Teaching Chinese Dance and Customs to Five to Ten Year Old Chinese-American Students" (master's thesis, University of California, Los Angeles, 2001), 55.
67. M. Davies, *Movement and Dance in Early Childhood* (London: Paul Chapman Publishing, 2003), 101.
68. Putumayo World Music, *African Playground,* compact disc, New York: Putumayo World Music, 2003. http://www.putumayo.com/en/catalog_item.php?album_id=4 (accessed April 1, 2010).
69. R. Pica, *Experiences in Movement with Music, Activities, and Theory* (New York: Delmar Publishers, 1995), 326.
70. J. Kenbrovin and J. W. Kellette, *I'm Forever Blowing Bubbles* (New York/Detroit, MI: Jerome H. Rernick and Company, 1919).
71. S. W. Stinson, *Dance for Young Children: Finding the Magic in Movement* (Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance, 1988), 15.
72. M. Joyce, *First Steps in Teaching Creative Dance to Children,* 3rd ed. (Mountain View, CA: Mayfield Publishing Company, 1994), 29–39.
73. K. A. Kaufmann, *Inclusive Creative Movement and Dance* (Champaign, IL: Human Kinetics, 2006).
74. "Social–Emotional Development," in *California Preschool Curriculum Framework Volume 1* (Sacramento, CA: California Department of Education, 2010), 45.
75. *California Preschool Learning Foundations, Volume 2.* Sacramento: California Department of Education (in press).
76. E. J. Keats, *A Snowy Day* (New York: The Penguin Group, 1962).
77. Movement idea is developed by J. Kirsch, "Creativity in the Classroom Dance Workshop," *Annenberg Professional Development Program,* Spring 2010.
78. E. Carle, *The Very Hungry Caterpillar* (New York: The Penguin Group, 1986).
79. M. Davies, *Movement and Dance in Early Childhood* (London, UK: Paul Chapman Publishing, 2003).
80. Ibid., 158.
81. E. Slobodkina, *Caps for Sale: A Tale of a Peddler, Some Monkeys, and Their Monkey Business* (New York: Scholastic Book Services, 1966).
82. *Korean Dance and Music* (Seoul: Ministry of Public Information, Republic of Korea, 1968), 17.
83. Stick Together is a play dance authored by: M. Joyce, *First Steps in Teaching Creative Dance to Children,* 3rd ed. (Mountain View, CA: Mayfield Publishing Company, 1994).
84. J. Orozco, "Juanito" in *Diez Deditos. Ten Little Fingers and Other Play Rhymes and Action Songs from Latin America* (New York: Penguin Putnam Books, 2002).
85. H. Gardner, *The Arts and Human Development* (New York: Basic Books).

Bibliography

Visual Art References

Althouse, R.; Johnson, M.; and Mitchell, S. *The Colors of Learning: Integrating the Visual Arts into the Early Childhood Curriculum.* New York: Teachers College Press, 2002.

Camhi, L. "When Picasso and Klee Were Very Young: The Art of Childhood." New York Times, June 18, 2006. http://www.nytimes.com/2006/06/18/arts/design/18camhi.html?pagewanted=1&_r=1 (accessed September 10, 2009).

Carle, E. *Artist to Artist: 23 Major Illustrators Talk to Children About Their Art.* New York: Philomel, 2007.

Davis, J. H. *Framing Education as Art: The Octopus Has a Good Day.* New York: Teachers College Press, 2005.

Fineberg, J. *The Innocent Eye: Children's Art and the Modern Artist.* Princeton, NJ: Princeton University Press, 1997.

Gardner, H. *Art, Mind, and Brain: A Cognitive Approach to Creativity.* New York: Basic Books, 1982.

Gardner, H. *Artful Scribbles: The Significance of Children's Drawings.* New York: Basic Books, 1980.

Golomb, C. *Young Children's Sculpture and Drawing: A Study in Representational Development.* Boston: Harvard University Press, 1974.

Kolbe, U. *It's Not a Bird Yet: The Drama of Drawing.* New York: Peppinot Press, 2005.

Pelo, A. *The Language of Art: Reggio-Inspired Studio Practices in Early Childhood Settings.* New York: Redleaf Press, 2007.

Schirrmacher, R., and J. Englebright-Fox. *Art and Creative Development for Young Children.* Boston: Wadsworth Publishing, 2008.

Wright, S. *The Arts, Young Children, and Learning.* New York: Allyn and Bacon, 2002.

Music References

Andreae, G., and G. Parker-Rees. *Giraffes Can't Dance.* New York: Scholastic, Inc., 2001.

Andress, B. *Music for Young Children.* Fort Worth, TX: Harcourt Brace College Publishers, 1998.

Bennett, P. "From Hungary to America: The Evolution of Education Through Music," *Music Educators Journal* 74, no. 1 (1987): 36–45, 60.

Bennett, P. D. *RhymePlay: Playing with Children and Mother Goose.* Van Nuys, CA: Alfred Publishing, 2010.

Binder, J. R., and others. "Function of the Left Planum Temporale in Auditory and Linguistic Processing," *Brain* 119, no. 4 (1996): 1239–47.

Bisgaard, E., and S. Gulle. *Musicbook 0: Pulse, Pitch, Rhythm Form, Dynamics* (Wilhelm Hansen edition). Edited by T. Aaron. St. Louis, MO: Magnamusic, 1976.

Broudy, H. S. *Enlightened Cherishing: An Essay on Aesthetic Education.* Urbana, IL: University of Illinois Press, 1972.

Campbell, R. *Dear Zoo.* London: Campbell Books Ltd., 2007.

Clark, E. V. *First Language Acquisition.* Cambridge, UK: Cambridge University Press, 2003.

Designing Music Environments for Early Childhood. Compiled by S. H. Kenney, and D. Persellin. Reston, VA: National Association for Music Education, 2000.

Feierabend, J. M. *First Steps in Music for Preschool and Beyond: The Curriculum.* Chicago: GIA Publications, 2006.

Forrai, K. *Music in Preschool.* Translated and adapted by Jean Sinor. Budapest, Hungary: Corvina Press, 1990.

Gopnik, A.; A. N. Meltzoff; and P. K. Kuhl. *The Scientist in the Crib: What Early Learning Tells Us About the Mind.* New York: HarperCollins, 2001.

Gordon, E. E. *A Music Learning Theory for Newborn and Young Children.* Chicago: GIA Publications, 1990.

Kalan, R. *Jump Frog, Jump!* New York: Greenwillow Books/HarperCollins, 1981.

Keetman, G. *Elementaria: First Acquaintance with Orff-Schulwerk.* Mainz, Germany: Schott, 1983.

Kim, J. "Children's Pitch Matching, Vocal Range, and Developmentally Appropriate Practice," *Journal of Research in Childhood Education* 14, no. 1 (2000): 152–60.

Kleiner, L. *Kids Make Music! Twos & Threes!: For Parents and Their Children.* Van Nuys, CA: Alfred Publishing, 2000.

Learning, Arts, and the Brain: The Dana Consortium Report on Arts and Cognition. Edited by C. Asbury, and B. Rich. New York: Dana Press, 2008.

Lithgow, J. *Carnival of the Animals.* New York: Simon & Schuster, 2004.

Luthey, V.; P. Miller; and J. Ray. *Language Through Music.* La Cañada, CA: LTM Music, Inc., 1998.

MacDonald, M. R. *The Farmyard Jamboree.* Cambridge, MA: Barefoot Books, 2005.

MacDonald, M. R. *Algarabía en la Granja* (Spanish edition). Cambridge, MA: Barefoot Books, 2009.

Music Educators National Conference. 1994. *Opportunity-To-Learn Standards for Music Instruction.* http://www.menc.org/resources/view/opportunity-to-learn-standards-for-music-instruction-grades-prek-12 (accessed February 23. 2010).

National Association for Music Education (MENC); National Association for the Education of Young Children; and U. S. Department of Education. 2000. *Start the Music: A Report from the Early Childhood Music Summit.* http://www.menc.org/resources/view/start-the-music-a-report-from-the-early-childhood-summit (accessed February 23. 2010).

National Reading Panel. 2000. *Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction—Summary Report of the National Reading Panel.* http://www.nationalreadingpanel.org/Publications/summary.htm (accessed November 21, 2009).

Raffi. *Shake My Sillies Out.* New York: Troubadour Learning/Crown Publishers, 1987.

Reilly, M. L., and L. F. Olson. *It's Time for Music: Songs and Lesson Outlines for Early Childhood Music.* Van Nuys, CA: Alfred Publishing, 1985.

Richards, M. H. *Aesthetic Foundations for Thinking: Part 2, Reflection.* Portola Valley, CA: Richards Institute of Education and Research, 1978.

Weiss, G. D., and B. Thiele. *What a Wonderful World.* New York: Atheneum Books, 1995.

Music Discography

Armstrong, L. "What a Wonderful World," in *Chicken Soup for Little Souls: What a Wonderful World: Songs to Celebrate the Magic of Life.* CD. Burbank, CA: Kid Rhino Records, 1998.

Diamond, C. "Looking for Dracula," in *10 Carrot Diamond.* CD. Vancouver, BC: Hug Bug Records, 1985.

Diamond, C. "I Am a Pizza," in *10 Carrot Diamond.* CD. Vancouver, BC: Hug Bug Records, 1985.

"In the Hall of the Mountain King" from *Peer Gynt Suite No. 2* by Edvard Grieg.

Leeman, M.; B. Bos; and T. Hunter. "Itsy Bisty Spider," in *We've Been Waiting for You.* CD. Roseville, CA: Turn the Page Press, 1999.

The Nutcracker by Peter Ilich Tchaikovsky.

Peter and the Wolf by Sergei Prokofiev.

Raffi. "Shake My Sillies Out," in *More Singable Songs.* CD. Cambridge, MA: Rounder, 1996.

Saint-Saëns, C. "Aquarium," in *Carnival of the Animals: Classical Music for Kids.* CD. New York: Henry Colt and Company, LLC, 1998.

Drama References

California Preschool Curriculum Framework, Volume 1. Sacramento: California Department of Education, chapter 4, "Language and Literacy," 97–176; chapter 3, "Social–emotional Development," 37–96, 2010.

California Preschool Learning Foundations, Volume 2. Sacramento: California Department of Education, 2010.

Christie, J. "Sociodramatic Play Training," *Young Children* 37(4): 25–32, 1982.

dePaola, T. *Adelita: A Mexican Cinderella Story.* New York: G. P. Putnam's Sons, 2002.

Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age Eight. Edited by S. Bredekamp. Washington, DC: National Association for the Education of Young Children (NAEYC), 1987.

Fink, R. S. "Role of Imaginative Play in Cognitive Development," Psychological Reports

39: 895–906. As summarized in *Critical Links: Learning in the Arts and Student Academic and Social Development.* 2002. Edited by R. Deasy. Washington, DC: Arts Education Partnership, 1976.

Goodman, J. R. "A Naturalistic Study of the Relationship between Literacy Development and Dramatic Play in Five-Year-Old Children." Nashville, TN: George Peabody College for Teachers (doctoral dissertation). As summarized in *Critical Links: Learning in the Arts and Student Academic and Social Development.* 2002. Edited by R. Deasy. Washington DC: Arts Education Partnership, 1990.

Griffing, P. "Encouraging Dramatic Play in Early Childhood," *Young Children* 38, no. 2 (1983): 13–22.

Hendy, L., and L. Toon. *Supporting Drama and Imaginative Play in the Early Years.* Buckingham, UK: Open University Press, 2001.

Learning Through Play: Dramatic Play: A Practical Guide for Teaching Young Children. Edited by N. J. Hereford and J. Schall. New York: Scholastic, 1991.

McMaster, J. C. "Doing' Literature: Using Drama to Build Literacy," *The Reading Teacher* 51, no. 7 (1998): 574–84.

Monighan-Nourot, P., and others. *Looking at Children's Play: A Bridge Between Theory and Practice.* New York: Teachers College Press, 1987.

Orozco, J. *Diez Deditos: Ten Little Fingers and Other Play Rhymes and Action Songs from Latin America.* New York: Penguin Putnam Books, 2002.

Piaget, J. *Play, Dreams and Imitation in Childhood.* Translated by C. Gattegno and F. M. Hodgson. New York: W. W. Norton and Company Inc, 1962.

Podlozny, A. "Strengthening Verbal Skills Through the Use of Classroom Drama: A Clear Link," *Journal of Aesthetic Education* 34, no. 3–4 (2000): 239–75.

Segal, M. M., and D. Adcock. *Just Pretending: Ways to Help Children Grow Through Imaginative Play.* Englewood Cliffs, NJ: Prentice-Hall, 1981.

Smilansky, S., and L. Shefatya. *Facilitating Play: A Medium for Promoting Cognitive, Socio-Emotional and Academic Development in Young Children.* Gaithersburg, MD: Psychosocial and Educational Publications, 1990.

Toye, N., and F. Prendiville. *Drama and Traditional Story for the Early Years.* New York: Routledge Falmer, 2000.

Visual and Performing Arts Content Standards for California Public Schools: Prekindergarten Through Grade Twelve. Sacramento: California Department of Education, 2001.

Wood, D., and J. Grant. *Theatre for Children: A Guide to Writing, Adapting, Directing, and Acting.* Chicago: Ivan R. Dee, 1999.

Dance References

Baum, V. *I Know What I'm Worth.* London: Michael Joseph, 1964.

California Preschool Curriculum Framework, Volume 1. Sacramento: California Department of Education, chapter 3, "Social–emotional Development," 37–96; chapter 4, "Language and Literacy," 97–176, 2010.

California Preschool Learning Foundations Volume 2. Sacramento: California Department of Education, 2010.

Carle, E. *The Very Hungry Caterpillar.* New York: The Penguin Group, 1986.

Damasio, A. *The Feeling of What Happens: Body and Emotion in the Making of Consciousness.* New York: Harcourt Brace, 1999.

Davies, M. *Movement and Dance in Early Childhood.* London: Paul Chapman Publishing, 2003.

Gardner, H. *The Arts and Human Development.* New York: Basic Books, 1994.

Joyce, M. *First Steps in Teaching Creative Dance to Children.* 3rd ed. Mountain View, CA: Mayfield Publishing Company, 1994.

Kaufmann, K. A. *Inclusive Creative Movement and Dance.* Champaign, IL: Human Kinetics, 2006.

Korea (South) Kongbobu. *Korean Dance and Music.* Seoul: Ministry of Public Information, Republic of Korea, 1968.

Landry, A. *Come Dance with Me.* New York: James H. Heineman, Inc., 1964.

McCall, R., and D. Craft. "Preschool Movement Programs: Designing Developmentally Appropriate, Inclusive Curricula and Games." Paper presented at the annual meeting of the American Alliance for Health, Physical Education, Recreation and Dance, Orlando, Florida, 2000.

National Dance Education Organization. *Standards for Learning and Teaching Dance in the Arts: Ages 5–18.* Bethesda, MD: National Dance Education Organization, 2005.

Pica, R. *Experiences in Movement with Music, Activities, and Theory.* New York: Delmar Publishers, 1995.

Slobodkina, E. *Caps for Sale: A Tale of a Peddler, Some Monkeys, and Their Monkey Business.* New York: Scholastic Book Services, 1966.

Spodek, B. *Handbook of Research in Early Childhood Education.* New York: The Free Press, 1982.

Stinson, S. W. *Dance for Young Children: Finding the Magic in Movement.* Reston, VA: American Alliance for Health, Physical Education, Recreation, and Dance, 1988.

Wang, H. "A New Approach to Teaching Chinese Dance and Customs to Five to Ten Year Old Chinese-American Students." Los Angeles: University of California (master's thesis), 2001.

CHAPTER 3

Physical Development

Young children learn best by *doing.* Active physical play supports preschool children's brain development[1] and is a primary means for them to explore and discover their world.

Physical activities enhance all aspects of development, including cognitive, emotional, social, as well as physical. For example, cognitive growth occurs when children problem-solve how to negotiate an obstacle course or how to build a fort. Acquisition of physical skills supports emotional development by increasing children's confidence and willingness to try new activities. Physical play creates optimal opportunities for social development. Since much of preschool children's peer play involves physical activities, proficient physical skills enable children to interact with others and to develop friendships. Active physical play also has clear benefits for children's health and fitness. Promoting children's **physical fitness** is critical given the increasing rates of lifestyle-related health issues (including **obesity** and diabetes) among children in California. All children, no matter their ability levels or backgrounds, benefit from engaging in physical activities.

The preschool years are a prime time for children's physical development. Preschool programs have a key role in maximizing children's developmental potential during this important time by providing well-designed, regular, and frequent opportunities for physical play. Although many of young children's physical activities are exploratory and self-directed, children greatly benefit from adult encouragement and guidance when learning new physical skills. Teachers tap into children's intrinsic motivation for movement by designing meaningful, culturally appropriate, and accessible play activities in which all children feel challenged yet successful.

Teachers are important role models in the area of physical development. Children benefit immensely when teachers engage in physical activities alongside children and share in the fun of physical movement. Just as important, preschool programs collaborate with family and community members to promote children's physical development. Family support and participation foster children's active lifestyle habits. Promoting active lifestyles during the preschool years will benefit children throughout their lives.

Guiding Principles

- **Developmentally appropriate movement programs accommodate a variety of individual differences among children.**
  Children of the same chronological age may exhibit a wide range of **movement skills** because of differences in developmental level, previous experience, opportunity for practice, fitness level, socioeconomic status, special needs, and cultural expectations. These differences need to be considered and accommodations made for them in order to create beneficial learning experiences for all children.

Research Highlight: Physical Activities Enhance Young Children's Brain Development

Children use multiple senses when they engage in physical activities. Multisensory experiences create and strengthen communication pathways in children's brains.[2] Young children's brains are highly malleable; thus, early experiences have a big impact on their brain development. Movement experiences that are personally meaningful and provide the "just right challenge" (i.e., challenging but doable) have the most impact on brain development.[3] Neuroscientists studying the brain confirm that "exercise provides an unparalleled stimulus, creating an environment in which the brain is ready, willing, and able to learn".[4]

- **Children often learn best through maximum active participation.**
  There should be a daily quest to minimize sitting, waiting, and watching so children enjoy meaningful participation in physical activities. Maximum purposeful participation at some level is a challenging but attainable goal. To achieve this goal, it is often best to first provide brief, simple explanations that enable children to begin moving as soon as possible. Additional instructions can be provided later as needed.
- **The physical safety of children's play environments should be of paramount importance at all times.**
  Active play, by its very nature, involves an element of risk. It is risk that children enjoy as they test out their newly developing skills. Wise teachers permit children to take reasonable and measured risks but do so in a manner that does not compromise children's safety. A safe environment is one that maximizes learning opportunities and enjoyment while at the same time minimizing situations that compromise a child's physical, emotional, or social "safety net." Adults must continuously strive to provide a safe environment that is healthful in all ways.
- **Family members working as partners with teachers are key to enriching the physical development of children.**
  Each child's unique interests and learning needs are best met through thoughtful and regular collaboration

between family members and teachers. Teachers play an important role in providing information to family members about child development, while family members provide valuable insights about their child's unique preferences, abilities, and life contexts (including their home, community, and culture). The partnership between families and teachers creates continuity in supporting children's physical skills development across home, community, and preschool environments.

- **Inclusion of children with special needs is beneficial to all and promotes greater understanding of and respect for diversity.**
  Teachers can modify the environment, materials, or teaching methods during physical activities to facilitate participation and skill development for all children. When working with a child with disabilities or other special needs, they consult with the child's family members and special education specialists for adaptation strategies. All children in the preschool program benefit when provided with opportunities to play alongside peers with diverse abilities; they learn the important values of inclusion, empathy, respect, and acceptance.

- **Children are multisensory learners with unique learning styles.**
  It is important to provide children with various ways to learn new physical skills: exploration and guided discovery, visual demonstration or pictures, verbal or gestural directions, hands-on assistance, or combinations of these strategies. Through intentional observations, teachers become aware of children's individual learning preferences. Teachers support children's learning of new movement skills by providing them with adequate time and opportunities to observe and practice the skill demonstrated, close guidance, and teacher feedback.

- **To maximize teaching effectiveness, movement skill learning should first focus on *how* children are moving their bodies.**
  By designing movement activities focused on the process or quality of the body movements, teachers place emphasis on improving the child's body coordination (e.g., arm/leg actions) and on increasing awareness of body movements. The product, or quantitative aspect of movements (e.g., how far they jumped, or how fast they ran), should not be the initial focus of learning. For children with disabilities and other special needs, the focus should be on the functional aspects of movement for that particular child. Referring to each child's IEP and consulting with special education specialists about movement goals are effective practices.

- **Children generally learn new movement skills more easily when they can focus on one specific aspect of the skill at a time.**
  Providing cues to children for movement skill learning is important. However, it is recommended that teachers guide children on only one aspect of the skill at a time (e.g., stepping in opposition when throwing) while children are doing the overall movement.

- **Children benefit from ample opportunities to practice new physical skills.** When children initially acquire a new physical ability, they are often highly motivated to repeat the activity many times. Repetition should be encouraged because it strengthens the new communication pathways between the brain and the muscle being used.

Introducing slight variations or additional challenges further enhances motor development. For example, if a child has just learned to jump, it would be beneficial to challenge the child to try jumping on uneven surfaces, such as grass or sand, or to count while jumping.

- **Children benefit from integrated learning activities across the curriculum.**
  Movement experiences provide an ideal context for children's development in not only the physical domain, but also in the cognitive, social–emotional, and language domains.

- **Frequency, intensity, type, and duration are the four key parameters to designing active physical play to enhance children's fitness and health.** The four parameters may be thought of as the FITT principles (Frequency, Intensity, Type, Time [duration]).[5] "Frequency" refers to the regularity of engaging in **physical activity**; frequent short periods of physical activity each day are preferred (children should not be sedentary for more than 60 minutes at a time except when sleeping[6]).* "Intensity" refers to whether activities are **sedentary**, mild, moderate, or vigorous; moderate to vigorous activities are preferred. "Type" deals with the specific kind of physical activity engaged in; for young children, the types of activities usually take the form of active games, child-initiated play, as well as rhythms and dance. "Time" (duration) refers to the amount of time in which the child is engaged in physical activity; accumulating at least 60 minutes, and up to several hours, of **moderate** to **vigorous physical activity** per day is recommended. Some children with special needs may not have the physical stamina to participate in the same ways in terms of frequency, intensity, type, and time. Teachers may modify activities to accommodate children's individual needs.

- **Physical skills are more easily learned when clear instructions and appropriate feedback are provided in children's home language using familiar communication methods.** Children who are English learners acquire new movement skills more easily when clear instructions are provided in their home language. Similarly, children who communicate using sign language, picture communication systems, or other augmentative communication systems benefit when teachers use appropriate communication methods to teach physical skills. Moreover, all children in the preschool program would benefit from exposure to different languages and communication methods in addition to physical demonstration, modeling, and material cues provided by teachers.

*Recommendation from *Active Start: A Statement of Physical Activity Guidelines for Children from Birth to Age 5* (Reston, VA: National Association for Sport and Physical Education, 2009).

Environmental Factors

- **Teachers promote optimal physical development when they provide children with positive encouragement and quality instruction (both indirect and direct).**
  Teachers must be aware and take advantage of their critical role. They are the ones "setting the stage" and "creating the climate" for movement skill learning. Teachers who truly embrace the value of physical activities effectively communicate it to children, thus encouraging their participation. Often, quality instruction may require teachers to actively participate in physical play alongside children. At other times, children will benefit most when the teacher simply remains close by and shows genuine interest in the children's physical activities.

- **The immediate physical environment is a powerful influence on children's physical development.**
  The physical environment, play materials, and play themes can all be skillfully designed to promote active play. Both indoor and outdoor play environments should encourage fun and enjoyable learning. Indoor and outdoor play environments are fundamentally different. Each offers distinct learning opportunities in terms of the amount and type of activity that takes place, the sensory properties of the play area, and the potential for using the natural materials unique to the local geography and culture. Multipurpose open space and sufficient outdoor time, weather permitting, are important environmental considerations. If weather or air quality does not permit outdoor play, indoor open space should be provided.

- **Indoor and outdoor play environments should include a variety of appropriately sized equipment that promotes both gross and fine motor development.**
  Indoor movement areas can be as small as a corner of the room in which children can move with a scarf and streamers, throw at wall targets with a beanbag or foam-rubber ball, and play with other small materials. The outdoor play space should promote a variety of activities through the use of balls, low balance boards, hula hoops, tricycles, and other wheeled toys. Adaptations to the equipment encourage participation of children with special needs.

- **Learning is most meaningful when the environment and materials reflect and accommodate children's individual interests, backgrounds, and present abilities.**
  Children come to the learning environment with a wide range of needs, interests, and abilities. Children's life context (i.e., culture, language, diversity, abilities) should be represented through movement activities that maximize opportunities for participation, active engagement, and success. Embrace the richness of diversity by learning about children's culture, language, customs, music, physical activities, and focus on the unique gifts that each child brings to the learning environment.

- **Take time to build safety into both the indoor and outdoor play environments.**
  A safe environment reduces the need for adults to say no. It is important to establish clear expectations. Limits should be set rather than rules (rules eliminate reasonable risk) in order to ensure personal safety. Be particularly

cognizant when working with children who have disabilities that impact their impulse control and judgment. Also, differences in cultural expectations for girls and those for boys, as well as language differences, may impact the critical need for building safety into children's regular play environments. Playground equipment, such as climbing, hanging, and sliding structures, should be checked regularly for safety hazards.

Research Highlight: Must Young Children Sit Still in Order to Learn?

Researchers have stated that high activity levels, impulsivity, and short attention span for sedentary activities are characteristics of typically developing preschool-age children.[7] Children naturally need to move in order to learn.[8] Being physically active boosts children's attention span and capitalizes on multisensory learning so that children are more likely to retain academic concepts such as colors, shapes, and the alphabet.[9] The need for movement-based learning experiences may be particularly important for children with special needs. Research has shown that for children who have autism spectrum disorder and attention deficit hyperactivity disorder, being seated on a movable surface (e.g., a therapy ball) resulted in increased ability to stay on task and remain seated during classroom learning activities. However, children seated on a static surface such as a bench, chair, or floor were less able to remain on task.[10, 11] Experts have suggested that adults' efforts to entice young children to sit still, pay attention, and be quiet during learning activities often run contrary to children's natural needs for physical movement.[12]

- **Movement experiences should include exploration, discovery, and appreciation of the natural environment.**
  Children learn by interacting with people, objects, and the natural environment. Nature provides rich, diverse sensory experiences—sounds, smells, textures, and sights—that are beneficial for young children's sensorimotor development. Outdoor play offers an array of opportunities for exploration, discovery, and learning in a natural environment.

- **Thoughtfully designed movement experiences, guided by adults, support children's physical development.**
  Most children need more than just free play to acquire movement skills. Children benefit from teacher-guided, **structured physical activities**, particularly when they are learning new movement skills. Structured but flexible play activities that emphasize active participation, exploration, and self-discovery are ideal for practicing new, challenging physical skills. Skills acquired from structured activities are important building blocks for expanding children's repertoire of skills for spontaneous, child-directed physical play.

Summary of the Physical Development Foundations

The physical development domain is divided into three strands. The first strand is Fundamental Movement Skills. Most preschool children can acquire reasonable levels of competence in a wide range of movement activities, including balance, locomotor skills, and manipulative skills (both gross motor and fine motor), when given opportunities for instruction and practice in an enriched environment. The second strand is Perceptual-Motor Skills and Movement Concepts. This strand focuses on the development of body awareness, spatial awareness, and directional awareness. These skills are important for interacting with others and for exploring the environment. The third strand is Active Physical Play. Active physical play promotes children's health and physical fitness by increasing their levels of active participation, cardiovascular endurance, **muscular strength**, **muscular endurance**, and **flexibility**.

The remainder of this chapter is organized on the basis of the three strands. The introduction to each strand will highlight its importance to preschool children's overall development. Each strand is further divided into substrands, with specific strategies to support children's learning and development. Examples of strategies include both spontaneous interactions and planned activities that support children's physical development. Integration is a key concept in this framework, since the physical development activities also promote children's learning in all other developmental domains. This framework will guide teachers in planning a physical development curriculum that is flexible, inclusive, and responsive to children's unique needs. Suggestions for working with children from diverse cultures, children with special needs, and children who are English learners are provided.

Teachers play a critical role in supporting children's physical development because physical skills need to be explicitly and deliberately taught. Physical play, both indoors and outdoors, is not merely "free time"; it requires thoughtful planning and intentional interactions.

Summary of the Strands and Substrands

Fundamental Movement Skills

1.0 Balance
2.0 Locomotor Skills
3.0 Manipulative Skills (gross motor and fine motor)

Perceptual-Motor Skills and Movement Concepts

1.0 Body Awareness
2.0 Spatial Awareness
3.0 Directional Awareness

Active Physical Play

1.0 Active Participation
2.0 Cardiovascular Endurance
3.0 Muscular Strength, Muscular Endurance, and Flexibility

Please refer to the map of the physical development foundations on page 211 for a visual explanation of the terminology used in the preschool learning foundations.

Fundamental Movement Skills

Fundamental movement skills are the foundations on which more complex movement skills are built. Early childhood is a crucial and unique time for developing coordination of the basic movement skills. During this period, daily movement experiences significantly influence children's patterns of movement and their future as happy, active movers. Children who develop these fundamental movement skills tend to become confident movers and have the building blocks for an active way of life.

Fundamental movement skills emerge following a developmental sequence from simple to more complex body actions. Initially, when children attempt a movement pattern, they move few body parts (e.g., when throwing, move only one arm while the rest of their body remains still). As their movement skills develop, children begin incorporating other body parts (e.g., throwing with one arm while stepping with one foot). Research-based developmental sequences represent common pathways of development and can guide instruction and learning. However, each child's development is unique and affected by many factors (e.g., genetics, culture, special needs, socioeconomic status, environment, and practice). Teachers should expect variations in individual development.

Fundamental movement skills develop through meaningful interactions with the environment, people, and objects; through both structured (e.g., teacher-guided) and unstructured (e.g., child-initiated play) practice of movement skills; through the integration of fundamental motor skills into the preschool curriculum; and through the integration of fundamental movement skills into the daily home life of children. Children's movement activities should be designed with consideration of the multiple cultures and diversity of the participants. In addition, teachers need to be sensitive to children with disabilities and special needs and modify the tasks, context, or environment, including appropriate assistive devices and instructional strategies, to facilitate the development of fundamental skills for all children. The following strategies provide teachers, family members, and caregivers with guidance to foster the development of fundamental movement skills in preschool-age children.

Fundamental movement skills consist of three substrands:

1.0 Balance
2.0 Locomotor Skills
3.0 Manipulative Skills

These substrands of movement constitute the basis of movement throughout life. Teachers and caregivers have an important role in supporting the development and practice of foundational movement skills.

1.0 Balance

The ability to balance is fundamental to all body movements. All movement involves elements of balance, and each movement has different balance requirements. The center of gravity (i.e., how close the midsection of the body is to the floor) and the base of support (i.e., the amount of surface covered by the body parts holding the position) determine the difficulty of the task. If the center of gravity is closer to the floor, such as balancing on hands and knees, the balance task is easier than if it is far from the floor, such as balancing on tiptoes while standing on a stool. Likewise, if the base of support is larger (i.e., more area covered by the body parts holding the position), the movement will be easier. For example, standing with legs apart on a balance beam will be easier than standing on one foot on the same beam. Therefore some movements are more challenging than others for young children.

When most young children enter preschool, they have conquered the rudimentary ways of balancing. Most children walk without falling and can go up and down stairs holding a rail. During the preschool years, children expand their balancing abilities in many different environments and in a variety of movements. Young children need to learn to restore their equilibrium when things alter their balance, such as uneven surfaces (e.g., walking across sand) or moving/changeable surfaces (e.g., taking an escalator). Children develop their balance skills by experiencing a variety of balancing challenges, such as holding still in postures; moving the arm, leg, or head while maintaining balance; continuously moving while balancing; and making big changes in body positions. All these movements will provide opportunities to learn how to control and compensate for small, continuous, or large changes in body positions. Balance movements involve postures such as standing on one foot, balancing while rotating or turning (such as rolling sideways), and balancing in locomotion (such as walking on a low balance beam).

VIGNETTE

During a group activity, Ms. King asks children to find a rope on the floor and stand next to it. She indicates, "When you find the rope you want to work with, stand next to it like this." Ms. King demonstrates the standing position with hands down at her sides. Ms. King gives children some time to find their ropes. All the children move and stand next to a rope. Three children stand briefly at the same rope. One child leaves and goes to another rope. Two children, Ying and Carla, stay standing there. Ms. King lets them try to solve the problem. Carla tells Ying that she got to the rope first. Ying seems a bit confused and stays in the middle of the rope that another child is claiming. Ms. King says, "Ying, can you find another rope? The teacher notices that Ying looks confused and does not move. Mrs. King then asks, "Can someone help Ying find a rope?" Sarah runs to him and points to an available rope. Ying runs and lands with knees next to the rope, smiling.

Ms. King suggests, "Okay, let's see if we can hold our balance while using different body parts on the rope." Some children use hands and one foot; others use two feet and one hand, two hands and two feet, head and two feet. Ms. King explains, "You have one, two, and three body parts. You have two hands and one foot, and you are holding your balance on four body parts." They show different postures. Some are upside down, while others are right side up. Ms. King communicates, "Wow, you can hold your positions like statues using different body parts. Now please stand up." Ms. King makes a friendly gesture with her hand, indicating up, while looking at Ying. Ying follows the sign and looks around, noticing that everybody is standing. Then, Ms. King asks, "Now, can you walk over the rope while maintaining your balance? Children begin walking, and Ms. King comments, "Sara, you are balancing on the rope. Carla, you are keeping your arms out and that really helps with balancing." Ms. King sees Jose and says, "Jose, you take big steps while balancing on the rope. Wow, you have found many different ways to walk while ,maintaining your balance on the rope." Ying keeps looking at the children and walks while balancing on his rope.

PLANNING LEARNING OPPORTUNITIES

These balance activities allow children to challenge themselves and try different ways of balancing in static positions (i.e., stationary activities using different body parts) and dynamic ones (i.e., balancing while walking on the rope). Balance activities should be presented in developmentally appropriate ways by beginning with activities down at low levels, with the center of gravity closer to the floor. This can be followed by higher-level activities, with the center of gravity higher and using various body parts. Using more body parts at the beginning of the activity increases the base of support and the chance of success.

By asking questions and then describing children's choices, teachers make children become more aware of their actions while other children gain ideas from listening and seeing others' choices. Children tend to maintain a higher level of interest in the learning activity when they feel successful. In this way children build their balance repertory: from easy to more difficult tasks. Teachers' facial expressions of assurance or use of sign language are also useful when there are children who are English learners or children with hearing impairments among the participants. Additional adaptations may be necessary for children with other special needs. These approaches are developmentally sound and allow children to challenge themselves at their individual ability level.

Interactions and Strategies

Design spaces and activities to develop balance following a developmental progression. Provide low-level balance challenges and wide bases of support that encourage children to experience balancing with success (e.g., balancing on many body parts at a low level or tiptoe-walking on floor lines following different pathways). Progressively incorporate more difficult challenges, such as higher obstacles and narrower surfaces to stand or walk on (e.g., balancing on boxes or stones) and holding balance positions on fewer body parts. In general, most children enjoy the challenge of maintaining stability. Falling from low obstacles onto a safe surface will actually be fun and challenge them to keep trying. Young children learn to control their bodies better when they can progress from easier to more difficult balance positions or movements.

Provide opportunities that include diverse cultural themes. Traditional folk dances or dances that represent the culture of children and families can be really fun. Teachers can guide children to add extra balance demands. Changing body positions, dancing on one foot, and using different levels of movements can increase the balance challenges while children enjoy the rhythms of familiar songs. Activities such as tai-chi moves and hopscotch, where children move in different ways to accomplish a goal will, enhance balance in motion and stillness positions and can be fun ways to increase balance abilities. Other games using verbal and visual signals, such as Red Light—Green Light, help develop children's awareness and also enhance stability.

Incorporate balance activities into the children's world. Read stories and act them out incorporating balance challenges. Pretend to be in the zoo and act out different animals. Children may identify some animals, and the teacher may suggest some others, such as frogs jumping, bears walking on hands and feet, snakes moving close to the floor, or flamingos standing on one foot. Ask children to pretend to be things such as spinning tops that turn and stop or logs rolling down the hill. Do balancing acts such as balancing a turkey feather on their hand or plastic egg in a big spoon while standing, walking, or moving in a wheelchair. Ask children, "How does it feel? Which balances are harder?" These activities allow children to experience an array of balance challenges, and their bodies will increasingly improve stability and control.

Provide opportunities for activities that include both active movements and still body positions. Children need to experience the contrast between being in motion and being still. These activities will enhance the ability to control their

body movements and emotions. Games, such as Freeze where children dance and move to a song and then "freeze in different positions" when the music stops, are great for this purpose. Teachers can give a cue to visually or hearing-impaired children by clapping, making gestures, or showing pictures. Contrasting music may also be used; at times the music calls for fast movements, and other times the music slows down, calling for slow movements until total stillness is acheived. Children can use tambourines and bells or instruments that provide relaxing sounds.

Challenge children's balance abilities by asking questions. Teachers can facilitate and guide children's balance activities by providing thoughtful questions either before or after the activity. These questions challenge young children to explore and experience other ways of balancing. Teachers may ask, "Can you change from one balance position to another one while keeping your balance?" Questions can also focus on making children think about what their bodies are doing to maintain their balance, such as, "How did you move your body when changing positions and not fall down?" Teachers may also ask about what happened when children lost their balance, such as, "Why do you think you could not keep your balance this time?" These practices will develop body awareness that will translate into more confidence with balance abilities. Physical movements, along with a series of questions, will help children who are English learners bridge gaps in the understanding of the conversation. Teachers can also ask children who speak both the home language and English to help children who speak only the home language to understand the questions and the balance challenges. For more information about strategies to

support children who are English learners, see the *California Preschool Curriculum Framework, Volume 1,* chapter 5.

Encourage persistence during challenging balance tasks. Children will attempt to balance and will fail to hold the balance or fall down on the floor, or the object they are trying to balance may fall down. These are opportunities for teachers to encourage persistence and provide cues as to what they may do to better control their bodies or objects they are balancing. Effort is an important part of all learning, and children need to know that to control their bodies they need practice, practice, and more practice.

Post pictures of balance positions and balance activities. Provide visual examples of different balance positions or activities. Visual pictures can inspire children. These pictures can be of culturally representative athletes, dancers, art performers, known soccer players, gymnasts, people in yoga positions, as well as athletes with physical disabilities, such as wheelchair racers, or Special Olympians. When possible, find pictures or take digital photos of the children, children's characters, animals in balance positions, and things that you would like children to imitate. In addition, these pictures will

provide another way of communication for children who prefer a visual idea or for children who are English learners.

Design the environment so children combine balance skills with fundamental movement skills and movement concepts. Provide opportunities for combinations of balances with locomotor, manipulative, perceptual–motor skills, and the development of movement concepts. Obstacle courses provide opportunities for a variety of movements, as well as flexibility for children's movement choices. Most children love giant obstacle courses. Indoor spaces may be limiting for big setups of equipment that encourage ongoing activities. However, small obstacle courses indoors (e.g., using chairs, tables, and small equipment such as discarded milk containers or potato chip cans) can be really fun and are an especially good option when it is rainy outside or there is a lack of other

available spaces. Outdoor spaces can have big setups with large equipment (e.g., wheel equipment, big boxes, playground equipment, big stones, trees, tunnels) where children can experience a variety of movement skills and balance challenges. Whether indoors or outdoors, obstacle courses should allow room to maneuver for children who use walkers or wheelchairs.

VIGNETTE

Children in Ms. Lopez's class were very interested in fire stations. In a large circle activity the day before, they read a book about fire stations. Later a parent came and talked about the job of firefighters. The next day, Ms. Lopez designed a large obstacle course with fire station materials, such as fire hats and hoses, and placed equipment around the area to invite different movements and balancing challenges. A phone on one side and a round spot with scarves on the other side created a rectangular obstacle course. She added footprints in a curved path and boxes for children to crawl up and jump down from, a mat on the floor, hoops, and cones. When the children arrived, she commented, "I wonder if we can pretend to be firefighters and move like they do? How do you think the firefighters move?" Some children said they run and jump, and others said they go upstairs and put the fire out with their hoses. Ms. Lopez responded, "Exactly. Now you can play in this obstacle course while pretending you are firefighters." The children began moving around the course using the props and creating their own stories and ways of moving. Ms. Lopez was observing the multiple ways they chose to move and their different levels of development.

This activity revealed to Ms. Lopez the kinds of challenges her children were ready for and the activities that were their favorites. The children

were very excited and continued going around and around the course. After observing that some children repeated the same balance challenges several times, Ms. Lopez suggested, "Can you find a different way of moving your body through the curved path next time?" Then, Ms. Lopez noticed that one child, Hoa, stopped in front of the climbing box and put her hands over her face. Ms. Lopez went to her and asked if she needed help, and Hoa said, "I cannot get up." Ms. Lopez replied, "Let's find another way to pass this box." Hoa said, "I cannot climb up." Then Ms. Lopez said, "How about sitting on it and sliding on your bottom all the way down?" Hoa sat and tried sliding, and when she came to the end of the box, Ms. Lopez said with a big smile, "Wonderful. Now see if you can find a different way to go over the box."

Another child, Andre, was crawling up and down the box each time he passed the boxes. The next time he was about to crawl down, Ms. Lopez questioned, "Do you want me to hold your hands to see if you can jump down from the box?" Andre responded no and continued the course. After a few more trials, Andre came over and requested, "Ms. Lopez, can you help me jump off the box?" Ms. Lopez replied, "Sure, let's see if you can jump off while holding my hands." Andre jumped down from the box, with assistance, and continued the course.

The children were engaged in acting out their stories. After everyone had participated in the activity, Ms. Lopez made a circle in the middle of the room and asked the children questions about their experiences during the activity: "What was fun? What ways did you move? Which activities were harder to do? How did you move your bodies when it was difficult? What other balancing or movement activities can you use the next time you go through an obstacle course?"

TEACHABLE MOMENT

This activity provides an opportunity to practice several kinds of balances in static positions and while moving and changing direction using locomotor skills and movement concepts. Because of the children's interest in fire stations, the teacher chose to create an obstacle course that provides opportunities to practice balance in a pretend, safe, and educationally fun way. Including children's interests in designing activities geared toward developing balancing skills motivates children to participate. During this activity, children were able to create their own stories and challenge themselves in ways that were appropriate for their individual abilities. The teacher attentively observes children's movements in order to assist and modify the task so those with special needs, low muscle tone, low levels of confidence, or lack of practice can participate successfully. Observation can also yield information to teachers for planning: guide children who need extra assistance, or challenge those who are ready to add more balancing skills to their repertoire.

Provide a variety of sensory cues that facilitate multisensory learning. Demonstrations, showing models or pictures, pinpointing a position or balance that a child is doing, or describing how some children resolve their balance challenges provide many opportunities for children to learn about their own balance skills. Teachers may need to provide hands-on assistance, such as hold a hand or a leg, or touch a body part to develop body awareness in different positions. These practices will enhance balance abilities and promote learning in different sensorial styles (e.g., visual, kinesthetic, listening, or a combination of senses). When working with children who are blind or have visual impairments, guide them to develop their awareness of how their body parts are positioned in space during balance activities. For example, if a child who is blind pretends to be a flamingo and attempts to stand on one foot, the teacher may say, "Can the flamingo stand better when she spreads her wings out? Or bends her knee?"

Modify balance activities to increase participation by children with disabilities and special needs. Teachers and caregivers need to be sensitive to all children's needs. The task, or parts of the task, can always be modified for children with special needs or disabilities, depending on the disability. Sometimes children need a simple adjustment or modification to accomplish the task; at other times a more appropriate task needs to be incorporated where the child still works on balance but at his ability level and within her body constraints. For instance, balancing on a low balance beam may be appropriate for one child, but another child who uses a wheelchair may need a different kind of balance, such as going through lines avoiding objects on the floor, balancing objects, or rolling sideways on a mat. These types of balances will stimulate their vestibular and visual systems for improved balance orientation. See the "Research Highlight: Beyond the Five Senses" on page 172 for more information about the vestibular system. For resources for working with children with disabilities or other special needs, see appendix D of the *California Preschool Curriculum Framework, Volume 1*.

Use visual aids, foot and handprints, and objects on the floor to promote balancing skills. Balancing activities rely heavily on the use of the visual and vestibular systems. Most children enjoy moving on patterns on a tile floor or on rugs. In addition, visual aids in front of the child, such as targets or pictures on the wall, can help children stabilize body positions. Footprints on the floor, such as dragon prints, bear prints, or human prints arranged in sequences, will encourage children to move over them. Teachers can vary the challenges by placing the targets closer or farther apart, placing hands and footprints on the floor, or adding other objects or pictures. For example, making a pathway (e.g., curved or straight), a hoop, a leaf, or a picture of a river will encourage movements that require balance skills.

2.0 Locomotor Skills

Locomotor skills are the movement skills that children use to move effectively and efficiently through space. These skills allow children to travel, explore, and discover their environments. Preschool children use locomotor skills in their daily activities to move from one area to another. Locomotor skills include walking, running, jumping, galloping, sliding, leaping, skipping, and hopping. Teachers and caregivers can help children develop these skills by encouraging them to use different skills as they move and play in their environment. It is important to keep in mind that locomotor skills tend to develop in an orderly sequence in typically developing children.

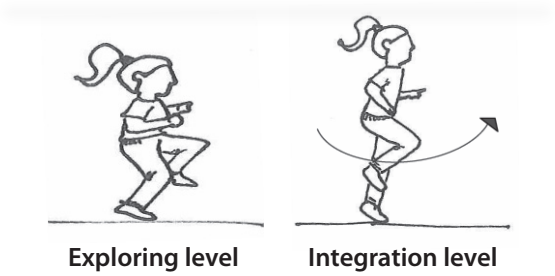
The level of difficulty for locomotor skills varies from easy to more difficult according to the demands of the skill on the body. For instance, walking can be considered an easy skill for a typically developing preschool child who has had the opportunity to walk and master balance and stability since infancy. However, hopping may be considered a more difficult skill, because the requirements for balance and strength increase considerably.

See figure 3.1, "Developmental Sequence of Hopping" and observe the body configuration of the early development of hopping. At the Exploring level, the child has one leg off the floor and in front of the body and has great difficulty getting the body off the floor on the other leg (little strength). The arms are to the side of the body, and they provide little help for pushing the body off the floor. At the Integration level, the child is able to hop several times on one leg while swinging the opposite leg back and forth like a pendulum. The arms move in opposition to the swinging leg. At this level, the child has developed sufficient balance, strength, and coordination for the hopping skill.

Hopping requires the use of only one leg to lift the body and enough strength to catch the body when landing on the same leg. Between the Exploring level and the Integration level, children will explore and discover ways to move their body segments to facilitate the hopping action. In the transition from one level to the next, the leg that is off the floor will be placed down, behind, and inconsistently in different positions, and the arms will be used in different ways until the child finds the most efficient way of moving the body while hopping on one foot at the Integration level. It is important for teachers and caregivers to understand the increasing complexity of locomotor skills. This understanding permits them to provide a wide variety of developmentally appropriate activities for skill development.

The immediate environment can also be manipulated to increase or decrease the difficulty of locomotor skills. Teachers and caregivers can modify it the most by using different surfaces and objects,

Figure 3.1 Developmental Sequence of Hopping



Designed by Clersida Garcia and illustrated by Xuyen Garcia, 2010.

such as beanbags; cones; rhythm sticks; footprints; visual aids; low-, middle-, and high-level obstacles; and music. Interesting, inviting activities can motivate children to practice a variety of locomotor skills. Modifications, adaptations, and preparation of the environment based on observations of children's ability levels and special needs can provide more appropriate challenges. Environmental modifications and adaptations assist children's development and may enhance children's sense of accomplishment of these skills.

The previous experiences, health status, cultural background, cognitive abilities, motor challenges, and personality traits of individual children will also influence the development of locomotor skills. Individual and cultural differences should be considered and activities adjusted accordingly so all children can develop efficient and effective locomotor skills.

Research Highlight: Locomotor Skills

Research indicates that movements develop from the interaction of the individual, the environment in which the movement occurs, and the task to be undertaken. Changing any of these factors will change the resulting movement. These three factors are in continuous interaction when children are growing and moving in different environments. To enhance and develop movement, teachers and caregivers need to consider the relationship between the characteristics of the individual child, her surroundings, and the purpose or reason for moving. To enhance motor skill development, these three aspects deserve clear consideration.[13]

VIGNETTE

During outdoor time the teacher invited children to play a game called "Pretend to walk on…" and the children excitedly agreed. The teacher asked them to spread out and listen. Then the teacher said, "We are walking on ice, and it is cold." He wrapped his arms around his body and started walking very slowly and carefully. Some children began walking as though on ice immediately while others started getting the idea by the teacher's demonstrations. The teacher said, "Okay, okay, now we are walking on hot sand. How do you move your body when the sand is hot?" While the children followed excitedly he continued to change the activity place, such as walking on a tightrope, walking on glue, walking on car oil, and so on. Then the teacher asked, "Who

would like a turn to decide where we are walking?" One child raised his hand and said, "We are walking on mud." All the children began walking and falling in funny ways. Another raised his hand insistently and, when given the turn, he said, "We are walking on rocks" and laughed. The children continued pretending and participating in the game, laughing and falling as if they were walking on rocks. Then another child said, "We are walking on water, and we splash it." The game continued until it was time to go back inside. Later, at circle time, the teacher reflected about the different ways they walked for each floor surface.

PLANNING LEARNING OPPORTUNITIES

These activities provide opportunities to experience a variety of pretend surfaces in which children's movement patterns adjust to the demands of the environment. The vignette also exemplifies that the environment has an impact on how people choose to move. The pretend world of children allows a variety of environments. For example, teachers can change the game to accommodate different weather conditions, places, or jobs. Music is an excellent resource to facilitate locomotor skills. It provides rhythm and can evoke emotion when a locomotor skill is demonstrated. This activity may be modified for children with movement difficulties by having the teacher add to the discussion about the various ways that children move (e.g., using adaptive equipment such as a walker or wheelchair).

Walking is the easiest way for children to travel. They have an opportunity to learn about safety because walking is a slower motion and gives children time to see other children moving and time to respond to the changing environment. Children may respond to an approaching child by changing direction or by stopping and waiting for someone to pass. By observing children walking, the teacher or caregiver can determine new challenges that can be incorporated in daily routines and ways to enhance safety while moving faster.

TEACHABLE MOMENT

The walking pattern may change depending on the conditions of the environment or the special needs of some children. Some children may walk primarily on their toes, without putting much weight on their heels, while others may not have experienced conditions such as snow; consequently, they do not know how to walk on it. However, teacher engagement, demonstration, and modification of the task according to special needs of children can enhance participation. For example, a child in a wheelchair could demonstrate and then talk about how the wheelchair would move on different surfaces.

Interactions and Strategies

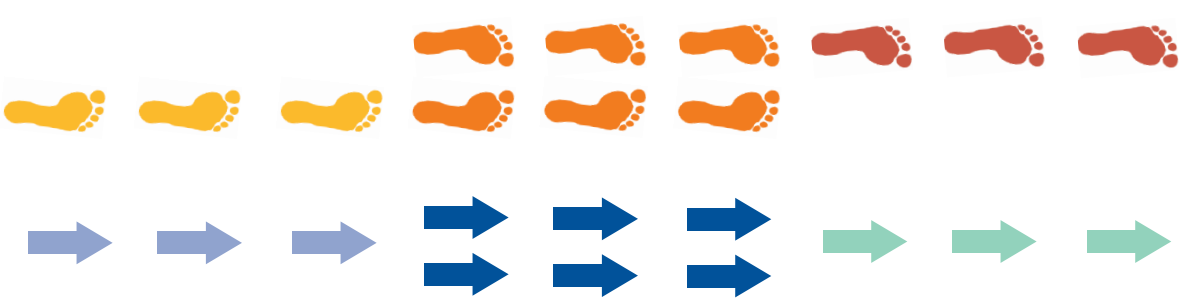
Observe and analyze children's locomotor skills to facilitate planning for learning opportunities. While children play and move using locomotor skills, teachers and caregivers can observe what kind of locomotor skills children are using, which ones they use more often and which they do not use or rarely try (see the illustrations in "Selected Developmental Sequences of Locomotor Skills" at the end of this chapter). Teachers can determine children's developmental progression for a particular skill (see the "Research Highlight: Locomotor Skills" on page 148). Observations can guide the focus and purpose of the activities in the creation of plans to facilitate skill development and to provide opportunities for variation of those skills.

For instance, the teacher observed that children walk and run but rarely use any other locomotor skills in the playground. This observation can guide the teacher's planning to increase variation in the locomotor skills used. The teacher can guide the variation of locomotor skills by designing the outdoor environment or spacious indoor environment to include objects that call for other locomotor movements. Adding some hoops, spots, and footprints in patterns on the ground or floor (e.g., a line of three single footprints followed by three pairs of footprints and then followed by another line of single footprints may encourage hopping and jumping). See figure 3.2. Additionally asking children to find different ways to move in and out of the hoops and patterns of footprints can create new forms of locomotion. Some children may jump, others may hop, others may leap, and some may tiptoe through the area.

As children explore new ways of moving, the teacher and caregiver should continue observing carefully to acknowledge those ways, help children who may need assistance, describe ways that other children are moving, and identify the children's levels of development. Focusing on the way the arms and legs move while observing can help the teacher clearly identify children's levels of development and therefore inform the planning of new and appropriate challenges for future activities.

Promote progressive development of leg strength. It is important to understand that locomotor skills require different levels of leg strength; however, teachers cannot sit and wait until children get stronger, because it is through using their legs and arms that children will gain

Figure 3.2 Locomotor Movement Patterns



more strength. Therefore, if the locomotor skill calls for strength, such as jumping, provide ways to develop strength in young children. Design the indoor and outdoor environments in ways that invite the use of locomotor skills, such as running, galloping, jumping, crawling, and climbing. Children can pretend to be springs and crunch down before jumping up; that will help build strength. Place different obstacles on the floor according to children's ability levels and the special needs; initially place them close to the ground and then increase the height as children's strength increases. Boxes of different sizes allow them to jump to the ground using the force of gravity. Taking off is more difficult than landing, and landing can be on hands and feet. Provide hands to assist the take-off if some children need this assistance. Safety in landing can be enhanced by providing cushioned surfaces, such as sand, grass, water, or mats. Coordinate with specialists and check the IEP goals for children with motor development challenges.

Promote progressive development of balance.* All locomotor skills require balance. Some locomotor skills have a greater demand for balance than others. If the children have a lower level of balance skills, then the teacher needs to provide ways to facilitate balancing skills. In this case, guide children to experiment with their arms in different positions to find greater stability. Usually, open arms along the side of the body enhance stability. Vision also plays a role in balance, so enhance visual cues. For children who have visual impairments, a vision specialist or an orientation and mobility specialist may suggest supportive ways to promote the child's progressive development of balance. Create activities that stimulate the use of the vestibular system to increase balance (see the "Research Highlight: Beyond the Five Senses" on page 172 for more information about the vestibular system). Encourage children to help each other. This also develops cooperation skills.

Promote and be aware of the progressive development of coordination of locomotor skills. Coordination is the most efficient organization of the body systems to perform movements. Advanced arm–leg coordination will demonstrate a contra-lateral opposition of arm and legs (see figure 3.1, "Developmental Sequence of Hopping.") Coordination increases with repetition of the movement actions and with guided practice. Children move progressively to a higher level of coordination as their bodies get stronger, they gain balance, and they experience new ways of moving their bodies. For coordination, observe the ways children move their arms as they run, gallop, leap, jump, or hop. Arm–leg coordination may be developed by challenging children to use their arms in different ways and to find out which way feels easiest. Holding scarves, maracas, or ribbons is a way to practice arm movements. In addition to the demands of the skill itself, locomotor skills can be combined in different patterns of two to three

*See the Balance substrand on page 140 for additional strategies.

locomotor skills (e.g., run and jump, run and leap, hop-hop-hop and jump), or sequences of skills to music. There are other ways teachers can vary the challenges and increase the coordination of locomotor skills. Consult with specialists and refer to IEP goals for children with motor development challenges. For resources for working with children with disabilities or other special needs, see the *California Preschool Curriculum Framework, Volume 1*, appendix D.

Encourage practice of locomotor movements in both indoor and outdoor environments. Children love to move in different ways. When they learn new locomotor skills, they want to use them over and over again. This is a natural drive for mastering locomotor skills. Teachers and family members should celebrate these accomplishments and encourage the use of emerging skills because it is through repetition that children establish the coordination pattern in their nervous system. Locomotor skills can be used in the daily routines of the preschool program, such as when moving from area to area, going out to the playground, or going into the classroom while setting up or cleaning up, in large-group activities, or after large-group activities. For instance, the teacher can say (verbally or using sign language), "Today, when I call your name, go to an interest area by galloping," or "Choose your favorite way to move to an area for play." The teacher can take into account the varying ability levels when giving the commands, providing locomotor practice that is inclusive of all children. The more ways teachers provide opportunities and encourage practice, the greater the opportunity for children to develop efficient patterns of locomotor skills. It is important to provide opportunities for both indoor and outdoor locomotor activities, as these two environments call for different levels of intensity, speed, and range of motions. Outdoor open spaces are excellent places for children to learn to control their efforts when moving in these spaces. The indoor environment offers a limited and more constrained space, while outdoor playgrounds provide for different types of terrain, natural obstacles, and availability of natural resources and people. It is essential that children practice and learn to move in these different spaces. Children will learn the range, speed, and intensity to apply to their locomotor skills when they are inside their homes or in more open areas such as playgrounds or parks.

Use vivid visual information and visual aids that communicate to children in simple ways how to move. Use props to promote locomotor skills. Pictures of animals, visual pointers such as arrows for directions, or pathways can guide children in performing locomotor skills. Visual information is also valuable for children who are English learners and children with auditory disabilities. Pat-

terns of footprints and handprints from different animals or monsters are exciting for children to follow. Low, slanted hurdles allow children to jump or leap at their ability level. Bubble-wrap material secured to the floor produces great sounds when children jump on it. Sturdy boxes of different sizes provide different heights for jumping on and from. Stones of different sizes, containers, and pictures secured to the floor facilitate and also promote locomotor skills.

Use music, songs, rhymes, and stories to provide rhythmic patterns. All locomotor skills have a rhythmic pattern, and most children benefit from listening to the beat as they move their bodies. Rhythmic patterns are evident in songs such as "Skip to My Lou" or "Listen and Move." Or use different rhythm instruments such as rhythm sticks, drums, paper plates, metal cans that are property sealed, or maracas. When using instruments or music, be aware that some children have a low threshold for noise tolerance. Adapt by providing soft earplugs or earmuffs. Many early childhood music CDs, including music in many languages, promote the development of locomotor skills. The words of the songs are also an excellent source for increased vocabulary and understanding of their meaning as well as bridging children's vocabulary in their home language and English. The Explorer Adventure Game allows teachers to create stories around children's interests. For example, going on an adventure to find "magic" leaf shapes, stones of different colors, stick sizes, or hidden objects is an activity that most children like to do again and again. Variety may also be introduced in games such as Simon Says or Red Light, Green Light by using different locomotor movements. Teachers can ask parents for cultural music or songs involving movement and play from their childhood and incorporate the music or songs into the locomotor activities. These actions provide opportunities to validate children's culture and family values.

Plan meaningful, purposeful, and connected locomotor activities and games. The activities should be meaningful to children, have a clear purpose, and be connected to their culture and the realities of their lives. To be meaningful, the activities should represent children's interests. Children love to move to accomplish something: to feed a pretend animal, to carry pieces of a puzzle from one side of the room to another, to take a letter from one container and place it into another, to match objects, to order numbers, to build a house, to show their costumes, and so on. All these activities can be combined with locomotor movements. One of the factors that can influence the development of locomotor skills and motor skills in general is the purpose or reasons for moving. Teachers need to design activities that center on children's interests. For instance, many children have a genuine interest in animals and love to care for them. This interest can be combined with locomotor skills by setting up plates at one end of the room and containers of food at the other end. In this way children move with the purpose of feeding the animals. Children will be asked to feed the animals the food on the other side. Each time they go to pick a food, ask them to use a different locomotor skill. Remember to discuss the purpose of the movement, such as in this activity, which was to feed the animals. Ask questions: "Did you bring something yellow to your animals? How about something green? What about something red?" "Did they eat their food?" Or, if the children know the food names and groups, add that information to the questions.

Create picture cards representing different ways to move related to children's cultural background. Teachers can add feelings to the locomotor movements, such as happy (skipping), calm (tip-toe), funny (jumping), silly (walking), angry (hopping), and dance walking. Ask the child to pick a card and then move that way. At the end of the activity, ask questions to reinforce concepts and to increase children's awareness of how they moved. For example, ask, "Did anyone move on one foot? Did you move quickly or slowly? Did you express a feeling when you moved? Which one was your favorite way of moving?"

Create culturally diverse scenarios for practicing locomotor skills. Providing movement experiences that reflect the diversity of a group of children is another way to motivate participation and to validate children's cultures. Dances representing different cultures are excellent ways to practice locomotor skills. Another way to incorporate cultural scenarios is through pretend activities using props. For example, children can pretend to be rangers, wear hats, and use Styrofoam noodles as "horses." The teacher can play western-style galloping music to which children can gallop around a "range area." When the teacher plays a different sound (or signal) for the horses to stop, children may act out a jump or make horse noises. The teacher can play the song (or signal) again, and the children can continue galloping to the music.

Teachers and caregivers can incorporate cultural customs and traditions into the locomotor activities. For instance, some Latino children celebrate their birthdays with a cake and a piñata. Traditionally, the piñata is filled with candies and toys. Children take turns hitting it with a stick until it breaks and the prizes fall out. Then they collect items and take them home. Teachers may evoke piñata fun times by having children paint and decorate small piñatas or by making pretend piñatas using cardboard or square paper plates and then gluing decorations to the outside. The cardboard or paper plates should have a small hole at one end so a plastic string or a light rope can be attached. Then pair up the children: one with the piñata and one with a short noodle wand in her hand. Have children chase the piñata outside and hit it with their wands. This activity calls for locomotor movements such as running, galloping, leaping, and changing directions while hitting the piñata. This is a fun activity that should be done outside in open areas that allow space for running, chasing, and changing directions. Teachers can also design a rectangular or circular track area by using traffic cones for children to run around. More than one child can follow the piñata on the ground. This is an excellent locomotor, eye-hand-coordination, and endurance activity. If one member of the pair has motor challenges, the partner can carry out the actions based on verbal or gestural cues.

Encourage persistence during challenging locomotor skills. Some locomotor skills are more challenging and difficult than others. For instance, hopping is difficult because it requires a lot of strength, balance, and coordination. As children experience difficulties, provide **affordances** (i.e., facilitators) such as objects to hold onto while hopping on one foot. Value children's efforts by making them aware of the importance of trying. Ask children to try hopping just one or two steps before trying to hop continuously. Another way to develop hopping skills is by increasing balancing skills on one foot and leg strength. Climbing can also assist children in strength development.

Provide appropriate challenges for children with special needs. Children with disabilities and special needs may need accommodations based on their differing abilities. Teachers need to be open and responsive to individual unique differences. If a child receives services from a specialist such as a physical therapist, occupational therapist, adaptive physical education teacher, or special education teacher, be sure to consult with the specialist about ways to appropriately encourage and challenge physical development. Recognize the strengths of children with special needs and enhance the sensory information that they increasingly rely on. Some children benefit from kinesthetic assistance while others get overstimulated when touched. Know your children well and modify the tasks accordingly. For instance, enhancing auditory and **tactile** stimulation is helpful for children with visual impairments and blindness. In the piñata game mentioned previously, an easy modification would be to place bells on the disc and on the cords. Provide longer cords and see if the child can participate more easily and accomplish the task. You may want to provide a partner for this child to ensure success at the beginning of the game, but as the child gains confidence let her try on her own and see how she feels. Pairing up different children as partners also fosters socialization and acceptance. For resources for working with children with disabilities or other special needs, see appendix D in the *California Preschool Curriculum Framework, Volume 1.*

Express enthusiasm for locomotor skills. Teachers can enhance children's participation by demonstrating enthusiasm for locomotor movement actions and by encouraging children to try new ways of moving. Teachers can show genuine appreciation for movement by describing children's locomotor actions, by taking pictures of children moving around and sending the pictures home (or posting them on a wall or board), by asking them about their feelings while they are moving, and, most importantly, by acting as good role models. Furthermore, describing children's efforts and giving cues or pointers will make them aware of their body actions and ability to replicate successful attempts. These strategies expand exploration, self-discovery, and self-confidence.

3.0 Manipulative Skills

Manipulative skills allow children to use their arms, hands, legs, and feet to project an object away from the body (e.g., throwing a beanbag) or to receive and absorb the force of an object coming to the body (e.g., catching a balloon). Fundamental motor skills that involve large muscle groups are called **gross motor skills** (e.g., kicking) and the ones that involve small muscle groups are called **fine motor skills** (e.g., cutting). Fine motor manipulative skills are usually those in which children manipulate objects with their hands. Gross motor manipulative skills include tossing, rolling, throwing, catching, striking, kicking, bouncing, and punting with objects. Fine motor manipulative skills include cutting, painting, and buttoning.

Most children are naturally eager to play with objects and discover manipulative skills. Exploring and manipulating objects is a natural or engaging way for preschoolers to understand their physical body and their impact on objects and people in the environment. From a young age, children begin exploring objects with their mouth and then with the hands and feet. Soon they drop objects intentionally while observing the reaction of the object as it falls, as well as the people observing and the changes in the environment. They are naturally thrilled by these actions and the reactions of others. To facilitate development, teachers need to observe what children like and dislike playing freely (e.g., some children avoid touching objects or people) and incorporate some of these aspects into their activities.

The acquisition of fundamental manipulative skills follows a predictable developmental sequence, but children often progress through these sequences at different rates (see illustrations of "Selected Developmental Sequences of Fundamental Manipulative Skills," at the end of this chapter). The different rates depend largely on opportunities for practice, encouragement, and instruction (i.e., development is age-related but not age-dependent). Teachers need to understand and expect variability of ability levels among children of the same chronological age as well as among children with special needs.

Environments also affect the quality of skill development. For instance, poverty may affect the availability of resources and opportunities for movement and may limit skill development and movement experiences. Therefore, low levels of skill development and low confidence in movement may be present in children facing these conditions.

A child living in a small urban apartment often tends to be more sedentary, less confident, and may show more delays in movement skill acquisition than a child who lives in a single-family home. The child living in the apartment faces obstacles: hazards outside, lack of play

time with parents because parent work schedules, and limited space and toys. The child living in a house tends to have adequate space to play, toys to play with, and parents who have time to encourage and physically play with him. Likewise, cultural values and beliefs about physical activity can affect the development of motor skills. In general, most cultures tend to support and encourage boys to play with balls and be physically active while girls may get the message that physical activity and gross manipulative skills (e.g., playing with balls) are not important for them.[14, 15] These beliefs and subtle messages may lead to girls becoming less interested in gross motor activities. On the other hand, boys may get less encouragement and opportunities for locomotor skills and fine motor manipulative skills. These cultural values, which are stronger in some cultures than others, negatively affect both boys and girls in the development of their movement repertoire. Fundamental movement skills are the foundation of movement for life, and both boys and girls need to develop proficiency in all locomotor, manipulative, and balance skills. To move with confidence and to develop healthy habits of physical activity, children need to have plenty of opportunities and encouragement that can ensure a physically active lifestyle in the future. Teachers and caregivers need to be aware of these cultural values and expectations so they can encourage, guide, and assist children and families in understanding the issues.

Enriched and developmentally appropriate environments invite movement experiences and may enhance children's skill development, physical activity experiences, and confidence in moving. However, certain aspects of the environment may affect progress in the development of manipulative skills. The conditions of the learning environment, the requirements of the movement task, and the uniqueness of the individual play important roles in the learning of manipulative skills. Strategies for teaching manipulative skills should be flexible and sensitive to individual and cultural differences in a variety of environments. Teachers should also facilitate the adjustment of the manipulative task to create appropriate challenges for all participating children (see the "Research Highlight: Locomotor Skills" on page 148).

Manipulative Skills: Gross Motor

VIGNETTE

Children were playing around a big plastic wading pool, and a few "swam" in a pretend lake (the pretend lake was defined by a large circle drawn on the floor). Children were tossing "food" toward plastic fish in the pretend lake. Some children indicated whom they were trying to feed, while others just tossed food for any of the fish or ducks. The food was in a plastic bucket and consisted of yarn balls, small beanbags, sticky balls, balls with bells inside, and small plastic sensory balls. Mrs. Williams observed the children and described how happy the animals were to get the food:, "Oh, those fish are so happy they do not have to look for food today. You sure are having fun tossing food to the fish today. You may want to toss a little harder to reach the ones that are far away." Some children answered, "Yeah. I am

going to toss really hard," and tossed and stepped forward with the force needed. Mrs. Williams observed, "I noticed that you stepped this time, and that helps when you want to toss hard." Then the child repeated and stepped again and again. Mrs. Williams walked around the circle and asked, "Can you step when you toss the food? Try stepping and see how far you can throw."

Some children stepped with the same-side foot as the arm in action; others changed back and forth. Mrs. Williams indicated to these children, "You're stepping a long way!" By now they were out of food, and the teacher remarked, "Okay, let's walk on your tiptoes and pick up the food and bring it back to the buckets. Look around so you don't bump into anyone." The children stepped into the lake and did so. Mrs. Williams reflected, "Now let's see if we can step over the line before you toss, like this," and she showed them the movement. The children began tossing again. A few stepped, but many others did not.

PLANNING LEARNING OPPORTUNITIES

This activity is engaging to children because it has a purpose that matches their interest. After observing the children's body movements when tossing, the teacher was aware that some children were more advanced than others. A few of the children stepped contra-laterally (i.e., using the leg opposite to the tossing arm), some stepped homo-laterally (i.e., using the same leg as the tossing arm), and many others did not step. This activity provides important information for the teacher when planning the next tossing activity. She can add some visual aids such as footprints (e.g., circle, small mat) and ask children questions to scaffold the stepping action such as, "Can you step in the footprint before tossing the food?" The teacher is aware that her goal for the next time in developing this skill is to encourage stepping. This stepping action can be with either foot so children begin to move their center of gravity. Teachers can ask, "Show me how you can step on the footprint before you toss." Teachers can model and show children the movement by indicating, "I step and toss. Did you see how I stepped?" Some children may benefit from the additional instructional strategy of having the teacher physically guide their bodies through the stepping motion so that children can learn how it feels to step when tossing.

TEACHABLE MOMENT

Encouraging comments, such as "It seems like you are having fun tossing to the fish today," help build internal motivation and enjoyment among children. Teachers can encourage children to step by affirming them based on what the teacher sees (e.g., "That time you took a step. How does

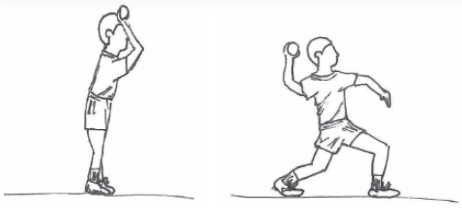
it feel?"). Or, when a child steps, the teacher may say, "That's great! You remembered to take a step before tossing." These comments will make children aware of their foot actions. When a child steps and tosses, the teacher can comment, "Way to step" or, "Now, you're stepping every time." In this way teachers reinforce and encourage the stepping action. If the teacher wants to remind a child of the stepping action, he might say, "Did you step this time?" Furthermore, modeling, mirroring, and physically guiding when the need arises will assist young children in becoming aware of their foot actions. In this vignette, the teacher also helped a child who was more advanced become aware that if his goal was tossing far away, stepping helped. Positive, instructive comments will empower the child and provide him with information on how to control his body to reach his goal.

Interactions and Strategies

Observe developmental sequences of fundamental manipulative skills. Most children progress in fundamental manipulative skills according to developmental sequences. These movements are usually of increasing complexity as the body moves from simple to greater body coordination. Teachers need to be aware of the sequences and able to observe where children are in their development in order to best facilitate the development of these skills in young children (see figure 3.3, "Developmental Sequence of Throwing").

Vary the focus of the manipulative skills. Usually young and inexperienced children will not move their feet when manipulating an object through gross motor movement (see figure 3.3 "Developmental Sequence of Throwing"). At the exploring level the child throws without moving her feet. Only the throwing arm moves; therefore, teachers and caregivers may want to encourage stepping by giving a cue and scaffolding the feet. As children begin stepping with their manipulative actions, their stepping will be done first using a homolateral pattern (i.e., stepping with the same side foot as the arm being used.). Developmentally, it is expected and a natural sequence that most children go through. As children become more comfortable stepping this way, teachers may begin encouraging a more proficient way of stepping. Stepping contra-laterally means with the foot opposed to the arm action. Progressively

Figure 3.3 Developmental Sequence of Throwing



Exploring level Integration level

Designed by Clersida Garcia and illustrated by Xuyen Garcia, 2010.

children will begin the transition to step in opposition (i.e., contra-laterally), the more coordinated way of moving the legs in most manipulative skills (see the integration level ilustrated in figure 3.3). Most children with disabilities or special needs move through the same levels of developmental sequences, but their progress is often at a different or delayed pace. Children with physical disabilities will accommodate their movement actions to their special capabilities. For instance, a child in a wheelchair will not step but can use a similar arm action as the one observed at the integration level. For propulsion skills, such as throwing, teachers and caregivers may want to encourage children to extend their arm back or swing the leg back before contact to increase the propulsive force that will be applied to the object (e.g., arms for throwing, legs for kicking). For receptive skills, such as catching, teachers may want to encourage children to focus on arms reaching up and moving smoothly down to absorb the force of the object. As children improve their skills, teachers may later encourage and focus on trunk rotation and so on. Teachers need to consider all these aspects when designing activities addressing the gross motor manipulative skills.

Provide a variety of equipment to accommodate individual differences in body size, skill level, and the development of children's physical and sensory systems. For example, for gross motor manipulative skill development, it is helpful to provide balls of different sizes, shapes, textures, and weight. Beanbags, sponge balls, or even wadded-up newspaper are good. If children will throw at a target, it should be colorful, large, and interactive. The activity should be enjoyable and interesting. A target with sounds or effects (e.g., objects appear and disappear) provides children with motivation and directionality in projection skills. When targets are used, the emphasis should not be on how accurately children hit the targets. Rather, the teacher's focus should be on observing children's movement patterns. Do they use the right hand or left hand consistently? Do they make an attempt at the movement? Do they step? How do they step? Do they step in opposition?

Create meaningful scenarios that provide the opportunity for the integration of fundamental movement skills with other curriculum concepts. Children learn and recall both motor skills and curriculum concepts better when they are related in meaningful ways. As stated earlier in this framework, motor, cognitive, social, and emotional development are all interrelated. Teachers can create opportunities for incorporating all domains of learning and concepts such as numbers, shapes, colors, matching activities, sequencing activities, creative activities, and special cultural themes with both gross and fine motor manipulative skills. This kind of experience will create countless opportunities for teachable moments (see "Bringing It All Together" on page 171 for an example).

Use both unstructured and structured strategies, as well as multisensory experiences, in your teaching. Unstructured time encourages children to explore and discover multiple possibilities and ranges of body motion. Structured activities provide efficient models for children to replicate skills. Young children typically benefit from exposure to a balance of unstructured and structured strategies. Children sometimes need a demonstration by the teacher or direct guidance on how to move ("Step with this foot,

Mary" while touching her foot); and other times they need a challenge: "How many ways can we move our feet to toss this beanbag to the circle?" "Show me two ways to kick!" "How can we throw from a sitting position?" In addition to these strategies, adding a variety of sensory stimulation (e.g., visual, hearing, tactile) can address children's multiple ways of learning.

Create developmental activities that provide a sense of success. Modifying activities for individual skill levels is a constant aspect of teaching. For instance, the way a teacher enhances a child's developing visual and perceptual systems and ability to track objects in space can facilitate success. The teacher can enhance and facilitate success by setting up the environment with appropriate challenges and by observing individual children and assisting them accordingly. For instance, using materials that are colorful, light, and falls slowly, such as scarves, feathers, balloons, or bubbles, can increase the child's ability to visually follow (i.e., track) the object. The slow fall of the object provides time for the child to respond and catch successfully even though the child may have delayed arm action. (*Note:* This is a typical characteristic of a young child's developing perceptual system.) Providing slower-falling objects may be particularly appropriate for children with disabilities and other special needs who benefit from having more time to respond physically or cognitively. Another accommodation can be made in the way the balls or objects are presented to children with special needs. For instance, it is easier for a child with a visual impairment to catch an object that makes sounds and rolls on the floor or a low table than a silent object that is tossed.

Provide opportunities for repeated practice in a safe environment. Children need plenty of opportunities to practice their manipulative motor skills in a variety of settings and with a variety of materials and equipment. Manipulative activities can be practiced indoors and outdoors, in interest areas, and during small- or large-group activities. Young children need to practice the same manipulative skills in many different settings. Sometimes a familiar activity in a different setting seems like a completely new experience. To provide safety during manipulative activities, check the space where the activity will be done and remove obstacles. Such things as water on the floor, slippery surfaces, or objects that can impede safe play need to be rectified before any activity begins. Making sure that the manipulative play equipment is soft and light is another important safety consideration. Also, be certain to provide clear directions and a recognized signal for starting and stopping all activities.

Understand gender-based expectations of the children's culture when teaching manipulative skills. Culture influences young children's exposure and opportunities to engage in manipulative activities. In some cultures, playing

with balls and using the large muscles is expected of boys. Likewise the clothing used by children represents these culturally based expectations. Boys are more likely to be dressed in clothing that allows for physical activity, rough-and-tumble play, and wear and tear. Girls are sometimes expected to be less active and may be dressed in clothes that limit their active play. In addition, girls may show little interest for gross motor manipulative skills because their culture perceives active play to be of low value.

The gender-based expectations of children's culture, as well as their level of skill development, may influence the motivation of children to participate in gross motor manipulative activities. Boys, in general, tend to be more interested in gross motor manipulative skills, while girls tend to avoid gross motor manipulative skills due to a lack of exposure and the cultural, gender-based perception that these types of skills are not for them.[16] Teachers should understand that these differences may be initially observed but do not need to persist. Open communication with parents and family members about the importance of gross motor manipulative skills for girls as well as boys, and asking for collaboration, can help girls and their families understand the benefits of becoming competent in manipulative skills. In addition, parents and children need to understand the importance of appropriate clothing for movement activities. Teachers, parents, and family members need to learn and understand the benefits of manipulative and large muscle skills for girls. Girls may need more encouragement, guided assistance, reassurance, and role modeling to develop manipulative skills. To learn more about expectations for children in specific cultures, observe carefully, communicate thoughtfully with children and family members, and seek community resources as needed.

Provide plenty of encouragement. Most of the time, young children value adults' opinions about their efforts. Adults need to recognize the value of trying. Trying is key to the process that led to the acquisition of the skill. Skills development is a slow process and each tiny improvement helps that process advance. Children want adults to notice them in action and to acknowledge their efforts. Adults encourage children to participate and enhance children's sense of accomplishment of a task. Positive verbal and nonverbal communication is effective. For example, take time to express verbal acknowledgment of their movement actions, take digital pictures of their movement skills, show reassurance, and use hand signals such as "a high-five" or thumbs-up gesture. Adults' demonstrations of enjoyment and genuine enthusiasm for children's skill development are

a powerful motivation for young children. (See the *California Preschool Curriculum Framework, Volume 1,* chapter 3, for more information).

Create manipulative activities that provide automatic feedback and a sense of accomplishment. Teachers can create activities in which children's movement actions cause a reaction in the environment. For instance, providing targets with sound lets children know immediately that they hit the target. This activity can provide a sense of accomplishment independent of skill level. If they do not hit the target, they may make an adjustment to do so. They will develop their ability to judge and adjust their movement actions. Another motivational effect is having children knock down objects that produce a sound or making something appear or disappear after the child's action. For example, hitting a beach ball with a short Styrofoam "noodle" will create a sound that children enjoy. The sound itself may motivate them to do the task over and over again.

Manipulative Skills: Fine Motor

VIGNETTE

Ms. Lupe overhears Trang, a new child in the preschool program, talk enthusiastically about going on nature hikes with her family. Ms. Lupe designs a nature-hike activity in which children pretend to be scientists and collect specimens from the outside play area. The teacher provides several specimen containers, including twist-top food jars, zippered pouches, and flip-top dental floss dispensers. Trang finds an acorn to put into a twist-top jar, and Todd places a leaf into a zippered pouch. Todd and Trang return to the "lab" area indoors, where there are "lab coats" consisting of button-down shirts and a tray of "lab tools." The tools include a magnifying glass, tweezers, and a paintbrush. Both children put on lab coats, and Trang buttons one button.

Trang asks Todd, "Want to see the nut I found?" "Yeah!" exclaims Todd as Ms. Lupe joins the children. Trang untwists the lid of her container and pours the acorn onto the tray. Ms. Lupe says, "Scientist Trang, you found a nut called an acorn." Trang takes the tweezers and tries to pick up the acorn, which slips out. Trang sighs in frustration but keeps trying, while Ms. Lupe nods and smiles encouragingly at Trang. On her third attempt, Trang picks up the acorn. Ms. Lupe exclaims, "Trang, you picked up your acorn! How did you hold the tweezers?" Trang shrugs and says, "I don't know." Ms. Lupe suggests, "Hmm . . . it looks like you squeezed the tweezers just tightly enough, but not too much. What do you think?" Trang pauses for a moment, and then nods, "The nut falls when I squeeze too hard. I have to squeeze just right." Ms. Lupe replies, "Yes, you squeezed the tweezers just right to pick up your acorn. And you kept trying even when it was hard. Now, tell me about this acorn."

PLANNING LEARNING OPPORTUNITIES

Teachers can design meaningful learning experiences by incorporating children's interests. By being a careful observer, Ms. Lupe learns about Trang's interest in nature walks. The teacher designs the general theme and purpose of the activity (i.e., find an object from outside) but provides choices for carrying out the activity, such as which containers to use and what to collect. Having choices may motivate children's participation and accommodate different skill levels and interests. This activity provides multiple ways for children to develop fine motor manipulative skills. Because natural materials from outside are used, children can explore and manipulate objects of various sizes, shapes, weight, and textures. Incorporating different tools, containers, and clothing fasteners creates additional fine motor challenges. The nature-hike activity also provides learning opportunities in other domains; it involves science concepts, vocabulary, emotional regulation (e.g., persisting with a challenging task and managing frustration), social interaction, and pretend play.

TEACHABLE MOMENT

The teacher observes that Trang is frustrated by the challenge of manipulating tweezers and uses nonverbal communication (i.e., facial expressions and gestures) to encourage the child's effort. If Trang had become very frustrated or had been unable to pick up the acorn after numerous attempts, Ms. Lupe may have provided verbal suggestions, demonstrations, or hands-on assistance as needed. Ms. Lupe expresses genuine enthusiasm when Trang picks up the acorn. The teacher's description of what the child did validated her accomplishment. The teacher helps the child to reflect on *how* she effectively manipulated the tool; this reflection process promotes self-awareness of the motor strategies used and solidifies learning.

VIGNETTE

Luz, an English language learner, reaches for scissors during a craft activity. Mr. Aponte hands her a pair of scissors, saying, "These are scissors." Luz repeats "scissors." A few days later, also during a craft activity, Mr. Aponte asks Luz, "Show me what you do with scissors." Luz opens and closes her index and middle fingers, pretending to be cutting something using scissors. A few weeks later, during another craft activity, Luz says to a peer, "Please give me the scissors."

TEACHABLE MOMENT

In this vignette, the teacher uses a craft activity as an opportunity to teach and reinforce the learning of the word "scissors." Mr. Aponte first uses the natural context of handing over a pair of scissors to expose Luz to a vocabulary word. Then, after exposing Luz to the word perhaps multiple times, Mr. Aponte checks Luz's comprehension of the word by asking her to use gestures to demonstrate its meaning. Finally, Luz has mastered the word and uses it to facilitate her participation in craft activities. Fine motor manipulative activities can provide meaningful contexts for learning English. This vignette also illustrates a realistic learning process that could span over weeks or even months.

Interactions and Strategies

Learn about children's cultural context for fine motor activities. Culture influences young children's opportunities to engage in fine motor activities. Fine motor skills may be highly valued and encouraged in some cultures but viewed as less important in others. Thus, children whose cultures value fine motor skills may demonstrate more well-developed skills due to increased practice opportunities. Gender-based cultural expectations may also exist; some cultures expect girls to engage more in fine motor activities and boys to be more proficient in gross motor activities. Cultures also differ in the types of tools introduced to children and the appropriate time to introduce those tools. For example, young children may be expected to manipulate chopsticks, use a fork, or eat with their hands, depending on their cultural norm. To learn more about certain cultures, observe carefully, communicate thoughtfully with children and family members, and access community resources as needed. Remain respectful of children's cultural contexts while communicating openly with family members about the importance and benefits of fine motor skills for all children.

Learn about families' values related to fine motor activities. Be sensitive to each family's personal values. Some family members may have safety concerns about introducing scissors to young children. Others may be uncomfortable about allowing children to get messy with paints or markers. Educate families about the benefits and safety of fine motor participation for children while remaining sensitive to family values. For example, teachers may suggest that children use only blunt-tip scissors and only in the presence of an adult. Teachers may also use washable paint and suggest that children

wear aprons to keep clothing free from stains. Partner with families to identify appropriate home activities to promote children's fine motor development.

Learn about children's prior experiences and personal interests related to fine motor activities. Depending on cultural traditions, socioeconomic status, family values, and special needs, children enter preschool with a wide range of prior exposure and access to fine motor activities. Children also have personal preferences with respect to play. Children who prefer fine motor play may demonstrate a relative strength in fine motor development. By gaining a broad understanding of each child's personal contexts and interests, teachers can design more effective and more meaningful learning opportunities to support fine motor development.

Focus on the quality of movement rather than the end product. When children are acquiring new fine motor skills, focus on the developmental progression of hand and arm movements (see figure 3.4, "Developmental Sequence of Cutting"). For example, when children are learning to cut, provide instruction and feedback on the quality and mechanics of movement (e.g., proper positioning of the scissors in the hand) rather than about the end product (i.e., whether the child cuts on the line).

Provide clear, specific feedback to facilitate children's problem-solving process. Motor skills are learned best when children are allowed to encounter motor challenges, problem-solve, and develop their own solutions.[17] During challenging activities, encourage children's efforts with acknowledgment such

Figure 3.4 Developmental Sequence of Cutting

Early Cutting

When children are first learning to cut, they often hold the scissors with the thumb facing down. The elbow may elevate as they cut. They tend to cut across their bodies (toward the opposite hand). Young children usually need to position the paper on a support surface.

More Mature Cutting

As children's cutting skills mature, the thumb is positioned facing up. They also keep their elbows down at their side when cutting. Children tend to cut away from their bodies. Older children can hold the paper in the opposite hand as they cut.

Photographs by Robyn Wu

as, "You are working hard to make this necklace. The beads are smaller than what you used before." Teachers can also assist children by narrating and framing the motor problem: "Hmm, the bead slips out of your fingers when you try to push the lace through. I wonder how you can get the bead to stay in your fingers?" When children are able to solve the motor problems, provide prompts to increase self-awareness about how they solved the problem. The teacher may say, "You held onto the bead this time. What did you do differently?" The teacher can also offer a more directive prompt, such as, "The bead stayed in your hand when you held on to the very middle of the bead. Does it feel different when you hold it like that?"

Provide a variety of tools and media to promote participation. Accommodate individual differences in interests and abilities by providing options. For example, if children create greeting cards, provide various materials to decorate the cards, including crayons (of different diameters and lengths), markers, stickers, stamps, or finger paint. Crayons or makers may motivate those children who prefer to draw freehanded, and the different types and sizes of drawing tools will accommodate differences in grasping abilities and hand strength. Children who enjoy sensory exploration with their hands may choose finger painting. The novelty of stickers and stamps may appeal to others.

Design meaningful fine motor activities by incorporating children's diverse backgrounds. Children from diverse ethnic or cultural backgrounds may be familiar with different types of tools and materials for fine motor manipulation. Create meaningful learning experiences for children by incorporating elements from their cultures. For example, cooking activities can incorporate fine motor activities from multiple cultures, such as making tortillas with rolling pins, crushing dough with a Roti press, or picking up sticky rice with chopsticks. Include clothing and accessories from various cultures for children to explore during dress-up play. Exposure to diverse tools, materials, and activities yields not only fine motor benefits, but also enhances cognitive and social development for children from all cultural backgrounds.

Provide adaptations to support participation of children with disabilities or other special needs. Adapt fine motor activities and materials to enable children with differing abilities to participate. Some children with physical disabilities may benefit from additional postural support during fine motor activities. Common positioning strategies for postural support including providing a tabletop or tray to support the elbows, firm blankets or pillows to prevent loss of balance sideways, or hip straps to keep the pelvis in place. If a child has use of only one hand, teachers can stabilize fine motor materials by using nonslip mats, binder clips, or clamps. Consult with the children's family or special education specialists to obtain specific suggestions to meet children's unique needs. See the strategy, "Assist children with proper fit and positioning of scissors" on page 169 for including a variety of types of scissors. For resources for working with children with disabilities or other special needs, see appendix D of the *California Preschool Curriculum Framework, Volume 1.*

Promote children's ability to manipulate objects by feel. To use the hands with skill and efficiency, children need to learn to manipulate objects "by feel" (i.e., using the sense of touch) rather than relying only on vision.[18] As children's

touch sense develops, they can determine an object's size, weight, shape, texture, and other physical features by feeling with their hands, without needing to look at the object. Finding small treasures hidden in a treasure box of water, sand, or other materials develops the sense of touch. Challenge children to refine their touch and movement senses by asking them to build, with their eyes closed, a block tower as high as possible. Teachers can also introduce small-group games, such as having children pass around and identify a mystery object while keeping their eyes closed. The development of touch perception may be particularly important for children who have visual impairments. Some children have an aversion to touching certain objects or textures. Consult with the family and an early childhood special education specialist for adaptations.

Provide opportunities for children to engage in fine motor activities in a variety of positions. Fine motor activities can be performed in many different positions, including standing, lying on the stomach, seated on the floor, or seated in a chair. Preschool children benefit from the opportunity to practice manipulative skills from different body positions.

Provide optimal postural support during challenging fine motor activities. When a child appears challenged by a fine motor activity, consider asking the child to sit in a chair at a tabletop surface for more postural support. Postural support allows children to focus more on hand movements and less on postural control. Optimal support is achieved when the child sits on a stable chair with ankles, knees, and hips bent at 90 degrees, feet flat on the floor, and forearms resting on the table. The tabletop should be approximately two inches above the child's elbow when she is seated. Simple adaptations to accommodate different body sizes include footrests of telephone books or shoeboxes and seat cushions made from rolled towels or blankets.

Position materials vertically. Provide opportunities to explore art and writing media at vertical surfaces such as an easel, writing board, or paper taped on the wall. Pegboards and lacing boards can also be placed vertically. Manipulating objects on a vertical surface develops strength and endurance in children's shoulder and trunk muscles. Strong shoulder and trunk muscles are necessary for maintaining the body in a stable, upright position during fine motor activities. The vertical position also promotes development of the wrist and thumb muscles for grasping tools. Cutting materials can also be positioned vertically. For example, teachers can tape a long strip of paper vertically to the wall or top of a cabinet and have children cut on a "road" from the bottom to the top. Cutting in a vertical, upward direction encourages proper positioning of the forearm (i.e., thumb up and elbow down) for using scissors.

Engage children in "heavy work" activities to develop trunk and shoulder muscles. Examples of "heavy work" for preschool children include pushing a chair across the floor, carrying a tray of snacks across the room, carrying a watering can to the garden, or wiping off a table. Many children are motivated by the helper role when completing heavy work. Heavy work strengthens the trunk and shoulder muscles necessary for maintaining the child's body in proper alignment (i.e., upright rather than slumped over) during fine motor activities.

Provide resistive activities to develop hand strength. Hand strength is required to complete many tasks, such as removing the cap from a marker, opening food containers, or fastening snaps on clothing. Resistive play activities include rolling clay to make snakes, using clothespins to pin up flags for a castle, or carrying buckets of water to the sandbox. Encourage children to use resistive tools—a rolling pin to roll out play dough for pizza, a single-hole punch to punch holes for lacing, or a shovel to dig a moat in the sandbox. Tearing, scrunching, and folding paper for art projects also develop hand muscles.

Provide activities to develop hand precision. Children need precision when manipulating small objects, such as when buttoning or threading a zipper. Focus on developing refined control of the thumb, index finger, and middle finger. Provide play activities that require precise placement of small objects, such as lacing small beads or playing with puzzles. Provide fun, purposeful activities involving tools, such as squeezing spray bottles to water plants, using chopsticks to sort objects (can be adapted by using rubber bands to help hold the two sticks together) or manipulating eye droppers filled with colored water to make pictures.

Assist children with proper fit and positioning of scissors. To accommodate the range of hand sizes in a preschool program, consider obtaining a few different sizes and designs of blunt-tip children's scissors. If the child has not used scissors before, show her how to hold the scissors with the thumb and middle finger through the loops and the index finger placed on the underside of the scissors, outside of the loops. Scissors designed for children with special needs include "loop" scissors (more like using tongs), spring-loaded scissors (which help the child reopen the scissors after each cut), and "trainer" scissors (with added loops for adults to cut with the child). These alternative scissors may benefit all children.

Provide a variety of media for cutting with scissors. If children are new to cutting, they can practice snipping straws, rolls of play dough, or strips of paper,

where one cutting movement results in a successful cut. A fun activity that incorporates many fine motor skills is snipping plastic straws into short segments and then threading the straw segments to make a necklace. Once children acquire the basic movement patterns for cutting, they benefit from opportunities to cut different textures of paper (e.g., cardstock, tissue, construction paper) or cloth. Practicing with a variety of media promotes further development of cutting skills.

Be aware of children's handedness when providing assistance with fine motor activities. Many preschool children may not consistently demonstrate whether they are right- or left-handed (see the "Research Highlight: Development of Handedness in Children" for more information). Teachers have excellent opportunities to observe children's hand-preference development when children are drawing with crayons, pounding with toy hammers, or eating with a spoon. To promote the child's natural **handedness**, offer tools at the middle level of the child's body, letting the child choose which hand to use. For children with established handedness, model and provide assistance that is compatible with the child's handedness. For example, it may be easier for a left-handed child to learn to hold scissors when the teacher demonstrates with the left hand.

Research Highlight: Development of Handedness in Children

Handedness means that one hand is consistently used for most tasks requiring skilled manipulation (e.g., drawing, cutting). Handedness is genetically determined, and scientists have observed a preferred hand for thumb sucking as early as in the womb. However, there is a wide age range at which handedness is consistently demonstrated in children. A majority of children begin to show a hand preference by age three. Most children exhibit consistent hand preference between ages five and six. However, a small percentage of typically developing children do not show consistent hand preference until as late as age eight. Approximately 90 percent of the typically developing population is right-handed. Children with special needs may demonstrate handedness later and are more likely to exhibit inconsistent hand preference. Among children with learning disabilities and autism, the incidence of left-handedness is higher, ranging from 15 to 30 percent.[19, 20, 21, 22, 23]

Bringing It All Together

The only way to develop efficient patterns of fundamental movement skills is through the practice of these skills. Teachers play a critical role in engaging children and supporting their practice by modifying the environment and allowing individualization and meaningful interactions that reflect children's interests and cultural experiences. When planning to guide and expose children to opportunities for developing more proficient patterns of fundamental movement skills, teachers and caregivers need to consider the value of integration in learning.

Children learn new skills, including movement skills, most effectively when the learning occurs in an integrated, personally meaningful way. Fundamental movement skills provide another way for children to learn, develop, and to gain knowledge and experiences about the physical world. In this sense, meaningful connections with all areas of development and the reality of the children involved, including their cultural and linguistic experiences, are essential for healthy development.

Children constructed birds and balls out of paper while playing indoors. They colored the papers using markers of different colors. Children also decorated their creations with colorful feathers and cut out shapes from magazines. They attached these decorations to their birds and balls with glue. When the decorations were dry, the teacher invited them to play with their birds and balls outside. The teacher, Ms. Gupta, previously had designed the outdoor play area by placing some colorful plastic hoops, cones, and shapes on the floor with pictures of the community buildings attached to them. She also drew a line two steps away from the pretend buildings.

Outside, she said to the children, "Let's make *the birds fly toward those buildings and see where they land." The children became excited and began using the throwing action to fly their birds. Some children were much closer to the line, and others stood farther away. While throwing, they began adjusting their proximity to the line. Ms. Gupta said, "How can you move your bodies to make your bird fly up in the sky?" Jamila said, "I know, throw like this [moving her arm up and down]." Lesley said, "We need to step and send the bird up." Ms. Gupta paused and observed them throwing for a while. One child's bird was going down fast, and she said, "Xuyen, do you want your bird to go up?" Xuyen replied, "Yes." Ms. Gupta asked, "How can we do that?" Xuyen shrugged her shoulders as though to say, "I do not know." Ms. Gupta then suggested, "How about if you throw it toward the sky?" Xuyen moved her arm up over her head in the throwing action, and her bird flew a little longer. She noticed and smiled, then ran to get it and tried again. Ms. Gupta smiled and said, "You moved your arm up this time. That is the way to make your bird go up: keep moving your arm up each time." Another child was picking up his bird, and Ms. Gupta said, "Yeng, on what building did your bird land?" Yeng said, "The store." and kept running back to try again. Ms. Gupta said to another child, "Mary, did your bird land in the hospital?" Mary replied, "No, that is the park." Mary was right. Ms. Gupta continued asking different children about the buildings.*

After some time, Ms. Gupta changed the challenge by asking the children if they wanted to try throwing the paper balls. After observing their movement pattern of throwing the balls, she said, "It may help if you step before you throw," as she demonstrated the movement. Some children tried the movement, and others continued doing it their way. She noticed that some began incorporating their locomotor skills. Then she said, "What other movements can you add before you throw?" and paused. Then she said, "How fast can you go to get your paper balls?" Then she said, "Let's pretend that you are walking in mud when you go to pick up your balls." (Ms. Gupta already knew that the children enjoy pretending to walk in mud.) Then she asked, "What other ways can you go to get your paper ball?" She knew the children would come up with different ideas because they had played the game "Pretend You Are Walking on . . ." before. One child who was having a difficult time throwing said to Ms. Gupta, "I know how a bird flies!" Ms. Gupta said, "Show me, Alejandro." Alejandro went on and began running around the whole playground area, moving his arms like a bird. Ms. Gupta said, when Alejandro came back,

Research Highlight: Beyond the Five Senses

Most people are familiar with the five senses: hearing, vision, touch, smell, and taste. However, there are two additional body senses, **vestibular** (i.e., head position and head movement) and **proprioceptive** (i.e., body position and body movement), and they are extremely important for physical development in young children.

The vestibular receptors, located in the inner ear, provide information about head position in space. Thus, we can perceive whether we are upside down or right-side up while riding a roller coaster. Vestibular receptors also tell us the direction in which our head is moving through space, and how fast it is moving—such as when we are riding an elevator or jumping on a trampoline. Intact vestibular processing contributes to many fundamental physical functions, including keeping our balance, sustaining muscle tone to stay upright against gravity, maintaining alertness, coordinating head and eye movements (e.g., when turning our head to look at a sign while riding in a car), and coordinating the two sides of the body.

The proprioceptive sense provides information about the position and movement of body parts. Proprioceptive receptors in muscles and joints enable people to know whether their fingers are bent or straight when they have their hands inside pockets. This internal sense of how body joints are positioned is important for planning how to move the body and for adjusting movements to maneuver around obstacles. Proprioceptive awareness also enables people to gauge how much pressure to use when manipulating toys or touching other people.

The preschool years are a critical developmental period for the vestibular and proprioceptive senses. Both senses are activated when children engage in movement activities such as running, jumping, rolling across the floor, or twirling around when dancing. Preschool children need plenty of movement experiences throughout the day to support the development of these two important senses.[24]

Often, children with special needs have difficulty in processing vestibular or proprioceptive sensations, which affects their ability to explore their environments, to interact with others, and to learn.[25]

"You really know how they fly. Have you seen them before?" Alejandro said, "Yes, I saw many around my house."

In this movement activity, the teacher integrates learning with other areas of the preschool curriculum and learning that includes fundamental movement skills. The line on the floor that she draws will separate the throwing area from the landing area. That line also gives children a point of reference to adjust their throwing. Most children will automatically adjust their position (i.e., closer to the line or farther from the line) according to their ability levels. The teacher makes the activity developmentally appropriate by allowing children to make adjustments. Children will fly their birds and throw their paper balls and they have some connection to the birds and balls because they created them. This is another way to create connections and meaning for the activities. Finding out where the birds and balls land gives children a chance to integrate knowledge about their community with fundamental movement skills. In this activity, the teacher can also integrate knowledge from the areas of visual and performing arts with the realities of their community. The ways they move to collect their birds and balls provide them with opportunities to practice locomotor skills and movement concepts. Children can also learn which of the two objects flies better and how to control their bodies to make the objects fly higher or farther. They use their locomotor skills and perceptual skills to go get their airplanes without bumping into each other. They can pretend to be birds and explore movement concepts.

Alejandro, the child who wanted to show the teacher how birds fly, may have difficulty throwing but clearly understands the action even though he cannot demonstrate it with his paper bird. Some children understand the concepts but cannot produce the desired movements, and they benefit from opportunities to express themselves. The teacher also integrated the children's past pleasant experiences into the activity when she asked them to walk on mud. The ideas for connection become countless when teachers begin to consider the possibilities for integration.

In relation to manipulative skills, children here were working on throwing and fine motor skills prior to the activity. This activity may move them into stepping naturally, after their throw, or may help loosen their bodies for the step-and-throw action to evolve. They will have used their fine motor skills in the preparation and construction of birds and paper balls. The teacher could incorporate more unique places in the community, geometric shapes, animals, numbers, or letters as landing targets and have other pretend landing scenarios that incorporate other academic areas into this activity.

Engaging Families

Teachers need to develop some patterns for continuous communication with parents and caregivers. Families are an important force in children's lives and in the physical activities children engage in. Some people believe that fundamental movement skills are only used outdoors. Although the outdoor environment offers a series of appealing possibilities, such as open space and the chance to use all-out force, indoor spaces also offer an array of opportunities for continued practice of the fundamental movement skills.

- ✔ Create a newsletter to be given to parents and family members periodically. Photos of their children, pictures, and documents in the family's home language about what their children are learning about fundamental

movement skills can be included. This may require translation; however, the connection with the families is worth the effort. Provide some stories and pictures of children in action.

- ✔ Provide suggestions for activities that will support children's continuous fundamental motor skill development. Be specific about how. For instance, suggest to parents and family members that when they go to the park, they can ask their child to show a balance position or a balance movement they learned at preschool, denonstrate a favorite way to move fast or slow, or show how he or she plays with balls.
- ✔ Ask parents and family members about the kind of balance, locomotor, and manipulative activities they did when they were young children. They can write them down or verbally communicate with the teachers and their children. This information can be incorporated into future activities and open a door of communication to discuss physical development in the past and in the present. Talk about the importance of physical development for both boys and girls and how gender issues may affect children. Girls already receive encouragement for manipulative skills, as do boys for locomotor skills. These reflections and conversations can bring opportunities to close this gap and explain to parents the importance of physical activity in today's society.
- ✔ Encourage parents and family members to ask their children about the movement skills the children are learning at their preschool.
- ✔ Inform parents about the importance of having their children wear comfortable clothes and shoes so they can move easily and freely during physical development activities.
- ✔ Ask children to show their parents and family members the movements they are learning at their preschool.
- ✔ Have a parents' "Show and Tell Day" where children show and tell parents their favorite fundamental movement skills.
- ✔ Ask children to identify the movement skills of the athletes in sport games family members are watching and then demonstrate those skills. This is a way to engage family members' interest in their child's fundamental movement skills development.
- ✔ Suggest ways for children to help around the home and at the same time practice their fundamental movement skills. Examples include matching and rolling their socks and tossing them from a short distance into the laundry basket or drawer. Helping to unpack groceries and placing them on shelves provides children with an activity to develop manipulative skills and strengthen their hands. Parents and children can create a safe obstacle course in their home where children can move under and over furniture by using locomotor skills.
- ✔ Encourage parents and family members to provide time for children to perform independent daily living activities, such as brushing teeth or getting dressed. Children need time to manipulate objects such as toothpaste caps, zippers on their clothing, and lids of food containers.
- ✔ Encourage parents and family members to take their children outside to safe, open spaces and play areas where they can use fundamental movement skills.

Questions for Reflection

1. In what areas of your program can you incorporate fundamental movement skills? How can you integrate and make meaningful connections with other domains of learning, such as language and literacy, social–emotional development, and mathematics?
2. What aspects of the indoor and outdoor environments can you modify to help children advance in the development of fundamental movement skills?
3. What tasks can you modify to facilitate the development of more efficient fundamental movement skills? How can you modify these tasks?
4. How can fundamental movement activities be modified to include children with disabilities and special needs?
5. How can family culture, language, and diversity be incorporated into fundamental movement activities? How can ideas and materials from children's different cultures be included in fine motor activities and games?
6. In what ways can you encourage the practice of fundamental movement skills at home?

Perceptual-Motor Skills and Movement Concepts

Perceptual-motor skills and movement concepts are essential to all facets of young children's lives. Perceptual-motor coordination is the process of receiving, interpreting, and using information from all of the body's senses. Perceptual-motor development requires children to integrate both sensory and motor abilities to carry out physical activities. For example, to walk across a balance beam, children take in sensory information from multiple senses. They see the height and dimensions of the balance beam, feel its surface with their feet, and feel the position of their body parts in space. Children then use this sensory information to plan how they will step on the beam. All voluntary movement involves an element of perception, and perceptual-motor coordination plays an important role in children's development of movement skills.

Movement concepts are the cognitive component of movement. Preschool children gain important knowledge about how the body can move in an almost endless variety of ways. For example, they learn to move at different speeds and with different degrees of force, in various pathways, around different types of obstacles, and in relation to other people. They are also acquiring new vocabulary (e.g., *zigzag, under,* or *behind*) that describe their movement experiences. Movement concepts enable children to problem-solve how the body should move during certain activities and situations. For example, walking across ice requires children to take slow, light steps, while walking in sand requires heavier steps. Movement concepts provide critical foundations for learning how to move in novel situations (e.g., when playing new sport). To become proficient movers, children need to acquire both the movement skills and the movement concepts underlying those skills.

Children enter preschool with various experiences and abilities in perceptual-motor coordination and understanding of movement concepts. Children's growth in perceptual-motor skills and movement concepts leads to increased success and confidence when exploring, performing personal care, and playing cooperatively with others. Perceptual-motor skills and movement concepts are also key building blocks for future learning in areas such as reading, writing, and mathematics. Preschool programs promote children's development of perceptual-motor skills and movement concepts by engaging children in a variety of movement experiences and by increasing their cognitive understanding of movement. When teachers and family members become aware of the importance of perceptual-motor skills and intentionally teach these skills, they lay important foundations for children to successfully learn and participate in all of life's activities.

In this section, strategies are provided to promote development in each of the following substrands:

1.0 Body Awareness
2.0 Spatial Awareness
3.0 Directional Awareness

1.0 Body Awareness

During the preschool years, children's knowledge of their bodies becomes more accurate and specific. They develop a clear understanding of how body parts interrelate (e.g., the shoulder connects to the arm, which connects to the hand). Children are also learning to identify, describe, and differentiate an increasing number of body parts. Furthermore, they can demonstrate different ways to move specific body parts (e.g., the shoulder can move up and down, out to the side, or in a circular motion). Body awareness is necessary for coordinating physical movements when new skills are being learned, such as hopping or throwing. Accurate knowledge about body parts also enhances children's ability to care for their own bodies, such as during toileting, bathing, and dressing.

VIGNETTE

Ms. Elena approaches the dramatic play area, where Deepa and Jorge are playing together. Both children greet their teacher with a hug and then resume playing. Jorge, a child who is a very new English learner, picks up a shiny bracelet and shows Deepa. "Put that here!" Deepa says enthusiastically as she points to her wrist. Jorge puts the bracelet on Deepa, and both children smile while admiring the bracelet. Ms. Elena exclaims, "What a sparkly bracelet Deepa has on her wrist!" as Ms. Elena lightly touches Deepa's wrist. Ms. Elena smiles at Jorge and says, "Pulsera en su muñeca (Bracelet on her wrist)." She touches the bracelet as she says "pulsera" and lightly taps Jorge's wrist when she says "muñeca."

TEACHABLE MOMENT

Ms. Elena took the opportunity to introduce body-parts vocabulary within the meaningful context of a child-initiated play activity. She utilized a **multisensory** teaching approach by providing verbal modeling, visual prompts, and touch feedback to both children. In this scenario, the teacher had determined that both children would be comfortable with having her touch their wrists; it is important to consider each child's comfort level with receiving physical touch from teachers. Ms. Elena modeled vocabulary in each child's home language. For more information about strategies to support children who are English learners, see the *California Preschool Curriculum Framework, Volume 1*, chapter 5.

Interactions and Strategies

Use multisensory teaching strategies to reinforce children's learning. Whenever possible, incorporate multiple senses to teach a concept. For example, if teaching children about the elbow, the following strategies may be used: (1) visual, by the teacher holding up or pointing to his own elbows or asking children to find elbows in pictures; (2) auditory, by modeling and prompting children to say the word *elbow* during both planned and unplanned activities; and (3) touch and movement, such as by having children wiggle their elbows, rub their elbows, touch a friend's elbow, or put a sticker on one of their elbows.

Use body-parts vocabulary in the child's home language. When working with children who are English learners, obtain written words and auditory recordings of vocabulary in children's home languages from family members or interpreters. Incorporate children's home languages when teaching body parts. Teachers can also use the home language of children who are English learners during songs. For example, if there are Spanish speakers, teachers can teach the "Head, Shoulders, Knees, and Toes" song with Spanish translations of the key words (i.e., *cabeza, hombros, rodillas, y dedos*). Children who are English learners may learn more easily when instruction is available in their home languages, and *all children* benefit from exposure to additional languages.

Use alternative communication methods, as appropriate, to teach body-parts vocabulary. Some children with special needs may communicate by using sign language, picture communication systems, or other augmentative communication methods. Incorporate the child's familiar communication method when introducing body parts vocabulary. All children in the preschool program may benefit from the additional visual cues provided by sign language or pictures.

Use body-parts vocabulary in the natural context of daily living activities and child-initiated play. For example, during handwashing, the teacher can demonstrate by rubbing his hands together and say, "Rub your *palms* together like this." If a child is exploring art media, the teacher may say, "Wow, you put the elephant stamp on your *forearm*."

Introduce body-parts vocabulary during structured group games. Games such as Simon Says can teach body awareness. When playing Simon Says, give all children the chance to play for the entire duration of the game. Assist children to correct their movements or postures rather than taking them out of the game if they make errors. Dice games can also be used to teach body parts. Teachers can make "body-parts dice" by placing pictures of different body parts on each side of a small cardboard box. Children take turns rolling the die and leading the group in a body movement. For example, if a child rolls the "ankle" picture, she may choose to have everyone make circles with their ankles.

Engage children in singing and movement activities to teach body parts. Singing group songs provides multisensory learning opportunities with music, body movements, and visual modeling. For example, when singing the "Spider on the Floor" song, teachers can lead children in touching and pointing to the body parts from the lyrics. "The Mulberry Bush" song can be adapted into a body-awareness activity by asking children

to take turns choosing body parts and movements to sing about. For example, the lyrics can be "This is the way we wiggle our hips" or "This is the way we shrug our shoulders." When singing "If You're Happy and You Know It," teachers can also introduce body-parts vocabulary with corresponding movements—for example, "If you're happy and you know it, tap your chin."

Encourage children to identify and describe body parts in books or in pictures of themselves and family members. Match the difficulty level of the prompting questions to the child's abilities. For example, a teacher can say, "Where is daddy's nose?" and allow the child to respond by pointing. With a different child, the teacher can give a more open-ended prompt such as, "Tell me about Daddy's face."

Provide opportunities for dress-up play. Children learn body awareness through the process of exploring clothing items and accessories, looking at themselves and each other during dress-up, and talking about what they are wearing. Teachers can also narrate children's play using body-parts vocabulary, such as by saying: "You have a necklace around your *neck*." Some children may also enjoy dressing up dolls, action figures, or stuffed animals. In addition to promoting body awareness, dress-up play also provides the opportunity to develop pretend play, social interaction, language, and fine motor manipulation skills.

Provide opportunities for children to see external representations of their bodies. Seeing external images of their bodies through playing in front of mirrors, making body shadows, or tracing body parts (e.g., hands or feet) onto paper enhances development of children's "visual maps" of their body parts.

Provide constructional play for children to build or put together body parts. Children can use play dough or clay to make people or animals. Preschool children may also enjoy making collages by cutting out pictures of different body parts from magazines. Provide puzzles, felt boards, or self-sticking hook-and-eye surfaces for children to assemble faces and bodies.

Ask children to describe their drawings of people. Between the ages of four and five, many children begin to make rudimentary drawings of people. Please refer to the visual and performing arts foundations in the *California Preschool Learning Foundations, Volume 2,* for more information about children's drawing skills. Children are often motivated to draw pictures of themselves or a significant person such as a family member. Encourage the child to talk about the drawing and model the usage of body-parts vocabulary when commenting on the child's drawing.

2.0 Spatial Awareness

Spatial awareness enables children to understand their location and the location of objects and people around them. Preschool children are learning to judge how much space their bodies and other objects take up and whether something is "close" or "far." They are also developing vocabulary for describing the position of two objects relative to one another, such as whether a ball is "in front of" or "behind" them. Children gain awareness of their body dimensions and body position by physically exploring their world and by maneuvering around different obstacles (both people and objects) during play.

Activities that require children to push, pull, squeeze or do other "heavy work" against resistance provide amplified sensory feedback to children's bodies and are effective for developing spatial awareness. Moreover, the type of touch sensation experienced during "heavy work" activities is generally well tolerated by most children, including those who have difficulty tolerating other types of touch sensations (e.g., light touch, wet or messy textures). Spatial awareness is an important skill that will support children's development in multiple domains, including Physical Development, Math (see the *California Preschool Curriculum Framework, Volume 1*, chapter 6, "Mathematics," Geometry strand), and Visual and Performing Arts (see chapter 2, "Visual and Performing Arts," Dance strand).

Developmental Sequence of Spatial Awareness

- Around three years of age, a child bumps into others who are close by during all types of activities.
- Around four years of age, a child participates in seated activities without bumping into others.
- Around five years of age, a child participates in standing activities (primarily staying in place) without bumping into others.
- Around five and a half years of age, during a locomotor activity in which children move in the same direction (e.g., pretending to walk like a row of ducklings or marching in a parade), a child, with prompting, maintains space around self without bumping into others.
- Around six years of age, during a locomotor or movement activity in which children move in different directions (e.g., chasing games or dancing), a child maintains space around self without bumping into others.[26]

VIGNETTE

During outside play, Mr. Clay brings several phone books, recycled bubble-wrap material, and a large cardboard box with cutouts. Ming (a child who uses a wheelchair), Lana, and Spencer go over to see what their teacher is doing. Mr. Clay indicates, "I am setting up an obstacle course. Would you all like to help?" The children all agree excitedly.

Ming points to the box and asks, "Is this a tunnel?"

Mr. Clay replies, "Ming, I think this would make a great tunnel. What do the rest of you think?" The teacher facilitates the children's discussion as they decide this will be a tunnel in the mountains. "Where is a good place for the tunnel?" asks Mr. Clay. The children look around, and Lana says, "Over there," while pointing. Mr. Clay replies, "Great idea, Lana. There is a space over there, between the sandbox and the grass area." The three children work together to push the box over.

PLANNING LEARNING OPPORTUNITIES

Teachers can promote the development of spatial awareness by providing fun movement activities that require children to figure out how to maneuver their bodies over, under, or around various obstacles. By designing the obstacle course as a small-group activity, teachers give children the opportunity to use spatial awareness to maintain an appropriate distance from other children. Materials used in the obstacle course are simple yet versatile for providing variations in movement experiences. For example, children can jump on, step over, or zigzag around the pieces of bubble wrap. Asking children to help with setup or cleanup requires them to coordinate their own body spaces and positions with each other and the objects. Teachers can also introduce vocabulary for spatial concepts when giving verbal instructions (e.g., using the word "between").

VIGNETTE

Jamar brings a ladybug in a container to show his friends at preschool. He arrives at preschool with his grandfather, Elijah, who says, "Jamar, put the ladybug on the table behind you." When Jamar looks at his grandfather with a slightly puzzled look, Elijah repeats, "Behind you, Jamar," while simultaneously pointing to the table. Jamar then walks to the table using his walker, takes the ladybug container out of his walker pouch, and places the container on the table. Ms. Julia, who has been observing, says to Jamar, "Wow, I like your ladybug! We sometimes have to turn our bodies around to get to things 'behind' us, right?" Jamar nods and then goes to find his friends. Ms. Julia takes this opportunity to talk to Jamar's grandfather. She says, "Jamar is learning many new words. By using the word 'behind' and also pointing in that direction, you helped Jamar learn what 'behind' means."

TEACHABLE MOMENT

Jamar's grandfather spontaneously used an effective multisensory strategy (i.e., using both words and gestures) to teach Jamar the spatial concept "behind." Ms. Julia took the opportunity to reinforce Jamar's understanding of the

concept. She also provided feedback to Jamar's grandfather to increase his awareness about the learning process that just occurred and to encourage the family member to continue these types of interactions with the child. Adults can help children develop a sense of position by modeling and teaching positional vocabulary in natural contexts.[27]

Interactions and Strategies

Set up obstacles courses that encourage children to go over, under, and through objects. General household objects and recyclable items (e.g., cardboard boxes, phone books, or ropes) can be easily adapted for outdoor or indoor use.

Provide opportunities for children to experience moving at different levels of body positioning, ranging from high to low. Guide children to practice high-level movements by asking them to be as "tall" as possible while pretending to be storybook characters (e.g., Clifford the giant dog) or tall animals (e.g., a giraffe). Encourage children to move at lower levels by asking them to pretend to be animals, such as a snake sliding across the sand or a bunny hopping across the field. Teachers can also provide physical obstacles for children to negotiate, such as using a long Styrofoam noodle for Limbo (where children have to pass underneath the target without using hands) or creating a tunnel with cardboard boxes for crawling.

Provide games for children to explore changing the size of their bodies. Ask children to make their bodies as "small" or "big" as possible when pretending to be different animals or characters. For example, when acting out "Goldilocks and the Three Bears," encourage children to make their bodies small for Baby Bear and big for Papa Bear.

Play games that allow children to move around with objects balanced on different parts of their body. For example, ask children to crawl or move with a beanbag on their shoulder or on top of their head.

Provide pushing and pulling games with peers. Two to three children can work together to push or pull each other across the room or playground while seated in a cardboard box, storage bin, or wagon. For an additional challenge, children can transport blocks or beanbags in addition to the "passenger." Children may be motivated to participate when provided with pretend-play themes—for example, pretending to be the school bus, an airplane, or race car.

Play games that require two to three children to work together to transport a large, lightweight object. Children will experience many spatial-awareness challenges when coordinating their own body positions with others to carry large items (such as a sheet or blanket, a large poster board or cardboard, or a long pole) in the context of play.

Use dancing and musical games to promote the development of spatial awareness and body control. Group games, such as musical hoops or musical statues, provide fun opportunities for

children to practice starting and stopping their movements while navigating around furniture and other people. When playing musical hoops, keep enough hoops and allow children to share their hoops so that all children can participate and learn about sharing. To play musical statues, children dance whenever the music is playing and "freeze" like statues whenever the music stops. Recognize that children can engage in large or small movements to participate in this activity.

Use positional-concepts vocabulary within the natural context of daily routines. For example, during toileting, the teacher may say, "Did you pull your pants up all the way in the *back*?" When assisting a child to pack up to go home, the teacher may say, "Let's put your things *inside* your backpack."

Have children participate in cleanup routines by putting away toys. Cleanup activities require children to use spatial skills to place play objects back into containers. Children also apply positional concepts when putting away containers, such as understanding that the bin of play dough goes on the *top* shelf and the car and truck bin goes on the *bottom* shelf.

Engage children in helper roles by performing "heavy work" activities. Heavy work activities include pushing, pulling, squeezing, or carrying objects. While engaging in heavy work, children develop body awareness and spatial awareness as their muscles and joints receive amplified sensory information. Heavy work may have a calming and organizing effect for children who have attention or sensory processing challenges.[28, 29] Teachers can reinforce positional concepts when giving instructions during heavy work, such as by saying, "Please stack the chairs *on top of* the table" or "Please put the apples *next to* the milk at the snack table."

Narrate or ask questions about children's play using positional-concepts vocabulary in English and the child's home language. When children are playing "car wash," a teacher may comment or sign to the child, "I wonder if you will wash the *front* or the *back* of the car first?" or "Wow, the *side* of this truck looks much cleaner now." During constructional play, a teacher may ask, "Are you going to build your house *close to* the train station?"

Engage children in songs and rhymes with body movements or spatial concepts. For example, when singing the "Hokey Pokey," emphasize the words "in" and "out" and demonstrate the actions for children to follow. The "Ring Around the Rosie" song provides opportunities for children to learn the concepts of up and down. Teachers can also engage children in a spatial-concepts activity by adapting the lyrics of "Where Is Thumbkin?" Provide a stationary object (e.g., a large beach ball) and ask a child to pick a way to position himself relative to the object. For example, if Dylan chooses to position himself behind the ball, the group would sing, "Where is Dylan? Where is Dylan? There he is. There he is. He's behind the ball. He's behind the ball. Wave to Dylan! Wave to Dylan!"

Reinforce spatial concepts when reading or looking at books. Reading books together not only promotes language and literacy development, but also can teach movement concepts. Encourage children to describe locations of characters or objects in pictures. Reading and acting out books with spatial-concept themes (e.g., "Going on a Bear Hunt" or "Three Little Monkeys Jumping on the Bed") help to reinforce children's emerging spatial vocabulary.

Use props or play objects to guide children in positioning their bodies. For example, provide individual carpet squares for children to sit on during circle time and explain that each carpet square is his or her space. Place hula hoops or draw circles on the ground and ask small groups of children to sit within the boundaries when playing games that requires children to be "close" to each other.

Use the child's home language to introduce spatial-concepts vocabulary. When working with children who are English learners, provide written words and an auditory recording of key vocabulary for distance (e.g., close, far) and position in space (e.g., under, over, in front of, behind, next to) in children's home languages. Teachers can obtain translations from other teaching and support staff, bilingual assistants, and family or community members. Incorporate vocabulary in the child's home language when giving instructions (e.g., "Stand *behind* the rope") or when describing the child's play (e.g., "You are *next to* your fort"). For more information about strategies to support children who are English learners, see the *California Preschool Curriculum Framework, Volume 1*, chapter 5.

Provide alternative ways for children with physical disabilities or other special needs to learn spatial concepts. Children who lack the mobility to participate in active physical play may not have the same opportunities for physical exploration. Teachers can provide alternative learning activities for children, such as manipulating dolls and actions figures during pretend play or identifying positions of characters and objects in books. When possible, it is helpful for the child to have the physical experience of moving through different positions. Children who are blind or have visual impairments may need extra assistance to explore their physical environments. Talk with the specialists working with the child to discover how to best support this learning. For resources for working with children with disabilities or other special needs, see appendix D of the *California Preschool Curriculum Framework, Volume 1*.

Provide additional cues and assistance as needed to ensure safety for children who have spatial-awareness challenges. Some children with special needs, such as those with hearing or visual impairments, may need extra help to avoid bumping into other people or environmental obstacles during play and daily routines. Sometimes children do not have an accurate awareness of their body dimensions or position in space. Other times they may not be able to plan or sequence movements (i.e., motor plan) in order to negotiate obstacles or climb onto/off playground equipment. Teachers can help by providing extra verbal prompts, visual aids, or physical guidance as appropriate. Always consult with family members and specialists working with the child.

3.0 Directional Awareness

When provided with opportunities to move their bodies through space in different directions, preschool children are learning what it means and how it feels to move up, down, forward, and backward. They later learn the concept of moving sideways. Most preschool children begin to understand that their bodies have two sides but cannot yet identify the left or right side of their body. Children are also learning to identify the top, bottom, front, or back of objects, but they do not clearly understand that objects have a left or right side. Preschool children also enjoy following pathways on the floor or creating their own movement pathways, such as straight, curved, or zigzag. Teachers can promote the development of preschool children's directional awareness by providing both planned games and child-initiated play to encourage children to move their bodies in different ways.

- As children mature, they develop their "sense of direction" in a predictable sequence.
- Between ages two and three, children can identify front/back and top/bottom on their own bodies.
- Around age four, children are aware that their bodies have two distinct sides and are learning to determine which side is left and which is right.
- By age six or seven, children can accurately identify the left and right sides on their own body parts.
- Around age eight, children become aware that objects also have a left and right side.
- Older children (age ten or older) can give directions to another person, such as "Go down the hall and turn left to get to the school office." They can accurately identify the left and right sides on another person, even if the person is facing a different direction.[30, 31, 32]

VIGNETTE

During outdoor play, Ms. Jodi notices several children playing the "Mirror, Mirror" game, which they learned yesterday during a teacher-guided group activity. Harpreet, one of the more outgoing children, is the leader. She makes gestures with her arms and gets into different postures (e.g., standing on tiptoes or on one foot), and the others imitate her. After a few minutes, Ms. Jodi comments, "I see how all of you are paying attention to the leader and doing the same thing as Harpreet. Would it be fun to try to copy her if she moves in different directions?" The children are excited about this new way to play the

game, but Kai asks, "Like what?" Ms. Jodi explains, "For example, if I were the leader, I could move forward [she simultaneously demonstrating each movement] . . . backward . . . sideways . . . or even turn my body all the way around in a circle." The children have fun exploring this new variation of the game. After several minutes, Ms. Jodi suggests that Miya, who is usually reserved and quiet, take a turn being the leader. Miya smiles and agrees.

TEACHABLE MOMENT

Ms. Jodi creates an opportunity for the children to explore directional concepts by suggesting a variation to a movement game they already know and enjoy. The teacher provides verbal instructions and visual modeling of the movements. If needed, the teacher can also provide hands-on assistance to help children with their movements. If children seem to be catching on as the game continues, Ms. Jodi can suggest additional challenges, such as moving at a faster pace or holding hands with a partner while moving. The teacher adjusts the pace of the game so that children experience a sense of success yet remain engaged and challenged by the variety in the movement experiences. Ms. Jodi also encourages a quiet child to take a turn at being the leader. Children benefit from the opportunity to both follow and lead movements.

Interactions and Strategies

Provide opportunities for child-initiated play in areas with open space. The outside environment is ideal for allowing children to explore moving their bodies while running, chasing, jumping, or moving alongside other children. Indoor spaces can also be adapted to create open spaces for children to run, chase, and move about freely.

Provide safe environments in which children can climb up and down. Climbing experiences can occur in a variety of environments, such as outside on play equipment; in a designated inside area, where children can climb onto the top of a mountain of cushions; or out in the community, where children can climb steps.

Encourage children to move in different directions and in different types of pathways (e.g., straight, curved, or zigzag) during group movement games. During games such as Follow the Leader, provide opportunities for children to move in different directions, including forward, backward, and sideways. To encourage children to move in curved or zigzag pathways, use visual guides for obstacle courses or treasure hunts in which children have to follow a path drawn on the ground with sidewalk chalk or taped on the floor with masking tape.

Design activities for children to practice moving alongside or in a line with other people. For example, moving alongside or behind another child while marching in a parade or dancing in a conga line provides a wonderful challenge for both directional awareness

and spatial awareness. Or have children practice staying in a line while pretending to march like ants or swim like ducklings. Games such as Red Light–Green Light provide an additional challenge by requiring children to control starting and stopping body movements frequently while moving alongside others. Suggest more challenging variations to Red Light–Green Light by asking children to move backwards or sideways.

Play games that require children to coordinate moving with others to manage a physical object or prop. For example, the teacher can suggest children to either move in a line or move around in a circle while everyone holds onto a section of a long rope. Children can work together to transport a large box across the room. During parachute play, teachers can ask all children to move around in a circle with the parachute. Children can also move forward toward the middle of the parachute to make the parachute "small" and then move backwards away from the middle to make the parachute "big." A large sheet can serve as a parachute.

Provide opportunities for children to move and use their bodies with force. Some young children may receive more sensory feedback about their body movements when they use a large amount of force. Thus, children may benefit from a safe environment to crash their bodies into a pile of pillows or cushions, stomp hard on a sheet of bubble-wrap material taped on the ground, or push heavy boxes up a slope. In particular, some children who have disabilities or other special needs may seek and benefit from opportunities to move their bodies with force. Give all children clear safety guidelines for the activities and set up the environment to ensure safety.

Provide opportunities for children to move and use their bodies lightly. Children learn how much force to use by practicing both forceful and light movements. Provide games for children to move their bodies while handling light objects, such as transporting a feather or plastic egg on a mixing spoon across the room. Soft, slow music also encourages light movements. Be aware of different children's responses to light touch, which may be perceived as uncomfortable by some children.

Engage children in two-handed play activities. Provide percussion instruments for children to bang together or shake with both hands during movement activities, such as dancing or marching. Examples of homemade percussion toys include paper tubes filled with small rocks or beads, pots and pans (including lids), and metal cups, plates, and utensils. Many fine motor activities (e.g., opening containers, lacing, stringing beads) also incorporate use of both hands. Using two hands together during play increases children's awareness of the two sides of their body.

Position drawing activities vertically. When children draw at a vertical surface, they are able to apply directional concepts to their drawings more easily because the paper is oriented the same way, (i.e., vertically) as their body. For

example, if children understand *up* and *down* movements with their own body, they can use their own body orientation as a guide when learning to draw *up* and *down* lines on a piece of paper.

Provide pretend-play activities to reinforce directional concepts. During pretend play, children can "drive" vehicles or move action figures in different directions. Teachers can comment or ask about the children's play, such as by saying, "I wonder if the fire engine is going to *back up* to get *closer* to the building?" or "I wonder if the firefighter is going to climb *up* the tree to find the cat?"

Use the child's home language for introducing directional-concepts vocabulary. When working with children who are English learners, provide written words and auditory recordings of key vocabulary for directional concepts (e.g., forward, backward, sideways). Incorporate vocabulary in the child's home language when giving instructions (e.g., "Let's walk backwards") or when describing the child's play (e.g., "You are jumping sideways"). For more information about strategies to support children who are English learners, see the *California Preschool Curriculum Framework, Volume 1*, chapter 5.

Adapt movement experiences as needed for children with physical disabilities. Some children with physical disabilities may not be able to move their body in different directions through space. However, they still benefit from the experience of moving forward, backwards, or sideways in a wagon or wheelchair.

Bringing It All Together

Several children in Mr. Clay's class are interested in trains, and during circle time they read a book about trains. Later that day, a group of children go through the obstacle course outdoors. Spencer asks, "I wonder if a train could go through our tunnel." Ming responds, "Yeah, the train in the book went through mountain tunnels." Mr. Clay suggests, "Well, maybe this obstacle course is a railroad today?" The children all agree excitedly.

Children begin to go through the obstacle pretending to be trains and saying "choo-choo" along the way. After awhile, Mr. Clay asks, "Do any of you trains want to carry freight?" "I do!" volunteers Mei enthusiastically. Mr. Clay retrieves a bucket of beanbags, which will be the trains' freight. The teacher asks Mei, "Mei the Train, where will you carry your freight?" Mei replies, "here" while pointing to her shoulder. "On your shoulder? Great idea!" responds Mr. Clay. As children continue with the activity, Mr. Clay assists them in coming up with other variations, such as having everyone line up in a row and stay close together as one long train. When Ming gets to the cardboard tunnel, the teacher lifts up the cardboard box to provide clearance for Ming and his wheelchair to fit through the tunnel. Later, the teacher asks, "I wonder if it would be fun for the trains to go in reverse?" "What's reverse?" Spencer asks. Ming responds, "I know! Watch this," and demonstrates wheeling his wheelchair backwards.

In this vignette, the teacher thoughtfully incorporates perceptual-motor skills and movement concepts into a child-initiated movement activity. Mr. Clay reinforces body awareness by asking Mei to decide how she would be carrying her freight and thoughtfully used the word "shoulder" in a meaningful context. Spatial awareness is required for negotiating the obstacle course while maintaining appropriate physical positioning with peers. The teacher introduces directional concepts by suggesting "reverse" movements. The children are motivated by the pretend-play theme, and the teacher uses the train theme to create variations and challenges to the activity. Mr. Clay provides an integrated learning experience by using the physical play activity to reinforce "train" vocabulary and concepts from an earlier circle-time activity. This vignette also illustrates how a child who uses a wheelchair for mobility is able to participate fully alongside his peers when given a simple accommodation (i.e., the teacher lifting up the cardboard box momentarily).

Engaging Families

The following suggestions to family members may promote their children's development in the area of perceptual-motor skills and movement concepts.

- ✔ Encourage children to use words or signs to identify or describe their body parts when they are completing personal-care activities such as getting dressed or bathing.
- ✔ Provide opportunities for children to interact with adults and help around the home with activities such as putting away their toys, putting away groceries, sorting laundry, or bringing dirty dishes to the kitchen.

- ✔ When out in the community, such as at the park or grocery store, communicate with children about objects in the environment. Encourage them to describe where trees, buildings, cars, and other objects are located in relation to one another.
- ✔ When looking at books or pictures together, talk about how the characters are positioned and how they are moving their bodies.
- ✔ When children are playing, ask them to describe what they are doing with their bodies.

Questions for Reflection

1. What is your current level of knowledge, experience, and comfort with promoting the development of perceptual-motor skills and movement concepts in young children? What specific topics do you want to learn more about? What resources can you access for more information?
2. How would you recognize if children in your program were experiencing challenges with perceptual-motor skills and movement concepts? How might it look when a child is having difficulty with body awareness, spatial awareness, or directional awareness?
3. How can you use pretend-play themes and children's interests to provide variety and challenges to the movement activities in order to promote development of body awareness, spatial awareness, and directional awareness?
4. How can you enlist children as helpers for group activities? Which activities would be beneficial for their perceptual development?
5. How can you thoughtfully use vocabulary for body parts, positional concepts, and directional concepts more often throughout the school day?
6. What types of activities, environmental supports, and teaching strategies may promote the development of perceptual-motor skills and movement concepts for children who are English learners?
7. What types of activities, environmental supports, and teaching strategies may promote the development of perceptual-motor skills and movement concepts for children with special needs?

Active Physical Play

Active play is essential to the optimal physical development and overall health of young children. Physical activity embedded throughout the preschool day promotes children's ability to attend to, learn, and regulate their emotional responses. Active physical play not only enhances the body's physiological functions (i.e., physical fitness), it promotes optimal brain chemistry for self-regulation and enhances learning readiness.[33, 34] As such, it should be fully integrated into the regular preschool day.

Active physical play contributes markedly to enhancing children's fundamental movement skills in three principal areas: balance, locomotion, and both gross and fine motor manipulation. Both typically developing children[35, 36] and those with special needs benefit.[37, 38] Furthermore, the perceptual-motor components also discussed earlier are promoted through active physical play. Activities that promote body awareness, spatial awareness, and directional awareness engage the senses as children move through space.[39]

To derive the maximum health-related benefits, children should engage in active play on most days of the week, in an environment that promotes enjoyment, safety, and success. These benefits include increases in **muscular strength, muscular endurance,** and joint **flexibility** as well as improved **aerobic endurance** and **body composition**. Proper nutrition and adequate hydration also play important roles in young children's active physical play. Both of these topics are covered in greater detail in the *California Preschool Learning Foundations, Volume 2* and in chapter 4, "Health."

Young children can be easily engaged in movement and benefit immensely from an active way of life. The habits of physical activity that children learn in the early years greatly increase the chance that children will continue being physically active throughout childhood and beyond. Most importantly, children must see active play as fun. Your regular participation with children will do much to model the joy of moving. You can take almost any indoor or outdoor physical activity, give it a name, and make it a game. Children are active learners. For most, physical activity is fun. Your enthusiastic participation with children will go a long way to motivate them for continued active play. The three substrands of Active Physical Play are:

1.0 Active Participation
2.0 Cardiovascular Endurance
3.0 Muscular Strength, Muscular Endurance, and Flexibility

1.0 Active Participation

When the large muscles of the body are fully engaged, young children learn more effectively and also derive important health and physical fitness benefits. Active physical play contributes measurably to all aspects of physical fitness. Physical fitness is defined as a set of physical attributes related to a person's ability to perform activities that require cardiovascular endurance, muscular strength, muscular endurance, and joint flexibility. Although genetic inheritance does play a role, physical fitness is largely determined by regular participation in moderate to vigorous physical activity.

Moderate physical activities use large muscle groups and include walking, water play under a garden sprinkler, and dancing for short periods of time. Vigorous physical activities elevate the heart rate significantly and sustain an elevated rate. Activities such as running for several minutes at a time, tricycle riding up an incline, dancing to music that helps maintain an elevated heart rate, and repeatedly jumping over a rope for a sustained period are vigorous physical activities. Young children need to be involved in moderate to vigorous physical activity almost daily, at home and at school. Moderate to vigorous activity that is enjoyable, developmentally appropriate, and adapted to the needs of each child increases children's physical fitness levels.

VIGNETTE

Anna and Bethany, two preschool-age girls, live in urban, high-rise apartment buildings that limit the opportunity for physical activity. At home they watch television, play computer games, and engage in a variety of sedentary activities. Their outdoor play is restricted because of their parents' concern for safety. Fortunately, they are enrolled in preschool programs where there are well-informed teachers who are just as concerned with and knowledgeable about children's physical development as they are with their social–emotional and cognitive development.

At Anna's preschool, Ms. Jennifer has created both indoor and outdoor spaces that encourage increased physical activity. Indoors, Ms. Jennifer has taken a corner of the room and outfitted it with beanbags, soft balls, beach balls, and scarves for manipulative activities; floor markings, rubber spots, and sturdy boxes of varying heights to encourage jumping; and a tunnel made from discarded packing boxes to encourage crawling and imagery activities. Outdoors, Ms. Jennifer has provided tricycles, hand carts, wagons, musical instruments and music CDs that encourage active movement for sustained periods, and a variety of climbing, hanging, and swinging equipment to promote vigorous physical activity.

Bethany's teacher, Ms. Ellie, has less access to play equipment and space but still engages the children in many physical activities. Indoors, she provides frequent learning activities in which she leads the children through a story play, nursery rhyme, or song that involves

the use of the major muscle groups of the body. Outdoors, Ms. Ellie relies on the natural terrain of the small outdoor play area and actively engages children by offering movement challenges, problem-solving activities, and imagery that encourages increased physical activity.

Anna and Bethany love preschool for many reasons. Chief among them is the opportunity to engage in a variety of indoor and outdoor play activities that are fun and not possible at home. Their parents are also pleased with the programs not only because they are "fun," as Anna and Bethany insist, but also because the activities give their children regular opportunities for sustained gross motor play that improves their fundamental movement skills, perceptual-motor abilities, and active participation in moderate to vigorous physical activities.

TEACHABLE MOMENT

At the beginning of the school year, the teacher observes that Anna is reluctant to engage in large muscle activities and much prefers sedentary activities. Approaching Anna, Ms. Jennifer says, "Let's go to the movement area and play with the beach balls." Ms. Jennifer has created an indoor movement area by using a small space in a corner of the room where children play with materials such as streamers, scarves, beanbags, and hoops to promote increased physical activity. Working with Anna and others who spontaneously gravitate to the movement center, Ms. Jennifer poses a set of progressive movement challenges in the form of questions such as: "Can you bat the beach ball on the floor?" "Can you hit it real hard/real soft/on one side/on the other side?" "High/down low?" "Can you hit the beach ball to make it roll on the floor from this side of the room to the other side? Can you keep running after your beach ball while rolling it on the ground?" "Can you move about the room while keeping the beach ball rolling on the floor?" "Can you make funny faces while keeping the beach ball on the ground?" "Can you find new ways to hit your beach ball to keep it rolling on the ground?" Ms. Jennifer provides plenty of verbal reinforcement to Anna and the other children, acknowledging their attempts and offering new and progressively more challenging movement problems. Finally, she encourages small groups of two or three children to roll the ball back and forth on the ground. She retreats from the space, leaving Anna and the other children to discover new ways of playing with the beach balls.

PLANNING LEARNING OPPORTUNITIES

By carefully observing children and their activity preferences, teachers and parents can provide support to children in exploring and experimenting with new objects and active play.

Children who have not had an opportunity to ride a tricycle, play on a climbing apparatus, or express themselves to music, as well as children with other special needs, might need extra support and encouragement. Teachers can guide children to try new activities by breaking the activity down into its simplest components and building skill upon skill. For example, for a child who has never been on a climbing dome, the teacher may first encourage him to climb to only the lowest rung and to then try to move all the way around the dome on just the lowest rung. Later the teacher may encourage him to climb higher and eventually to the top. Care should be taken to go at the child's pace in building skills and to let the child take the initiative to explore, experiment, and discover at her own pace.

VIGNETTE

The class goes to the playground. It is the first time for Elisa. While other children are climbing, swinging, and sliding, Elisa looks intimidated. Ms. Martinez wants to her go up the steps to the top of the slide. Elisa refuses to go up and starts to shake. Ms. Martinez stays close to Elisa while paying close attention to other children. The next time they come to the playground, Ms. Martinez brings a ball with her so that Elisa can play on the ground. A few times later, Ms. Martinez notices that Elisa ventures to the stairs of the slide, cautiously making baby steps. "You can do it!" Ms. Martinez encourages her. After Elisa has made a few steps, Ms. Martinez says, "You did it! You made one more step than last time!" Two months later, Elisa climbs up the stairs and slides down on her own: "I did it!" she says. Ms. Martinez gives her a big hug, and the whole class cheers for Elisa.

TEACHABLE MOMENT

Many children from low-income families are not exposed to parks before they enter preschool. In some low-income neighborhoods, there are not enough clean and safe parks suitable for young children. Some parents are not aware of the importance of bringing children to parks or do not have time to do so. Children's initial responses to parks may be very different. Some children may cry and may not want to leave the park after playing there for the first time. They may be intimidated by these new activities. This vignette captures the process through which a teacher helps a child who has had limited play experiences on the playground overcome her fear and strategically get to master one type of popular play equipment.

Interactions and Strategies

Provide ample opportunities for children to engage daily in active play. Play is the "learning laboratory" of children. It is a primary means by which they make contact with and make meaning of their rapidly expanding world. Children should participate in both self-directed play and guided play each day. Because young children tend to have low levels of endurance and short attention spans, their physical activity patterns are intermittent. The "Active Start" guidelines recommend at least 60 minutes of daily physical activity that can be broken into two or three bouts of 20 or 30 minutes. Actual instructional time for physical activity should be daily but for no more than 30 minutes at a time.[40] Additional time should be allotted daily for children to engage in self-directed play both indoors and outdoors. It is widely recommended that children accumulate at least 60 minutes and up to several hours of **unstructured physical activity** on each day of the week.[41, 42, 43, 44]

Create inviting activity environments in which children can be physically active. Fun is the primary motive for young children to engage in active play.

Without teacher interaction, children may not understand (or know) that the results of their physical activity or inactivity affect their physical fitness and overall health. Teachers therefore should "plant seeds" for understanding and model enthusiasm for being active movers. For example, the teacher may say, "Put your hand on your heart before and after running around the playground. Do you feel a difference? Is your heart beating faster or slower? Why?" Making an activity fun is the key to getting children moving and to sustaining active play that results in a fitness benefit.

Help children identify appropriate places for different types of physical activity. It is important for young children to know and respect what is appropriate for various indoor and outdoor play spaces. This is important for their own safety and enjoyment and that of others. See the "Research Highlight: Does Increasing Children's Physical Activity really make a difference?" See page 198 for more information about the importance of physical activity for preschool children.

Create an activity environment that is nurturing and supportive and allows likely success. Children respond positively to encouragement and the process of building skill upon skill. Breaking an activity down into smaller steps promotes success. Participation attempts that have positive results tend to encourage further participation, which leads to improved body coordination. Preschool-age children do not fully master physical skills. However, they can attain increased competence in a wide range of activities. For example, when a child climbs on an apparatus, the teacher might first say, "See if you can climb as high as my head. I'll be behind you and help if you

need it." Later the teacher may say, "You climbed so high yesterday on the climbing gym. Let's see if you can do it again and maybe even climb higher." Finally the teacher may say, "You are so strong. See if you can climb to the top while I stand beneath you here at the bottom."

Encourage children to continue participation by providing opportunities for short but frequent rest periods during vigorous activity. Low levels of strength and endurance make it necessary to take a short break for up to one minute during extended bouts of vigorous activity. Experienced teachers use this "down" time to encourage children, to check for understanding, and to monitor interest levels. If interest wanes, activity levels will decrease. So it may be time to transition to another activity or game or self-directed play. Oftentimes, giving a routine activity a name and making it a game will spark continued vigorous activity. For example, rather than having the children just run or tricycle around the play area, call it the "Playground Super Challenge." Have children pretend to be race cars and count laps out loud, or even better, try it yourself. Children often love to imitate adults. If they see you having fun, they will join in the fun too.

Ensure that physical activity is sustained by providing personally meaningful and purposeful opportunities for children. The primary reasons given by children for engaging in physical activities are to have fun and to make new friends. Teachers need to keep these two reasons in the forefront of their planning to facilitate success and enjoyment in a social context. Today's children live in a world in which physical activity that results in improved fitness levels and positive health benefits has become an option rather than a necessity. The problem is well known and the culprits are many (e.g., TV, computer games, lack of space, city planning, personal safety).

Recognize and take into account any environmental constraints. Take time to observe and be responsible for the play environment. Are there barriers to participation such as insufficient or worn-out equipment, lack of materials, or limited play spaces? If so, these barriers need to be addressed to the best of your ability. When working with children with disabilities, it is especially important to assess potential barriers in the play space, accommodate for them (e.g., create ramps to eliminate stair barriers), and create environments that are educational, safe, and accessible. Proper clothing for the outdoor environment (e.g., shorts or slacks and an adequate shirt and head covering for sun protection) as well as adequate footwear (e.g., sneakers or sturdy shoes) are also important

considerations. Long dresses, baggy pants, flip-flops, and jelly shoes restrict movement and may result in injury. It will be helpful for adults to participate with the children by also wearing appropriate clothing for active play, both indoors and outdoors.

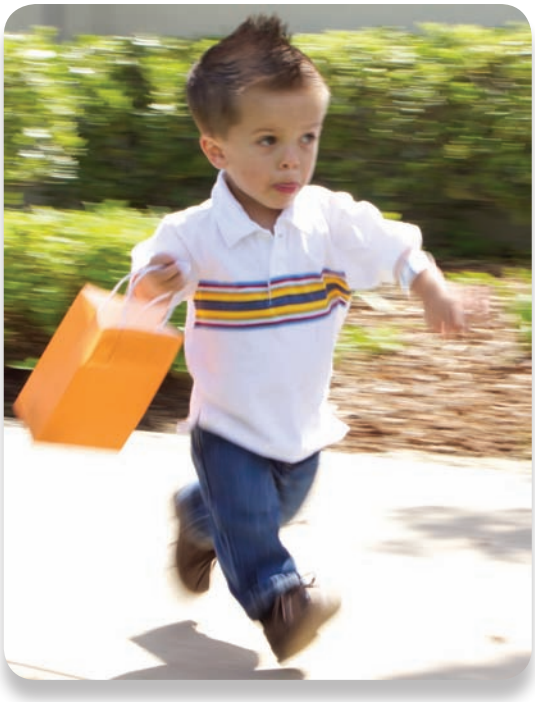
Encourage physical exploration through play equipment and materials. Equipment that is simple and versatile (e.g., hula hoops, ropes, balls, streamers, and recycled materials such as cardboard boxes, bubble-wrap material, PVC pipe, and hosiery) promotes physical development and learning. Ample opportunities to explore, experiment, and discover new ways of moving that capitalize on children's emerging sense of discovery, wonder, and risk taking are important.

Research Highlight: Does Increasing Children's Physical Activity Really Make a Difference?

A decisive "yes" was the answer to this important question which was cited in a review of 850 research articles and published in the Journal of Pediatrics.[45,46] The evidence strongly supported that children of school age who engage in relatively high levels of physical activity are less overweight than inactive children, have better cardiovascular endurance, and higher levels of muscular strength, endurance, and higher self-concepts. The authors conclude that "Increasing the level of habitual moderate- to vigorous-intensity physical activity in youth is a health promotion and disease-prevention strategy. Sedentary youngsters should progress toward the recommended level of physical activity gradually."

Providing adaptive toys and equipment is important to ensure that all children can participate in physical exploration.

Respect differences in children's temperament and find creative ways to engage all children in active physical play. Some children enjoy being ballerinas, while others prefer to be superheroes in their fantasy play. Some enjoy endless chasing and fleeing activities; others prefer kicking, bouncing, or throwing a ball as they pretend to be soccer, basketball, or baseball players. Still others enjoy rough-and-tumble activities in the outdoor play space. Others prefer nesting in a shady area or playing in the sandbox. It is important to recognize and respect these differences in temperament, but it is also important to find new and creative ways to get children moving in ways that elevate their heart rates; challenge their balance; locomotor, and manipulative skills; and promote increased levels of fitness.



2.0 Cardiovascular Endurance

The general assumption is that children are naturally active and that they get plenty of vigorous physical activity as a normal part of their day. The research, however, is not as supportive of this notion. Some children are sufficiently physically active to promote improved levels of cardiovascular endurance, but many are not. The rapidly increasing rate of obesity among young children in the United States attests to the need for children to be more active. Moderate to vigorous levels of physical activity for sustained periods on all or most days of the week, coupled with proper nutrition, will do much to reverse this unfortunate trend that has impacted all cultural groups in American society. Building cardiovascular endurance involves exposing the body to an increased workload that raises the heart rate beyond its normal range of beats per minute and sustains that elevated rate for several minutes.

VIGNETTE

Paulo loves to run and to ride his tricycle. He enjoys running games and is eager to learn to ride a bicycle. He is fortunate because at preschool and at home there are plenty of opportunities to learn to ride safely with adult assistance. Running games are also encouraged on the large grassy areas at both home and preschool. Simply because of the way his environment is structured and the aid of helpful parents and teachers, Paulo is well on his way to enjoying a lifetime of vigorous physical activities that promote cardiovascular health.

Paulo's friend and next-door neighbor, Ian, is not as fortunate. Although he would also love to run and ride a tricycle, he has little opportunity or encouragement to do so. His home environment is one that focuses on regular participation in things other than physical activities. His parents are reluctant to encourage vigorous play activities because of time constraints and safety concerns. As a result, his preschool is the only place where Ian has both the opportunities and encouragement to be physically active.

TEACHABLE MOMENT

Ian's teachers recognize the need for children to increase their level of physical activity and the importance of vigorous activities such as running, jumping, and tricycle riding. They regularly send information sheets home that provide ideas for parents to play with their children. The teachers also invite family members and their preschool children to a family fun night once or twice each year. At these sessions they provide hands-on ideas for families to help them learn how to play with their children and engage them in physical activities that are healthful and fun even, when families have limited outdoor space.

PLANNING LEARNING OPPORTUNITIES

Teachers can gain tremendous momentum on behalf of children's physical activity needs by partnering with family members and representatives from the local community, as well as with their own program leaders. Adults can work together to provide young children with designated play areas, open spaces, and the necessary equipment to promote vigorous physical activity. The health benefits of regular physical activity are too great to be ignored.

Interactions and Strategies

Design the physical setting of the play environment to encourage moderate or vigorous physical activity. Provide an inviting environment for sustaining elevated heart rates by offering large open spaces; climbing, hanging, and swinging apparatus; as well as natural places to climb, crawl, and slide. Locating and making regular use of open play spaces can be challenging in some communities, but the effort will be worth it in terms of promoting increased cardiovascular endurance.

Engage children of all ability levels in activities that promote increased cardiovascular endurance. The dramatic trend toward sedentary activity and less physical activity among all segments of American children may be attributed to many factors. Television, computer games, neighborhood design, family customs and dietary habits, and lack of adequate spaces for young children to play safely are among the most frequently cited. Reversing this trend takes conscious and sustained effort on the part of both parents and teachers. Take time to consider the activity levels of your children and look for ways to engage them in moderate to vigorous physical activities that are viewed as purposeful, meaningful, and fun. Children with disabilities that result in low muscle tone (hypotonia) may benefit from extra encouragement to initiate physical activities; initiation of physical activities may be particularly effortful for children with low muscle tone.

Promote increased cardiovascular endurance through chasing and fleeing activities. Children love to chase and be chased. A simple game of tag or games that raise the heart rate promote improved cardiovascular endurance.

Promote cardiovascular endurance through the use of riding toys that require sustained pedaling or cranking. Mobility toys are excellent ways to promote cardiovascular endurance through active participation. Tricycles, "hot wheel" carts, and hand-cranked tricycles provide children the thrill of fast movement, sheer enjoyment, and the potential for sustaining an elevated heart rate for several minutes at a time.

Use imagery as an effective tool in promoting moderate to vigorous physical activity. Permitting children to be superheroes complete with cape (an old bath towel will do) on the playground or outdoor play space is a simple way to encourage them to be aerobically active.

The use of props, such as cardboard boxes or a bed sheet draped over a table, creates an environment that promotes active fantasy play.

Provide positive encouragement for participation. Positive encouragement is both the teachers' and parents' primary avenue for sustaining active physical play. Recognizing effort, and not just results, is important because children are attuned to what we say and how we say it. The use of rich, descriptive language that recognizes effort encourages children's continued participation. Starting with a positive comment, following with a helpful instructional hint, and finishing with an encouraging statement is a simple technique that works, even with young children. Breaking down an activity into small steps and building skill upon skill promotes feelings of success. It is important to check for understanding (e.g., "What was it that I asked you to try when you threw the ball?"). Getting immediate feedback from the child (e.g., "You jumped down from the top of the climber. How did it make you feel?") promotes skill building and continued participation.

Promote increased physical activity through story plays. Story plays that act out familiar children's stories and nursery rhymes can be an effective group activity for promoting increased physical activity. Taking an imaginary trip to the jungle to photograph the animals can be fun and can elevate young heart rates for several minutes. Pretending to be firefighters on the way to a fire, reeling out the hoses, fighting the fire, and returning to the fire station can result in heart-pounding fun.

Promote cardiovascular endurance through dance and rhythmic activities. Children often love to move to music. They shake and wiggle and move about in an attempt to keep time with the music. Including music that children know from home serves to encourage them to practice familiar dance steps as well as create a natural bridge between home and school communities. Props such as scarves, ribbons, and homemade musical instruments further encourage actively moving to the music and assist children in sustaining this increased physical activity.

3.0 Muscular Strength, Muscular Endurance, and Flexibility

Children who are active naturally increase their muscular strength, muscular endurance, and joint flexibility. By definition, muscular strength is the ability to perform one maximum effort, such as lifting a heavy weight overhead, or picking up a heavy object off the ground. Muscular endurance is the ability to perform work repeatedly. It is not recommended that children prior to puberty engage in maximum strength efforts through high-resistance activities. Instead, it is recommended that children engage in low-resistance activities with multiple repetitions.[47] Keep this important concept in mind when planning activities for children. Low-resistance activities that are continually repetitive— such as swimming, riding a tricycle, or pushing one's wheelchair up a gradual incline or around the playground, walking distances, running, and jumping—will promote both muscular endurance and cardiovascular endurance. They also contribute to strengthening the muscles used.

Active young children are generally quite flexible. Flexibility is the ability of a joint to move through its full, intended range of motion. With disuse, joints become less flexible. Older children entering the prepubescent growth spurt often experience a dramatic decrease in joint flexibility. During this period, growth is frequently so rapid that muscles and tendons have yet to catch up to increased body proportions. Preserving joint flexibility throughout life requires maintaining an active way of life and engaging in activities that promote stretching. Failure to do so will result in the gradual lessening of flexibility and a tightening of the muscles and tendons around the joints. Some children with physical disabilities are more vulnerable to loss of flexibility; thus, play activities that incorporate stretching are particularly beneficial.

VIGNETTE

During outdoor play activities, several boys and girls love running around the playground pretending to be superheroes, who can perform amazing feats of strength and daring. Their teacher picks up on their spontaneous play and decides to encourage it as a means of promoting the children's muscular strength and endurance and flexibility. Using donated bath towels and pillowcases, Mr. Lee fashions colorful capes for his class of superheroes. Pretending to be a superhero himself, the teacher leads the class several times each week on a "mission" that involves bending, stretching, reaching, lifting, pushing, pulling, and other activities that make them "strong" superheroes who always succeed in their mission to help others in need. Mr. Lee's clever use of imagery makes the "heavy work" of superheroes fun and has the net effect of promoting increased strength, endurance, and flexibility.

TEACHABLE MOMENT

During the play activity, Adam and Alec and their friends, Julie and Mai, ask Mr. Lee to show his "muscles" and to make his "arm big." Mr. Lee cheerfully obliges and flexes his biceps. The

children are fascinated and want to flex their biceps also. When they try, however, they see little change in the muscle. Disappointed, they ask Mr. Lee why they do not see much of a difference.

Now is an excellent time for Mr. Lee to remind children that being strong is not all about having big muscles. Being strong is about being able to do more work than one could do before. To be able to play longer, climb higher, and run faster than before are the important signs of being strong. Mr. Lee emphasizes that real "superheroes" do not need big, bulging muscles to be strong. But they do need to work their muscles every day in active play to get stronger and to be able to do more than they could before.

PLANNING LEARNING OPPORTUNITIES

Children who are reluctant to engage in new movement activities are inhibited for many reasons. Some are afraid of failing and lack the confidence to try new activities. Others may be self-conscious and afraid of looking "silly" in front of others. Still others may not be used to the spontaneous nature of active play. Or they may feel uncomfortable due to limited ease in communicating with peers who speak a different language. Whatever the reason, reluctant movers can be encouraged by incorporating a few simple guidelines. Invite the child to take part. Do not insist on participation. First try, "Would you like to go to the movement center?" If the child hesitates, take the next step by offering to go to the movement center together and playing together.

Children often love it when you take time to play with them. When you are at the movement center, make the experience positive and fun-filled. You can do this by asking a series of movement questions that progressively challenge the child to try new ways of moving. These movement challenges provide open-ended opportunities for experimentation, exploration, and discovery of new and fun ways of moving. For example, moving on a chalk line can be made into a circus high-wire act in which you and the other children, who are sure to join in, perform a series of "daring" moves as you all move from one end of the wire to the other. Questions to foster progressive movement might be as follows: "Can you move on the high wire from one end to the other?" "How can you use your arms to help you balance?" "Can you find three new ways to get from one end of the high wire to the other without falling off?" "Can you make a half turn/full turn while keeping your feet on the wire?"

Interactions and Strategies

Encourage the development of muscular strength and endurance through building activities that involve performing "work" repeatedly. The "work" of children is active play. Providing ample opportunities for self-directed play, encouraging physical activity, and serving as a role model for physical activity will do much to spur children to increase their activity level. Teachers standing with their arms folded and enjoying a "break" during outdoor play time do little in the way of modeling to encourage children to be active. However, teachers who are actively engaged with children from time to time and who encourage children (verbally or by using sign language) promote increased physical activity.

Research Highlight: Strength Training for Young Children: Is It Okay?

Strength training for prepubescent children can be beneficial if properly supervised at all times. Boys and girls, including preschoolers, can increase their strength by engaging in low-resistance, high-repetition activities. Maximum efforts, however, are not safe and have no place in strength training for children. These are the conclusions arrived at by the American Academy of Pediatrics and published in a 2001 position statement entitled *Strength Training by Children and Adolescents*.[48]

With proper supervision, strength-training activities can benefit children by promoting gains in strength and endurance, injury reduction, and improved performance. It must be stressed that strength training is much different from weight lifting. Strength training involves the use of progressive resistance and several repetitions. Weight lifting is a sport in which one attempts to make a single maximal lift, as in the bench press or overhead press. Weight lifting is strongly discouraged for all prepubescent children.

Promote cardiovascular endurance through repeated muscular endurance activities. Children engaged in rough-and-tumble play, tricycle riding, and a game of tag are simultaneously improving both their muscular endurance and cardiovascular endurance.

Promote muscular endurance and strength in the muscles of the upper body through the use of playground equipment that encourages climbing, hanging, and swinging. Children enjoy the thrill of climbing to the top of the jungle gym or climbing on a rope ladder to the top of an apparatus. In doing so, they test their newly developing climbing skills and increase their muscular strength and endurance. Care should be taken to ensure the safety of participants on any climbing apparatus. Instruction should be provided on the **safety grip** (see figure 3.5): the thumb curls under the fingers when grasping an object.

Figure 3.5

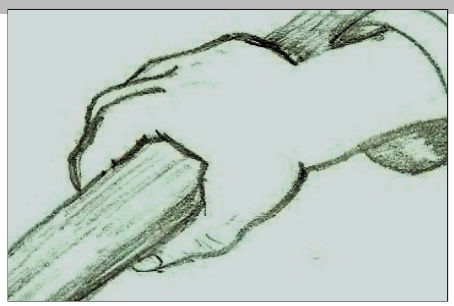


Illustration by Laura Bridges

Allow for supervised risk taking. Risk taking, when properly supervised, is a natural and desirable response by children as they test their developing

strength, endurance, and flexibility. Testing the ability to climb higher, jump from a greater height, swing higher and higher, or twirl until losing balance are natural challenges for young children. Proper supervision is, of course, essential. But so too is an environment that permits and celebrates reasonable risk taking. Some children and adults are reluctant to try new and challenging physical activities. They may be afraid of injury or being in an unsettling situation. The three keys to proper supervision are to:

- build skill upon skill (e.g., "Try sliding down or climb up the low slide before the high one");
- be close by to encourage verbally (e.g., "You can do it");
- be close enough to assist physically (but only as needed).

Some children with special needs engage in extreme risk-taking behavior. Careful monitoring of the environment and each child's actions is needed.

Engage children in the setup of the play space and the return of materials to their original space. This practice not only promotes group cooperation and responsibility, it also promotes increases in muscular endurance and strength. Children are generally eager to be of assistance. Helping with setting up and taking down play equipment for an obstacle course can be used as a means to enhance muscular endurance. The obstacle course will be another way to get physically involved in repetitive movements. Workloads that are greater than normal, such as the pushing and pulling of an object, help build strong muscles and increase endurance. Make sure that obstacle courses involve some pulling and pushing, or change the equipment from one location to another.

Promote increased joint flexibility through animal walks, nursery rhymes, and story plays. Animal walks such as walking like a bear, giraffe, puppy dog, or frog, promote joint flexibility as do movement songs such as "Head, Shoulders, Knees, and Toes" and "Itsy Bitsy Spider." Engaging children in a story play that involves reaching high, stretching low, and twisting and turning from side to side—as in acting out "A Day at the Laundry" or "Picking Apples off the Tree"—promotes increased joint flexibility.

Encourage practice in fundamental movement skills and perceptual-motor activities that contribute to children's physical fitness. Although the teacher's attention may be focused on one aspect of motor, cognitive, or social–emotional development, the reality is that any given activity has the potential to contribute to development in multiple ways. For example, the game Crossing the Brook involves two lines that are drawn increasingly far apart, and the children jump across the "brook," which provides them with practice in jumping repeatedly over greater distances. This game also helps children negotiate aspects of body and spatial awareness and promotes increased leg muscle endurance and joint flexibility.

Bringing It All Together

When the weather permits, Ms. Jennifer takes her class outdoors to play in the designated play space. She is intrigued by the many types of activities in which her children choose to engage. She is quick to notice that several are in almost perpetual motion, running to and fro with seemingly endless energy and little purpose to their activity. Others tend to gravitate to the sandbox and other fine motor activities. Still others are hesitant to explore and reluctant to participate in any self-initiated free-play activities. Knowing the importance of active physical play, Ms. Jennifer develops strategies intended to maximize meaningful participation in a variety of activities that promote active participation by all, cardiovascular endurance, muscular strength, muscular endurance, and joint flexibility. These strategies take into account children's personal preferences, likes and dislikes, and sense of success and accomplishment. Over several months of engaging in active play with children and encouraging them to try new things, she notices a decided change in behavior. The children are now more fully engaged in play activities that are purposeful, meaningful, safe, and fun.

Being outdoors and observing the children as they spontaneously engage in a variety of activities can be an illuminating experience. Children have a tendency to gravitate to areas in which they experience success and enjoy learning. Some will be engaged in fine motor activities in the sandbox or with small objects. Others will be running about, wheeling their wheelchairs, or pedaling tricycles almost constantly. Some will be engaged with balls or other **manipulative equipment,** and still others will be enjoying climbing, hanging, and swinging activities.

Such child-initiated play and individual differences in temperament should be recognized, respected, and encouraged. By creating a physical environment where all can find success and learning enjoyment, teachers do much to promote active participation by all children. Creativity in taking advantage of the natural environment, both indoors and outdoors, is needed for an endless variety of activities that promote fundamental movement and perceptual-motor skills and engage children in active physical play.

However, as teachers look around, they will notice that some children are hesitant to explore, experiment, and discover the joy of movement. For a wide variety of reasons including temperament and fears, both real and imagined, some young children hesitate to get involved in playground activities. Instead they seem to prefer sitting, waiting, and watching others as they play. This is an area where sensitive and caring adults can be influential. Teachers can help a hesitant child enter into a small group so the child can feel comfortable with the social and physical, aspects of play. Furthermore, pairing children who speak the same home language often helps children who are English learners feel more comfortable and confident during play. By providing positive encouragement, offering to play with the child, adapting the play environment or materials to be more accessible, or providing simple instructional cues, teachers can do much to engage children in active play. Increased participation, cardiovascular endurance, muscular strength, muscular endurance, and flexibility will result.

Teachers can take time to observe children at play and reflect on how they might encourage active and more diverse physical play. Child-initiated play is encouraged and respected, but teacher-guided play can be a powerful motivator, especially for children who are reluctant to participate.

Engaging Families

- **Create an "Activity Recall Chart" to be used in the classroom first, then at home.** To begin, teachers can use photocopied pages from a date book or daily planner, and colorful letters creatively drawn as an ***S, M,*** and ***V*** by the children in class as they learn about the differences in the levels of physical activity in which they can participate: ***S****edentary,* ***M****oderate, and* ***V****igorous.* It will be helpful to first try this activity in the classroom and then introduce it later at a family night for possible use at home. First, as a classroom activity help children chart their physical activities over the course of a school day. Young children will need help to recall their activities and how long they lasted. Classify each activity as ***S*** (*sedentary physical activities*, such as story or nap time); ***M*** (*moderate physical activities,* such as playing in the sandbox or doing other fine motor activities); or ***V*** (*vigorous physical activities:* such as climbing stairs, riding a tricycle, running, or engaging in rough-and-tumble play). Later, as a family activity, use the same letters drawn in school; colored stickers (e.g., red for sedentary, white for moderate, blue for vigorous) or animal stickers (hibernating animals such as bears for sedentary, cuddly animals such as koalas for moderate, speedy animals such as jaguars for vigorous). At the end of the 24-hour period, family members total up the number of each letter (*S, M, V*) color (*red, white, blue*) or animal (*bears, koalas, jaguars*) representing sedentary, moderate, or vigorous physical activities. Be sure to take time to discuss what you can do as a family to put more moderate to vigorous activity into your day and why it is important.
- **Have a "Family Dance Party."** Most children love to move to music. They enjoy wiggling, shaking, and moving in new and creative ways to the catchy beats of their favorite music. Take advantage of this natural urge to move by dancing with your children. Practice dances familiar to your culture and make up new ones for fun, enjoyment, and increased physical activity. Be sure to take time to discuss how dancing increases the heart rate and why it is fun and healthy to be physically active.
- **Model healthy behavior.** Modeling healthy behavior is a powerful way to effect change. Children are expert observers, and they observe the activity habits that adults engage in. Taking a walk as a family, playing a game of tag, or engaging in a family activity familiar to one's cultural heritage can be a powerful means of promoting increased levels of physical activity.
- **Take an adventure walk to school.** Children in a neighborhood preschool program can become part of an adult-led Walk to School Day. Although it is not recommended that young children walk to school unaccompanied by a responsible adult, they can take part in an adult-led adventure walk. With an adult in the lead and one in the back, turn

your walk to school into a journey by "train." The adults are the engine and caboose, and the children are the freight cars in between. Take time to stress safety by obeying traffic signs, crossing only at designated areas, and looking both ways before crossing streets.

- ✔ **Develop a list of "can do" family rules for active physical play.** Active family fun works best when there are ground rules for participation that respect the rights of other family members and promote a safe and healthful play environment for all. For example, children often love to jump and bounce, but doing so unsupervised on a sofa or bed could be dangerous. A family rule of where and under what circumstances jumping is permissible will go a long way to preventing injuries and saving your furniture. Be sure that your family rules form a short "can do" list rather than a long list of what is not allowed. It is much more affirming to say "Jumping on the bed is okay when mom or dad is present," rather than "No jumping on the sofa or the bed."
- ✔ **Take part in family rough-and-tumble play that respects the rights and wishes of all.** Children often enjoy the rough-and-tumble activities of playing horsey on top of a parent or wrestling on the living-room floor. These activities are worthwhile and promote active physical play by all, but they must be kept in perspective. It is of paramount importance to set rules of play in which the rights, responsibilities, and wishes of all are clearly understood and followed. For example, Family Trap is a rough-and-tumble game in which an adult ensnares a child in an arm or leg grasp and then, after the child has made efforts to escape, releases the child. The adult may permit the child to determine if it is to be an "easy trap," "medium trap," or "hard trap." It is fun to give each of the traps a name, such as the "mousetrap," "butterfly trap," "alligator trap," or even the much-anticipated "double dog trap." There is, of course, no place for family play of this sort in which the child experiences pain or distress of *any* kind. If this does occur, immediately change the activity to something appropriate that the child finds to be fun.
- ✔ **Proper clothing for indoor and outdoor family activities is a must.** Proper clothing for active physical play need not be expensive or elaborate. It must, however, be appropriate to the activity and the playing conditions. Sturdy gym shoes, shorts (even under a dress) and an appropriate T-shirt or blouse will work well for most indoor activities. Special care, however, should be taken for sunny or cold outdoor conditions. Sun protection, in the form of a cap and sunscreen, is important, as are proper layering, mittens, a jacket, and scarf in the cold. Below-freezing temperatures are not a sufficient reason for remaining inside. Children, when properly clothed, enjoy the refreshing vigor of playing in cold weather.
- ✔ **Make a FITT activity chart.** At a family meeting, discuss the different types of activities that each family member likes; emphasize activities that get the heart pumping and muscles working. Try to follow the FITT principles: **F** stands for *Frequency* (how many times the activity is performed each week); **I** stands for *Intensity* (how hard one plays). **T** stands for *Type* (of activity).

And the second **T** stands for *Time* or *duration* (length of time of the activity). Make a weekly chart with the names of each family member and the physical play activities each one wants to engage in (e.g., walking, running, playing an active game, tricycling). Put a check mark or a star by each activity in which the family member participates during the week. At the end of the week, discuss what everyone did and whether the four FITT principles were followed. Continue to build children's interest in participation by emphasizing fun and enjoyment and by joining in when possible. Adults who model of active physical play do much to encourage children to be active also.

Questions for Reflection

1. How can you increase young children's participation in moderate to vigorous physical activities on a sustained basis in your program?
2. What is your level of participation in moderate to vigorous physical activity? Do you need to increase your personal participation in active physical play in ways that demonstrate to children that you "love to move"?
3. What community, social, cultural, linguistic, or other environmental considerations might limit some children's participation in active physical play? How might these limitations be addressed in ways that are sensitive and respectful?
4. How can you increase children's level of active participation in ways that they find purposeful, meaningful, and fun?
5. Obesity rates among children and adults have risen dramatically over the past 20 years. How can preschool teachers, caregivers, and family members prevent or reverse this trend?
6. How can you adapt the program environment, materials, or activities to ensure that children with disabilities can participate alongside their peers in active physical play?
7. What are your views on physical risk taking by young children? Why might it be important to reevaluate your position? How might you negotiate with children to permit them to engage in reasonable and supervised risk-taking activities?

Concluding Thoughts

Until recently, the physical development of young children was often taken for granted. Family members and caregivers had a tendency to assume that children, by virtue of being children, got plenty of physical activity as a normal part of their daily routine. The results of over a decade of research comparing the present, more sedentary generation of children to previous generations clearly reveals an alarming trend toward increased obesity, diabetes, asthma, and other health-impairing conditions.[49] Fortunately, a resurgence of interest in the vital importance of young children's physical development is taking place throughout California and the nation. Those working with young children have recognized that developing fundamental movement skills; learning perceptual-motor skills and movement concepts, and engaging in active physical play are essential to the total balanced development of children.[50]

The development of fundamental movement skills provides a basis for an active way of life. Attaining proficiency in a myriad of fundamental balance, locomotor, and manipulative skills equips children for active participation in physical activities for a lifetime. Perceptual-motor skills and basic movement concepts are important to the many time and space concepts that children acquire as they get ready for more formal types of instruction and learning. Body-awareness, spatial-awareness, and directional-awareness concepts can be taught and learned through both teacher-directed and self-directed play. However, children need encouragement, instruction, and sufficient opportunities for practice in supportive environments to learn fundamental movement skills, perceptual-motor skills, and movement concepts. Preschool programs and families play a critical role in maximizing children's development in these areas.

Active physical play in preschool is a means by which children (and adults) can engage in the physical activities that promote healthy lifestyles and a genuine zest for life. Through active participation in self-directed and adult-facilitated play, children acquire increased cardiovascular endurance, muscular endurance, muscular strength, and flexibility. Young children have not only movement skills and perceptual abilities; they also have the joy of movement. Learning to move and moving to learn are too important to be left to chance. Parents and teachers have a precious opportunity to help set the stage for young children to enjoy physical activity for a lifetime.

Map of the Foundations

Domain → **Physical Development**

Strand → **Fundamental Movement Skills**

Substrand → **1.0 Balance**

Age ←

At around 48 months of age	*At around 60 months of age*
Foundation → **1.1** Maintain balance while holding still; sometimes may need assistance.	**1.1** Show increasing balance and control when holding still.
Examples	**Examples**
Examples → • Pretends to be a flamingo by standing balanced on one foot, with or without assistance, for several seconds using arms to balance. • Stands still with eyes open; arms may swing side to side to maintain balance. • Able to "freeze" after running; arms may swing side to side to maintain balance. • Able to stand still while holding onto a shopping cart or walker.*	• Pretends to be a flamingo by standing on one foot, unassisted, for five or more seconds without touching a nearby object, such as a wall or a table, for support. • Balances on three body parts (for example, two hands and one foot). • Stands still while holding arms at side when the song says, "Freeze!" • Balances a beanbag on top of head for several seconds.

Includes notes for children with disabilities →

Note: Many examples in this section describe movement skills that may look different in children with physical disabilities. When possible, early educators should check with family and specialists regarding the child's movement skill development.
*Walker: When used in examples, it indicates a therapeutic walker specifically prescribed for a child in need of support when walking.

Selected Developmental Sequences

Locomotor Skills

Sample Developmental Sequence of Running

Exploring level

Child runs with feet flat

Arms are at the waist and move side to side

Small steps, little bend of knees and little reach with legs

DEVELOPING

Child runs alternating flat feet with heel to toe action

Bigger strides

Arms are down to the side

Knees bend less than 90 degrees

Inconsistency

TRANSITION

Integration level

Child runs showing opposition of arms and legs and heel to toe action

Knees bend more than 90 degrees in recovery

Increased speed, body leans forward

Consistency

Sample Developmental Sequence of Jumping

Exploring level

Child brings arms back on takeoff

Legs do not completely extend

Body bends

Small vertical jump

DEVELOPING

Child brings arms sideways on the takeoff

Arms do a complete circle at takeoff

Body leans forward and jumps forward

Body and legs flexed during flight phase

Lands on hands and feet

Inconsistency

TRANSITION

Integration level

Child swings arms forward over head

Body gets extended during the flight phase, jump is diagonal

Lands on feet

Consistency

Designed by Clersida Garcia and illustrated by Xuyen Garcia, 2010.

Sample Developmental Sequence of Hopping

Exploring level

Child holds hopping leg up with leg parallel to the floor. Body erect. Difficult to maintain leg up and hop.

DEVELOPING

Hopping leg flexed and moves up and down

Forceful hops; arms pull up

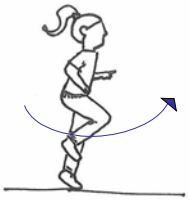
Body leans forward too much

Leg hangs behind the body

Arms uncoordinated

Inconsistency

TRANSITION



Integration level

Child swings leg as in a pendulum action. Shows opposition of arm and leg. Smooth, rhythmical hopping. Body leans forward.

Consistency

Sample Developmental Sequence of Skipping

Exploring level

Child has difficulty alternating feet. May hop, step, or run while trying.

Arms bilateral and uncoordinated.

DEVELOPING

Deliberated skip

High skips

Arms used to pull body up

Slow rhythm

Arm used bilaterally

Uneasy skips

Inconsistency

TRANSITION

Integration level

Child shows smooth alternative skip. Smooth and rhythmical pattern. Arms used contra-laterally in opposition to legs.

Consistency

Designed by Clersida Garcia and illustrated by Xuyen Garcia, 2010.

Fundamental Manipulative Skills

Sample Developmental Sequence of Catching

Exploring level

Child is stationary and usually misses the ball

DEVELOPING

Child begins to use hands, arms, and chest to successfully catch the ball

May step toward the ball

Begins to catch with hands only

Inconsistency

TRANSITION

Integration level

Child usually moves feet to catch successfully, using hands only

Consistency catching

Sample Developmental Sequence of Throwing

DEVELOPING

Exploring level

Child is stationary and usually brings arm up, flexed or extended, and throws down with arm action only

Child begins to homo-laterally step

Arm windup upward and moves down during the throw

Arm moves upward during windup and sideways during the throw, sometimes body rotates (block rotation of body)

Homo-laterally steps and may maintain straddle position for several throws

Homo-lateral and contra-lateral steps (inconsistency). Throws facing target.

Big step is contra-lateral most of the time; side faces target.

Integration level

Arm windup down; back below waist.

Throw showing arm lag, lower body rotates first, then upper body (sequential rotation)

Consistency

TRANSITION

Designed by Clersida Garcia and illustrated by Xuyen Garcia, 2010.

Sample Developmental Sequence of Kicking

Exploring level

Child is stationary, usually pushes ball with one foot, and steps back quickly to catch balance.

DEVELOPING

Child swings leg back before kicking. Shows better balance.

Child steps toward the ball and kicks.

Child makes few steps and kicks forcefully with opposition of arm and leg.

Inconsistency

TRANSITION

Integration level

Child approaches the ball running or with few steps, leaps before kicking, and hops after the kick. Shows contra-lateral opposition of arm and leg. Forceful kicking.

Consistency

Sample Developmental Sequence of Striking

Exploring level

Child is stationary and holds the bat with one or two hands.

Striking action goes from top down in "choppy" action.

DEVELOPING

Child may step and rotate around with the swing.

Child steps homo-laterally and may swing diagonally,

Child steps contra-laterally, swings horizontally.

Body rotates as a unit (block rotation).

Inconsistency

TRANSITION

Integration level

Child's body is sideways in preparation to strike.

Steps contra-laterally and rotates lower body first, then upper body.

Swing is horizontal and makes contact with ball.

Consistency

Designed by Clersida Garcia and illustrated by Xuyen Garcia, 2010.

Teacher Resources

Alliance for Technology Access (ATA). *Playgrounds for Everyone.*

Suggestions and resources for creating universally accessible outdoor play areas for children.

Bissell, J., and others. 1998. *Sensory Motor Handbook* (Second edition). San Antonio, TX: Therapy Skill Builders.

This book provides fun and easy activities to implement at home or at a center. Activities are designed to develop gross motor, fine motor, and oral motor skills.

Blaydes Madigan, J. 2004. *Thinking on Your Feet* (Second edition). Murphy, TX: Action Based Learning.

This book provides ideas, games and activities on how movement enhances learning in all academic subject matters. Can be used from prekindergarten to sixth grade.

Brack, J. C. 2004. *Learn to Move, Move to Learn! Sensorimotor Early Childhood Activity Themes.* Shawnee Mission, KS: Autism Asperger Publishing Company.

This book, written by a pediatric occupational therapist, provides lesson plans for multisensory learning activities. It includes explanations about how each sensory system (e.g., vestibular, proprioceptive, touch, auditory, and visual) is addressed by the recommended activities.

Clement, R. 1995. *My Neighborhood Movement Challenges: Narratives, Games and Stunts for Ages Three Through Eight.* Reston, VA: National Association for Sport and Physical Education (NASPE).

Provides narratives taken from storybooks, tales, fables, rhymes, mimetic activities, challenges and games. Designed to reinforce the child's understanding of the body's movement capabilities.

Clements, R. L., and S. L. Schneider. 2006. *Movement-Based Learning: Academic Concepts and Physical Activity for Ages Three Through Eight.* Reston, VA: National Association for Sport and Physical Education (NASPE).

This book provides a wealth of simple lesson plans using the NASPE National Standards for Quality Physical Education as a guide for fun, creative, and educationally sound activities.

Council on Physical Education for Children. 2000. *Appropriate Practices in Movement Programs for Young Children Ages 3–5. A Position Statement of the National Association for Sport and Physical Education.* Reston, VA: National Association for Sport and Physical Education (NASPE).

This publication provides clear descriptions of appropriate and inappropriate practices in movement programs for children ages three to five helps teachers and caregivers make sound curricular decisions.

Craft, D. H., and C. L. Smith. 2008. *Active Play: Fun Activities for Young Children.* Cortland, NY: Active Play Books.

This book comes with a DVD of toddlers and preschoolers moving and learning.

Davis, K., and S. Dixon. 2010. *When Actions Speak Louder than Words: Understanding the Challenging Behaviors of Young Children and Students with Disabilities.* Bloomington, IN: Solution Tree Press.

This excellent resource supports all children whose primary way to communicate is through challenging behaviors. It addresses the behaviors children use to communicate, the messages they may be sending, and how adults can ask six critical questions to better understand and meet children's needs.

Erhardt Developmental Products. http://www.erhardtproducts.com/

The company provides videos and publications about fine motor development in young children. Teachers can access helpful resources for working with children with disabilities.

Fit Source: A Web Directory for Providers. http://www.nccic.org/fitsource. The Child Care Bureau, Administration for Children

and Families, U.S. Department of Health and Human Services.

The directory contains resources for incorporating physical activity into child care programs. It includes activity/game ideas, curricula plans, and information for parents.

Gallahue, D. L., and F. Cleland-Donnelly. 2003. *Developmental Physical Education for All Children* (Fourth edition). Champaign, IL: Human Kinetics.

This practical, easy-to-use resource for teachers incorporates the NASPE national standards for quality physical education for young children in age-appropriate, developmentally appropriate, and fun ways. Fundamental movement skill acquisition, perceptual-motor learning, and increased physical activity for young children are emphasized.

Gallahue, D. L., J. C. Ozmun, and J. D. Goodway. In press. *Understanding Motor Development: Infants, Children, Adolescents, and Adults* (Seventh Edition). Boston, MA: McGraw Hill.

Up-to-date theory and research on motor development throughout a lifespan with emphasis on growth development of children and youth.

Handwriting Without Tears. 2009. *The Pre-K Get Set for School.* http://www.hwtears.com.

A program developed for preschool children by a pediatric occupational therapist. This preschool workbook of activities includes music, movement, building, coloring, and sensory play for developing gross motor and fine motor control.

Haywood, K. M., and N. Getchell. 2009. *Life Span Motor Development* (Fifth edition). Champaign, IL: Human Kinetics.

The book presents research and theory on motor development throughout a lifespan using a constraints approach.

Jensen, E. 2005. *Teaching with Brain in Mind* (Second edition). Alexandria, VA: Association for Supervision and Curriculum Development.

This book addresses brain anatomy, cooperation and competition in the brain, brain changes over time, and how the brain learns.

National Association for Sport and Physical Education (NASPE). 2004. *Moving Into the Future: National Standards for Physical Education* (Second edition). Reston, VA: NASPE.

This excellent resource aligns curricula content with NASPE's voluntary national standards for excellence in physical education from kindergarten through grade twelve.

———. 2005. *Inicio Activo: Informa de Lineamientos de Actividad Fisica para Ninos desde el Nacimiento hasta los Cinco Anos de Edad.* Reston, VA: NASPE.

Spanish translation of the NASPE *Physical Activity Guidelines for Children Ages 3-5.*

———. 2009. *Active Start: A Statement of Physical Activity Guidelines for Children Birth to Age 5* (Second edition). Reston, VA: NASPE.

This excellent resource for parents and caregivers describes how to implement NASPE's Physical Activity Guidelines for infants, toddlers, and preschool children.

———. 2009. *Appropriate Practices in Movement Programs for Young Children Ages 3–5* (Third edition). Reston, VA: NASPE.

This guidebook of appropriate practices for children ages three through five is suitable for use by preschool teachers, daycare providers, caregivers, parents, and administrators.

North Dakota State University of Agriculture and Applied Science, NDSU Extension Service, 2003. http://www.ext.nodak.edu/food/kidsnutrition/edu-2.htm#Resources.

The Web site features children's books about physical activity.

Pica, R. 2003. *Teachable Transitions: 190 Activities to Move from Morning Circle to the End of the Day.* Silver Spring, MD: Gryphon House, Inc.

This book focuses on transitions during the preschool day and provides movement activities, songs, and finger plays to move smoothly from one activity to the next while holding the attention of waiting children.

———. 2006. *A Running Start: How Play, Physical Activity, and Free Time Create a Successful Child.* Emeryville, CA: Marlowe and Company.

This book addresses the importance of a balance between free play and structured activity and how physical activity contributes to brain

and intellectual development. It provides great practical ideas for parents to bring fun and play back into their homes and yards.

———. 2007. *Moving and Learning Across the Curriculum: More than 300 Activities and Games to Make Learning Fun* (Second edition). Florence, KY: Wadsworth.

This excellent resource for preschool teachers and parents provides fun movement activities related to all academic disciplines of the preschool curriculum.

———. 2008. *Physical Education for Young Children: Movement ABCs for the Little Ones.* Champaign, IL: Human Kinetics.

This book provides great ideas and activities for teaching basic movement to young children.

Ratey, J. J. 2008. *The Revolutionary New Science of Exercise and the Brain.* New York: Little, Brown and Company.

This book provides a fascinating journey through the mind-body connection, presenting startling new research to prove that exercise is the best defense against everything from mood disorders to attention deficit hyperactivity disorder to Alzheimer's and provides incontrovertible evidence that aerobic exercise physically transforms the brain for peak performance.

Staisiuna-Hurley, D. 2001. *Sensory Motor Activities for the Young Child.* Bisbee, AZ: Imaginart Press.

This book, written by a pediatric physical therapist, provides suggestions for simple movement activities. Each activity page includes what the activity works on, materials or setup needed, step-by-step instructions, and how to modify the activity. It is appropriate for both typically developing children and children with disabilities, ages three to seven years old.

Endnotes

1. National Scientific Council on the Developing Child, *Rich Experiences, Physical Activity Create Healthy Brains.* Cambridge, MA: Center on the Developing Child, Harvard University, 2006. http://www.developingchild.net (accessed September 3, 2009).
2. National Association for Sport and Physical Education (NASPE), *Active Start: A Statement of Physical Activity Guidelines for Children Birth to Age 5.* Reston, VA: NASPE, 2009.
3. G. L. McCormack and others, "How Occupational Therapy Influences Neuroplasticity," *OT Practice* 14, no. 17 (2009): 1–8.
4. J. J. Ratey, Spark: *The Revolutionary New Science of Exercise and the Brain.* New York: Little, Brown and Company, Hachette Book Group, 2008, 10.
5. D. L. Gallahue and F. Cleland Donnelly, *Developmental Physical Education for All Children,* 4th ed. (Champaign, IL: Human Kinetics, 2003).
6. National Association for Sport and Physical Education (NASPE), *Active Start: A Statement of Physical Activity Guidelines for Children Birth to Age 5.* Reston, VA: 2009.
7. J. A. Blackman, "Attention-Deficit/Hyperactivity Disorder in Preschoolers. Does It Exist and Should We Treat It?" *Pediatric Clinics of North America* 46, no. 5 (1999): 1011–25.
8. T. Hunter, "Some Thoughts About Sitting Still," *Young Children* 55, no. 3 (2000): 50.
9. T. Schilling, and others, "Promoting Language Development Through Movement," *Teaching Elementary Physical Education* 17, no. 6 (2006): 39–42.
10. D. L. Schilling and I. S. Schwartz, "Alternative Seating for Young Children with Autism Spectrum Disorder: Effects on Classroom Behavior," *Journal of Autism and Developmental Disorders* 43, no. 4 (2004): 423–32.
11. D. L. Schilling and others, "Classroom Seating for Children with Attention Deficit Hyperactivity Disorder: Therapy Ball Versus Chairs," *American Journal of Occupational Therapy* 57, no. 5 (2003): 534–41.
12. T. Hunter, "Some Thoughts About Sitting Still," *Young Children* 55, no. 3 (2000): 50.

Fundamental Movement Skills

13. K. M. Newell, "Constraints on the Development of Coordination," in *Motor Development in Children: Aspects of Coordination and Control,* ed. M. G. Wade and H. T. A. Whiting. Dordrecht (The Netherlands: Martinus Nijhoff, 1986): 341–61.
14. C. Garcia, "Gender Differences in Young Children's Interactions When Learning Fundamental Motor Skills," *Research Quarterly for Exercise and Sport* 65, no. 3 (1994): 213–25.
15. C. Garcia and L. Garcia, "Examining Developmental Changes in Throwing: A Close Up Look," *Motor Development Research and Reviews* 2 (2002): 62–95.
16. C. Garcia, "Gender Differences in Young Children's Interactions When Learning Fundamental Motor Skills," *Research Quarterly for Exercise and Sport* 65, no. 3 (1994): 213–25.
17. J. O. O'Brien and J. E. Lewin, "Translating Motor Control and Motor Learning Theory Into Occupational Therapy Practice for Children and Youth," *Occupational Therapy Practice* 13 (2008): CE1-8.
18. J. Case-Smith and N. Weintraub, "Hand Function and Developmental Coordination Disorder," in *Developmental Coordination Disorder,* ed. S. A. Cermak and D. Larkin (Albany, NY: Delmar, 2002).
19. S. Mori, M. Iteya, and C. Gabbard, "Hand Preference Consistency and Eye-Hand Coordination in Young Children During a Motor Task," *Perceptual and Motor Skills* 102, no. 1 (2006): 29–34.
20. R. P. Erhardt, *The Erhardt Hand Preference Assessment* (Maplewood, MN: Erhardt Developmental Products, 2006).

21. M. Annett, "Hand Preference Observed in Large Healthy Samples: Classification, Norms and Interpretations of Increased Non-Right-Handedness by the Right Shift Theory," *British Journal of Psychology* 95 (2004): 339–53.
22. Z. Goez and N. Zeinik, "Handedness in Patients with Developmental Coordination Disorder," *Journal of Child Neurology* 23, no. 2 (2008): 151–54.
23. P. G. Hepper, S. Shahhidullah, and R. White, "Handedness in the Human Fetus," *Neuropsychologia* 29, no. 11 (1991): 1107–11.
24. S. J. Lane, "Structure and Function of the Sensory Systems," in *Sensory Integration: Theory and Practice,* 2nd ed. Edited by A. C. Bundy, S. J. Lane, and E. A. Murray (Philadelphia, PA: F. A. Davis Company, 2002), 35–70.
25. C. S. Kranowitz, *The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder* (New York: Penguin, 2005).

Perceptual-Motor Skills and Movement Concepts

26. J. O'Brien and H. Williams, "Application of Motor Control/ Motor Learning to Practice," in *Occupational Therapy for Children,* 6th ed. Edited by J. Case-Smith and J. O'Brien (Maryland Heights, MO: Elsevier, 2010), 245–74.
27. C. Poole, "Development: Ages and Stages—Spatial Awareness," *Early Childhood Today* 20, no. 6 (2006): 25–30.
28. D. Fertel-Daly, G. Bedell, and J. Hinojosa, "Effects of a Weighted Vest on Attention to Task and Self-Stimulatory Behaviors in Preschoolers with Pervasive Developmental Disorders," *American Journal of Occupational Therapy* 55, no. 6 (2001): 629–40.
29. N. L. VandenBerg, "The Use of a Weighted Vest to Increase On-Task Behavior in Children with Attention Difficulties," *American Journal of Occupational Therapy* 55, no. 6 (2001): 621–28.
30. C. M. Schneck, "Visual Perception," in *Occupational Therapy for Children,* 5th ed. Edited by J. Case-Smith (St. Louis, MO: Elsevier Mosby, 2005).
31. M. N. Roncesvalles, and others, "From Egocentric to Exocentric Spatial Orientation: The Development of Postural Control in Bi-Manual and Trunk Inclination Tasks," *Journal of Motor Behavior* 37 (2005): 404–16.
32. S. Mori, M. Iteya, and C. Gabbard, "Hand Preference Consistency and Simple Rhythmic Bimanual Coordination in Preschool Children," *Perceptual and Motor Skills* 104 (2007): 792–98.

Active Physical Play

33. Q. Ma, "Beneficial Effects of Moderate Voluntary Physical Exercise and Its Biological Mechanisms on Brain Health," *Neuroscience Bulletin* 24, no. 4 (2008) 265–70.
34. R. Meeusen, "Exercise and the Brain: Insight in New Therapeutic Modalities," *Annals of Transplantation* 10, no. 4 (2005) 49–51.
35. J. Miller, "Primary School-Aged Children and Fundamental Motor Skills: What is All the Fuss About?" Refereed paper for publication and presented at the Australian Association for Research in Education (AARE), Adelaide, Australia, November 2006, 1-13.
36. A. Fisher, and others, "Fundamental Movement Skills and Habitual Physical Activity in Young Children," *Medicine and Science in Sport and Exercise* 37, no. 4 (2005) 684–88.
37. J. Goodway and C. Branta, "Influence of a Motor Skill Intervention Program on Fundamental Motor Skill Development of Disadvantaged Preschool Children," *Research Quarterly for Exercise and Sport* 74, no. 1 (2003): 36–46.
38. G. T. Baranek, "Efficacy of Sensory and Motor Interventions for Children with Autism," *Journal of Autism and Developmental Disorders* 32 (2002): 397–422.
39. L. Biel and N. Peske, *Raising a Sensory Smart Child* (New York: Penguin Group, 2005).
40. National Association for Sport and Physical Education (NASPE), *Active Start: A Statement of Physical Activity Guidelines for Children from Birth to Age 5,* 2nd ed. (Reston, VA: NASPE, 2002).

41. Centers for Disease Control and Prevention (CDC), "Increasing Physical Activity: A Report on Recommendations of the Task Force on Community Prevention Services," *Morbidity and Mortality Weekly Report* 50 (RR-18, 2001): 1–16.
42. National Association for Sport and Physical Education, *Appropriate Practices in Movement Programs for Children Ages 3-5,* 3rd ed. (Reston, VA: NASPE, 2009).
43. U.S. Department of Health and Human Services, Center for Disease Control and Prevention, *Physical Activity and Health: A Report of the Surgeon General Executive Summary,* 2004. http://www.cdc.gov/nccdphp/sgr/pdf/execsumm.pdf (accessed March 29, 2010).
44. National Association for Sport and Physical Education, *Active Start: A Statement of Physical Activity Guidelines for Children Birth to Age 5,* 2nd ed. (Reston, VA: NASPE, 2009).
45. W. B. Strong and others, "Evidence Based Physical Activity for School-Age Youth," *The Journal of Pediatrics* 146, no. 6 (2005): 732–37.
46. A. Ignico, C. Richart, and V. Wayda, "The Effects of a Physical Activity Program on Children's Activity Level, Health-Related Fitness, and Health," *Early Childhood Development* 154 (1999): 31–39.
47. American Academy of Pediatrics, "Policy Statement: Strength Training by Children and Adolescents," *Pediatrics* 107, no. 6 (2001): 1470–72.
48. Ibid.
49. National Association for Sport and Physical Education, *Comprehensive School Physical Activity Programs: A Position Statement* (Reston, VA: NASPE, 2008).
50. H. G. Williams and others, "Motor Skill Performance and Physical Activity in Preschool Children," *Obesity* 16 (2008): 1421–26.

Bibliography

American Academy of Pediatrics. Policy statement: Strength training by children and adolescents. *Pediatrics* 107, no. 6 (2001): 1470–72.

Annett, M. Hand preference observed in large healthy samples: Classification, norms and interpretations of increased non-right-handedness by the right shift theory. *British Journal of Psychology* 95 (2004): 339–53.

Baranek, G. T. Efficacy of sensory and motor interventions for children with autism. *Journal of Autism and Developmental Disorders* 32, no. 5 (2002): 397–422.

Bertenthal, B., and C. Von Hofsten.Eye, head, and trunk control: The foundation for manual development. *Neuroscience and Biobehavioral Reviews* 22, no. 4 (1998): 515–20.

Biel, L., and N. Peske. *Raising a sensory smart child.* New York: Penguin Books, 2005.

Bundy, A. C., S. J. Lane, and E. A. Murray. *Sensory integration: Theory and practice* (Second edition). Philadelphia, PA: F. A. Davis Company, 2002.

Case-Smith, J., and N. Weintraub. Hand function and developmental coordination disorder. In *Developmental Coordination Disorder.* Edited by S. A. Cermak and D. Larkin. Albany, NY: Delmar, 2002.

Centers for Disease Control and Prevention (CDC). Increasing physical activity: A report on recommendations of the task force on community prevention services. *Morbidity and Mortality Weekly Report* 50, RR-18 (2001): 1–16.

———. 2004. *Physical activity and health: A report of the surgeon general executive summary.* www.cdc.gov/nccdphp/sgr/summ.htm (accessed April 29, 2010).

Erhardt, R. P. *The Erhardt hand preference assessment (EDPA).* Maplewood, MN: Erhardt Developmental Products, 2006.

Fertel-Daly, D., G. Bedel, and J. Hinojosa, Effects of a weighted vest on attention to task and self-stimulatory behaviors in preschoolers with pervasive developmental disorders. *American Journal of Occupational Therapy* 55, no. 6 (2001): 629–40.

Fisher, A., and others. Fundamental movement skills and habitual physical activity in young children, *Medicine and Science in Sport and Exercise* 37, no. 4 (2005): 684–88.

Gallahue, D. L., and F. Cleland Donnelly. *Developmental physical education for all children.* 4th ed. Champaign, IL: Human Kinetics, 2003.

Garcia, C. Gender differences in young children's interactions when learning fundamental motor skills, *Research Quarterly for Exercise and Sport* 65, no. 3 (1994): 213-25.

Garcia, C., and L. Garcia. Examining developmental changes in throwing: A close up look, *Motor Development Research and Reviews* 2 (2002).

Goez, Z., and N. Zelnik, Handedness in patients with developmental coordination disorder," *Journal of Child Neurology* 23, no. 2 (2008): 151–54.

Goodway, J., and C. Branta. Influence of a motor skill intervention program on fundamental motor skill development of disadvantaged preschool children, *Research Quarterly for Exercise and Sport* 74, no. 1 (2003): 36–46.

Henderson, A. Self-care and hand skill. In *Hand Function in the Child.* Edited by A. Henderson and C. Pehoski. St. Louis, MO: Mosby, 2005.

Hepper, P. G., S. Shahhidullah, and R. White. Handedness in the human fetus, *Neuropsychologia* 29, no. 11 (1991): 1107–11.

Ignico, A., C. Richart, and V. Wayda. The effects of a physical activity program on children's activity level, health-related fitness, and health, *Early Childhood Development* 154 (1999): 31–39.

Kranowitz, C. S. *The out-of-sync child: Recognizing and coping with sensory processing disorder.* New York: Penguin Group, 2005.

Lane, S. J. Structure and function of the sensory systems. In *Sensory Integration: Theory and Practice.* 2nd ed. Edited by A. C. Bundy, S. J. Lane, and E. A. Murray. Philadelphia, PA: F.A. Davis Company, 2002.

Ma, Q. Beneficial effects of moderate voluntary physical exercise and its biological mechanisms on brain health, *Neuroscience Bulletin* 24, no. 4 (2008): 265–70.

McCormack, G. L., and others. How occupational therapy influences neuroplasticity, *Occupational Therapy Practice* 14, no. 17 (2009).

Meeusen, R. Exercise and the brain: Insight in new therapeutic modalities, *Annals of Transplantation* 10, no. 4 (2005): 49–51.

Miller, J. Primary school-aged children and fundamental motor skills: What is all the fuss about?" Refereed paper for publication and presented at the Australian Association for Research in Education (AARE), Adelaide, Australia, November, 2006, 1–13.

Mori, S., M. Iteya, and C. Gabbard. Hand preference consistency and simple rhythmic bimanual coordination in preschool children, *Perceptual and Motor Skills* 104, no. 3 (2007): 792–98.

Myer, C. A. Therapeutic fine motor activities for preschoolers, In *Development of hand skills in the child.* Edited by J. Case-Smith and C. Pehoski. Rockville, MD: American Occupational Therapy Association, 1992.

National Association for Sport and Physical Education (NASPE). *Active start: A statement of physical activity guidelines for children from birth to age 5.* Reston, VA: NASPE, 2002.

———. *Active start: A statement of physical activity guidelines for children birth to age 5.* 2nd ed. Reston, VA: NASPE, 2009.

———. *Appropriate practices in movement programs for children ages 3–5.* 3rd ed. Reston, VA: NASPE, 2009.

———. Moving into the future: National standards for physical education. 2nd ed. Reston, VA: NASPE, 2004.

———. *Position statement: Comprehensive school physical activity programs.* Reston, VA: NASPE, 2008.

Newell, K. M. Constraints on the development of coordination. In *Motor development in children: Aspects of coordination and control.* Edited by M. G. Wade and H. T. A. Whiting. Dordrecht, the Netherlands: Martinus Nijhoff, 1986.

O'Brien, J. O., and J. E. Lewin. Translating motor control and motor learning theory into occupational therapy practice for children and youth, *Occupational Therapy Practice* 13 (2008): CE1–8.

O'Brien, J., and H. Williams. Application of motor control/ motor learning to practice. In *Occupational Therapy for Children.* 6th ed. Edited by J. Case-Smith and J. O'Brien. Maryland Heights, MO: Elsevier, 2010.

Poole, C. Development: Ages and stages—Spatial awareness, *Early Childhood Today* 20, no. 6 (2006): 25–30.

Ratey, J. J. Spark: *The revolutionary new science of exercise and the brain.* New York: Little, Brown and Company, Hachette Book Group, 2008.

Ray, M. *Rich experiences, physical activity create healthy brains: An interview with developmental psychologist William Greenough.* Cambridge, MA: National Scientific Council on the Developing Child, Center on the Developing Child, Harvard University, 2006. http://www.developingchild.harvard.edu. (accessed September 3, 2009).

Roncesvalles, M. N., and others. 2005. From egocentric to exocentric spatial orientation: The development of postural control in bimanual and trunk inclination tasks, *Journal of Motor Behavior* 37, no. 5: 404–16.

Schneck, C. M. 2005. Visual perception. In *Occupational therapy for children.* 5th ed., 412–48. Edited by J. Case-Smith. St. Louis, MO: Elsevier.

Shumway-Cook, A. and M. Woollacott. 2007. *Motor control: Theory and practical applications.* 3rd ed. Philadelphia, PA: Lippincott Williams and Wilkins.

Smith-Zuzovsky, N., and C. E. Exner. The effect of seated positioning quality on typical 6- and 7-year old children's object manipulation skills, *American Journal of Occupational Therapy* 58 (2004): 380–88.

Strong, W. B., and others. Evidence based physical activity for school-age youth, *Journal of Pediatrics* 146, no. 6 (2005): 732–37.

Sullivan, K., S. Kantuk, and P. Burtner. Motor learning in children: Feedback effects on skill acquisition, *Physical Therapy* 88 (2008): 720–32.

VandenBerg, N. L. The use of a weighted vest to increase on-task behavior in children with attention difficulties, *American Journal of Occupational Therapy* 55, no. 6 (2001): 621–28.

Williams, H. G., and others. Motor skill performance and physical activity in preschool children, *Obesity* 16, no. 6 (2008): 1421–26.

CHAPTER 4

Health

One way to foster healthy lifestyles is to encourage the development of health-promoting habits during early childhood. Preschool education about health can begin a lifelong process of learning about oneself, relationships to others, and the world. Preschool children's experiences with their health and ways to improve it, both at home and in the early childhood setting, enhance their desire and ability to make healthy decisions throughout their lives.[1]

The preschool health foundations describe the health knowledge, attitudes, habits, and behaviors that set the groundwork for all preschool children to develop into healthy adults. They explain what children should know about health, and what health habits and practices should be part of their daily routines when they are provided with high-quality health education in preschool. These skills and behaviors set young children on the path toward health and healthy lifestyle choices.[2]

The preschool health foundations represent a vision of young children's developmental process, not an expectation. Not all children will participate in a preschool program, and those who do may enter at age three, four, or five years. Each child enters preschool with a genetic background, developmental characteristics, an individual level of knowledge and skills, and understanding of everyday routines. The differences are based not only on the child's age, but also on the child's developmental level, prior experiences, and special needs. It is the responsibility of adults to help each child to develop the knowledge, skills, and behavior that promote healthy development.

An integrated and comprehensive approach is most effective when preschool children are taught about health. Health education does not stand alone in the preschool curriculum. It is integrated with the other eight domains: social–emotional development, language and literacy, English-language development, mathematics, visual and performing arts, physical development, history–social science, and science.

Health is comprehensive. Health education involves ideas directly relevant to the child, such as "How do I grow?" Preschool teachers work with children who are naturally curious and eager to learn about their bodies and how each part

works. A developmentally appropriate curriculum promotes overall health (e.g., wellness, safety, **oral health**, nutrition) and integrates topic areas. For example, a discussion about safety rules might include nutrition and sanitation. The question, "Why do we sit at the table to eat?" allows opportunities to start conversations about the social aspects of eating together, choking hazards, and avoiding spills on the floor.

Guiding Principles

Teachers address ideas and concepts that children can grasp at their developmental level and then progressively build on what children already know and understand. This approach applies to all children, including children with various abilities, disabilities, or other special needs (such as delays in language, cognition, or physical ability).

The following principles guide the integration of health with the eight domains and provide a basis for teacher guidance in the health domain strands and substrands.

- **Health knowledge is individualized.**
  Some children arrive at preschool already demonstrating expected levels of awareness and, in some cases, using health knowledge. Other children may have less experience with basic health concepts such as handwashing or coughing and sneezing into their elbows.[3] Through observation, teachers can determine where each child is on a developmental continuum of health knowledge, skill, and ability.
- **Preschool children and their families possess diverse backgrounds and cultural practices.**
  These differences influence the knowledge and skills that children bring to the preschool program. For example, cultures and families differ in the level of self-help skills and independence encouraged for preschool children; some cultures may emphasize interdependence, with children learning to collaborate with adults to meet health and safety needs. It is important that teachers understand and respect how children's health and safety needs are addressed by families in diverse ways and build on the families' approaches that would be effective in the preschool setting. It is also important for parents to be given information regarding health in both English and their home language.
- **Learning about health practices has a language component.**
  Teachers integrate modeling, visual cues, props, and demonstration to enhance understanding and unfamiliar terms. When introducing new terms, they support learning both in English and other home languages used by the children, including sign language.
- **Children's personal health status (i.e., physical, mental, emotional) affects their ability to learn and develop in all domains.**
  In addition to checking each child's initial well-being when the child arrives each day, teachers observe children throughout each day and work with families to ensure that health, nutritional, and other needs are met. They are aware of ongoing health issues for children, such as growth and development, nutritional status (e.g., childhood **obesity**), asthma, special needs, social ability, emotional well-being; they pay attention to physical illness or injuries; and they work with families to access appropriate services and resources. Teachers are sensitive to needs and share information about

relevant resources while maintaining confidentiality.

- **The overall theme of health education for preschool is personal health.** Children become aware of their bodies in their entirety and begin to recognize that their behavior directly affects their development and maintenance of a healthy body. Preschool children begin to develop self-help skills and the ability to respond to their body cues, and they engage in decision making, which can relate to their health. Children also begin to recognize differences in their bodies, such as height and weight, skin color, and physical abilities. Teachers can help children to accept differences, be comfortable with themselves, and be respectful of others. For example, children's body structures will vary, as some are small-framed and slender, and others are not. Children need help to understand that differences are natural. The objective is enhanced personal health and avoidance of risk factors, such as childhood obesity.
- **Children learn through their experiences, including play, routines and scripts, modeling, and developing and sustaining relationships at preschool.** Through **scaffolding**, most children will reach an appropriate level of health knowledge and practices within a relatively short period of time.

- **Practicing *scripts*, or behavioral rules, can foster development of certain health-promoting behaviors or skills.** Preschool children may not fully understand the benefits of following or the consequences of disregarding certain rules (e.g., buckling the seat belt in a vehicle); however, compliance is achieved because a trusted adult tells them, "This is what we do to stay safe."[4]
- **The preschool program provides both indoor and outdoor environments that are safe and appropriate, challenging, and inviting for all children.** Teachers model and contribute to the health and safety of children by maintaining a safe, clean, and accessible environment. This can be accomplished by appropriately engaging children in the maintenance of the classroom environment. The preschool program extends into the children's homes as teachers and families work together to support and reinforce learning through home and school experiences and daily routines.
- **Teachers help children feel secure by assuring them that there are adults who will take care of them (e.g., parents, family members, teachers, health care providers, special-needs assistants).** As children grow and seek independence, they begin to understand the actions and behaviors necessary to be healthy and safe (e.g., handwashing, toothbrushing, following safety rules). Teachers encourage and respond to positive behaviors and the development of decision-making and self-help skills by reinforcing positive choices made by

the children. When a preschool child's behavior is automatic, it sets the stage for the child to have lifelong healthy habits.

The guiding principles provide a basis for setting up the environment and selecting strategies to promote children's learning.

Environments and Materials

Children learn most effectively in a safe, inviting environment in which they can freely explore and challenge themselves. Health and safety in the preschool program, both indoors and outdoors, includes environment, supervision, and education. Environment is the first component of safety; a safe environment allows children to explore, play, and learn without unnecessary restriction. The environment should be set up and maintained to reduce the risk of injury and **disease transmission**.

Proper supervision of children is essential, and the required adult-to-child ratios must be met at all times, including periods when children play outdoors, are transported, and go on field trips.[5] The most effective supervision includes active involvement with children's learning: teachers move around the room with children, attend to children and their interactions, make eye contact, encourage children verbally, and model appropriate voice and actions.

Education is multifaceted. Teachers promote children's learning through discussion, modeling, and daily routines through active participation. An accessible and supportive environment with appropriate facilities and items allows children to practice and demonstrate progress in learning.

The following recommendations apply to establishing the preschool environment as related to the three health domain strands: Health Habits, Safety, and Nutrition.

- **Establish a physical learning environment designed for children's initiative.**
  This promotes their self-esteem and builds their skills and confidence. Arrange rooms to allow visual supervision and ease of movement throughout the indoor space. Provide child-size furnishings and low shelves with a wide variety of developmentally appropriate materials, in labeled areas, for easy return after use. Easily accessible handwashing and toothbrushing facilities allow children to initiate health-promoting behaviors. Small and sturdy plates, cups, and pitchers, as well as easy-to-grasp (and, if needed, specially adapted) serving utensils, facilitate self-help skills during mealtimes.
- **Provide safe, inviting learning environments and appropriate supervision of children.**
  When the environment is free of potential hazards, the staff spends less time saying no and more time in positive interaction with the children. Furthermore, if children are allowed to explore and investigate their environment without unnecessary risk of injury, they develop a sense of security and confidence.
- **Maintain a clean, healthy, and sanitary environment.**
  Incorporate **cleaning** and **sanitizing** into the daily routine. Children can practice basic cleaning (e.g., wiping tables after eating, disposing of trash, sorting recyclable materials).

Research Highlight

Cleaning and **disinfecting** is essential. Studies have shown that some **germs,** including influenza virus, can survive on surfaces for two to eight hours; rotavirus can survive up to 10 days. Cleaning with soap and water removes visible soil. After cleaning, disinfection (sanitizing) kills bacteria, viruses, and fungi (i.e., "germs"). The **Centers for Disease Control and Prevention (CDC)** states that a bleach and water solution of one tablespoon household bleach to one quart water is effective. Wet the surface with the solution and allow to air dry. Mix fresh bleach solution each day to maintain effectiveness, and store in a clearly labeled spray bottle out of children's reach. Research shows that other chemicals (e.g., ammonia, vinegar, baking soda, Borax) are not effective against some bacteria.[6]

- **Have supplies available and accessible to promote routine health practices.** Appropriate handwashing requires a sink with running water, liquid soap, paper towels, and a hands-free trash can, all within children's reach and readily accessible to children throughout the day. Supplies for toothbrushing include a water source and rinsing receptacle; child-sized, soft-bristle toothbrushes labeled with each child's name; toothpaste (ideally, approved by the American Dental Association); disposable cups for rinsing; and a storage container that allows toothbrushes to stand upright to air dry alone.[7] If appropriate facilities are not available in the classroom, then provide opportunities throughout the day for children to visit the sinks, with adult supervision.

- **Provide stimulating and developmentally appropriate materials in interest areas for children's use during dramatic play.** Materials may create awareness for one child while allowing another child to apply prior learning. Add health-related items that are familiar to children (e.g., empty containers from soap, bath, hair care, oral **hygiene**, and sunscreen products), and health-themed pictures, books, puzzles, and other materials to manipulative, block, and library interest areas. Children can imitate teachers' cleaning practices by including disposable gloves, spray bottles of clean water, and clean rags in interest areas. Clean, empty food containers, restaurant menus, and food models enhance nutrition education. Select items that would be familiar to the families in your program, or ask families to send in clean, empty containers from home with labels written in their home language. Special-interest areas (e.g., doctor's office, dentist's office, market, and grocery store) can be occasionally introduced. Children also learn through pretend play with protective equipment, such as

gloves, hard hats, bike helmets, knee pads, eye-protection goggles, ear protection, pot holders, and sports safety gear. A variety of real, unconnected telephones, cell phones (with batteries removed), and model pay phones can help children practice dialing 911. Adding car seats and seat belts (available from car salvage businesses) for children to practice with and use in the dramatic play area enhances small-muscle development while reinforcing the importance of "buckling up." Additionally, car seats can be provided for "buckling up" dolls. Belts, backpacks, shoes, and other materials with buckles encourage buckle practice. If there are children with special health care needs, it may be appropriate to include items that are part of their lives (e.g., a mask to give a stuffed animal "asthma treatment," a doll-sized wheelchair for children to use in play).

- **Provide furnishings and utensils appropriate for children's size and abilities.**
  Child-sized tables and chairs let preschool children easily reach the table while sitting comfortably with feet touching the floor. Small and sturdy trays, plates, and cups make it easier for children to grasp, lift, and carry. There are a variety of utensils available with larger grip handles or bent angles to support children who do not yet turn their wrist. Handwashing sinks should be child-sized; if not, provide sturdy, wide-based step stools with a nonslip base and top. Teachers may consult an early childhood special education teacher or other specialist for guidance in selecting items appropriate for children with special physical needs.

- **Be creative and include a gardening space, either indoors or outdoors, where children can plant seeds, tend the garden, and watch the plants grow.**
  It is helpful for preschoolers to understand where foods come from; foods do not just "appear" in a grocery store or farmers market. Gardening activities are one way to help children learn about food production.[8] Plant fast-growing plants such as leaf lettuce, radishes, and herbs; these can easily be grown in pots in the preschool setting. Outdoor garden areas should be free of natural hazards such as insects that bite or sting or animal waste.

Summary of the Health Foundations

The preschool health foundations describe the health knowledge, skills, and behaviors that preschool children typically develop in a quality preschool

environment. Through supportive communication (e.g., **scripts**, social stories) and participation in everyday routines and activities, children begin to develop behaviors such as making food choices, engaging in physical activity, and maintaining personal safety and oral health. These skills and behaviors set young children on the path toward health and healthy lifestyle choices.

Summary of the Strands and Substrands

Health Habits

1.0 Basic Hygiene
2.0 Oral Health
3.0 Knowledge of Wellness
4.0 Sun Safety

Safety

1.0 Injury Prevention

Nutrition

1.0 Nutrition Knowledge
2.0 Nutrition Choices
3.0 Self-Regulation of Eating

Please refer to the map of the health foundations on page 277 for a visual explanation of the terminology used in the preschool learning foundations.

Health Habits

Teachers can help children establish positive health habits. This learning is progressive, and preschool teaching often focuses on scripts and routines for prevention of disease and injury. Later, as children grow and develop knowledge and skills, they begin to believe and understand that they are responsible for their own health.

The Health Habits strand includes the following substrands: Basic Hygiene, Oral Health, Knowledge of Wellness, and Sun Safety. The following section introduces and recommends strategies to support learning related to the specific substrands.

Teacher-guided activities on health habits may be used to introduce or focus attention on a specific topic or concept. However, learning is primarily achieved through children's daily routines (e.g., washing hands at certain times, brushing teeth after meals) and verbal or nonverbal scripts that illustrate the desired lifelong behavior (e.g., using tissue when blowing the nose, coughing into elbows). Children demonstrate knowledge of body parts, disease prevention, and wellness as they practice routines and develop descriptive scripts (e.g., "We wash our hands, fingers, and wrists"; "I'm going to brush my teeth and tongue"); they begin to understand more difficult concepts through scaffolding.

VIGNETTE

Brianna and her dad arrive at preschool. As they enter the classroom, Mr. Moore says, "Good morning, Brianna. I'm happy to see you!" Brianna places her bag in her cubby and then begins to play with her friend, Carlos. Mr. Moore turns to her dad and says, "Good morning, Mr. Manning. Brianna looks like she slept well last night. Has she had any recent asthma episodes?" Mr. Moore knows that Brianna has had several severe asthma episodes, so it is important that he communicate regularly with Brianna's family. Both the teacher and family share information each day so that potential health issues or asthma triggers can be avoided.

PLANNING LEARNING OPPORTUNITIES

Health education is integrated in the daily schedule and begins as the teacher greets and welcomes each child to the program. As the children arrive, the teacher can note each child's health and appearance; if family members are present, briefly ask for information that may be important to care for the child that day. Throughout the day, routines are established to allow children to interact with each other and materials, eat **nutritious foods**, brush teeth, wash hands, be physically active, and relax and rest as needed.

1.0 Basic Hygiene

Providing a clean and healthy physical environment is essential for the prevention and control of diseases in preschool programs. A second defense against disease transmission is helping children develop basic hygiene habits. For preschoolers, the objective is to understand that health habits help to prevent disease and promote healthy bodies. Preschool children will not understand how diseases are spread (e.g., through direct contact, airborne pathogens, and food and beverages), and the concept of invisible germs is usually beyond their comprehension. Children require repeated hands-on experiences and conversations about invisible germs in order to comprehend this concept. It is not appropriate to discuss specific diseases because this knowledge may be frightening or confusing.

Children can develop the skills needed to perform routines (e.g., handwashing, toothbrushing, coughing into elbow) and disease-prevention behaviors (e.g., use of tissue to blow nose, proper disposal of tissue), and they may mimic scripts, demonstrating "Germs cause disease" and "Don't share germs." **Language scripts** in both English and the child's home language (including sign language), along with daily routines, help health behaviors become internalized for preschool children and establish a basis for lifelong healthy habits. Combining pictures with the spoken home language is also very helpful. An example of a handwashing poster that is available in English, Spanish, or both languages can be downloaded at http://www.childhealthonline.org/downloadform.html.[9]

Handwashing is the most effective way to prevent **communicable disease**. Children learn as they explore the environment with their hands, play in dirt and sand, and touch the hands of other children. Hands come in contact with bacteria and other organisms, some of which may cause disease. Frequent and proper handwashing removes most harmful germs before they spread to children's mouths, noses, and eyes or to other people.[10] Through modeling and gentle coaching, teachers remind children to wash their hands thoroughly and frequently throughout the day.

Adults can demonstrate personal hygiene routines and promote disease-prevention actions by teaching children to cough into their elbows and use a tissue to clean their noses. Family-style eating (i.e., self-serve from common serving bowls) provides an opportunity for teachers to discuss sharing, manners, and program practices along with germ prevention.

Research Highlight

The Centers for Disease Control and Prevention (CDC) recommends washing with soap and warm water, lathering for 15–20 seconds. If soap and water are not available, alcohol-based hand sanitizers are effective in killing germs. These products do not replace regular handwashing with soap and running water; however, they can be used as an alternative when water is not readily available. If **hand sanitizers** are used, follow the manufacturer's instructions for use and supervise each child's use of the product. Such products are potentially toxic and must be stored away from children's reach.[11] The CDC recommends using products that contain at least 60 percent alcohol.[12]

Teachers model disease prevention by following **standard precautions** (e.g., handwashing, wearing gloves, disposing of contaminated first-aid supplies). These guidelines (previously called **universal precautions**) were initially intended to reduce the spread of infection to **health care providers** and to other patients. The recommendations were expanded and renamed "standard precautions." See the following Research Highlight for more information.

Research Highlight

"Universal precautions," as defined by the CDC, were designed to prevent transmission of blood-borne **pathogens**[13] (e.g., hepatitis B, HIV) when providing first aid or health care.13 In 1996, the recommendations were expanded and renamed "standard precautions." They are still primarily designed to prevent the spread of blood-borne diseases, but they also are an excellent way to reduce the spread of **infectious diseases** in places other than health care settings, such as child care facilities and schools. It is important to recognize that children with infectious diseases are often contagious before they appear to be sick or are aware that they are ill. Therefore, preschool teachers should follow this application of the CDC's standard precautions to prevent the spread of infectious diseases.[14, 15, 16]

VIGNETTE

The children are playing indoors when Miss Marie reminds them that it is time to prepare for lunch. She begins to sing a handwashing song as children leave their interest areas. Some of the children begin singing as they wash their hands. The song follows the familiar "Row, Row, Row Your Boat" tune, and the children enjoy singing it in both English and Spanish.

Wash, wash, wash my hands
Make them nice and clean
Rub the bottoms and the tops
And fingers in between

Lava, Lava, Lava mis manos
Lavalas muy limpias
Lavalas de arriba y abajo y
Entre mis dedos de las manos[17]

The children have learned that if they sing the song two times while washing their hands, then their hands should be clean! Miss Marie sings along with the children as she observes the handwashing process. She helps Tonya, who has a hearing impairment, by clapping along with the song; Tonya can look in the mirror above the sink to see when the song (clapping) ends. The younger children sometimes need help in dispensing the soap and turning the water on and off; the older children enjoy helping the younger ones and like to model their handwashing skills.

PLANNING LEARNING OPPORTUNITIES

Thorough handwashing requires that children apply soap and water and rub their hands for at least 20 seconds. Children can "time" their handwashing by singing a short song such as "Happy Birthday" or "Row, Row, Row Your Boat" twice before rinsing. Handwashing songs are available from several online resources (e.g., Henry the Hand, Scrub Club, Clean Hand Coalition). See the "Teacher Resources" on page 278 for more information. As teachers model handwashing, they encourage children to mimic the actions; rub the soap to form a lather; and see the running water send the soap bubbles, along with dirt and germs, down the drain.

Interactions and Strategies

Teach children how to wash hands. Developing proper handwashing skills and behavior is a process. There are several steps: (1) wet hands and apply soap to make lather, (2) rub over and under hands and between fingers for at least 20 seconds, (3) rinse hands under running water, (4) use a paper towel or air dryer to dry hands, (5) turn off the faucet using the paper towel, and (6) dispose of the used paper towel.[18] Model and assist children through each step. Children will need modeling, coaching, and reminders as they develop the skills.

Model basic hygiene and disease-prevention actions throughout the day. In addition to handwashing, teachers can demonstrate the use of disposable tissue when blowing the nose; and assist children as they learn to use a tissue, blow properly, and dispose of the tissue in a hands-free trash can. When sneezing, children turn the head into the elbow to prevent the spread of airborne germs. Encourage children to practice sneezing into their own elbows through games and activities (e.g., Simon Says, Follow the Leader). Discuss and model other health habits as opportunities arise, such as using a napkin while eating, dispensing toothpaste, and explaining why serving utensils are used, instead of fingers, to serve food.

Remind children about health practices throughout the day. Strategically place laminated posters, which can be wiped and sanitized, near the handwashing sink to remind children of handwashing steps. Posters may have pictures

and simple words in both English and the children's home languages to clearly illustrate the steps of handwashing (e.g., Handwashing poster, Scrub Club). See "Teacher Resources" on page 278 for more information. Provide disposable tissues in accessible places in children's play areas.

Incorporate handwashing and other health practices in the daily routine. Preschoolers feel comfortable and secure with familiar, consistent routines. Through daily exposure and routines, children begin to recognize that health is part of their life and personal responsibility. Encourage parents to help children wash their hands when they arrive at preschool. Remind children to wash their hands throughout the day: on arrival; before and after eating or handling food; after toileting; after coughing, sneezing, or blowing their noses; before and after water play or sand play; after handling pets; and any time hands appear dirty. Incorporate handwashing into the daily routine, and remind children to wash hands at other times, as needed.

Use visual aids to demonstrate invisible germs. Preschool children can understand visible dirt, but the concept of germs that are too small to see (i.e., invisible) is beyond their comprehension. Introduce the term *invisible*. Demonstrate that something is there, but they cannot see it. Put a tiny dot on a piece of paper and post it on the wall. Have children stand at the opposite side of the room and tell you if they can see the dot. Have them move closer until they can see the dot; explain that the dot is there, but it is so small they could not see it from across the room. Products such as Glogerm[19] can be applied to hands; it is invisible until hands are held under a special light. Spray lemon juice on white paper; the drops disappear as the paper dries. When the paper is warmed, the droplets will become more visible.[20] Help children imagine what germs look like; draw pictures or read books such as *Those Mean Nasty Dirty Downright Disgusting but . . . Invisible Germs*.[21] Make sure to include children with visual impairments in the discussion of the concept of invisible germs.

Reinforce learning with stories and music. Teach short (i.e., 20-second) songs about handwashing and include music tapes or CDs in the interest areas. Play or sing songs in both English and the children's home languages to remind children of routine hand-washing times. Read books or tell stories about preventing the spread of germs through proper handwashing, covering a cough, sneezing into the elbow, and using disposable tissue when blowing noses. See "Teacher Resources" on page 278 for more information.

Observe individual children attentively. Each child enters preschool with different levels of experience, knowledge, skill, and ability. Through observation, teachers can determine where children are in the learning process. Anecdotal notes may also be helpful in determining a child's progress and identifying skills or behaviors that may need additional coaching and reinforcement. Use modeling, coaching, planned learning activities, and teachable moments to promote the development of health skills and positive behaviors. Provide both individualized and group activities to develop healthy habits, including adaptations for children with special needs. For resources for working with children with disabilities or other special needs, see the *California Preschool Curriculum Framework, Volume 1*, appendix D.

2.0 Oral Health

Children's **primary teeth** (i.e., "baby teeth") are important not only for chewing food, but also to help with speech, to keep space in the jaw for adult teeth, and to provide structural support for facial muscles.[22] The role of preschool teachers includes helping children build toothbrushing skills and form the foundation for lifelong habits. Through daily routines, practice, and modeling, children will learn when and how to brush their teeth. Oral health education is further promoted and reinforced through family education and community partnerships; teachers can provide information to families on how to use free or low-cost dental services in the community.

Early childhood **caries** (i.e., tooth decay) is the most common chronic childhood disease in the United States.[23] The best way to prevent **cavities** and other dental problems is to thoroughly brush and clean between the teeth at least twice each day. For children in preschool, this may mean brushing after breakfast or lunch with the teacher and then brushing with family members at home before bedtime. For some children, the preschool routine may be the *only* time they brush their teeth. For example, some families are under tight schedules and may not place a priority on brushing teeth. Teachers may encourage adult family members to brush their own teeth with their preschool child and provide families with information about dental health services. If brushing is not possible, teachers can provide disposable cups and encourage children to "swish and spit" with plain water to help rinse food off teeth.

VIGNETTE

"Bihn is nervous about his visit to the dentist," Mrs. Phan confides to Ms. Morales, Bihn's teacher. "The dental visit is a new experience for him," says Ms. Morales, "and a lot of children are afraid of new situations. Several children have scheduled visits, so I have activities to help children prepare for going to the dentist. This week, we will talk about tooth care and what to expect at the dentist's office. The children will use mirrors to look inside their own mouths. They will also practice opening their mouths really wide. I will send home activities that you can do at home with Bihn. Please let me know of other ideas or activities that you have. We are reading books about teeth and the dentist; you can borrow these if you would like. If you have other books or stories that the children would enjoy, I would like to see them."

TEACHABLE MOMENT

Teachers may include discussion and dramatic play about dental visits when introducing children to oral health. They describe the dentist as a **health helper** who assists people in keeping teeth healthy. Introduce new terms when explaining simple procedures (e.g., proper brushing and flossing) and instruments generally used in a dental office (e.g., small mirror, tooth cleaner, dental probe, and dental floss). Teachers may read stories about visiting the dentist. They encourage parents to talk with their children about the dental visit in a positive manner; explain how dental staff can help them have strong teeth; and share stories about how a dentist has helped them.

Interactions and Strategies

Practice toothbrushing skills. Toothbrushing requires several separate skills, including putting toothpaste on the brush, brushing each tooth, brushing the tongue, and rinsing the mouth. Introduce these skills by practicing dry brushing during small-group time. Read stories and show pictures of the separate steps of toothbrushing. Let children practice on a doll or other model (e.g., a toy alligator with lots of teeth). Practice "swish and spit" with plain water and a proper spit receptacle (e.g., trash can); this activity may be practiced outdoors for less mess and more fun!

Include toothbrushing in the daily routine. Provide a child-sized, soft-bristle toothbrush for each child, labeled with his or her name. Only a tiny smear of toothpaste is recommended; talk with children about preventing the spread of germs as you distribute toothpaste on wax-paper squares or on the side of small paper cups for each child. Assist children as needed; children with special needs may require adaptive equipment such as special toothbrushes. A child with visual impairment may be unable to see the toothpaste or judge the amount, so teachers may encourage the child to feel the amount of toothpaste with her tongue before she begins to brush. For resources for working with children with disabilities or other special needs, see the *California Preschool Curriculum Framework, Volume 1*, appendix D. Observe and gently coach children as they brush teeth and spit out excess toothpaste. Rinsing is not required but may be desired; prevent the spread of germs by using disposable cups to rinse. Display laminated posters (that can be wiped and sanitized) to remind children to brush their teeth; posters may have both pictures and simple words in English and in the children's home languages.

Integrate oral health and nutrition education through cooking activities. Some foods stick to teeth more than others. The sugar in hard candy or dried, processed fruit snacks stays on teeth longer than the sugar in chocolate bars or cake. Encourage children to explore sticky items such as glue, hair gel, tape, or stickers.[24] Invite children to touch different items and describe how each feels. While children wash their hands, ask which substances are easiest and which are hardest to wash off. Build on this experience as you explain that some foods are sticky and stay on the teeth. Use cooking activities to help children identify and categorize foods by "stickiness"; have children cut through various foods with table knives to see which foods stick to the knives.

Incorporate music. Thorough toothbrushing takes about two minutes. One way to help children brush completely is to "time" the brushing by having other children sing a song while their classmates brush. During small-group time, combine music and movement with songs and physical activities such as the "Toothbrush Wiggle."[25]

(Sung to the tune of "The Hokey Pokey")

You put your toothbrush in, you put your toothbrush out
In–out in–out brush it all about
First you do the front, then you do the sides
Then spit the toothpaste out

Oh brush your teeth in circles
Oh brush your teeth in circles
Oh brush your teeth in circles
Then spit the toothpaste out[26]

Build communication and vocabulary skills. Read a story in the child's home language or encourage children to draw a story about going to the dentist. Introduce dental vocabulary, such as *dentist*, ***fluoride***, *cavity, gums, tartar, enamel, floss,* and *X-ray* in English and the children's home languages. Provide a bulletin-board display with pictures and terms; include children's artwork or photographs of children in the display. Invite a dentist or dental hygienist to talk with children; encourage children to ask questions and invite parents to attend. For more information about strategies to support children who are English learners, see the *California Preschool Curriculum Framework, Volume 1*, chapter 5.

Encourage pretend play. One way to alleviate fear of the dentist's office is to establish a pretend dental office in the dramatic play area. Dramatic play allows children to try a variety of roles and occupations.[27] Depending on the space, you may be able to have both a waiting room and a dentist's office. Look for props that are safe and developmentally appropriate, such as unbreakable mirrors, oversized play toothbrushes, large models of teeth, dental health posters, flashlights, gloves, scrubs, masks and goggles, play money and receipt books, clipboards, bibs, dental X-rays, dolls, and magazines for the waiting room. Encourage children to assume different roles as dentist, dental hygienist, and patient. They may also play the role of a family member (i.e., parent or other adult caregiver), bringing in a doll, stuffed animal, or another child for a dental appointment.

3.0 Knowledge of Wellness

Children are naturally curious about their body parts, especially **external body parts** that are visible. Often, preschool health education begins with a unit on the five senses—sight, smell, hearing, taste, and touch—and the body parts associated with each sense. The five senses are incorporated in all learning activities during preschool. For example, if a food *looks* good and *smells* good, most children will want to *taste* it. The senses are integrated into all domains, such as math (e.g., "How many apples do you see? Which apple is bigger?"); science (e.g., "How does fresh bread smell?" "How does the color change after the bread is toasted?" "How does it feel on your tongue after the bread is toasted?"); and language (e.g., "Let's read a story about visiting the dentist.")

The five senses provide an introduction to how body parts work. Children can recognize the external body parts (e.g., eyes, ears, nose, tongue, fingers) and, through hands-on activities, can associate those parts with specific functions. Children can also explore how these body parts work together. For example, a food activity or snack with crispy rice cereal and milk allows children to see the food, touch it to compare dry cereal with wet milk, hear the cereal crackle when the milk is added, and smell and taste the cereal both with and without milk.

The concept of **internal body parts** is more difficult for preschoolers to understand. Teachers may begin with the mouth and tongue. Children looking in a mirror can see their faces and lips; when they open their mouth, they see the tongue and teeth. Children with visual impairments can be encouraged to feel the tongue and teeth. This introduces the concept that there are body parts that are not easily seen. Teachers can reinforce the concept of both internal and visible body parts by inviting children to welcome themselves to school by way of greeting their body parts during circle time (e.g., "Good morning, heart," "Hello, fingers"). Preschool teachers can introduce specific body parts, one at a time, based on children's previous learning and experiences. Most children have experienced a cut or scratch, so they can understand that there is blood inside their body. Older preschoolers can be introduced to the idea that there is a heart inside their body. Appropriate hands-on activities (e.g., feeling their heart beat after a movement activity, listening through a stethoscope) help children understand that their heart pumps blood.

Preschoolers can begin to understand that bones provide a frame for the body and help them move. A variety of activities may be used to introduce children to bones, such as feeling bones in their own bodies (e.g., kneecap), looking at and touching the bones after eating chicken, and showing and explaining how X-rays are pictures of the inside of the body.

Older preschoolers may begin to learn that they have muscles under their skin

and that muscles also help them move. They can see the difference in muscles by comparing their own bodies to the bodies of older siblings or adults. Keep concepts simple; it is enough for children to learn that they have internal body parts, such as bones and muscles, and that these body parts have specific functions. As children learn about their own bodies, they will build on this information to understand and learn about other concepts presented in the primary grades.

Encourage children to tell an adult when they are hurting. If a child expresses, "I don't feel good," it is helpful to know if it is his or her head, stomach, or extremities (e.g., arms, legs) that hurt. Learning about body parts will enable children to communicate specific information about what hurts. Children may communicate by verbalizing (e.g., "My stomach/tummy hurts") or by pointing to the affected area of their bodies (e.g., "My knee is bleeding").

VIGNETTE

Mrs. Chang saw Tommy fall while he was playing on the balance board. Mrs. Chang immediately knelt by Tommy and asked him if he was hurt. Tommy did not cry or complain of pain when asked, but Mrs. Chang noticed that he continued to hold his right arm close to his body as they reentered the room. She continued to observe him during naptime; he did not appear to be in pain. She completed an injury/incident form, noting all the details, and contacted his family to share details of the fall. When Tommy's grandfather came to pick him up, Mrs. Chang recommended that he consult with Tommy's doctor and provided the center phone number in case the doctor needed additional information. The next day, Tommy returned to preschool with his arm in a bright blue cast.

TEACHABLE MOMENT

The next day, Mrs. Chang encouraged Tommy to tell the other children about his cast. Then the children identified people they could talk to if they were hurt or sick, such as a family member, guardian, or teacher. They discussed how doctors, dentists, and other health helpers can help them stay healthy, as well as take care of them when they are sick or hurt.

It is important that teachers observe children for changes in behavior or actions. There are several reasons why a child may not communicate physical discomfort to adults. Some young children may not recognize pain or think pain is "normal"; as a result, they may not cry even though the injury or illness may be severe. Other children may be afraid to cry or demonstrate pain or injury. They may not verbalize discomfort because of fear of doctors, nurses, or hospitals. A goal of preschool health education is to help children become familiar with health helpers and learn to communicate their feelings and questions.

Some preschool children easily understand why they go to a health helper (i.e., doctor, nurse, clinician) when they are sick. It is important that preschool children also recognize that health helpers help them grow up to be strong and healthy. Likewise, they may have difficulty understanding that medicine can also be used to prevent illness. For example, a preschooler may question why he needs a vaccination when he is "not sick."

As young children develop, they begin to make more choices that affect their health and well-being. Since much of their early behavior is monitored by adults, children often are unsure or unaware of the choices they have. Teachers should respect and be open to family beliefs, customs, and cultural practices—which may vary greatly—regarding when and what type of medical attention to seek. Access to money and health resources also influences decisions about health care and health products. These same factors influence the messages given to children and the choices they will be allowed to make. Recognize that each family has the right to make their own health decisions. While being respectful and open to families, teachers in the preschool setting need to support families' practices that agree with guidelines from the American Academy of Pediatrics, promote positive health for all children in the group, and make sure potentially harmful practices are avoided. Work with families to identify and support the individual needs of each child.

Interactions and Strategies

Encourage children to explore and accept differences. Children can recognize physical differences (e.g., children who use braces, wheelchairs, glasses, or hearing aids; height, weight, and color of skin or hair). Children with disabilities may take medication or breathing treatments during the day, eat in a different way (e.g., through tube feeding), or need other supports to assist them in daily activities. Likewise, there are differences in families' health care practices, meal setup and food choices, and safety considerations. For resources for working with children with disabilities or other special needs, see the *California Preschool Curriculum Framework, Volume 1*, appendix D.

Use correct terminology throughout the day. Children will learn appropriate terminology about body parts through daily usage and practice; include terms in both English and the children's home languages. Handwashing terms include *hands, fingers, skin, fingernails,* and *wrists.* Games such as Simon Says or Follow the Leader incorporate body parts (e.g., "Wiggle your nose" or "Jump with your legs"). Start with simple body parts that children recognize; as children develop knowledge and understanding, teachers can demonstrate how to "feel

your heart" or "flex your arm muscles." Model appropriate terminology as situations arise (e.g., when children have scratches or scrapes). Identify the affected body part by the appropriate term and describe the injury. For example, say "You scraped your elbow" rather than "You have a boo-boo."

Familiarize children with health helpers. When gathering materials or planning field trips and guest speakers, include health helpers from many specialties (e.g., lab technicians, paramedics, fitness specialists, nutritionists, dentists, eye doctors). Consider types of medical specialists who might be less familiar (e.g., chiropractors, acupuncturists, and midwives) and that are utilized by families in your community. Provide information that interests the children, such as tools used by health helpers, places where they work (e.g., doctor's office, school, hospital, fitness center, portable dental trailer), and how they help children stay healthy. Health screening can be a positive way for children to meet health helpers; prepare children in advance and practice specific activities such as opening their mouths as wide as possible (i.e., dental screening) or pointing up, down, right, and left (i.e., vision screening with E chart). As children explore the roles of health helpers and hear about what they do, begin to describe occasions when specific health help might be needed. Allow ample time for children to process, role-play, and ask questions.

Establish special interest areas. Books and pictures can show a variety of health helpers from diverse backgrounds and in different settings. Dress-up clothes and props for role playing (e.g., nurse, doctor, fitness instructor) enhance dramatic play. Design special health-helper interest areas, such as a medical doctor office,

dentist office, eye doctor office, or store that sells health products. Many children have pets, so the concept of health helpers can be expanded to include veterinarians as children pretend-play with toy animal figures. Engage with preschool children as they work out their questions through dramatic play.

Integrate health promotion with other domains. Provide clean, empty containers for shampoo, toothpaste, sunscreen, and other health-related items for children to use in dramatic play. Avoid using containers that previously held medications, cleaning products, cosmetics (e.g., nail polish remover), or other potentially toxic substances that children should not handle. Use health-product coupons and flyers with pictures to create table games; children can examine the coupons and match them to product containers. Containers can also be used to make puzzles or lotto games to help children recognize letters and words. Provide product containers for children to use in making

collages or paintings, or add to the block area for children to haul in toy trucks. Matching container lids to the containers promotes fine motor skills as well as eye–hand coordination. Encourage children to sort and categorize items. Provide a variety of items that represent the diversity of products used by families (e.g., bar soap, liquid soap, body wash) and show packaging and advertisements printed in various languages. Promote language development by reading books aloud and singing songs about wellness in English and the child's home language (including sign language); have the books and music available for children to explore in interest areas. For more information about strategies to support children who are English learners, see the *California Preschool Curriculum Framework, Volume 1,* chapter 5.

Enhance children's knowledge and understanding through problem solving. Display pictures, puppets, or dolls of diverse health helpers (e.g., doctor, nurse, ambulance driver, fitness trainer, nutritionist). Be consistent; when showing pictures or puppets, children can recognize each image as a specific health helper. Teachers may represent a nutritionist as a person holding an apple, while a fitness trainer might be represented as a person walking, jogging, or riding a bicycle. Doctors and nurses are often identified as having a stethoscope around their necks. Teachers can vary images by showing males and females, different ethnic groups, and different age groups. Present children with situations and ask which health helper might help them in providing assistance. Remember: the people to whom parents and children may turn for help will be based on resources available in the community, family decisions, and familiarity with certain professionals. Examples of simple situations might include the following ones: (1) a boy wants to know what foods will help him grow strong or where food comes from; (2) a girl has a stomachache; (3) a boy wants to learn to move faster; (4) a girl wears glasses or need glasses and needs a vision check; and (5) a boy has a loose tooth or a toothache.

Model and share information each day. Using health products (e.g., soap, toothpaste, sunscreen) as part of the daily routine helps children understand what the products are used for. After applying first aid (e.g., cleaning a minor cut or scrape), teachers may let children pick an adhesive bandage from a selection of colors. Talk with children about activities they enjoy or experiences they have had. Adults can integrate health information by talking about their own visits to the dentist or doctor or participation in fitness events (e.g., community walking/running races, bike rides).

4.0 Sun Safety

Exposure to the sun's **ultraviolet radiation (UV rays)** can occur from direct sunlight, reflected rays (e.g., off water, snow, or concrete), and sunlight that passes through windows (e.g., in a classroom, play area, or vehicle).

Teachers can encourage children to be outside, active, and safe—including "sun-safe." Immediate benefits of sun-safe practices are to help children stay cooler and more comfortable, which makes outdoor time more enjoyable. Sun-safe actions reduce the risk of painful sunburn, reduce eye discomfort, and lower the risk of **dehydration** and **heat-related illness**.[28]

Teachers can promote sun safety by scheduling activities appropriately (i.e., avoid overexposure during peak hours of 10 a.m.–4 p.m.) and providing large shade areas for active outdoor play. They help children develop protective habits, including wearing wide-brimmed hats and 100 percent UV-protective sunglasses and covering skin with clothing. Sunscreen is considered a nonprescription medication; with written family permission, teachers can apply sunscreen (i.e., having a **sun protection factor [SPF]** of 30 or above) to children. Teachers need to be aware of the UV index, air quality, and heat index; and should help prevent heat-related illness by encouraging children to drink plenty of water.[29]

Research Highlight

Children adjust more slowly than adults do to changes in environmental heat. They also produce more heat during activities than adults, and they sweat less. Heat-related illness (e.g., dehydration, **heat exhaustion, heat cramps**) can cause serious complications for children. These conditions can escalate to **heatstroke**—a life-threatening condition. A child's body temperature can quickly reach 108 degrees Fahrenheit or higher. The body must be immediately cooled and **emergency** medical attention provided to prevent brain damage or death.[30, 31, 32]

VIGNETTE

Mr. Jeff is putting sunscreen on four preschoolers. "Mr. Jeff, why do we have to put this sticky stuff on every day?" asks Mary. As he removes his gloves and puts away the sunscreen bottle, he explains, "The sun is good for us. It gives us light and warmth. But too much sun is not good for your skin. We put on the sunscreen to protect our skin from too much sun." Javier says, "I don't burn. I don't need this." Mr. Jeff replies, "Everyone needs to be sun-safe." Mr. Jeff encourages the children to run, jump, and try new activities as they play outdoors.

TEACHABLE MOMENT

Teachers discuss sun safety while preparing for outside activities. Topics may include the weather (e.g., sunny, cloudy, hot, cool) and reminders that the sun is always above, even when there are clouds and it is not hot. Teachers encourage children to observe physical differences among themselves, including skin color, and tell them that all skin

needs protection. They talk with children about other ways they protect their skin from the sun—for example, by wearing hats and sunglasses and playing in the shade. Teachers point out that clothing covers part of their bodies; therefore, it is necessary to put sunscreen on skin that is not covered. The children sing to the tune of "Head, Shoulders, Knees and Toes" when teachers apply sunscreen and point out how sunscreen is applied without sharing germs. Before going outside, children put on hats and sunglasses to protect the face, neck, and eyes. Teachers point to each body part, naming it both in English and in the home languages of the children in the group (including sign language). For more information about strategies to support children who are English learners, see the *California Preschool Curriculum Framework, Volume 1*, chapter 5.

Interactions and Strategies

Introduce vocabulary related to sun safety. Expose children to terms in English and in the children's home languages that apply to sun safety and other topics. For example, "protect" is a term that applies to sun safety ("Sunglasses protect your eyes from the sun"), community helpers ("Crossing guards help protect you from the cars on the street"), and oral health ("Toothbrushing protects your teeth from cavities").

Integrate sun safety with emergency preparedness and safety. A trip outdoors to study the weather can be used to teach science and safety. The wind, clouds, thunderstorms, rain, hurricanes, UV radiation, extreme heat, air quality, and other conditions that merit safety considerations might be discussed.

Encourage dramatic play. Gather a collection of hats, some that are wide-brimmed and some that are not. Show the children the hat collection, and discuss how some hats protect people from the sun better than others. Have children sort the hats into two piles (good protection versus poor protection). Provide a wide range of baby-doll hats, clothing, and sunglasses in the dramatic play area, and encourage children to use items to protect the dolls from the sun. Display photographs of the children (individual or group shot) wearing sun-safe clothing, sunglasses, and hats.

Integrate sun safety with other health topics. For example, relate sun safety to understanding their body. Help children understand that their skin covers their entire body, even under hair. Discuss how skin protects what is inside their bodies; when skin is damaged (i.e., cut), they bleed. Through role play, demonstrate ways to protect skin (e.g., gloves, shoes, bandages, sunscreen). Discuss physical differences between children (e.g., height, hair color, skin color), and how all children, no matter what skin color they have, need to protect their skin. Integrate nutrition and science by discussing what the children eat and drink; compare this to other living things (e.g., animals and plants); and discuss what they need in order to grow. For example, plants need soil, water, and sunshine. Teachers encourage children to draw pictures or tell stories about the sun and what it does (e.g., feels warm, provides light, helps plants grow), but that too much sun is not good (e.g., makes them feel hot, causes sunburn).

Combine sun safety with other domains. Make sure children are protected with wide-brimmed hats, cover-up clothing, sunglasses, and sunscreen. On a sunny day, children may notice their shadows as they play outside. Encourage them to move about (i.e., exercise) as they watch their shadows. Older preschoolers may work in pairs: one strikes a pose, and the other does a chalk outline of the shadow. This activity helps children develop teamwork, body control, and fine motor skills. It also provides opportunities for children with different abilities to participate fully by sharing responsibilities. After drawing the outlines, introduce math skills by measuring the shadows. Repeat this activity at different times of the day and compare shadows; discuss how the sun moves through the sky.

Encourage decision making. Select a safe area (e.g., playground) and go for a shade walk with the children. Have the children look for shady areas, including small areas created by shadows of signs, fences, buildings, trees, and other objects. Engage children in helping to create temporary shade spaces by using blankets, sheets, parachutes, tarps, or large boxes. Play a game where you indicate (verbally or with signs) "shade" or "sun," and have children move from shady areas to sunny areas based on what you communicate.

Integrate sun safety into daily routines. Encourage each child to wear a hat and shatter-resistant (e.g., polycarbonate) sunglasses, and model this behavior. (These items may be provided by the preschool program or the family.) Although young children may not consistently wear hats and sunglasses, this will help form the basis for developing sun-safe habits.

To prevent transmission of disease (e.g., ringworm, head lice), label items with each child's name and help children learn to store items in their personal storage spaces (i.e., cubbies). Check the heat index and air quality for your community each day, and post it during morning group time. Provide opportunities for children to help you offer water cups during outside play. Help children make up words for a sun-safety song, in English and in the children's home languages, that can be sung to a familiar tune; sing with children as they prepare for outside play time. For example:

(Sung to the tune of "Old MacDonald Had a Farm")

I am sun-safe all day long, E–I–E–I–O
I wear a hat to shade my face, E–I–E–I–O
With a floppy hat here, and a floppy hat there
Here a hat, there a hat, everywhere a floppy hat
I am sun-safe all day long, E–I–E–I–O

Promote sun safety everywhere, every day, all year long. Teach children that the sun is shining on them every day, even on cloudy or cold days. Each month, take a picture of children practicing sun safety. Create a class book, collecting stories the children share about the protection activity. At the end of the year, there will be a class picture book displaying year-round sun safety. For example, you may have pictures of children wearing sunglasses when there is snow on the ground.

Ensure that children have access to appropriate sun-safety items. Water should be available to children at all times. Each child should have his own wide-brimmed hat and UV-protective sunglasses. Demonstrate and model sun-safe actions, and encourage children to practice sun safety.

Bringing It All Together

The children have been playing in interest areas and it is time to get ready for lunch. Mr. Akamu goes to Kalei and Patel, the lunch helpers for that day, and asks them to help him. They begin by washing their hands together; Mr. Akamu sings their favorite handwashing song as they rub their hands with soap lather. As Kalei and Patel put the napkins and plates on the table, Mr. Akamu begins singing their "get ready" song in the languages of the children to let them know to put away toys and prepare for lunch. In the beginning of the school year, Mr. Akamu selected a few songs children were going to sing and worked with a few parents to translate them into a few languages spoken by children in the class. As each child leaves an interest area, he or she goes to the sink and washes his or her hands.

Mr. Akamu notices that Aaron is still playing on the floor with the blocks. He goes to him and says, "Aaron, I see you are having fun stacking those blocks. It looks like you created a tall building. Let's leave it on this table, and you can come back to it after we eat our lunch." He watches Aaron go to the sink, quickly put his hands under the running water, and then dry them on a paper towel. As Aaron walks to the table, Mr. Akamu gently reminds him, "Aaron, do you remember why we wash our hands?" Aaron does not answer, so Mr. Akamu says, "Let's go to the sink and use soap while we sing our handwashing song. The soap will clean your hands before we eat."

Aaron looks at his hands and replies, "They're not dirty." Mr. Akamu looks at Aaron's hands and says, "They do look clean, but they might have germs on them. Remember the story we read about those invisible germs? Let's go make soap bubbles and wash away the germs."

Preschool children have limited understanding of the process of cause and effect as it relates to health; many health concepts (e.g., germs) are beyond their comprehension. Yet, preschool is the developmental period during which children establish the routine practices and habits that form the basis for a healthy lifestyle. By observing adults model healthy behaviors, learning the steps in language scripts (verbal or signed), and taking part in daily routines (e.g., handwashing, toothbrushing, sun-safe practices), children begin to gain knowledge, develop skills, and establish their own health practices, beliefs, and values that they will carry on throughout their lives.

Engaging Families

Teachers can use the following strategies can help families to develop their children's health habits:

- ✔ Provide families with concise, accurate information about ways to promote and develop good health habits in children; information should be presented in English and the families' home languages. Capture their interest by addressing topics related to their children's age and development, as well as topics related to common health risks for children, such as childhood obesity, asthma, and dental caries. Injury prevention and first-aid topics, such as treating burns, bleeding, and choking, are also relevant. Provide written informational materials that are brief and easy to read. See "Teacher Resources" on page 278 for additional information.
- ✔ Provide individualized information, as well as general health information,

to all families through daily contact, workshops, and parent meetings. All information should be presented in English and in the families' home languages. Accommodate family schedules by providing workshops and meetings at various times (e.g., morning, afternoon, evening), and arrange for child care during meetings.

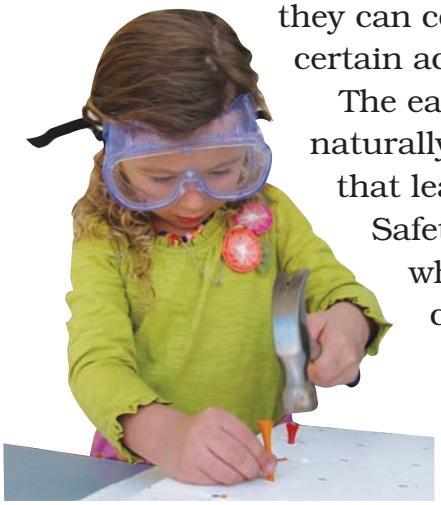
- ✔ Show family members what the children are learning by sending home examples of work, encouraging families to visit the preschool and observe children in action, and sharing children's portfolios during home visits. Reinforce children's learning about health habits through take-home activities, lending libraries of read-aloud books in the languages of the families in the group, and displays of children's work.
- ✔ As you introduce health routines (e.g., handwashing, toothbrushing), invite family members to participate and model. Encourage families to contribute ideas or materials to interest areas that reflect diverse health habits at home.
- ✔ Identify community resources related to health habits (e.g., handwashing, toothbrushing) and invite community personnel to participate in and bring resources to family workshops or parent meetings. Emphasize the role of home and family members in helping children to develop health habits, and inform all parents of the availability of free and low-cost community resources.
- ✔ Be sensitive to and respectful of different values or beliefs, as well as varying levels of access to health products and services. Gather information on available and accessible resources in the community, including those for children with special needs, and provide this information to all families, translated into their home languages.

Questions for Reflection

1. What elements of your program's physical environment promote healthy habits (e.g., handwashing, toothbrushing, sanitation)? What elements have created challenges? Have you adapted the environment to meet the needs of all children?
2. How do you support all families in seeking appropriate and accessible health products and medical care?
3. How have you provided time in the daily schedule to support health habits?
4. What disease-prevention skills have you been able to effectively help children learn by modeling each day?
5. In your library of children's books in home languages, what stories have you found that support learning about health habits?
6. What adaptations have you made to address the impact of various disabilities on children's ability to demonstrate healthy habits?

Safety

Preschool children deserve to live and play in safe environments. It is the adult's responsibility to keep children safe; children should not be expected to actively protect themselves. Preschool safety education helps children develop safety awareness and the realization that they can control some aspects of their safety through certain actions.



The earlier children learn about safety, the more naturally they will develop the attitudes and respect that lead to lifelong patterns of safe behavior.[33]

Safety education involves teaching safe actions while helping children understand possible consequences of unsafe behavior.

The safety strand addresses children's ability to follow safety rules, emergency routines, and transportation and pedestrian safety rules.

1.0 Injury Prevention

Preschoolers need help to recognize that safe play may prevent injury. Teachers can promote independence and decision-making skills as children learn safe behaviors. Teachers can explain that children can make choices to stay safe, just as they wash their hands to prevent disease, brush their teeth to prevent cavities, and eat a variety of foods to help them grow strong and healthy.

Preschoolers can learn to apply a few simple and consistent rules, such as riding in a car seat and wearing seat belts, even though they are too young to understand the reasons for such rules. For example, three-year-old Morgan says, "My seat belt on," as she gets into a vehicle. Although Morgan lacks the skill needed to buckle the seat belt and does not understand the consequences of not wearing a seat belt, she is developing a positive habit. Safety education in preschool focuses on behaviors the children can do

Research Highlight

Unintentional injury is the leading cause of death of children ages fourteen and under. Motor vehicle injuries are the leading cause of death among children in the United States; each year more than 200,000 children are treated in emergency departments for playground-related injuries; children ages four years and younger are susceptible to residential fire deaths and injuries; and children under age six years are more likely to experience unintentional poisoning.[34] The good news is that the number of deaths caused by unintentional injuries to children has dropped in recent years; from 1987 to 2004, there was a 43 percent decrease.[35]

Death rates among California children ages one to four years declined slightly from 2000 to 2005; however, the death rates for young children remained significantly higher than the target established in *Healthy People 2010*.[36]

Child injury prevention efforts continue throughout the United States. For example, all 50 states and the District of Columbia have child restraint laws; and 21 states, the District of Columbia, and over 140 localities have enacted some form of mandatory child bicycle helmet legislation. In addition, all national and regional code-making bodies have amended their plumbing-code language to require anti-scald technology and a maximum water heater temperature of 120 degrees Fahrenheit in all newly constructed residential units.[37]

The state of California has been a leader in advocating child safety. It has enacted laws requiring the use of bike helmets, personal flotation devices, and child safety seats; prohibiting adults from leaving children alone in motor vehicles; and imposing criminal liability on adults who allow children to have access to loaded firearms.[38]

to stay safe. It involves simple, concrete practices that children can understand.

Safety in preschool involves establishing and maintaining a safe environment; supervising children while being involved in their activities; and helping children develop skills and learn ways to stay safe. Preschoolers learn through routines and daily practice and by engaging in language scripts and following simple rules. These scripts and rules may be communicated through voice, pictures, or signs. Children learn concepts and develop skills through repetition, then build upon these as concepts and skills become more complex.

The purpose of safety rules and guidance is to promote awareness and encourage developmentally appropriate behavior to prevent injury. Teachers may include separate rules for the classroom, playground, hallways, buses, or **emergency drills**. Limit the number of rules or guidelines, but foster consistency (e.g., three indoor rules, three playground rules) and base them upon the greatest hazards, threats, and needs in your preschool program and community.

Safety guidance is most effective when teachers have appropriate expectations and safety rules are stated in a positive manner. For example, an appropriate indoor safety rule might be stated, "We walk indoors," rather than the negative, "Do not run indoors." On the playground, a rule might state, "Go down the slide on your bottom, feet first." As children follow these rules, acknowledge them for specific actions with descriptive praise (e.g., "Kevin, you sat on the slide and went down really fast! That looked like fun!").

State rules clearly, in simple terms, and in children's home languages; include pictures or icons with posted rules to assist all children's understanding. Children often are more willing to accept a rule when they are given a brief explanation of why it is necessary.[39] Gently remind children during real situations; with positive reinforcement, they will begin to follow safety rules more consistently. As children develop greater understanding of safety rules, they begin to develop self-control and feel more secure.

Adults are fully responsible for children's safety and compliance with safety rules and emergency procedures. Safety education for children, which include rules and reinforcement of verbal and picture scripts in children's home languages (including sign language), is essential for handling emergency situations. Through practice and routines, children are better able to follow the teacher's instruction and guidance. It is essential that teachers evaluate each child's knowledge and skill in this area, and provide additional learning activities as needed to ensure that all children can follow emergency routines.

VIGNETTE

Ms. Linda is preparing her preschoolers for the first fire drill of the year. She has read several books about fire safety to the children. The class enjoyed a visit from Deloria's mother, who is a firefighter. The children are excited about their first fire drill, but they are not sure what to expect. Ms. Linda plays a tape of the school fire alarm and explains that the real warning alarm will be very loud. The fire alarm means everyone must leave the building.

"Now we are going to practice listening and preparing to leave the classroom," says Ms. Linda. "It will be like playing Follow the Leader, and I will be the leader." The children are eager to try this new experience, and it is difficult for them to listen quietly. Several of the children are learning English so Ms. Linda uses words in the other languages of the children, as well as English, to focus their attention and explain the steps. Prior to this practice, Ms. Linda presented a list of key words and phrases to parents who speak languages other than English and obtained the relevant translations. She combines words and hand signals to direct the children. Ms. Linda explains that she will assist Juan, who is in a wheelchair, during the fire drill.

Ms. Linda demonstrates what to do when the alarm sounds (e.g., stand up, stay quiet) before the children practice. They practice this routine each day that week so they will be ready for the actual drill on Friday.

PLANNING LEARNING OPPORTUNITIES

Children may have difficulty following procedures during the first few emergency practices. The teacher continues to practice the individual steps of the emergency drill and reinforces learning through other routines and activities. She explains to children that they gather to exit the classroom in the same way for meals, outdoor play time, and emergency drills. The focus is on one type of emergency drill at a time, (e.g., fire drill this week; earthquake drill another week).

Transportation may be provided by the preschool program, not only to and from school and home each day, but also in emergency or evacuation situations.

Children ages four and under are at greatest risk of traffic-related pedestrian death and injury. Family members and other adults often overestimate children's pedestrian skills. Children under age six can learn scripts (i.e., "Stop, look, and listen") but cannot accurately determine whether a vehicle is coming toward or going away from them, the distance of the vehicle, or the speed at which it is moving.

Another factor is that children are still developing basic impulse control of their actions. If a ball rolls into the street, a child is very likely to run after it. Likewise, a child exiting the

preschool bus or van may run toward a friend or a field-trip destination without stopping to consider oncoming vehicles and other dangers. It is the responsibility of adults to ensure children's pedestrian and transportation safety.

The community and environment are to be considered when teaching pedestrian safety. In rural areas, the greatest dangers may be home driveways, farm equipment, or crossing a road to the mailbox. In small communities and neighborhoods, children often play on sidewalks or driveways and may learn to cross streets to play with neighboring children. In urban areas, children may live or play near high-traffic areas that may (or may not) have pedestrian crossing and traffic signals.

Interactions and Strategies

Incorporate safety activities into the daily routine. Consistent routines, adult modeling, and active involvement with children are essential in safety education. To prevent falls, children can learn to push their chairs under the table when they get up, clean up their spills, tie their shoes, and walk (not run) when indoors. Let one or two children assist each day as "safety helpers" to go with a teacher and look for hazards on the playground before other children go outside to play. Children can point to trash, which the teacher removes. The teacher should wear protective gloves to dispose of the trash properly. Both the teacher and children should wash hands thoroughly after inspecting the playground. Implementing safety measures throughout the day—such as counting children when loading or unloading the bus, taking attendance each day, and checking for all children before leaving the center or playground—helps children see that they are valued.

Involve children in creating rules. Preschool children can be involved in creating some classroom, indoor, or playground rules; they can also help design posters to display rules in words and pictures. Ask children to discuss similar rules they have at home. Limit the number of rules and keep rules simple. Take the child through the steps of identifying, understanding, and practicing and following rules. Modeling and encouragement are essential.

Provide coaching and gentle reminders to help children follow safety rules. Display laminated posters (which can be wiped and sanitized) to remind children of safety rules for certain areas; posters may have both pictures and simple words in the children's home languages. As appropriate, use the same simple rules for each environment, such as, "Take turns." The rules should be stated in a positive manner, such as, "Walk when indoors," rather than, "No running." Recognize children's efforts to follow rules with specific encouragement (e.g., "Kevin, thank you for waiting your turn on the slide. After Carlos goes down the slide, then you can get on the ladder").

Promote independence while developing other skills. Acknowledge children's self-initiated actions, such as pushing

their chairs under the table (e.g., "I see Alan pushed in his chair and is ready to go to circle time") and wiping up spills (with assistance as needed). Encourage children to communicate using verbal language or gestures to inform adults of potentially unsafe situations (e.g., trash on the playground). Promote language development by helping children learn what to say in an emergency; have each child recite, sing, or sign his or her full name and address, both in English and in the family's home language. Integrate counting skills by involving children in frequent head counts during transportation, field trips, going to or from the playground or other building areas, and emergency drills; encourage children to count in their home languages as well as in English.

Research Highlight

Each year, approximately 890 children, ages fourteen and under, die from airway obstruction injuries. Children ages four years and under are at greatest risk for all forms of **airway obstruction** injury.[40] Foods most likely to cause choking are those that are round-shaped (e.g., grapes, carrots, nuts, hot dogs, candies); slippery (e.g., peanuts, ice); dry (e.g., marshmallows, dried fruits, popcorn); tough (e.g., chunks of meat, dried meats); sticky (e.g., spoonfuls of peanut butter, peanut butter on soft bread); hard (e.g., raw cauliflower, hard candy); and foods with inedible parts (e.g., fish with bones, fruits with pits).[41] Help staff and parents recognize potential choking hazards by displaying posters in the family's home language and examples of foods that are commonly served by families of various cultures or ethnic groups. See "Teacher Resources" on page 278 for a Web site that offers a downloadable poster displaying foods that pose potential choking hazards.[42]

Provide time for children to practice individual skills. When teaching vehicle safety, take a few children at a time on a field trip to the parking lot to practice fastening seat belts and child restraint systems (e.g., car seats, booster seats). Let children practice putting on seat belts and allow them to try several different cars with different seat belts, if available. Show different types of car seats, including infant/toddler and booster seats, and assist children in buckling up dolls or animal toys. As a group, use cardboard boxes to make cars and trucks, each with seat belts. This integrates buckling (i.e., fine motor) skills with safety education. The pretend seat belts may be actual vehicle seat belts, available from vehicle repair shops or vehicle salvage yards, or adult-size clothing belts found in discount or secondhand stores. Observe children to determine their skill levels, and provide hands-on activities to promote and reinforce learning.

Introduce concepts and behaviors in simple steps. After introducing concepts and practices, combine the steps to build upon previous learning. Learning is progressive. Emergency routines may be broken down into simple steps, such as recognizing the warning signals (e.g., fire alarm), being quiet and listening to the teacher, and following the teacher to the exit. Likewise, the emergency routine for earthquake drills involves several steps. Children can learn to recognize the warning (e.g., signs of an earthquake), identify the safest area (e.g., hallway, bathroom, under sturdy table), and assume the "safe position" (e.g., sitting with arms over head). These steps will come together during practice of emergency drills.

Role-play safety helpers. Families' past experiences with emergency and safety workers, combined with the environment they live in, may influence children's levels of ease with or trust in safety personnel. Invite guests or provide field trips so children can meet firefighters, police officers, crossing guards, paramedics, street patrols, and other safety helpers. Show pictures of diverse safety helpers (e.g., males and females, various ethnicities) and emphasize that men and women of all backgrounds and cultures can be safety helpers. Occasionally set up special themes for interest areas, including emergency safety items (e.g., posters of fire escape routes, maps showing earthquake safe zones, items for evacuation backpacks, books and puzzles on community safety helpers, toy emergency vehicles, telephones and cell phones). Set up a transportation theme in a large outdoor area to represent a street or road crossing, including street signs, pretend vehicles (e.g., made from cardboard boxes), and car seats for dolls. Read stories and provide pictures of diverse safety helpers and equipment related to the

various safety helper roles for children to view and incorporate in role playing. Set up areas of the room or playground to serve as offices for police officers, sheriffs, firefighters, ambulance drivers or paramedics, crossing guards, bus drivers, or safety patrols. Include props such as puppets, pictures, badges, toy vehicles, or dress-up uniforms. Encourage children to participate in any way they wish; anyone can become a safety helper. Use appropriate and inclusive language (e.g., "firefighter" rather than "fireman").

Practice problem solving. Define "emergency" (when people need help fast, it is called an "emergency"). When children see a fire engine or ambulance with the sirens and lights on, point out that the vehicles are going to the scene of an emergency. The types of emergencies that children and families might encounter will differ depending on the demographics and geographic location (e.g., flooding, wildfires, mudslides, earthquakes). Familiarize children with safety helpers, and build on this knowledge through problem solving. Display pictures, puppets, or dolls of diverse police officers, firefighters, ambulance attendants, crossing guards, and other community safety helpers. Present children with situations and ask which safety worker would come to help. Whom children should ask for

help will depend on resources available in the community; asking for help may also be a family decision. Simple situations may be presented: (1) there is a fire at your school; (2) someone is hit by a car; (3) children need help crossing the street; (4) someone gets sick and cannot get up; and (5) you are alone or do not know where to find your family.

Introduce safety signs. Signs help children recognize important symbols and reinforce environmental print words (e.g., exit, caution, poison, walk, wait, stop, danger) in English and the home languages of the children in the group. A well-planned walk can help children understand that some signs (e.g., "Wait" and "Walk") give directions to keep us safe. Explain how some street signals make a sound and/or show how much time is left for safely crossing the street. Prior to the walk, integrate safety with language development by showing and verbalizing to children the words and symbols that they may see on signs. Take a short list of words with pictures for children to use as they search for signs. Incorporate safety signs in interest areas, post traffic signs on tricycle paths or walkways, cut large pictures of signs into puzzles for children to reassemble, and read books related to signs.

Incorporate music. Safety songs that teach important concepts be included during group time; cassettes or CDs of songs can be added to the music area. It is often easier for children to learn to state their name and home address when the information is made into a simple song. Music can be used to illustrate seat-belt safety. Play the "Freeze" game for children to move to. When the music stops, tell the children to stop and hold the same position until the music begins again. Try fast and slow music. Tell children that when a car is moving and suddenly stops, car seats and seat belts help hold them in their seats. Let them know that without seat belts, they might fall or lean forward.

Bringing It All Together

On the playground, Ms. Micki watches and talks with several children as they play on the equipment. She assists Steven as he navigates the arch climber, crosses the bridge, and goes down the slide. Ms. Micki smiles at Ms. Aiesha, her assistant, as they move around the play area, making eye contact and encouraging each child. Ms. Aiesha is engaged with four children preparing to ride wheeled toys. "Is everyone wearing a helmet?" she asks. The children all nod. Tina pats her helmet and says, "I have the pink one today!" "I have the purple helmet. I always get the purple one," says Darius, grinning.

Ms. Aiesha smiles and helps them position their helmets properly on their heads, gently reminding them to fasten the straps. As they ride around the path, she encourages them to look at the pretend road signs. "Tina, you stopped and looked both ways at that stop sign. That was a great safety habit. Darius, you made a left turn at the sign. You really can ride a tricycle and follow the road signs!"

"Come play with me!" calls Steven. As Darius jumps off the tricycle and starts across the path, Ms. Aiesha calls him back, "Darius, please park your tricycle before you go play with Steven." Darius runs back and moves the tricycle off the path. "Thank you for parking your tricycle," says Ms. Aiesha. "Let's hang the helmet on the handlebars so Estrella can use it."

Injury is the leading cause of death in children. Because of their level of cognitive development, many preschool children cannot consistently identify dangerous situations. Older preschoolers can understand some safety consequences (i.e., cause and effect)—for example, fire can cause burns, and sharp objects can cause cuts. Preschoolers can also learn scripts, such as "Stop, look, and listen." However, adults must be responsible for their safety. Preschool children do not have the cognitive or perceptual development to judge the distance, speed, or direction of vehicular traffic. They often act impulsively, without stopping to consider danger. By learning and following simple safety rules (e.g., take turns, wear a helmet) and practicing verbal, visual, or sign-language scripts, children establish a foundation of lifelong safety habits.

Engaging Families

- ✔ Share written and visual safety messages with families through newsletters, brochures, bulletin boards, Web pages, and take-home activities in the home languages of the families in the program. Emphasize safety issues that relate to your preschool program and community (e.g., the importance of escorting children to the bus stop and staying there until they are on the vehicle, then being at the bus stop when they return, and walking to and from the parking lot at school). Integrate parent information with children's learning about topics such as poisoning prevention and traffic safety.
- ✔ Provide safety information through workshops and during parent meetings; include information on a variety of topics, especially those that involve higher risk in specific communities, such as water safety, gun safety, or lead poisoning. Invite community safety personnel to participate in

workshops and share resources and information about how to access community services. Address specific safety issues, such as vehicle safety and pedestrian safety, through one-on-one guidance during pickup and drop-off times.

- ✔ During family conferences, find out what messages family members would like teachers to reinforce at school. Safety rules and supervision may differ at home. It is important not to judge differences; parents, family members, and adult caregivers know best the needs and abilities of their child in that environment. During home visits, offer to help families identify potential hazards in their family environment and ways to reduce possible injury.
- ✔ Post emergency plans on family bulletin boards and provide families with a written copy of the preschool program's emergency plan. Include responses to different scenarios (e.g., evacuation, shelters), location of the designated evacuation shelter, and a number to call if family members cannot reach the preschool. Routinely update families' emergency contact information.
- ✔ Encourage families to plan and practice emergency drills for fires, earthquakes, floods, violent encounters, or other situations that could occur in their home or community. Provide families with resources to develop a home evacuation plan and drill.[43, 44]
- ✔ Invite family members to attend the preschool or to serve as guest speakers as children learn about people who can help in emergency situations. Invited guests may include safety or medical personnel (e.g., firefighters, paramedics) or workers in related professions (e.g., construction workers, electricians, meteorologists, cleaning businesses).

Questions for Reflection

1. What elements of your program's physical setting have you modified to create a safer environment in which children can freely explore and learn?
2. What are three safety rules you have consistently modeled and promoted in all environments (e.g., classroom, hallway, playground)?
3. How do you effectively supervise children while being actively engaged in their play?
4. How do you share information about children's safety with all families?
5. What program policies and procedures are in place? Are these safety policies readily available to program staff and family members? Are there others that should be developed?
6. What practices are in place to ensure that children with special needs will be safe in emergency situations?

Nutrition

Lifelong eating habits are shaped during a child's early years. Teachers of young children have a special opportunity to help children establish a healthy relationship with food and lay the foundation for sound eating habits. Nutrition education and activities help set children on the path to a healthful lifestyle. Providing nutritionally balanced meals and snacks and integrating nutrition education and healthy eating habits in the home and early childhood environment can help prevent health risks such as childhood obesity.

Nutrition education is integrated with the other eight domains. Through food and cooking activities, children also develop skills in math, science, art, language and literacy, social science, health and self-care, and social skills. Nutrition education for preschoolers fosters children's awareness of different types of foods and promotes exploration and inquiry of food choices. Lifelong habits with foods are developed during early childhood. Through nutrition education in preschool, teachers encourage children to include a wide variety of foods that provide adequate nutrients in their daily diet.

The Nutrition strand consists of the following substrands:

1.0 Nutrition Knowledge
2.0 Nutrition Choices
3.0 Self-Regulation of Eating

Through knowledge, children become aware of different foods and tastes, some of which are familiar and others that are new. As they explore various foods and food preparations, they develop likes and dislikes and begin to make choices based on preference. Both nutrition choices and **self-regulation of eating**—that is, eating when hungry, chewing food thoroughly, eating slowly, and stopping when full—involve decision-making skills.

Research Highlight

Fear of new foods is common in children.[45] It may take many tries before a child will taste a new food and up to 20 exposures before a child decides he likes or truly dislikes a food.[46] **Food jags** (when a child will eat only one food item meal after meal) are also common. Food jags rarely last long enough to cause harm.[47] Children's eating habits are a way for them to feel independent. They reflect typical development in children.[48]

Some children have disabilities or other issues that affect their decisions about foods. Children with autism often have very limited food preferences; some children may have sensory issues and avoid specific textures or food items. Other children may not like it when different types of foods touch each other on the plate or may wish to eat foods in a particular order. Be aware of differences in children's preferences and eating habits, and consult with the child's family and specialist to ensure that needs are met.

1.0 Nutrition Knowledge

Preschool children are active learners who experience the world through their senses, physical involvement, and active play. They are eager to use materials, try new experiences, and communicate their wants, needs, and ideas to others.

Children experience foods, both familiar and unfamiliar, every day through meals, snacks, and cooking activities. As children begin to understand the concepts of food identification and categorizing, teachers may describe how specific foods help our bodies. Children may better understand the overall benefit of food in terms of it helping them grow, giving them energy to run and play, and helping them to become strong. As children begin to understand internal body parts, teachers can initiate discussion of more specific food benefits.

It is essential for children to understand that various foods help the body in different ways and that some children have specific food allergies.

For those with allergies, certain foods are potentially harmful for them. Teachers should encourage tasting and eating a variety of foods to obtain adequate nutrients for growth and development. "Variety" may mean foods of different color, shape, texture, and taste.

As children gain understanding of different foods, they can begin to categorize foods in other ways, such as by **food groups** (e.g., bread, fruits, meat) or the U.S. Department of Agriculture (USDA) MyPlate food guide for young children. MyPlate reflects the 2010 Dietary Guidelines and replaces the MyPyramid for Preschoolers. Every food is all right, but some foods help the body more than others; therefore, people may eat some foods more often than others. Food models, combined with visual aids such as the Food Pyramid[49] and integration of the topic with daily nutrition activities (e.g., mealtime, snack time, cooking activities), can help children begin to understand that some foods are eaten more frequently than others.

Family food choices may be based more on culture, accessibility of foods, and preference rather than on guidelines and recommendations (e.g., Food Pyramid, MyPlate). A family's food choices should be respected. Families find it helpful to receive information and guidance on making cost-effective food choices, access to community resources (e.g., farmers markets), and ways to obtain lower-cost items (e.g., by purchasing them on sale or in season).

VIGNETTE

Ms. Harris gathers the children and says, "Let's do something new for our snack time. Has anyone been on a picnic before?" Leticia looks excited and says, "We went on a picnic with my cousin." Ms. Harris encourages her to tell the other children what they did. "We sat on a blanket, and there were bugs, and the dog ate my sandwich, and Daddy made hot dogs on a grill." "That sounds like fun!" exclaimed Ms. Harris. "A picnic is when you take your food and eat outdoors. It could be in a park, under a tree, or in your own backyard. Today, we are going to take our snack and have a picnic outside. I have packed the food and drinks. We will have foods that you can eat with your hands and fingers. We will not need forks or spoons. We need to wash our hands before we go outside. I will also have some wet cloths so you can wipe your hands if they get dirty."

PLANNING LEARNING OPPORTUNITIES

Some young children may not have experienced a picnic, so this will be an exciting new experience for them. Children may eat picnic-style if the class goes on a field trip, so it is helpful to familiarize them with this activity prior to the field trip. During the snack-time picnic, teachers may encourage children to observe the environment, foods, and other aspects of the experience (e.g., what makes it fun, how it is similar and different from their regular snack-time routine). When teachers prepare children for the off-site field trip and picnic, they remind children of this picnic experience. Teachers may suggest to children that they get everything ready for their upcoming event. Each day teachers introduce a different aspect of the event, such as how they will wash hands, what food to take, where they will sit to eat, and other steps or activities that will take place. Teachers may have children help create lists of items needed.

Interactions and Strategies

Introduce many different foods. This can be done through books (e.g., The Fruit Group; "Everybody Cooks Rice"; "Bread, Bread, Bread [Foods of the World];" "The Meat and Beans Group"), meals and snacks, and cooking activities. Include both familiar and new foods, and include food items from the various cultural backgrounds of the children and their families. Encourage children to categorize foods any way they wish, such as by size, shape, color, taste (e.g., sour, sweet) or as "familiar" and "new." Introduce children to a variety of foods in categories such as breads (e.g., tortilla, bun, roll, sliced white, pita, naan) and fruits (e.g., mango, papaya, avocado, strawberry). Promote learning of English and sign language as foods are introduced using familiar names (e.g., beans/*frijoles;* rice/*arroz;* soup/*sopa),* adding the sign when you repeat the word in English or Spanish. For more informa-

tion about strategies to support children who are English learners, see chapter 5 of the *California Preschool Curriculum Framework, Volume 1.*

Recognize and accommodate differences in eating habits and food choices. Children may have different eating habits (e.g., liquid or soft foods only, avoidance of food allergies) related to cultural differences, restricted diets, or physical disabilities. To the extent possible, accommodate children's eating habits that are related to cultural practices. Some children may need special utensils to participate in a **family-style meal**. Other children may be fed with a feeding tube and take little or no food through the mouth. Food choices may be based not only on personal preferences, but also on cultural or religious preferences (e.g., kosher foods, avoiding certain meat products) and on family values or choices (e.g., vegetarian). Provide explanations for these differences by having a family member or specialist come in and explain why a child eats certain things or has a feeding tube. For resources for working with children with disabilities or other special needs, see the *California Preschool Curriculum Framework, Volume 1,* appendix D.

Provide opportunities and encouragement in food exploration. Encourage children to learn about foods through the five senses: taste, touch, sight, smell, and sound. Children can look at the food to determine its color, size, texture, and shape. They also learn about it by feeling, washing, cutting, measuring, counting, mixing, stirring, and rolling it. Some foods make interesting sounds, such as "snapping" beans or "crunchy" apples. Explore how different foods smell, such as herbs and spices. Follow appropriate food preparation and sanitation practices so that foods can be tasted during snack times.

Integrate nutrition with other areas of learning through cooking activities. Introduce new terms and integrate language by creating large recipe cards that children can decorate; incorporate math through ingredient measurements and counting the final product. Explore science when food products change structure through blending and cooking. Children can do activities individually or in small groups. Verbalize and demonstrate each step and encourage children to model your action. As children grow, build on their skills and increase the complexity of the activity and the time allotted for it. Some cooking activities may include steps to be completed throughout the day; baking bread requires mixing dough, waiting for the first rise, punching and shaping dough, waiting for a second rise, and baking.

Show children where food is produced. Expand nutrition education through field trips to gardens, farms, orchards or nearby fruit trees, local produce markets, kitchens, restaurants, grocery stores, or other places where food is grown, sold, or prepared. Invite community members to your program as visiting experts (e.g., farmers, food co-op members, community gardeners). Help children experience gardening as they raise herbs, fruits, or vegetables in pots (indoors or outdoors)

or in a small garden plot. Children practice fine motor skills as they shell fresh garden peas, count the number of peas in each pod, and then have the opportunity to taste crisp, sweet vegetables. (As with all food-related activities, it is important to consult with family members about eating habits and potential concerns about foods their children consume.). While learning about numbers, the children observe where peas come from and experience the great taste of raw peas. The pea shelling also provides opportunities for verbal and social skills as children share stories about picking peas or other produce that they have grown, harvested, purchased, or eaten. Introduce gardening or farming songs (e.g., "The Garden Song," "Oats, Peas, Beans, and Barley"). Incorporate teaching on hygiene and disease prevention by washing hands, washing and peeling produce (if necessary), and demonstrating how to share foods without sharing germs (e.g., using utensils to serve).

Establish special interest areas. Set up special areas to represent nutrition-related environments, such as grocery stores, restaurants, open-air markets, food co-ops, and picnics. Include a variety of items such as coupons, grocery advertisements, restaurant menus, picnic baskets and cloth for seating, durable dishes and utensils, handwashing items, and a "purchasing" system (e.g., cash register, pretend money, coupons).

Integrate nutrition education with basic hygiene education. Teach children to wash hands thoroughly before and after preparing foods. Watch children closely because children may unconsciously touch their nose or tie a shoe and then put their fingers back in the food. To lessen hygiene concerns, plan activities where foods will be cooked after handling, or allow each child to prepare and eat his own portion. Caution children to avoid licking their fingers since this may spread germs to others; they also risk contracting food-borne illness by tasting or eating uncooked foods containing egg or meat products (i.e., cookie dough, undercooked meat). There are many cultural differences in how foods are served or eaten; in certain cultures it is acceptable for family members to eat from a single bowl or to eat with their hands and fingers. Explain to children that in preschool, they will use individual bowls and utensils.

2.0 Nutrition Choices

For preschoolers, food selections and preferences are primarily based on familiarity, taste, and the sensory feelings associated with certain foods. In addition, the roles children have at mealtimes will vary depending on the family and culture. Offering a variety of cooking activities and foods ensures that each child can relate to some of them. As children share family stories and try new foods, they begin to show respect for food preferences of other children and families. This provides a model of inclusion and allows children to learn from one another.

The learning objectives and concepts should be appropriate for children's ages and development. Preschoolers can understand that "these foods help us grow" and "those foods help us get strong"; however, discussion of specific food nutrients (e.g., foods rich in vitamin C) is usually beyond their comprehension. Emphasize growth and development in terms that children recognize, such as height, weight, strength, running, and jumping (gross motor abilities). Encourage children's conversation about foods and how they help the body; the goal is to achieve balanced nutrition and healthy growth. Limit discussion about weight gain, obesity, or dieting. Help children understand that it is important to eat a variety of foods and to eat in moderation (i.e., self-regulation of eating).

Research Highlight

Obesity is an excess percentage of body weight caused by fat and puts people at risk for many health problems. In children older than two years of age, obesity is assessed by a measure called the **body mass index (BMI).** BMI is calculated from a child's height and weight.[50]

One out of seven low-income, preschool-age children is obese, but the obesity epidemic may be stabilizing. The prevalence of obesity in low-income two- to four-year-olds increased from 12.4 percent in 1998 to 14.5 percent in 2003 but rose to only 14.6 percent in 2008. Childhood obesity continues to be a leading public health concern that disproportionately affects low-income and minority children. Children who are obese in their preschool years are more likely to be obese in adolescence and adulthood and to develop diabetes, hypertension, asthma, and sleep apnea.[51]

VIGNETTE

Ms. Juana notices that three of her five children did not serve themselves any carrots or green beans on their lunch plates. This was a pattern she had observed for several days: the children ate most of their lunch but ignored the vegetables. Ms. Juana takes a bite of carrots and comments, "These are yummy orange carrots. I am glad we are having them for lunch today. They are one of my favorite vegetables!" Amelia expresses, "I don't like green beans. They're yucky!" Jonas agrees with Amelia; and Tommy signs, "I don't like nasty green stuff." Ms. Juana asks the children what foods they like to eat at home. The children begin to name foods such as kimchi, tofu, cabbage, pineapple, and frijoles. "I have an idea. Why don't we make a list of all the foods that we like and then find pictures? It will be fun to see the colors of the foods we like to eat!"

PLANNING LEARNING OPPORTUNITIES

Children often reject new foods, at least initially. Teachers may introduce vegetables and other new foods in creative ways that are appealing to children. At snack time, carrots could be served as thin strips with low-fat dip or grated and included in muffins. Stories such as "Stone Soup" or "The Vegetable Group" could be followed by tasting a different vegetable each day. Begin to incorporate foods commonly eaten at home into the meal service and include them in food activities as appropriate.

VIGNETTE

Ms. Tsikudo has invited Ava's mother, Zhiying, to tell the class about Taiwan. Zhiying was born and grew up in Taiwan. Zhiying has brought many family photos, as well as photos of the beautiful scenery of Taiwan. After showing the photos and taking questions from children, she shares with children a large durian and a few star fruits, fruits that people in Taiwan like to eat. Ms. Tsikudo helps to carry the durian on a plate and moves around the class to ask children to touch it. "How does the skin feel?" "Bumpy!" Children reply with excitement. Meanwhile, Zhiying has sliced the star fruits and starts to pass them around. "What do the pieces look like?" she asks. "Stars!" reply the children. Ms. Tsikudo picks up one slice of star fruit, puts it into her mouth, and says "I have never had start fruit before. Yum! I like the taste of this fruit. Who wants to try?" Some children raise their hands to try the fruit.

TEACHABLE MOMENT

In this vignette, Ms. Tsikudo introduces children to fruits they are not familiar with. She effectively engages a family and models openness to trying a new food. Through food, children also learn about another country, which is relevant to one of their peers.

Interactions and Strategies

Model and coach children's behavior. It is recommended that children and adults eat from the same menu unless a child or adult is on a restricted diet (e.g., for food allergies, diabetes, religious requirements). Adults who are on weight-management programs can adhere to their diet by eating healthy foods in moderation. Encourage children's mealtime conversation about topics that interest children; topics may include food, but it is not necessary to discuss food.

Encourage children to share information about family meals. Explore cultural diversity and children's respect for self and others by talking with children about what or how their family eats at home. Discuss similarities and differences and promote acceptance of differ-

ent family styles. Teachers may lead the discussion to specific topics about family eating practices: where family members eat (e.g., at a table with chairs, or on the floor at a low table), where they purchase or receive food (e.g., grocery store, open-air market, or food co-op), or who prepares the meals (e.g., male or female parent, extended family member, children assisting). Discussion may focus on types of foods, such as breads (e.g., tortillas, rolls, loaves, white or brown), favorite fruits or vegetables (e.g., apples, bananas, papayas, mangoes, kiwi), or words in children's home languages for various foods. Children may wish to share their food choices; for example, some children may avoid foods such as peanuts or shellfish because of food allergies, pork or beef because of religious or cultural practices, or meats and dairy products to follow a vegetarian diet.

Encourage role playing. Occasionally provide place mats, tablecloths, centerpieces, or napkins to share with children examples of table settings that represent the diversity of families. Explain that some families may not use table settings or utensils, some families may eat the same food every day, and some families have a lot of food and others do not have very much. Include table-setting items, pretend foods, cooking utensils, aprons, pot holders, menus, and other items in interest areas to promote role play.

Serve meals and snacks family-style. At "family-style" meals, adults and children eat together, share the same menu, and talk with each other in an informal way. Family-style dining promotes beneficial activities that children might experience in their home environment, including decision making, self-help skills, and sharing and social skills. Assist children, as needed, while allowing them to serve their own food; this helps them develop decision-making skills as they choose how much of each food to put on their plate. Children can serve milk from a small pitcher into their cup or take their own milk carton from a tray. Be aware of each child's developmental skills and provide appropriate serving utensils (e.g., easy-grip tongs and serving spoons) and adaptive eating utensils. Always consider safety and sanitation; do not allow children to serve finger foods or foods that are very warm.

Encourage tasting and decision making. Foods that are familiar, look and smell good, and are served in **child-sized portions** are more appetizing to young children. Encourage children to taste all foods, but do not compel them to taste or eat certain foods. It can take many "tastes" before a child really decides if he or she likes or dislikes a new food. Try serving foods prepared in different ways (e.g., raw, grilled, steamed, cut in shapes); offer foods as part of a cooking activity or snack; and combine familiar foods with new foods (e.g., shredded carrots added to muffin mix, carrot salad, with low-fat dressing). Always be aware of individual food restrictions, and help children make appropriate choices.

Integrate nutrition education with other learning areas. Sing songs to familiarize children with new foods and new terms. For example, the "Peanut Butter Song"[52] addresses learning about foods (e.g., peanut butter and jelly), where foods originate (e.g., "dig 'em"), vocabulary (e.g., *berry, bite, chew, spread*), fine motor skills (e.g., "pick 'em, smash 'em, spread 'em"), and body functions (e.g., chew it, swallow it). Discuss how some children eat in different ways (e.g., with a feeding tube).

Research Highlight

A food allergy occurs when the immune system mistakenly attacks a food protein. When the body recognizes a food as harmful, the immune system—which fights infection and disease—reacts to protect the body. Sometimes the reaction is excessive or inappropriate. The immune system reacts by producing certain types of antibodies (Immunoglobulin E, or IgE). These antibodies are created after the first or subsequent exposures to a food or ingredient. The body then has a defense if exposed to that food again, resulting in symptoms of an allergic reaction. The symptoms may be mild (e.g., rashes, hives, itching, swelling) or severe (e.g., trouble breathing, wheezing, loss of consciousness). A food allergy can be fatal. Scientists estimate that 12 million Americans suffer from food allergies. Avoiding the allergy-causing food is the only way to prevent a reaction.[53]

A child who has had a severe reaction previously may have a doctor-prescribed auto-injector of epinephrine (such as EpiPen Jr.™ or Twinject™). Injectable epinephrine should be administered only if prescribed for that child by a physician.[54]

Provide choices for children. Snack times and mealtimes provide a wonderful opportunity for children to practice decision-making skills. Giving choices also helps children feel empowered, thus preventing food battles over what children will and will not eat. During meals, serve all foods at one time and allow children to taste and eat foods in the order they prefer. If possible, offer a choice of two items at snack time. Two different beverages (e.g., milk or juice) may be offered with crackers, or two types of cheese may be served with crackers and water.

3.0 Self-Regulation of Eating

Children are born with an innate ability to control their food intake and balance their diet (except when affected by rare genetic conditions, such as Prader Willi syndrome[55]). When infants are hungry, they cry. Usually, the result is that they are fed and their hunger is alleviated. Further, they learn that by crying, they not only receive food and feel better, but also develop feelings of security while being held and cuddled. As children grow, they begin to recognize specific needs and distinguish between feelings, such as being hungry (i.e., needing food) or being sad (e.g., needing encouragement).

Teachers help children become aware of and responsible for their bodies. Children learn to wash their hands before eating and to brush their teeth after eating. If they say they are tired, teachers let them rest. Once children begin to master these skills, teachers provide opportunities for them to do these things independently, with gentle coaching and reminders. The same approach is used when teaching self-regulation of eating (i.e., to listen to the body's signs of hunger and fullness).

As children learn their own hunger and fullness cues, teachers continue to encourage them to communicate when they are full or hungry and to demonstrate it through mealtime-serving and eating practices. Adults are responsible for providing nutritious, appetizing foods in an appropriate setting. Children are responsible for how much or even whether they eat. Children generally do not eat everything presented; they eat only what pleases them on a particular day. A child may eat only one or two food items; or they may eat a lot one day and a little the next.

Teachers help children to recognize and follow their bodies' internal cues of hunger and fullness. It is key to developing healthy eating habits and preventing childhood obesity. Teachers may encourage children to taste new foods, eat a variety of foods (e.g., different colors, shapes, tastes), and help them self-serve appropriate portions of each food. Children may be more comfortable taking small portions if they know they are able to have second servings.

VIGNETTE

Mrs. Brown is assisting her preschoolers as they prepare for their family-style lunch. Today is Jin's turn to help set the table, so he places plates, cups, forks, spoons, and napkins for each child. After washing their hands, the children sit at the table and begin to self-serve the foods. "Please use the tongs to get your tortillas," Mrs. Brown gently reminds the children as they pass the serving bowls.

Throughout the meal, children take their time to enjoy the different food tastes. Mrs. Brown sits with the children and encourages conversations about topics that interest them. "Can I have another tortilla?" asks Jared. "Yes, there are enough for everyone to have another," replies Mrs. Brown.

Tavon takes a small spoonful of beans but does not take any of the rice or tortillas. Mrs. Brown cuts a tortilla into fourths and asks Tavon if he would like to try a small tortilla. Sarah is eating quickly, and Mrs. Brown gently reminds her to please slow down and chew her foods and enjoy the tastes.

Jared and several other children request second helpings of food. Sarah takes another tortilla, but after a bite or two she stops eating and says, "I don't want any more." Mrs. Brown has observed that Sarah generally eats only one helping of food and knows Sarah will be hungry again at snack time. "If you are full, you can stop eating. You can stay at the table and talk with us, or you can go play in the book center."

It is amazing, thinks Mrs. Brown, that children can have such different reactions to the same plate of food. Some children are very slow eaters and occasionally need a reminder of how long they have in order to finish their meal, while others cannot seem to control their eating.

PLANNING LEARNING OPPORTUNITIES

Children have a variety of appetites, food preferences, and eating habits. It is important to guide and support them at mealtimes. The majority of children are born with natural feelings of hunger and fullness, and it is the adults' responsibility to help children recognize and maintain this ability to control their appetite and eating. Teachers can help children by giving them the opportunity to self-serve foods and make decisions about what and how much to eat. Providing easy-to-grasp serving utensils that provide appropriate-size portions is important; then, if they wish, children can choose to have second servings. Serve all foods, including fruits, which are often considered dessert, at the same time and allow children to eat foods in the order or combination they prefer.

Some children may live in "food-insecure homes" (i.e., homes with a shortage of food) and may need to eat more at preschool. Have additional servings available, especially on Monday mornings or mornings after holidays away from preschool, to allow children additional food as desired. These children may also choose to eat more on Fridays since they may not have enough food at home.

Interactions and Strategies

Offer a variety of nutritious, appetizing foods in small portions. A general guideline is to provide one tablespoon of each type of food for each year of the child's age. Allow additional servings if children are hungry; encourage children to eat only until they are satisfied (i.e., full). Assist children as they serve themselves, using easy-to-grasp serving utensils for child-sized servings. Provide adaptive eating utensils for children with special physical needs. Offer water throughout the day.

Encourage children to chew their food well and eat slowly. Chewing allows children to taste foods more intensely, reduces the possibility of choking, and allows the body time to feel fullness. Occasionally singing songs before meal or snacks, such as "Chew, Chew, Chew Your Food," is a good way to remind children to chew their food completely.[56]

(Sung to the tune of "Row, Row, Row Your Boat")

Chew, chew, chew your food
A little at a time
Chew it slow, chew it well
Chew it to this rhyme

Teach children to recognize signs of hunger. Observe each child's appetite and eating habits and share this information with families. At mealtimes and snack times, encourage children to decide how much to eat and to stop eating when they feel full. Help preschool children learn the body's signals, such as a stomach "growl" or an empty feeling.[57] Help them become aware of how these feelings change when they eat food. Children may visualize *empty* and *full* by pouring water into a glass. Use a frame of reference that allows children to construct their own understanding of "full" and "too much" through their home languages and their experiences. For example, you might ask, "How would you feel if you ate too much?" ("I would have a tummy ache") or "How would you feel if you ran too much?" ("I would be tired"). Children can learn about "too much" by experiencing things that are too heavy to carry, seeing clothes that are too big for a doll, or having too many blocks for a container.

Discuss how the body uses food. Young children may not be able to understand the digestive process; however, they can begin to understand that their bodies need food and water. As children grow and begin to understand that there are internal body parts, they may find it fascinating to be introduced to what happens to food after it is swallowed. This conversation may also lead to discussion of toileting, so be prepared. Before meals, ask, "Who is hungry?" and "How do you know you are hungry?" After mealtime, discuss feelings of fullness.

Reinforce learning throughout the day. Nutrition education can take place throughout the day with conversation about foods before meals and during meals, cooking activities, pretend play, and story time, and through music.

Integrate eating with language and socialization. Children can learn much from conversation that takes place at the table. Conversation should be on topics interest children and may take place in the children's home languages. While talking about the foods being served, discuss the morning activities, a book that was just read, or an upcoming field trip or picnic. Encourage children to come up with topics. Keep in mind that children often enjoy talking about "boogers" or body functions that may not be appropriate during mealtime. If this occurs, gently guide the conversation to more suitable topics.

Bringing It All Together

"I don't like that." Every day at lunch for the past three weeks, Amy said the same thing. She would eat the meat and fruit but would not taste any vegetables or bread. Mr. Rios asked Mrs. Gardner, Amy's grandmother, "What does Amy like to eat at home?" Mrs. Gardner replied, "She has never eaten very much at one time, and now all she wants is mashed potatoes. She looks healthy, but I'm worried about her."

Mr. Rios continued to observe Amy's eating habits and encouraged her to try other foods. As the children served their plates, he asked them about the different colors and smells. Using small serving utensils, he encouraged each child to take a small amount. If a child said he did not want it, Mr. Rios assured him that he did not have to eat it but gently encouraged him to put a tiny bit on his plate.

As Mr. Rios planned learning activities for the following weeks, he included a cooking activity along with snack time two days each week. He involved children's families by asking them to send ideas or simple recipes for favorite snack foods. Through these activities, the children were introduced to different foods, some new and some familiar, and various methods of food preparation (e.g., cooked versus raw, single food versus combined foods).

Children learn about food and develop food preferences through their direct experiences with food (i.e., handling, preparing, eating) and by observing the eating behaviors of adults and peers. The goal in preschool is that children will learn to eat a variety of nutritious foods and begin to recognize the body's physical need for food (i.e., hunger and fullness). Through modeling, repeated and various exposures to food, and social experiences, children begin to develop eating behaviors that can prevail throughout life.

Engaging Families

- ✔ Provide families with weekly or monthly meal and snack menus in their home languages. Recognize that families have the most information about the food preferences, serving styles, and restrictions in eating habits of their children.
- ✔ Offer workshops and information on nutritious and economical meals based on the families' cultural, ethnic, and personal food preferences. Encourage parents to use available community resources on how to plan meals.
- ✔ Provide lists of foods or simple recipes for a variety of foods that are

high in nutrients; are low in fat, salt, or sugar; and look and taste great. Include foods that reflect cultural preferences and that are locally accessible.

- ✔ Encourage families to involve children in food preparation through take-home activities. Provide large recipe cards; allow children to decorate cards if desired. Recipes calling for two or three ingredients that families are likely to have on hand will be helpful; include ingredient substitutions if appropriate.
- ✔ Invite families to share their favorite family recipes. Encourage children to discuss their favorite foods and make a graph of the preferences of the class. Additionally, create a class recipe book as dictated by the children.
- ✔ Gather information on accessible nutrition resources in the community and provide this information to all families. Check with local planning councils, schools, and community agencies regarding initiatives on childhood obesity, food insecurity, and other nutrition issues.
- ✔ Invite family members to visit the classroom and encourage them to sit with children during mealtime and participate in or lead nutrition-related activities. Provide opportunities for families to participate in meal planning in the preschool, especially suggesting menu items or meal-service routines related to the family home culture.
- ✔ Provide information to all families on nutrition, child growth and development, nutrition risk factors (e.g., childhood obesity, diabetes), and community resources. Encourage families to ask questions or provide information about their children's eating habits or nutritional concerns.

Questions for Reflection

1. How have you integrated cultural food preferences and eating practices of families in planning your nutrition program (e.g., meals, snacks, cooking activities)?
2. What elements of family-style eating have you incorporated into your mealtime and snack-time activities?
3. How have you addressed individual needs (e.g., food allergies, eating difficulties, religious or cultural preferences) when planning cooking activities?
4. What has been your biggest challenge in helping children to learn about and understand hunger and fullness?
5. How do you allow children to self-regulate their eating? Do you allow flexibility at snack time, such as providing a 30-minute window of time? Are children allowed to leave the table when they have eaten all they want?

Concluding Thoughts

The early years of children's lives are crucial to the development of behaviors that contribute to good health, and early childhood teachers can significantly enhance opportunities for young children to learn about health by providing appropriate experiences. Many adult chronic diseases and conditions, such as obesity, diabetes, and heart disease, are related to lifestyle choices about nutrition and fitness and often begin in childhood. Early childhood teachers have a responsibility to not only help children learn about their bodies and ways to stay healthy, but also to work with parents and families. A respectful and integrated approach that meshes home and preschool environments and involves responsible adults can help children initiate a lifelong process of learning about themselves, their relationships to others, and the world around them. Health education is an essential part of the curriculum for young children. The topic of health is incorporated into daily routines and the environment; it is also the focus of planned learning activities. Early childhood educators have the challenge of modeling a healthy lifestyle for the children they teach—one that will benefit both themselves and the children.

Map of the Foundations

Domain → **Health**

Strand → **Health Habits**

Substrand → **1.0 Basic Hygiene**

Foundation →

Examples →

At around 48 months of age	*At around 60 months of age* ← Age
1.1 Demonstrate knowledge of some steps in the handwashing routine.	**1.1** Demonstrate knowledge of more steps in the handwashing routine.
Examples	**Examples**
• Shows a friend how to wash hands but leaves out several steps. • Washes fingers and part of hand. Does not wash between fingers. • A child with Down syndrome puts soap on hands and with teacher's hands guiding her, rubs hands together, rinses, and turns off the water.	• Shows a friend how to wash hands but may leave out a step. • During toileting, a child shows a friend how to wash hands properly while singing the handwashing song. Then communicates, "Oops! I forgot to dry my hands." • After using the bathroom, a child who is nonverbal goes to the sink and follows all the directions for washing hands, pointing to each picture prompt.

Teacher Resources

American Dental Hygienist Association (ADHA)—*Proper Flossing*

Instructions and illustrations on the proper way to floss teeth. http://www.adha.org/oralhealth/flossing.htm (accessed August 1, 2011)

Bos, B., T. Hunter, and M. Leeman.

California Childcare Health Program (CCHP) http://www.ucsfchildcarehealth.org/ (accessed August 1, 2011)

Web site includes fact sheets, family information, checklists, policy statements, and other resources related to health and safety in preschool.

California Training Institute Curriculum for Child Care Health Advocates http://ucsfchildcarehealth.org/html/pandr/trainingcurrmain.htm#ccha (accessed August 1, 2011)

Publications and resources, training curricula. Stand-alone training curricula on various health and safety topics; designed for use by qualified trainers of preschool personnel and child care providers.

ChildHealthOnLine.org

Health and Safety Booklets for Children. http://www.childhealthonline.org/booklets.html

Free downloadable booklets on health and safety with appropriate information for children and for parents.

Posters. http://www.childhealthonline.org/downloadform.html (accessed August 1, 2011)

Free downloadable posters on handwashing, family-style eating, toothbrushing, emergency responses, and so on.

Recommended Children's Book List

List of children's books related to health and safety topics. These books have been reviewed and identified as developmentally appropriate, culturally sensitive, diverse, and free of stereotypical language. http://www.childhealthonline.org/links.html (accessed August 1, 2011)

Training Modules for Staff and Family http://www.childhealthonline.org (accessed August 1, 2011)

Ready-to-use training modules for staff training, conference presentations, and parent or community meetings. Modules include PowerPoint presentations and reproducible handouts.

Clean Hands Coalition http://www.cleanhandscoalition.org/resources.htm (accessed August 1, 2011)

Links to handwashing resources: posters, fact sheets, interactive games for children, and so on. The Clean Hands Coalition is facilitated by the Centers for Disease Control and Prevention.

First 5 California (California Children and Families Commission) http://www.ccfc.ca.gov (accessed August 1, 2011)

The commission provides funding to local communities for initiatives related to health, education, and other crucial programs for children.

GloGerm http://www.glogerm.com/ (accessed August 1, 2011)

This product can be used to demonstrate the importance and effectiveness of handwashing.

Harman, M. 2002. The Safety Series. Palm Harbor, FL: Music with Mar., Inc. http://www.musicwithmar.com (accessed August 1, 2011)

Healthy Child Care http://www.globalhealthychildcare.org/ (accessed August 1, 2011)

The Web site provides up-to-date, easy-to-understand materials and guidance on how to create healthy and safe environments for young children.

Healthy Child Care America

Early Education and Child Care in Action. http://www.healthychildcare.org/ENewsCaregiver.html

An electronic newsletter published by the American Academy of Pediatrics section on early education and child care.

Resource Library. http://www.healthychildcare.org/resourcelibrary.html (accessed August 1, 2011)

Searchable resource library provides links to a variety of health, safety, and early childhood topics.

Healthy Childcare magazine
http://www.healthychild.net (accessed August 1, 2011)

Searchable online library features articles on child care health and safety topics.

Henry the Hand, Champion Handwasher
http://www.henrythehand.com/ (accessed August 1, 2011)

The Web site includes posters, books, videos, and fact sheets about handwashing and prevention of infectious disease.

Hendricks, Charlotte. *HIP on Health: Health Information for Parents.* 2008. Pelham, AL: Healthy Childcare Consultants, Inc. http://www.childhealthonline.org

Home Safety Council. 2010. *Start Safe: A Fire and Burn Safety Program for Preschoolers and Their Families.* http://www.homesafetycouncil.org (accessed August 1, 2011) or http://www.safekids.org (accessed August 1, 2011).

Katzen, M., and A. Henderson. 1994. *Pretend Soup and Other Real Recipes: A Cookbook for Preschoolers and Up.* Berkeley, CA: Tricycle Press.

Kohl, M., and J. Potter. 2001. *Snacktivities! 50 Edible Activities for Parents and Children.* Beltsville, MD: Robins Lane Press.

Martin, J., ed. 2011. *Preschool Health and Safety Matters.* Silver Spring, MD: Gryphon House, Inc.

Matricardi, J., and J. McLarty. 2005. *Cooking Activities A to Z.* Florence, KY: Cengage Learning, Inc.

National Association for the Education of Young Children (NAEYC). 2002. *Healthy Young Children: A Manual for Programs.* Edited by Susan Aronson. Compiled and edited by Patricia Spahr. Washington, DC: National Association for the Education of Young Children.

National Resource Center for Health and Safety in Child Care and Early Education. *A–Z Child Care Information Links.* http://nrckids.org/RESOURCES/list.htm (accessed August 1, 2011)

Provides health and safety tips and information applicable to child care settings.

NSF International. *Scrub Club.* http://www.scrubclub.org/home.aspx (accessed August 1, 2011)

Includes interactive activities for children.

Schiller, P. 2006. *Fabulous Food: 25 Songs and Over 300 Activities for Young Children.* Beltsville, MD: Gryphon House, Inc.

Soap and Detergent Association
http://mycleaning101.com/cvweb_sda/cgi-bin/msascartlist.dll/productlist?onwebflg=Y&minorcat=Children

Stecklein, H. P. 2010. *Recognizing Common Illnesses in Early Childhood Settings.* St. Paul, MN: Redleaf Press.

Free and low-cost resources on handwashing, including posters, storybooks, and CDs.

Sun Safety Alliance. Early Childcare Project
http://sunsafetyalliance.org (accessed August 1, 2011)

Resources include activities for teaching preschool children about sun safety.

Toothbrushing songs
http://www.preschooleducation.com/sdental.shtml (accessed August 1, 2011)

The words for toothbrushing songs sung to familiar children's tunes are provided.

United States Department of Agriculture (USDA). *Daily Food Plan for Preschoolers.* http://www.choosemyplate.gov/preschoolers/index.html

The Daily Food Plan for Preschoolers is for children two to five years of age. Click on the blue button to get a customized Daily Food Plan for your preschooler.

United States Environmental Protection Agency (USEPA). 2010. *Look Up Your UV Index.*

Map is created daily from National Weather Service forecast data.

Endnotes

1. C. M. Hendricks and C. J. Smith, "Transforming Health Curriculum," in *Reaching Potentials: Transforming Early Childhood Curriculum and Assessment, Volume 2,* ed. Sue Bredekamp and Teresa Rosegrant (Washington, DC: National Association for the Education of Young Children, 1995).
2. *California Preschool Learning Foundations, Volume I* (Sacramento: California Department of Education, 2008).
3. C. M. Hendricks and C. J. Smith, "Transforming Health Curriculum," in *Reaching Potentials: Transforming Early Childhood Curriculum and Assessment, Volume 2,* ed. Sue Bredekamp and Teresa Rosegrant (Washington, DC: National Association for the Education of Young Children, 1995).
4. *California Preschool Learning Foundations, Volume 2,* Health (Sacramento: California Department of Education, in press).
5. California Child Care Regulations, California Department of Social Services, Community Care Licensing Division. http://www.ccld.ca.gov/ (accessed March 3, 2010).
6. W. Rutala and D. Weber, *Guidelines for Disinfection and Sterilization of Healthcare Facilities, 2008.* http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/Disinfection_Nov_2008.pdf (accessed March 3, 2010).
7. C. Hendricks, *Oral Health and Young Children.* Healthy Childcare Consultants, Inc., 2008. http://www.childhealthonline.org (accessed March 2, 2010).
8. K. Kalich, D. Bauer, and D. McPartlin, Early Sprouts, Cultivating Healthy Food Choices in Young Children (St. Paul, MN: Redleaf Press, 2009). http://www.redleafpress.org (accessed March 3, 2010).
9. Healthy Childcare Consultants, Inc., *Washing Hands Poster, 2010,* http://www.childhealthonline.org/downloadform.html
10. C. J. Smith, C. M. Hendricks, and B. S. Bennett, *Growing, Growing Strong: A Whole Health Curriculum for Young Children* (St. Paul, MN: Redleaf Press, 2006). http://www.redleafpress.org (accessed March 3, 2010).
11. S. G. Allen, "Handwashing on the Go," *Healthy ChildCare* 8, no. 4 (2005). http://www.healthychild.net (accessed March 3, 2010).
12. S. Reynolds, F. Levy, and E. Walker, "Hand Sanitizer Alert," CDC, *Emerging Infectious Diseases* 12, no. 3 (2006). http://www.cdc.gov/ncidod/EID/vol12no03/05-0955.htm (accessed March 3, 2010).
13. Centers for Disease Control and Prevention (CDC), *Universal Precautions for Prevention of Transmission of HIV and Other Bloodborne Infections,* 1996. http://www.cdc.gov/ncidod/dhqp/bp_universal_precautions.html (accessed March 3, 2010).
14. S. D. Palmer, "Universal (or Standard) Precautions," Healthy ChildCare, *Health and Safety Ideas for the Young Child* 5, no. 1 (2002). http://www.healthychild.net/InSicknessandHealth.php?article_id=164 (accessed March 18, 2010).
15. State of California, Department of Social Services, CCL information release no. 2009-03 Standard Precautions. http://www.ccld.ca.gov/res/pdf/IR200903.pdf (accessed March 3, 2010.).
16. Centers for Disease Control and Prevention (CDC), *Guidelines for Isolation Precautions: Preventing Transmissions of Infectious Agents in Healthcare Settings,* 2007.
17. Columbus Public Health, *Wash My Hands Song.* Columbus, Ohio. http://publichealth.columbus.gov/Asset/iu_files/Shigella/HandwashingColoringSheet.pdf (accessed March 3, 2010).
18. Centers for Disease Control and Prevention (CDC), *Clean Hands Save Lives!* 2009. http://www.cdc.gov/cleanhands/ (accessed March 3, 2010).
19. Glogerm. http://www.glogerm.com (accessed March 18, 2010).
20. C. Hendricks, *Sanitation and Disease Prevention.* Healthy Childcare Consultants, Inc., 2008. http://www.childhealthonline.org (accessed March 3, 2010).

21. J. A. Rice, *Those Mean Nasty Dirty Downright Disgusting but . . . Invisible Germs* (St. Paul, MN: Redleaf Press, 1997). http://www.redleafpress.org (accessed March 3, 2010).
22. C. Hendricks, *Oral Health and Young Children.* Healthy Childcare Consultants, Inc., 2008. http://www.childhealthonline.org (accessed March 3, 2010).
23. ChildStats.gov, Forum on Child and Family Statistics, *America's Children: Key National Indicators of Well-Being, Oral Health,* 2009.
24. C. J. Smith, C. M. Hendricks, and B. S. Bennett, *Growing, Growing Strong: A Whole Health Curriculum for Young Children* (St. Paul, MN: Redleaf Press, 2006). http://www.redleafpress.org (accessed March 3, 2010).
25. Ibid.
26. South Dakota Department of Health, *Toothbrushing Songs,* 2010 http://doh.sd.gov/OralHealth/PDF/ToothbrushingSongs.pdf (accessed August 1, 2011).
27. M. Holland, "Preparing Children for Dentist Visits," *Healthy ChildCare* 10, no. 6 (2007). http://www.healthychild.net (accessed March 3, 2010).
28. Sun Safety Alliance (SSA), *Sun Safety in Early Childhood Settings,* 2008. http://www.childhealthonline.org (accessed March 3, 2010).
29. Ibid.
30. Children's Hospital, St. Louis, *Heat Related Illnesses (Heat Cramps, Heat Exhaustion, Heat Stroke),* 2009. http://www.stlouischildrens.org/content/greystone_1236.htm (accessed March 3, 2010).
31. C. Hendricks, *Medical Emergencies in Early Childhood Settings* (St. Paul, MN: Redleaf Press, 2008).
32. Mayo Clinic, *Heatstroke, Prevention, 2009.*
33. L. R. Marotz, M. Z. Cross, and J. M. Rush, *Health, Safety, and Nutrition for the Young Child,* 7th ed. (Florence, KY: Cengage Delmar Learning, 2009).
34. U.S. Department of Health and Human Services, CDC, *Injury Topics and Fact Sheets,* 2010. http://www.cdc.gov/ncipc/factsheets/children.htm (accessed August 1, 2011.
35. Safe Kids USA, *Trends in Unintentional Childhood Injury Deaths,* 2007. http://www.usa.safekids.org/content_documents/2007_InjuryTrends.doc (accessed March 3, 2010).
36. California Department of Public Health, Focus Area 16: *Maternal, Infant, and Child Health, Healthy People 2010* (Sacramento: California Department of Public Health, 2009). http://www.cdph.ca.gov/data/indicators/goals/Documents/objective1602a.pdf (accessed April 26, 2010).
37. Safe Kids USA, *Research Reports.* http://www.usa.safekids.org/tier2_rl.cfm?folder_id=680 (accessed March 3, 2010).
38. Safe Kids USA, *Preventing Injuries: At Home, At Play, and On the Way,* 2009. http://www.safekids.org/in-your-area/safety-laws/find-safety-laws.html?legstate=CA (accessed April 26, 2010).
39. L. R. Marotz, M. Z. Cross, and J. M. Rush, *Health, Safety, and Nutrition for the Young Child,* 7th ed. (Florence, KY: Cengage Delmar Learning, 2009).
40. Safe Kids USA, *Preventing Accidental Injury, Injury Facts, Airway Obstruction, 2009.* http://www.usa.safekids.org/tier3_cd.cfm?folder_id=540&content_item_id=991 (accessed March 3, 2010).
41. C. Hendricks, *Nutrition Activities in the Classroom,* Healthy Childcare Consultants, Inc. http://www.childhealthonline.org (accessed March 3, 2010).
42. Healthy Childcare Consultants, Inc., *Choking Hazards Poster,* 2010, http://www.childhealthonline.org/download-form.html
43. American Red Cross. http://www.redcross.org (accessed March 3, 2010).
44. Ready America. http://www.ready.gov (accessed March 3, 2010).
45. Medline Plus, Food Jags, 2007. http://www.nlm.nih.gov/medlineplus/ency/article/002425.htm (accessed March 3, 2010).

46. E. Satter, *The Picky Eater.* https://ellynsatter.com/showArticle.jsp?id=265&section=278 (accessed March 3, 2010).
47. American Academy of Pediatrics, *Feeding Kids Right Isn't Always Easy: Tips for Preventing Food Hassles,* 2008. http://www.healthychildren.org/English/healthy-living/nutrition/pages/Hassle-Free-Meal-Time.aspx (accessed May 11, 2010).
48. University of Maryland Medical Center, *Food Jags – Overview,* 2007. http://www.umm.edu/ency/article/002425.htm (accessed March 3, 2010).
49. United States Department of Agriculture (USDA), *MyPyramid for Preschoolers,* 2009. http://www.mypyramid.gov/Preschoolers/index.html (accessed March 3, 2010).
50. American Academy of Pediatrics, "About Childhood Obesity," *Prevention and Treatment of Childhood Overweight and Obesity.* http://www.aap.org/obesity/about.html (accessed February 4, 2010).
51. Centers for Disease Control, "Obesity Prevalence Among Low-Income, Preschool-Aged Children – United States, 1998-2008," *Morbidity and Mortality Weekly Report,* Vol. 58, No. 28, July, 2009. http://www.cdc.gov/mmwr/PDF/wk/mm5828.pdf (accessed March 3, 2010).
52. P. Schiller, *Fabulous Food: 25 Songs and Over 300 Activities for Young Children,* Beltsville, MD: Gryphon House, Inc., 2006.
53. Food Allergy and Anaphylaxis Network (FAAN). http://www.foodallergy.org (accessed March 3, 2010).
54. C. Hendricks, *Quick Guide to Medical Emergencies in Early Childhood Settings.* St. Paul. MN: Redleaf Press, 2008.
55. Prader-Willi Syndrome Association. http://www.pwsausa.org/syndrome/index.htm (accessed March 3, 2010).
56. P. Schiller, *Fabulous Food: 25 Songs and Over 300 Activities for Young Children* (Beltsville, MD: Gryphon House, Inc., 2006).
57. C. Hendricks, "Building Healthy Eating Habits," *Healthy ChildCare,* Vol. 10, No. 2., 2007. http://www.healthychild.net (accessed March 3, 2010).

Bibliography

Allen, S. G. "Handwashing on the Go," *Healthy Childcare, Health and Safety Ideas for the Young Child* 8, no. 4 (2005). http://www.healthychild.net (accessed March 17 2010).

American Academy of Allergy Asthma and Immunology. *Preparing for School with Allergies and Asthma,* 2005. http://www.aaaai.org/patients/topicofthemonth/0805/ (accessed March 17, 2010).

American Academy of Pediatrics (AAP), American Public Health Association (APHA), and National Resource Center for Health and Safety in Child Care and Early Education (NRC). *Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs* (Third edition). Elk Grove Village, IL: American Academy of Pediatrics and Washington, DC: American Public Health Association, 2002. http://www.nrckids.org (accessed July 25, 2011).

Aronson, S. "Update on Hand Hygiene in Child (Day) Care Settings," 2002. http://mail.ccie.com/library/5015058.pdf (accessed March 17, 2010).

Benjamin, S., and others. *Obesity Prevention in Child Care: A Review of U.S. State Regulations,* 2008. http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2438347 (accessed March 17, 2010).

British Columbia Ministry for Children and Families. *Life-Threatening Food Allergies in School and Child Care Settings,* 1999.

California Childcare Health Program. http://www.ucsfchildcarehealth.org/ (accessed March 17, 2010).

California Department of Education. *California Preschool Learning Foundations, Volume 1,* "Foundations in Health." Sacramento: California Department of Education, 2008.

———. *California Preschool Learning Foundations, Volume 2.* Sacramento: California Department of Education, 2010.

California Department of Social Services. *California Child Care Regulations Community Care Licensing Division.* http://www.ccld.ca.gov/ (accessed March 17, 2010).

———. *California Child Care Updates.* http://ccld.ca.gov/ (accessed March 17, 2010).

California Emergency Medical Services Authority (EMSA) First Aid and CPR Training. http://www.emsa.ca.gov/ (accessed March 17, 2010).

Centers for Disease Control and Prevention (CDC). *Clean Hands Save Lives!* http://www.cdc.gov/cleanhands/ (accessed March 17, 2010).

———. "Obesity Prevalence Among Low-Income, Preschool-Aged Children—United States, 1998–2008," *Morbidity and Mortality Weekly Report* (MMWR) (July 24, 2009) 58, no. 28. http://www.cdc.gov/mmwr/PDF/wk/mm5828.pdf (accessed August 1, 2011).

——— . *Pediatric Nutrition Surveillance Report,* 2007. http://www.cdc.gov/pednss/pdfs/PedNSS_2007.pdf (accessed August 1, 2011).

Chang, I. J. "No for Nuts," *Healthy Childcare, Health and Safety Ideas for the Young Child.* Library, *Nutrition Action* 7, no. 3 (2007). http://www.healthychild.net (accessed March 17, 2010).

Ernsperger, L., and T. Stegen-Hanson. *Just Take a Bite. Easy, Effective Answers to Food Aversions and Eating Challenges!* Arlington, TX: Future Horizons, 2004.

Fire Department, City of New York. *Fire Safety in Day Care Centers: What Parents Need to Know.* http://nyc.gov/html/fdny/pdf/safety/safety_child_care_centers.pdf (accessed August 1, 2011).

Food Allergy and Anaphylaxis Network (FAAN). *Managing Food Allergies in the Cafeteria,* 2009. http://www.foodallergy.org/school/archive/cafeteria.html (accessed August 1, 2011).

Glogerm. http://www.glogerm.com (accessed August 1, 2011).

Hendricks, C. "Building Healthy Eating Habits," *Healthy Childcare, Health and Safety Ideas for the Young Child.* Library, *Nutrition Action* 10, no. 2 (2007_. http://www.healthychild.net (accessed August 1, 2011).

———. *Medical Emergencies in Early Childhood Settings, Redleaf Quick Guide.* St. Paul, MN: Redleaf Press, 2008. http://www.redleafpress.org (accessed August 18, 2011).

———. "Nutrition Activities in the Classroom," *Training Activities, Healthy Childcare Consultants, Inc.,* 2008. http://www.childhealthonline.org (accessed March 18, 2010).

———. "Oral Health and Young Children," *Training Modules, Healthy Childcare Consultants, Inc.,* 2008. http://www.childhealthonline.org (accessed March 18, 2010).

———. Sanitation and Disease Prevention," *Training Modules, Healthy Childcare Consultants, Inc.,* 2008. http://www.childhealthonline.org (accessed March 18, 2010).

Hendricks, C. M., and C. J. Smith. "Transforming Health Curriculum," in *Reaching Potentials: Transforming Early Childhood Curriculum and Assessment, Volume 2.* Edited by Sue Bredekamp and Teresa Rosegrant. Washington, DC: National Association for the Education of Young Children, 1995.

———. *Here We Go . . . Watch Me Grow!* Santa Cruz, CA: ETR Associates, 1991.

Holland, M. "That Food Makes Me Sick! Managing Food Allergies and Intolerances in Early Childhood Settings," *Young Children* 59 (2004): 42–46. http://tyc.naeyc.org/pdf/Holland.pdf (accessed March 18, 2010).

———. "Preparing Children for Dentist Visits," *Healthy Childcare, Health and Safety Ideas for the Young Child* 10, no. 6 (2007). http://www.healthychild.net (accessed March 18, 2010).

Kalich, K., D. Bauer, and D. McPartlin. *Early Sprouts: Cultivating Healthy Food Choices in Young Children.* St. Paul, MN: Redleaf Press, 2009. http://www.redleafpress.org (accessed August 1, 2011).

Katzen, M., and A. Henderson. *Pretend Soup and Other Real Recipes: A Cookbook for Preschoolers and Up.* Berkeley, CA: Tricycle Press, 1994.

Learn Not to Burn Preschool Program. National Fire Protection Association (NFPA) http://www.nfpa.org (accessed August 1, 2011).

Marotz, L. R., M. Z. Cross, and J. M. Rush. *Health, Safety, and Nutrition for the Young Child.* 7th ed. Florence, KY: Cengage Learning, Inc., 2009.

Mydlensky, P. "Picky Eaters," *Healthy Childcare, Health and Safety Ideas for the Young Child* 12, no. 3 (2009). http://www.healthychild.net (accessed March 18, 2010).

National Resource Center for Health and Safety in Child Care and Early Education. *Healthy Kids, Healthy Care: Parents as Partners in Promoting Healthy and Safe Child Care,* 2009. http://www.healthykids.us/ (accessed March 18, 2010). *Niños Sanos, Cuidado Sano: Los Padres de Familia son Socios en la Promoción del Cuidado Sano y Seguro de los Niños* http://healthykids.us/spanish/index.htm (accessed March 18, 2010).

Palmer, S. D. "Universal (or Standard) Precautions," *Healthy Childcare, Health and Safety Ideas for the Young Child* 5, no. 1 (2002). http://www.healthychild.net (accessed March 18, 2010).

Peanut Allergy. 2009. MayoClinic.com.

Preventing Childhood Obesity: Tips for Child Care Professionals. New York State Department of Health, 1994. http://www.health.state.ny.us/prevention/nutrition/resources/obchcare.htm (accessed March 18, 2010).

Rice, J. A. *Those Mean Nasty Dirty Downright Disgusting but . . . Invisible Germs.* St. Paul, MN: Redleaf Press, 1990. http://www.redleafpress.org (accessed March 18, 2010).

Robertson, C. *Safety, Nutrition, and Health in Early Education.* Florence, KY: Wadsworth Cengage Learning, Inc., 2009.

Rutala, W. A. and D. J. Weber. *Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008.* Washington, DC:

Department of Health and Human Services, Centers for Disease Control and Prevention, 2008. http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/Disinfection_Nov_2008.pdf (accessed August 1, 2011).

Safe Kids USA. http://www.usa.safekids.org/ (accessed August1, 2011).

Satter, E. "Helping Children Be Good Eaters," in *Child of Mine; Feeding with Love and Good Sense.* Boulder, CO: Bull Publishing Company, 2006. http://ellynsatter.com/ (accessed March 18, 2010).

———. *Secrets of Feeding a Healthy Family.* Madison, WI: Kelcy Press, 2008.

———. "The Picky Eater." https://ellynsatter.com/showArticle.jsp?id=265&section=278 (accessed March 18, 2010).

Schiller, P. *Fabulous Food: 25 Songs and Over 300 Activities for Young Children.* Beltsville, MD: Gryphon House, Inc., 2006.

Sigman-Grant, M. "Vitamin D—the Sunshine Vitamin," *Healthy Childcare, Health and Safety Ideas for the Young Child* 12, no. 2 (2009): http://www.healthychild.net (accessed March 18, 2010).

Smith, C. J., C. M. Hendricks, and B. S. Bennett. *Growing, Growing Strong: A Whole Health Curriculum for Young Children.* St. Paul, MN: Redleaf Press, 2006. http://www.redleafpress.org (accessed March 18, 2010).

Sun Safety Alliance (SSA) *Sun Safety in Early Childhood Settings.* Healthy Childcare Consultants, Inc., 2008. http://www.childhealthonline.org (accessed March 18, 2010).

Thompson, C., and E. Shanley. *Overcoming Childhood Obesity.* Boulder, CO: Bull Publishing Company, 2003. http://www.bull-pub.com (accessed March 18, 2010).

United States Department of Agriculture (USDA). 2009. *Food Guide Pyramid for Young Children.* http://www.choosemyplate.gov/preschoolers/index.html (accessed July 12, 2011).

Glossary

Visual and Performing Arts

Visual Art

abstract. Having no intrinsic form with little or no attempt at pictorial representation or content.

assemblage. An artistic composition made from scraps, junk, or odds and ends.

malleable. Capable of being extended or shaped by outside forces or influences.

representational. An artistic likeness or image.

tactile. Perceptible by touch.

texture. The visual or tactile surface characteristics and appearance of something.

three-dimensional. Of, or relating to, having three dimensions.

tint. A variation of a color produced by adding white to it.

two-dimensional. Of, or relating to, having two dimensions.

Music

articulation. How music is played: short, detached, or smoothly connected.

beat. Steady pulse of the music.

chant. Words spoken on a somewhat steady beat, usually with inflection in the voice, but not necessarily on a definite pitch.

drone. A low, continuous sound, typically with a consistent, repeated beat.

dynamics. The overall loudness or softness of the music.

echo. A tone or sound that has been expressed before; a repeated musical phrase.

elements of music. Rhythm, pitch and melody, harmony, form, timbre or tone color, tempo, dynamics, and style.

energy. This is the force of an action. The use of energy can change the feel of a movement from subdued to spirited and everything in between.

ensemble. A group of musicians playing or singing together.

form. The structure of the music; how it is put together. For example, phrases can be put together to form a song chorus. Songs may have verses and choruses in their form (AB form). Popular musical forms found in children's music are AB, ABA, ABACA.

improvisation. To play or sing original music spontaneously—"on the spot" from the imagination, without a written score.

key. A specific collection of notes based a home tone key note. For example, the notes C D E F G A B C occur in the key of C. The pitch or note "C" is the home tone for the key of C.

melodic movement. Sequences, repetitions, or other pattern of melodies within a song or work of music.

melody. The "tune" you remember. Pitches that are arranged in a tuneful manner.

music map. A symbolic or iconic map of the music. Music maps are typically designed by the child or the teacher and do not use regular abstract music notation. Below is an example of the song "Here we go Looby, Loo."

musical tone. A musical pitch that is sustained through singing or playing. Regular speaking tones are not on a defined pitch and are not typically sustained.

phrase. A segment of the melody that makes up a logical "musical sentence." For example: "My country 'tis of thee, sweet land of liberty of thee I sing" is a complete musical phrase.

pitch. The highness or lowness of the musical tone.

range. The highest and lowest notes of a song or instrumental composition. The term usually applies to the range of a song. For example, the range of "Twinkle, Twinkle, Little Star" is six notes. To sing it in an appropriate range for young children, the teacher would start on the pitch D above middle C and use the notes D, E, F#, G, A, and B.

rhythm. Longer and shorter sounds organized in a logical manner. Rhythm does not refer to pitch or musical tones; it focuses on the duration of each musical tone.

shadow screen. A white sheet held up against a source of light so that children can move objects and project their shadows on the side away from the light.

staff paper. A sheet of paper displaying musical staff—for composing music or music phrases or exploring music notation.

style. The distinctive way in which musical elements are organized and played or sung. For example, jazz styles are characterized by the use of syncopated rhythms, extended scales, and specific instruments; acoustic folk music is characterized by the use of traditional folk songs and an acoustic instrument such as the guitar, banjo, or dulcimer.

tempo. The speed of music or a dance. Common tempo markings are "allegro" (fast), "andante" (walking pace), "largo" (slow), and so on.

timbre or tone color. The characteristic and distinct sound of each individual instrument or voice. For example, the "tone color" of a violin sounds different from the tone color of a trumpet. Or, the tone color of a father's voice sounds different from the tone color of a mother's voice.

tone. A vocal or musical sound of a specific quality (e.g., masculine, mellow, shrill). Or a musical sound of a certain timbre (a particular sound of a musical instrument).

vocal inflection. Change in the tone or pitch of one's voice.

Drama

act. To pretend to be a person, animal, or thing.

actor. Someone who pretends to be a person, animal, or thing.

blocking. The positioning of actors on stage.

character. An imaginary person in a literary work, such as a play, a story, or a poem.

costume. The clothing, hat, jewelry, and the like worn by a performer pretending to be a character.

drama. A participatory experience in which two or more children pretend to be someone else or to be someplace else. Drama is used in the preschool classroom as an experiential, play-based learning medium. Whereas theater is performance oriented, drama at the preschool level is process oriented and improvisational in nature. Generally guided by the teacher, children "live through" the drama, exploring and expressing their thoughts, feelings, and ideas. Teacher-led drama is similar to scaffolding in dramatic play in the sense that the teacher's questioning supports the child's use of his or her imagination.

dramatic play. Pretending, often with the use of props and costumes. Engagement in solitary, sociodramatic, fantasy, or story-based play.

dramatic play area. Section of a classroom dedicated to sociodramatic and fantasy role play. Includes props, costumes, and scenery.

fantasy play. Type of play in which children use their imaginations to create pretend worlds and scenarios in which they then act.

group play. Type of sociodramatic play in which two or more children play with each other.

parallel play. Type of sociodramatic play in which two or more children play alongside, rather than with each other.

plot. The unified structure of incidents in a literary work, such as a story, a play, or a poem.

pretend. To participate in a scenario with the knowledge that the scenario is not actually occurring.

props. The articles or objects used during a role play or that appear on stage during a play.

puppet. Inanimate object (often depicts a person or animal) controlled by a person.

role-play. To pretend to be or act like another person, animal, or thing, imaginary or real.

scenery. Things such as props, furniture, and backdrops that give the impression of a particular time and place.

setting. The time and place of a literary work that establishes its context.

sociodramatic play. Type of realistic or domestic play in which children pretend to be someone other than themselves or pretend to do something they are not actually doing.

solitary play. Type of play wherein children engage in pretend play by themselves. Often involves the use of dolls, stuffed animals, or other toys.

stage. A platform or other space where actors perform.

story-based play. A type of fantasy role play that involves the extension or changing of fictional narratives and imaginary happenings.

story dramatization. A process in which children are invited to act out, extend, and/or change in some way a story that their teacher has shared. This type of drama is often led by the teacher-in-role, while children typically take on the role of the protagonist (main character). For example, in leading a story dramatization of *Where the Wild Things Are* by Maurice Sendak, the teacher may pretend to be Max's mother with all of the children pretend to be Max, then later take on the role of Max, leading the children in "rumpus making" while they pretend to be the "Wild Things." Playing the protagonist facilitates the children's ability to step into the main character's shoes.

story understanding. Comprehending characters, actions, relationships, motives, and setting in a story.

teacher-in-role. The teacher acting out one of the characters in a drama or pretend play—typically in the classroom.

verbal coaching. Teacher or other adult's comments or suggestions to children.

voice. Sound made when a person speaks.

Dance

choreography. A dance sequence in which the movements are arranged by someone.

dynamics. The energy of movement expressed in varying intensity, action, and quality.

general space. Space shared by all.

improvisation. A dance composed extemporaneously (i.e., without preparation).

levels. The height of the dancer in relation to the floor (e.g., high, middle, low).

locomotor movement. Movement that travels from place to place, usually by the transfer of weight from foot to foot. Basic locomotor steps are walking, running, leaping, hopping, and jumping and the irregular rhythmic combinations of the skip (walk and hop), slide (walk and leap), and gallop (walk and leap).

movement pattern. A repeated sequence of movement ideas, a rhythmic movement sequence, a spatial design on the floor or in the air, or a specific relationship or grouping of people.

nonlocomotor movement. Movement that is anchored to only one spot, using the available space around the person doing the movement without losing the initial body contact. Basic nonlocomotor movements are bending, shaking, twisting, turning, stretching, and swinging.

personal space. The "space bubble" or the kinesis sphere that one occupies; it includes all levels, planes, and directions both near and far from the body's center.

rhythm. A structure of movement patterns in time; a movement with a regular succession of strong and weak elements; the pattern produced by emphasis and duration of notes in music.

shape. The body and body parts can be moved and held in asymmetrical, symmetrical, rounded, angular, and twisted forms.

tempo. The speed of dance (e.g., slow, medium, fast), usually determined by the tempo of music accompaniment.

warm-up. Movements and/or movement phrases designed to raise the core body temperature and bring the mind into focus for the dance activities to follow.

Physical Development

aerobic endurance. Performance of numerous repetitions of a physical activity that results in a sustained elevated heart rate followed by a rapid return to one's normal resting heart rate.

affordances. Factors in the environment that tend to promote or encourage developmental change.

body composition. The proportion of one's lean body mass to fat body mass.

developmental sequences of fundamental motor skills. A typical sequential progression along a continuum of fundamental motor skills where most children show similar characteristics at different points in their development. Although the sequence is relatively fixed, individuals progress at different rates in these sequences.

developmentally appropriate movement activities. Movement activities designed with the child's needs, interests, previous experiences, socioeconomic status, ability levels, and physical conditions in mind. The activities usually ensure children's success and continued participation in movement activities.

endurance training. Low-resistance physical activities accompanied by numerous repetitions, such as playing toss and catch and dancing to music.

fine motor activity. Physical activities, such as coloring paper, stacking blocks, and cutting with scissors, that use the smaller muscle groups of primarily the fingers, hands, and wrists.

flexibility. The amount of available range of motion at a joint.

fundamental movement skills. The foundational motor skills that provide the building blocks for future participation in more complex and specialized movement skills such as those found in sports, games, adventure activities, and dance. The ability to perform mature fundamental movement skills can predict future physically active lifestyles. Fundamental movement skills are the basis for movement literacy for life.

gross motor activity. Physical activities that use the major muscle groups of the body, such as arms, legs, and trunk.

gross motor skills. Movement actions, such as running, jumping, throwing, and catching, that use the major muscle groups of the body.

hand precision. Refined control of the muscles of the thumb, index, and middle fingers when manipulating objects or using tools.

handedness. Using one hand consistently for most tasks requiring skilled manipulation, such as cutting or drawing.

indoor movement area. a designated play space with specially selected soft and small materials that permit children to freely and safely engage in a variety of movements that incorporate balance, locomotor activities, and manipulative activities without disturbing classmates in other areas of the room.

manipulative equipment. Objects for hand and foot use such as different types of balls, beanbags, bats, scarves, and streamers.

moderate physical activity. A physical activity that can be easily maintained for an extended period at an intensity that increases the heart and breathing rate. It includes activities such as galloping from one end of the room to another, playing in a sandbox, or acting out a story play that results in an elevated heart rate that can be maintained for moderate extended periods of time.

motor coordination. The smooth connection of the nervous system integrating all relevant sensory information to provide a response that is translated into a movement action appropriate to the task.

movement concepts. Knowledge about the different ways in which the body can move through space.

movement skill. Movement action intended to accomplish a specific goal and that requires coordination of body segments such as arms, legs, and trunk.

multisensory. Pertaining to multiple senses during the learning/ teaching process.

muscular endurance. The ability of a muscle or group of muscles to perform work repeatedly against moderate resistance.

muscular strength. The maximum amount of force a muscle or group of muscles can exert.

obesity. Excessive increase in the amount of stored body fat generally considered to be above the 95th percentile of weight for height (body mass index).

overweight. Excessive increase in the amount of stored fat generally considered to be a the 85th to 94th percentile of weight for height (body mass index)

perceptual-motor coordination. The process of receiving, interpreting, and using information from all of the body's senses.

physical activity. Any body movements involving the skeletal muscles that results in energy expenditure. For young children, physical activities range from fine to gross motor activities and from sedentary to moderate to vigorous participation.

physical fitness. A condition in which the body enjoys a state of well-being that allows young children to play vigorously without undue fatigue. Physical fitness is

influenced by nutritional status, genetic makeup, and frequent participation in a variety of moderate to vigorous physical activities over time.

proprioceptive. The sensory system that provides information about the position and movement of body parts. Receptors are located in the muscles and joints.

safety grip. Gripping an object, such as the rungs on a hanging or climbing ladder, with the thumbs securely wrapped around the bars in opposition to the fingers.

sedentary activity. Inactivity, such as television watching and playing computer games, that does not cause the heart to beat significantly above its normal resting rate.

skill concepts. Knowledge about how the body should move in performing a mature fundamental movement skill.

strength training. Physical activities performed regularly over time with light to moderate resistance, such as carrying a pail of sand from one end of the sandbox to the other, pulling up onto a box, or climbing on the monkey bars.

structured physical activity. An activity planned and directed by a teacher, parent, or adult caregiver designed to meet the developmental needs of young children. Structured physical activities increase the probability of young children's participation in unstructured activities.

tactile. Of or relating to the sense of touch.

touch perception. The ability to identify physical characteristic (such as size, shape, weight, or texture) of objects using the sense of touch.

unstructured physical activity. An activity in which the child freely self-initiates physical activity. Young children freely explore, self-discover, and test their movement possibilities.

vestibular. The sensory system that provides information about head position and head movement through space. The vestibular receptors are located in the inner ear.

vigorous physical activity. Physical activity resulting in an elevated heart rate that can be maintained for short periods of time but quickly produces fatigue, such as running fast, climbing, tricycle riding, and carrying heavy objects back and forth.

Health

airway obstruction. Something that keeps air from moving in and out of the airways and lungs. Includes choking, suffocation, strangulation, and drowning.

body mass index (BMI). A measure of weight in relation to height that is used to determine weight status. BMI is the most widely accepted screening tool to identify possible weight problems for children over two years of age. For children and adolescents, BMI is age- and sex-specific and is often referred to as BMI-for-age. After BMI is calculated, it is plotted on the Centers for Disease Control and Prevention BMI-for-age growth charts (for girls or boys) to obtain a percentile ranking.[1,2]

caries. Also known as tooth decay. A disease that causes destruction of tooth enamel and irritation of the gums that surround the teeth. It occurs when foods containing carbohydrates (sugars and starches) are frequently left on the teeth. Bacteria that live in the mouth thrive on these foods, converting them into acids. Over a period of time, these acids dissolve tooth enamel, resulting in cavities (holes in the teeth).

cavities. Holes in the teeth.

Centers for Disease Control and Prevention (CDC). A government agency dedicated to protecting human health and promoting quality of life through the prevention and control of disease, injury, and disability.

child-sized portions. The amount of food considered to provide the minimum nutrients and energy for a child, depending on gender and age. Examples of portion sizes can be found on MyPyramid.gov Web site.

cleaning. Removal of dirt, scum, and debris from a surface, generally using a soap product and water.

communicable disease. Also called contagious disease. A disease that can be spread from one person to another.

dehydration. A condition that occurs when a child does not drink enough water or fluid to replace the fluid lost from perspiration, urination, diarrhea, or vomiting. Dehydration can be dangerous, especially for infants and young children

disease transmission. The passing of a disease from an infected individual to another person. The microorganisms that cause disease (i.e., pathogens) may be transmitted through coughing or sneezing; touching the infected person or touching a contaminated object; sharing food or drinks; or through insects or other animals.

disinfect. Also called "sanitize." To kill germs (e.g., bacteria, viruses, fungi) on a surface. In preschool, a mild bleach and water or other approved solution is often used.

emergency. A situation that requires immediate assistance. Examples include fire, weather conditions, sudden illness or injury, violence, and the like. Emergencies generally have the potential to cause injury.

emergency drill. A focused and planned activity that allows preschool teachers, children, and other individuals to practice specific functions and routines that would be appropriate and required in an emergency situation.

emergency preparedness. The preparation and planning necessary to effectively handle an emergency. It involves identifying services and resources required and ensuring that these are available in case of emergency.

external body parts. The parts of the human body that can be viewed, such as hands, feet, arms, head, eyes, ears, and so on.

family-style meals. Meals in which food is served in common serving dishes from which children serve themselves. Children pass the serving dishes from child to child, with assistance as needed; and take as much or as little food as they want. Teachers participate in the meal, modeling good eating habits, taking part in conversations, and assisting children only when a child requests help.

fluoride. A natural element found in almost all waters and soil and almost all foods and beverages. Just a small amount helps protect teeth not only during tooth development, but also after teeth are formed. Fluoride helps strengthen tooth enamel; works with saliva to reduce the ability of plaque bacteria to produce harmful acid; and helps repair tooth damage before it becomes serious.

food groups. The US Department of Agriculture (USDA) currently groups foods into five major categories: grains; fruits; vegetables; milk and milk products; meat, beans, and other protein foods.

food insecurity. For a family, it means the limited or uncertain availability of nutritionally adequate and safe foods, or the uncertain ability to acquire appropriate foods in socially acceptable ways.[3] Food insecurity often leads to buying less nutritious food that is high in calories and fat. Groups with the highest prevalence of household food insecurity are African Americans (22 percent of households), Latinos (18 percent of households), households with children younger than six years (17 percent), and single-mother households (31 percent).[4]

food jag. A child's request for the same food item, or only a few food items, meal after meal. This common behavior may begin at about age two and may continue through preschool age.

Food Guide Pyramid. A visual guide to the kinds of foods to choose every day for good nutrition. The five major food groups are pictured as blocks stacked pyramid style. The Food Pyramid was developed by the U.S. Department of Agriculture (USDA). More information can be found at http://www.MyPyramid.gov.

food-secure. Access at all times to enough high-quality food for an active, healthy life and no need for access to emergency food sources or extraordinary coping behaviors to meet basic food needs.

germs. (See *pathogen*.)

hand sanitizer. A product, usually a gel or foam, that can kill germs when rubbed on the skin. According to the CDC, the most effective products are alcohol-based and contain at least 60 percent alcohol.

handwashing routine. Steps of the routine: use soap to make lather, rub backs and fronts and in-between fingers, rinse with running water, dry hands, turn off faucet with towel, dispose of paper towel.

health care provider. A person who provides specific health-related care to prevent and/or treat injury or illness. Health care providers include doctors, nurses, paramedics,

laboratory technicians, and other professionals.

health helper. (See *health care provider.*)

health routines. A set of rehearsed steps designed to help children accomplish a goal, such as handwashing and toothbrushing.

heat cramps. Brief, severe cramps in the muscles of the legs, arms, or abdomen that may occur during or after exercise in hot weather or hot environment. The sweating that occurs with vigorous exercise causes the body to lose salts and fluids; the low level of salts causes the muscles to cramp. Children are particularly susceptible to heat cramps when they have not been drinking enough fluids (i.e., water). Heat cramps are painful but not serious.

heat exhaustion. A condition in which a person gets too hot, loses fluid by perspiring (i.e., sweating), and does not drink enough fluids. A child with heat exhaustion may be weak or dizzy, have nausea or muscle cramps, or may faint. The skin may be moist with sweat, and body temperature is near normal.

heat-related illness. A condition in which the body's normal cooling system may begin to fail, allowing internal heat (body temperature) to rise above normal, possibly to a dangerous level. Includes heat cramps, heat exhaustion, and heatstroke.

heatstroke. A life-threatening condition in which the body temperature rises high very fast. Body temperature can quickly reach 108^0 F or higher. A child with heatstroke may have hot, red and dry skin (no sweating), and a fever. The child may also have a rapid heartbeat, headache, or breathing problems. He may seem confused, faint, or have convulsions (i.e., seizures). The person must be cooled quickly to avoid permanent brain damage or death. Sometimes called "sun stroke."

hygiene. Cleanliness of the body. Personal hygiene includes actions such as handwashing, toothbrushing, bathing, and washing hair.

infectious disease. A disease caused by living organisms (i.e., bacteria, virus, fungus). An infectious diseases may or may not be "communicable" or "contagious." (See *communicable disease.*)

infestation. The presence of a large number of pests (for example, lice or pinworms).

internal body parts. Those parts of the body that are not visible externally. Includes vital organs such as heart, lungs, stomach, as well as muscles, bones, and blood.

language scripts. (See *scripts.*)

MyPlate. A visual guide to the kinds of foods to choose every day for good nutrition. MyPlate uses an illustration of a place setting (a plate, cup, and fork) to illustrate the five major food groups and encourage Americans to eat a nutritious diet. The U.S. Department of Agriculture (USDA) developed MyPlate. More information may be found at http://www.ChooseMyPlate.gov.

nutritious food. Foods that contains vitamins and minerals needed for a healthy body.

obesity. Obesity is an excess percentage of body weight due to fat; obesity is assessed by a measure called body mass index (BMI). A health care provider may designate a child as obese if the child is well above the normal weight for his or her age and height. The CDC defines obesity as "a BMI at or above the 95th percentile for children of the same age and sex."[5]

oral health. The state or condition of teeth, gums, tongue, and mouth.

overweight. The CDC defines overweight as "a BMI at or above the 85th percentile and lower than the 95th percentile." http://www.cdc.gov/obesity/childhood/defining.html.

pathogen. (Also called "germ.") Microscopic living organism (e.g., bacteria, virus, fungus) that can cause disease.

precausal reasoning. Piaget's term for the reasoning of young children that does not follow the procedures of either deductive or inductive reasoning. According to Piaget, young children believe that people can make things happen; however, children do not have an understanding of the invisible physical and mechanical forces that cause things to happen.

preoperational stage. According to Piagetian theory, the preoperational stage is the period between ages two and six, when a child learns to use language, representing things with words and images, but does not yet understand concrete logic. The child cannot mentally manipulate information,

and is unable to take the point of view of other people or think through the consequences of an action.

primary teeth. Humans develop two sets of teeth. The first set of 20 teeth are called primary, temporary, milk, or baby teeth. Primary teeth begin to develop before birth and begin to fall out when a child is around six years old. Primary teeth are replaced by a set of 32 permanent teeth (also called secondary or adult teeth).

sanitize. (See *disinfect.*)

scaffolding. A term borrowed from the construction industry and indicates a temporary framework that supports a building during construction. When the building is sturdy enough to stand on its own, the scaffolding is removed. In education, scaffolding involves supporting children's learning of new skills or concepts until they are able to complete a skill or understand a concept on their own and the supports are withdrawn. For example, children who are too young to understand that germs spread disease are taught to wash their hands and do so because a teacher tells them, "This is what we do." When they are older, they wash their hands because they understand that if they do not, they are more likely to get sick. They no longer need the teacher's instruction and direction to know how and when to wash their hands. Children find it easy to remember to wash hands because it has become an embodied habit or practice.

scripts (i.e., language scripts). Rules of behavior. Scripts describe a sequence of behaviors associated with a given situation or task—for example, brushing teeth. Scripts are used to develop habits and practices. Following scripts saves time and the mental effort of figuring out an appropriate behavior each time a situation is encountered. Scripts are a way to habituate preschool children to important health practices such as handwashing, physical activity, pedestrian safety, and so on.

self-regulation of eating. The practice of allowing a person to respond to internal cues of hunger and fullness without interference. For children, this means no adult comments regarding eating more or less.

sun protection factor (SPF). A number that indicates how many times longer a person can stay in the sun before beginning to sunburn, if the person applies sunscreen. For example, a sunscreen product with SPF 15 means a person should be able to stay in the sun 15 times longer than normal without sunburn. If a person normally burns after sun exposure for 10 minutes, then theoretically, applying SPF 15 sunscreen would allow the person to be exposed to the sun for 150 minutes (about 2½ hours) before sunburn occurs. A sunscreen product with an SPF of 30 or higher is recommended for children.

standard precautions. Safety and sanitation recommendations designed to prevent the spread of blood-borne and other diseases. These recommendations were originally called "universal precautions" and were intended to reduce the spread of infection to health care providers and other patients. The recommendations were expanded and renamed "standard precautions"; following these recommendations is an excellent way to reduce disease transmission.

teeth brushing routine. The routine consists of the following steps: place smear of toothpaste (from child's own tube or from a piece of paper or the edge of a paper plate) on brush; with brush at gum line at 45-degree angle, make small circles brushing the outer, inner, and flat surfaces of the upper and lower teeth and tongue for two minutes; rinse mouth with water; spit out water.

ultraviolet radiation (UV rays). UV radiation is part of the sun's spectrum—wavelengths shorter than visible light. There are three types of UV rays. UVB rays are more intense in summer months, at higher altitudes, and in areas closer to the equator; UVB rays are the primary cause of sunburn, premature aging of the skin, and the development of skin cancer. UVA rays are more constant, year-round, and penetrate deeper into the skin's layers; UVA rays are also harmful and contribute to burning, premature aging of the skin, and the development of certain forms of skin cancer. UVC rays are blocked by the earth's ozone layer and do not reach the earth's surface.

universal precautions. (See *standard precautions.*)

Endnotes

1. American Academy of Pediatrics, "About Childhood Obesity," *Prevention and Treatment of Childhood Overweight and Obesity.* http://www.aap.org/obesity/about.html (accessed February 4, 2010).
2. Centers for Disease Control and Prevention, "Healthy Weight—It's Not a Diet, It's a Lifestyle! About BMI for Children and Teens." http://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html (accessed February 4, 2010).
3. S. A. Anderson, "Core Indicators of Nutritional State for Difficult-to-Sample Populations," *Journal of Nutrition,* no. 120 (1990): 1559–1600.
4. M. Nord, M. Andrews, and S. Carlson, "Household Food Security in the United States, 2007," *Measuring Food Security in the United States, Food Assistance and Nutrition Research Program, Economic Research Report,* no. 66 (2008): 4–19.
5. Centers for Disease Control and Prevention, "Defining Childhood Overweight and Obesity," *Overweight and Obesity,* 2009. http://www.cdc.gov/obesity/childhood/defining.html (accessed February 4, 2010).

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