Healthy Children Ready to Learn:

Facilities Best Practices

California Department of Education

Sacramento, 2006

Healthy Children Ready to Learn:

Facilities Best Practices

Publishing Information

Healthy Children Ready to Learn: Facilities Best Practices was developed by the School Facilities Planning Division, under the direction of Kathleen J. Moore, Division Director, California Department of Education. It was edited by Faye Ong, working in cooperation with Shannon Farrell-Hart, Education Fiscal Services Assistant, School Facilities Planning Division. It was designed and prepared for printing by the staff of CDE Press: the cover and interior design were created and prepared by Paul Lee; typesetting was done by Jeannette Reyes. It was published by the Department, 1430 N Street, Sacramento, CA 95814-5901. It was distributed under the provisions of the Library Distribution Act and *Government Code* Section 11096.

© 2006 by the California Department of Education

All rights reserved

Notice

The guidance in *Healthy Children Ready to Learn: Facilities Best Practices* 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.)

Contents

A Message from the State Superintendent of Public Instruction v

Acknowledgments vii

Introduction xi

Facilities Best Practices in Food Services 1

1. Develop Inclusive Planning Processes with the End User 2
2. Create Attractive Environments to Increase Student Participation in the School Lunch Program 3
3. Install Signage 4
4. Create Healthy, Convenient Food Options at Point-of-Sale 5
5. Accommodate Growth on Existing Campuses 5
6. Celebrate Locally Grown/Student-Grown Produce 6
7. Create a Parent Resource Center 7
8. Install Seating Areas for Students 8
9. Secure Funds from Unconventional Sources 9
10. Collaborate with Local Businesses 9

Facilities Best Practices in Physical Education 11

1. Develop Educational Specifications (Involving End Users in the Planning Process) 12
2. Have Schools and Communities Collaborate as Partners in Developing Physical Activity Facilities 13
3. Incorporate Technology Opportunities in Physical Education Facilities 14
4. Designate Physical Education Teaching Stations in Small Spaces for High-Quality Instruction in Challenging Environments 14
5. Create Flexible-Use Spaces and Layouts 15
6. Remodel Weight Rooms (for Athletic Use Only) into Fitness Rooms (for Physical Education) 17
7. Convert Locker Areas 18
8. Provide Landscaping Maintenance 18

9. Allow Enough Space to Provide for Recess and Physical Education Space .. 18
10. Ensure Proper Planning for Placement of Utilities 20
11. Consider Artificial Turf 21
12. Maintain a Clean, Well-Organized, and Bright Environment 21
13 Plan Appropriate Equipment Storage 22
14. Provide Sufficient Equipment for Maximum Student Participation 23
15. Plan for Future Growth 24
16. Provide Adequate Drinking Water 24
17. Maximize Usable Square Footage by Design 25
18. Apply Striping on Hard Play Surfaces 25
19. Meet State Minimum Site-Size Standards for the Student Body 26
20. Look Beyond the Traditional 27

Conclusion 29

Appendixes

A. Facilities Planning for California High Schools 32
B. Technology Needs for the Physical Education Program 35
C. Designated Physical Education Teaching Stations 36
D. Flexible Layouts in Limited Space 39
E. Facilities Use Planning System for School Site Personnel 40
F. Physical Education Equipment Storage Models 42
G. Striping Patterns for Physical Education Instruction 45
H. Legal Requirements 46

A Message from the State Superintendent of Public Instruction

I am pleased to present *Healthy Children Ready to Learn: Facilities Best Practices*. Because physical health affects learning, schools have an important role to play in developing lifelong habits of nutrition and fitness. As academic expectations rise, educators must continue their ongoing commitment to our students' well-being. We are a nation in the midst of a crisis of childhood obesity, poor nutrition, and poor fitness, and I recognize that we face an uphill battle as students are leading more sedentary lifestyles. Encouraging healthy practices extends beyond the curriculum, and one of my goals is to create a *school environment* that supports the health of our children.

This goal is all encompassing as it affects the curriculum, instruction, and practices in the classroom as well as the noninstructional opportunities outside the classroom that influence student behaviors. The responsibility for creating this environment cannot rest on the school staff alone. Families, students, administrators, health care professionals, elected officials, and community members must help shoulder the responsibility to promote healthy lifestyles.

With the release of this publication, which brings together practical and successful ideas and solutions that schools throughout the state are implementing, we continue our efforts at the California Department of Education to support the goal of healthy children. *Healthy Children Ready to Learn: Facilities Best Practices* is a shining example of the collective effort required in the battle against childhood obesity, poor nutrition, and lack of exercise in our society.

Jack O'Connell

JACK O'CONNELL
State Superintendent of Public Instruction

Acknowledgments

The California Department of Education appreciates the work of everyone who contributed to the development of this document. Their generous feedback was invaluable. The Department is grateful to the following staff members who regularly participated in committee meetings:

William Ellerbee, Deputy Superintendent, School and District Operations Branch

Kathleen Moore, Director, School Facilities Planning Division

Phyllis Bramson-Paul, Director, Nutrition Services Division

Fred Yeager, Assistant Director, School Facilities Planning Division

Diane Waters, Senior Architect, School Facilities Planning Division

John Gordon, Associate Governmental Program Analyst, School Facilities Planning Division

Elizabeth Moreno, Nutrition Education Consultant, Nutrition Services Division

Suzanna Nye, Field Services Manager, Nutrition Services Division

George Shaw, Field Representative, School Facilities Planning Division

Dianne Wilson-Graham, Physical Education Consultant, Professional Development and Curriculum Support Division

Gratitude is also extended to those persons who provided comments and suggestions during the review process:

Jane Adams, Executive Director, California Parks and Recreation Society

Mary Blackman, Physical Education and Health Education Coordinator, San Diego County Office of Education

Phyllis Burns-Keeton, Certified Physical Educator and Associate Information Analyst, California Department of Health Services

Shannon Farrell-Hart, Education Fiscal Services Assistant, School Facilities Planning Division, California Department of Education

Nancy Gelbard, Chief, School Health Connections and California Obesity Prevention Initiative, California Department of Health Services

Anne Geraghty, Project Director, Partnership for Active Communities and Executive Director, WALKSacramento

Note: The affiliations of the individuals named in this list were current at the time the document was developed.

Martin Gonzalez, Assistant Executive Director of Governance and Policy Services, California School Boards Association

Susan Goodwin, Regional Recreation Director, Healthy Parks Program, North County Community Services Agency

Joanne Gooley, Registered Dietitian, California Department of Health Services; and Physical Activity Coordinator, California Obesity Prevention Initiative

David Hawke, Field Representative, School Facilities Planning Division, California Department of Education

Betty Hennessey, Consultant, Curriculum and Instructional Services, Los Angeles County Office of Education

Bedelia Honeycutt, Field Representative, School Facilities Planning Division, California Department of Education

Colin Jones, Student, University of California, Berkeley

Carolyn Knudtson, Recreation and Human Services Director, San Leandro Department of Parks and Recreation

Andrew Laufer, Education Programs Consultant, School and District Operations Branch, California Department of Education

Jeanie Leighton, Director, Middle School Program, Los Angeles Unified School District

Liese Olukoya, Assistant Field Representative, School Facilities Planning Division, California Department of Education

Michael O'Neill, Field Representative, School Facilities Planning Division, California Department of Education

Tom Payne, Education Programs Consultant, School Facilities Planning Division, California Department of Education

Rosalind Philips, Nutritionist, Department of Health Services, San Bernardino County

Lia Robinson, Director, Nutrition Services, Moreno Valley Unified School District

Barry Weiss, Director, San Carlos Department of Parks and Recreation

Participating Schools

The California Department of Education acknowledges the following schools, which are located throughout the state and are implementing successful ideas and solutions in support of the goal of healthy children ready to learn:

Berkeley Unified School District
Longfellow Arts and Technology Middle School
1500 Derby St.
Berkeley, CA 94703
(510) 644-6360

Berkeley Unified School District
Willard Middle School
2425 Stuart St.
Berkeley, CA 94705
(510) 644-6330

Carpinteria Unified School District
Carpinteria Middle School
5351 Carpinteria Ave.
Carpinteria, CA 93013
(805) 684-4544

Davis Joint Unified School District
526 B St.
Davis, CA 95616
(530) 757-5300

Elk Grove Unified School District
9510 Elk Grove-Florin Rd.
Elk Grove, CA 95624
(916) 686-7700

Elk Grove Unified School District
Foulks Ranch Elementary School
6211 Laguna Park Dr.
Elk Grove, CA 95758
(916) 686-8177

Folsom-Cordova Unified School District
Folsom High School
1655 Iron Point Rd.
Folsom, CA 95630
(916) 355-1115

Hawthorne Unified School District
Bud Carson Middle School
13838 S. Yukon Ave.
Hawthorne, CA 90250
(310) 676-1908

Hawthorne Unified School District
Hawthorne Middle School
4366 W. 129th St.
Hawthorne, CA 90250
(310) 676-0167

Kernville Union Elementary School District
Wallace Middle School
3240 Erskine Creek Rd.
Lake Isabella, CA 93240
(760) 379-4646

Lemon Grove Elementary School District
Palm Middle School
8425 Palm St.
Lemon Grove, CA 91945

Long Beach Unified School District
Cesar Chavez Elementary School
730 W. Third St.
Long Beach, CA 90802
(562) 590-0904

Long Beach Unified School District
Franklin Middle School
540 Cerritos Ave.
Long Beach, CA 90802

Los Angeles Unified School District
Monroe (James) Senior High School
9229 Haskell Ave.
North Hills, CA 91343
(818) 892-4311

Moreno Valley Unified School District
Sunnymead Middle School
23996 Eucalyptus Ave.
Moreno Valley, CA 92553
(951) 571-4280

Moreno Valley Unified School District
Badger Springs Middle School
24750 Delphinium Ave.
Moreno Valley, CA 92553
(951) 571-4200

Natomas Unified School District
Inderkum High School
2500 New Market Dr.
Sacramento, CA 95835
(916) 567-5640

Orcutt Union Elementary School District
Lakeview Junior High School
3700 Orcutt Rd.
Santa Maria, CA 93455
(805) 938-8600

Orcutt Union Elementary School District
Orcutt Junior High School
Pinal and Dyer Sts.
Orcutt, CA 93455
(805) 938-8700

Sacramento City Unified School District
California Middle School
1600 Vallejo Way
Sacramento, CA 95818
(916) 264-4550

San Francisco Unified School District
Presidio Middle School
450 30th Ave.
San Francisco, CA 94121
(415) 750-8435

San Francisco Unified School District
Tenderloin Community Elementary School
13th and E Sts.
Treasure Island
San Francisco, CA 94102

San Diego Unified School District
Hoover Senior High School
4474 El Cajon Blvd.
San Diego, CA 92115
(619) 283-6281

San Diego Unified School District
La Jolla Senior High School
750 Nautilus St.
La Jolla, CA 92037
(858) 454-3081

San Diego Unified School District
Theodore Roosevelt Middle School
3366 Park Blvd.
San Diego, CA 92103
(619) 293-4450

Santa Monica-Malibu Unified School District
Santa Monica High School
601 Pico Blvd.
Santa Monica, CA 90405
(310) 395-3204

Vacaville Unified School District
Vacaville High School
100 Monte Vista Ave.
Vacaville, CA 95688
(707) 453-6065

Introduction

Childhood obesity has become an epidemic that is sweeping the nation. The American Heart Association's report *A Nation at Risk* discusses the rapidly increasing incidence of obesity in the United States and notes "if childhood obesity continues to increase, it could . . . cause our current generation of children to become the first generation in American history to live shorter lives than their parents." In California the reality of childhood obesity is born out by startling facts:

- More than 32 percent of youths are overweight, and nearly 74 percent are unfit.[1]
- Only 29 percent of adolescents meet the recommended 60 minutes of daily physical activity.[2]
- Poor diet and physical inactivity are among the leading causes of death and disability, resulting in nearly 30,000 deaths each year in California.[3]

Studies show that good nutrition and physical fitness have a direct impact on a child's academic performance.[4] With this knowledge, State Superintendent of Public Instruction Jack O'Connell issued a call to action in his 2005 State of Education Address and launched the "Healthy Children Ready to Learn Initiative."

One aspect of the initiative is to create a school environment that supports the health of students. To that end representatives

[1] *2004-05 California Physical Fitness Report, Summary of Results.* Sacramento: California Department of Education, 2004. http://data1.cde.ca.gov/dataquest (accessed on January 4, 2005)

[2] CANFIT

[3] California Department of Health Services.

[4] For nutrition, see Project Bread as an example of such a study. For physical education, see "State Study Proves Physically Fit Kids Perform Better Academically," Sacramento: California Department of Education, 2002.

from three divisions of the California Department of Education —Nutrition Services, Professional Development and Curriculum Support, and School Facilities Planning—visited various school campuses to observe how facilities are providing a healthy environment for good nutrition and appropriate physical activity. This publication highlights many of the best practices observed during these site visits.

The *California Code of Regulations, Title 5,* sections 14001 through 14036, establishes minimum standards for playfields, gymnasiums, multipurpose rooms, and cafeterias in new schools. However, those areas are often compromised as the student population increases beyond the school's intended maximum capacity. In many cases this growth means that additional classrooms are placed on blacktops or playfields, reducing the original physical education space. It also results in cafeterias staggering lunch periods: some begin as early as 10:30 a.m. As construction costs continue to rise, this growth in population means more classrooms are added while the infrastructure to support delivery of quality nutrition and physical education services gets left behind. Nevertheless, school administrators around the state are finding innovative ways to ensure that the environment at their schools supports the health of students despite constraints due to growth and lack of funding.

This publication is a collection of the innovations or best practices currently employed by various California schools. Many of the innovations are complicated by limited space and money. Administrators attest that these student- and teacher-tested practices generate returns beyond the rate of investment. The outcome is increased student participation in choosing healthful foods and physical activities that support students' well-being. More students making healthy food choices at schools and becoming increasingly physically active are critical to the fight against childhood obesity.

Facilities Best Practices *in* Food Services

Facilities Best Practices *in* Food Services

Students at Monroe High School participate in a taste test.

The knowledge shared by these experts who utilize the space in their day-to-day operations will spark innovations and prevent inefficient design.

The importance of children being well nourished at school cannot be overstated. Children who are fed nutritious food have higher academic achievement than those without access to such food. Although administrators have made promising strides in providing appealing, nutritious meals, a student's decision to buy school lunch is affected by a variety of questions: *How long am I going to have to wait in line? Will there be a place for me to sit and eat my lunch? Are my classmates going to know that I get a "free" lunch? What is so exciting about eating at the school cafeteria?*

The following best practices address some of the obstacles affecting the eating environment at school.

1 Develop Inclusive Planning Processes with the End User

Good school design incorporates participation from the end user. One best practice is to link the facility planner with the director of food services, the district nutritionist, and food service workers during the planning phase of the campus kitchen, multipurpose room, and cafeteria. The knowledge shared by these experts who utilize the space in their day-to-day operations will spark innovations and prevent inefficient design. For instance, electrical equipment with appropriate voltage should be placed in a location that makes sense for its use.

Another best practice is to cast the students as end users in determining cosmetic design themes and food options for the campus. The Moreno Valley Unified School District collaborated with students on the transformation of the food service delivery areas, allowing the students a voice in choosing a theme. At **California Middle School** in Sacramento City

Unified School District, food selections alternate quarterly, based, in part, upon annual survey results from the end users. As students voice their opinions, they take ownership and feel included in the process, which typically results in greater participation.

2 Create Attractive Environments to Increase Student Participation in the School Lunch Program

If more students participate in the school breakfast and lunch programs, then these students are more likely to eat well-balanced, nutritious meals. An effective tool used to increase student participation in the school lunch program is the creation of an attractive food services facilities environment. For instance, colors, when used effectively, can evoke moods such as excitement, relaxation, alertness, and reflection. Recognizing this, food service industry professionals can strategically utilize color to create a welcoming, friendly environment. In addition to color, other design details can have an impact on receptivity as well. For instance, large plastic garbage cans may be shielded in restaurant-style enclosures and placed off to the side so as to be more pleasing to the eye rather than located in the middle of the eating area.

The Moreno Valley Unified School District provides an interesting example of this best practice. Several schools in the district transformed the food service delivery areas by using color and theme. For example, one food service delivery area became the "Old West," complete with a mural, bandannas accenting food service worker uniforms, and assorted props and signage that supported the theme. This cosmetic makeover gave the food service delivery area an identity of interest to the children while they waited in line to purchase breakfast or lunch. Now children go to the "Wild Horse Café" instead of the cafeteria. By creating a more attractive environment, the district made a minimal investment compared with the return, which netted an increase in student participation and sales.

The Berkeley Unified School District (BUSD) made improvements to two middle school cafeterias (**Willard** and **Longfellow middle schools**) so that salad bars could have an international marketplace theme. The new program offers healthy food choices from different cultures and nations as well as a full-service salad bar, fruit, and milk with each meal. To offer more fresh foods in the lunch program, the BUSD invested in new refrigerators, freezers, point-of-sale systems, food carts,

By creating a more attractive environment, the district made a minimal investment compared with the return, which netted an increase in student participation and sales.

Sunnymead Middle School's Wild Horse Café

Hawthorne Middle School cafeteria has a farmers market theme.

Signage functions to direct, stimulate, or inform.

Signage can be used to enhance the appearance of a space.

and heated cabinets. The new food offerings greatly increased participation in the national school lunch program.

The Hawthorne Unified School District (HUSD) provided **Hawthorne** and **Bud Carson Middle School** students with access to fresh fruits and vegetables throughout the school day, from breakfast in the classroom to garden salad bars and other self-serve produce options at lunch. The HUSD also planned renovations to beautify the cafeteria: new paint, new tables, nutrition and physical activity display cases, and produce carts/salad bars, all with a farmers market theme.

3 Install Signage

Signage can have a huge impact on the appearance of a space. Colors and materials can be effectively used in the design theme. Signage may include display cases, neon signs, painted signs, or murals. Signage can be used to direct the students in the space, add interest to a space, or provide information, such as public service announcements. An attractive environment can inspire students to participate in the lunch program.

Directional Signage. "Start Line Here" or "Wait Here" are examples. These directional signs are common in any public building, but they are often neglected in schools. Many times they are added later by the staff as a mere afterthought. Creating attractive permanent directional signs that are part of an entire signage scheme gives the environment a more finished appearance and, perhaps most important of all, helps to keep the human traffic orderly.

Point of Interest Signage. Neon signs, painted signs, and murals enhance the visual interest of the space and can create a thematic atmosphere.

Informational Signage. This type of signage can be used to create educational opportunities. Creating display boards that can be changed on a regular basis is more effective than installing permanent posters and displays. People tend to ignore an unchanging display that they have seen every day for months. One idea that has been used in some schools is to encourage student participation with a nutritional awareness ad campaign poster contest. Different students can create posters that are on display weekly, biweekly, or monthly. Even the use of a nationally recognized program, such as the U.S. Department of Agriculture (USDA) Food Pyramid, can be enhanced by placing it in a more eye-catching display case.

4 Create Healthy, Convenient Food Options at Point-of-Sale

Shorter lunch periods and an increased number of students have had a negative impact on food service at schools. Many students will skip lunch rather than wait in long lines. To help increase student participation, many schools have shifted food delivery methods in favor of convenience and speed of delivery. They provide prepackaged, individual items called "Grab N Go." The "Grab N Go" method allows students to choose from a variety of options, all nutritionally complete meals, in the shortest time possible.

At **Wallace Middle School** in the Kernville Union Elementary School District, the district added to the lunch program two salad bars, offered five days a week, which significantly increased the offerings of fresh fruits and vegetables. The second salad bar augmented the hot lunch entrée and was opened to help reduce the long lines.

Another obstacle to student participation has been the stigma associated with free and reduced-price meals. Technology has helped to eliminate the stigma by making it all but impossible to tell the difference between those on the free or reduced-price meal programs and those who pay full price for their meals. Point-of-sale devices allow students to pay for meals by entering a code on a keypad or using a debit card issued to all students. Those who pay for their meals may preload their account. To anyone observing students there is no distinguishable difference between those paying with the preloaded cards and those receiving the free or reduced-price meals. Students receive two benefits: they are able to move faster through lunch lines and have more time to consume their meals.

The design of the cafeteria at the Natomas Unified School District's **Inderkum High School** is an innovative best practice. Modeled after a mall food court, the cafeteria offers various specialized stations, each equipped with point-of-sale devices. Neon signs advertise the type of food entrée available at each station (see Best Practice 3). Separated from the cafeteria, the general indoor lunch eating area was designed to serve as the hallmark or central congregation area of the campus.

5 Accommodate Growth on Existing Campuses

All too often in older schools, cafeterias were designed for the number of students occupying the site at the time of initial construction. However, as the student population grew

"Grab N Go" meals enhance efficiency.

Point-of-sale devices enable food lines to move faster.

The food court at Inderkum High School features specialized stations. *(Photo courtesy of Nacht and Lewis Architects.)*

and relocatable classrooms were added to the campus, the cafeteria facilities typically remained the original size. To accommodate increased student population, schools must sometimes provide three or four different lunch periods. This schedule means that some students will have their lunch period either very early or late in the day. This solution is not ideal for maintaining consistent blood sugar levels, which is important for students' academic focus and concentration. A better alternative is to plan the core facilities with long-term potential growth in mind.

If long-term growth has not been adequately considered in the initial planning, the core facilities can be updated in many different ways as the campus grows. Sometimes, by eliminating old, outdated equipment, the school district can make room for new food service equipment. Another option is to build remote satellite facilities. This method accomplishes the objective of increasing the food-serving capacity, and it allows students flexibility in where they pick up and eat their lunches. Similarly, portable equipment, such as carts, allow the food services staff to deliver the food to the students who do not go to the cafeteria but congregate at other locations on the campus. In this way the potential for students to consume healthful food is increased.

Monroe High School in the Los Angeles Unified School District utilized food carts around the school campus to accommodate more students at multiple locations for a smooth-running lunch service. In addition, **Lakeview Junior High School** in the Orcutt Union Elementary School District has made use of additional express windows for lunch service, which allows more students to get their meals in a much shorter timeframe.

Food carts around the campus of Monroe High School accommodate more students during lunch.

6 Celebrate Locally Grown/Student-Grown Produce

A school garden provides many benefits. It may be used to teach science, math, history, social studies, and language arts. However, it is also a great way for children to learn about nutrition and agriculture. Nonnie Korten, former project director of The Partnership for Agriculture and Science in Education (Los Angeles Unified School District), commented, "It is important for urban children and their families to visit farms to better understand and appreciate the origins of the food they eat. There is something very wonderful about walking out into a field, smelling the soil and the plants, talking to the farm workers who tend the crops, and pulling one's own carrot out of the soil."[5]

[5] *A Child's Garden of Standards: Linking School Gardens to California Education Standards, Grades Two Through Six*. Sacramento: California Department of Education, 2002, p. 51.

The California Department of Education publication *Kids Cook Farm-Fresh Food* (2002) provides age-appropriate curriculum based on content standards. It also provides recipes, information about different fruits and vegetables, and profiles of several farms throughout the state.

A garden for students features many benefits. Allocating space for gardens or greenhouses is recommended. A garden can be as small as a raised bed between classroom wings, as exemplified by **Foulks Ranch Elementary School** in the Elk Grove Unified School District, or as large as a field area.

The cafeteria in **Carpinteria Middle School,** Carpinteria Unified School District, daily offers a centrally located salad bar. The salad bar is filled with local produce and is augmented with USDA commodities to keep costs down. New equipment, such as a salad bar cart, computer, electronic point-of-sale system, and scanner, has transformed the kitchen environment and the merchandising of the school lunch program. (For ideas on funding purchases of equipment, see Best Practice 9.) The ambience of the cafeteria is cheerful and colorful and highlights fruits and vegetables. Students participated in the cafeteria transformation through surveys and their own promotion of good nutrition.

In the Orcutt Union Elementary School District, **Orcutt** and **Lakeview junior high schools** both began offering salad bars that augment the hot entrée. Locally grown produce (greens, broccoli, strawberries) is featured at the salad bars. At Orcutt Junior High School, the salad bar is a component of the Mexican food and pasta bars and has greatly increased participation in the school lunch program.

As with any garden effort, a degree of maintenance is required. Composting and pest management practices are listed at http://www.schoolipm.info under Frequently Asked Questions.

7 Create a Parent Resource Center

The school may be a great place to educate children about healthy choices; however, if this information is not reinforced at home, it will be difficult to effect any real long-term changes in their eating habits. Nutrition education often fails to include outreach to the parents. Some schools have created a parent resource center, which provides information to parents about things that they can do to reinforce healthy lifestyle habits in their children.

It is important for urban children and their families to visit farms to better understand and appreciate the origins of the food they eat.

Parents using resource centers can learn to reinforce healthy lifestyle habits in their children.

Although printed resources such as pamphlets, posters, and flyers are important, numerous other possibilities exist for healthy lifestyle education for the whole family. Parent education classes may be available after school in a variety of subjects, such as basic nutrition, health, and cooking. These classes may be organized in partnership with local businesses, health care organizations, or interested volunteers. Another great resource for parent education is an after-school farmers market on the school site when produce is brought from local farms or student-grown gardens.

Schools exploring parental outreach programs during the facility planning stage can make it possible to provide space for the programs. Programmatic issues need to be addressed to allow the inclusion of such programs in school operations.

8 Install Seating Areas for Students

As discussed in Best Practices 2 (Create Attractive Environments) and 4 (Create Healthy, Convenient Food Options at Point-of-Sale), children may be dissuaded from participating in the lunch program if they perceive that it is inconvenient. Likewise, if the seating areas available for the students to eat their lunch are inconvenient or unattractive in some way, many students may choose to skip lunch.

The age group of the children must be taken into account when seating areas for students are designed. Elementary school children generally eat indoors. As they grow older, many of them prefer to go outdoors to eat in a less structured environment. Older children prefer to gather in small groups in different locations throughout the campus. When designing outdoor seating areas, consider the following tips:

- Offer the students choices of venues.
- Consider adult supervision while respecting the student groups' autonomy.
- Provide an adequate amount of protection from the elements by planting trees and installing shade structures.
- Provide furniture that allows flexibility in group size and configuration.

Site features, such as the concrete tiered seating at Badger Springs Middle School, allow flexibility in group size.

The Kernville Union Elementary School District focused on capital improvements to create an outdoor eating area. At **Wallace Middle School,** the district built a shade structure and added new tables and benches for eighth-grade students to enjoy their lunch period. The indoor cafeteria was also updated with new tables and chairs. The cafeteria lunch program has been well received by the students who now have

an inviting place to dine. By creating convenient and attractive seating areas for the students, the administration was able to encourage the children to eat nutritious, well-balanced meals.

School districts should be aware that review and approval by the Division of the State Architect (DSA) may be required for most projects, including installation of shade structures for outdoor seating areas. Contact your DSA Regional Office when planning this or any project on a school site.

Provide seating that allows flexibility in group size and configuration.

9 Secure Funds from Unconventional Sources

To create food services facilities that go beyond the traditional, institutional-looking blank boxes, facilities staff need to be creative in securing funds as budgets are often restrictive. Many different funding sources are available to help.

The Davis Joint Unified School District (DJUSD) is an excellent example of a district looking to outside sources for funds to improve its food service operations. The DJUSD has worked with and received funds from the nonprofit Davis Educational Foundation (DEF) for more than ten years. The Farm-to-School Connection project of DEF, in particular, has worked closely with the DJUSD Student Nutrition Services to incorporate fresh fruits and vegetables purchased from local farmers in the school lunch program, called the "Crunch Lunch." Grant funds provided salad bars, kitchen equipment, a refrigerated truck, and staff training. Initially, DEF also secured funds for the DJUSD for a "forager" position to serve as a broker for local farmers in negotiating pricing and delivery to the schools. Over the course of four years, fresh fruit and vegetable purchases increased by 73 percent. The DEF Farm-to-School Program in 2004 also received a contribution from the Chez Panisse Foundation to continue work with the DJUSD.

10 Collaborate with Local Businesses

In addition to being creative in securing funds, school districts sometimes find it helpful to partner with local businesses. A local business may be able to help the food service facility financially. These businesses may also be able to add their expertise in educating the students about healthy eating.

An exciting example of a school collaborating with a local business to improve its food service offerings is found in

James Monroe High School in the Los Angeles Unified School District. The school partnered with Whole Foods, Inc. (a large retailer of natural and organic foods), to assist with the school food services' salad bar promotion. Whole Foods, Inc., supplied needed salad bar equipment and publicity for the grand opening of the salad bar, including a televised celebrity kick-off in which students were involved in designing the event's slogan and logo. Since this event, the salad bar concept has expanded to other high schools in the district with great success.

Facilities Best Practices *in* Physical Education

Facilities Best Practices *in* Physical Education

There are many challenges in providing the adequate site acreage necessary to meet the recommendations for traditional physical education programs, particularly in large urban areas where land costs are at a premium. However, despite the challenges, many public schools throughout California have found creative ways of providing fine physical education programs at smaller sites. The following best practices are some of the methods those schools have used to overcome the challenges.

1 Develop Educational Specifications (Involving End Users in the Planning Process)

A school needs to be designed to support the educational program provided by the school district—including the physical education requirements. The development of educational specifications will assist the district in determining its own unique facility needs. Well-developed educational specifications will guide an architect in creating plans that support the delivery of the educational program. Clearly articulated goals and space needs for physical education and food service will assist the architect in designing appropriate spaces. The California Department of Education (CDE) has prepared a publication titled *Educational Specifications: Linking Design of School Facilities to Educational Programs* to assist districts in the preparation of educational specifications.

The Los Angeles Unified School District is an example of a district that has current education specifications for kindergarten to grade three, grades four to six, and grades nine to

twelve. The specifications address all space needs, including physical education and food services. (See Appendix A, "Physical Education Facilities Planning for California High Schools.")

2 Have Schools and Communities Collaborate as Partners in Developing Physical Activity Facilities

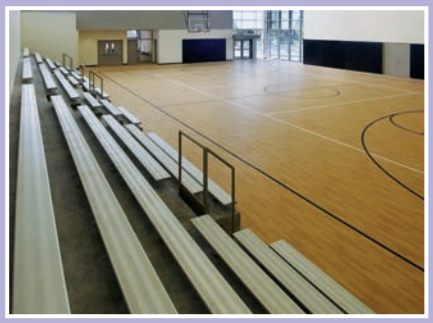
Schools and partners in the community can work together to optimize resources by designing and developing facilities that meet the physical activity needs of children, youths, and adults. **Cesar Chavez Elementary School,** a small urban school in downtown Long Beach, provides an example of such a best practice. During the day children learn and practice new movement skills in the gymnasium, using colorful equipment sized just for them. But at 4 p.m. the gymnasium "grows up" and becomes a hub of physical activity for youths and adults who join in classes, participate in community leagues, and enjoy other opportunities offered at an indoor facility.

This partnership provides the elementary school with an indoor facility for focused instruction, a sun-safe environment, and the delivery of a comprehensive, standards-based physical education curriculum. In addition, the community receives a neighborhood center that offers a multitude of programs that meet the needs and interests of all ages. Partnerships between schools and community entities help spread the financing and maintenance costs of these facilities among the partners.

A less tangible benefit, but one certainly noted by all districts that use these partnerships, is the decrease in vandalism. Administrators and teachers attribute this benefit to both increased community pride in the facility and, since the facility is used more often, greater supervision.

A difficult task in any partnership is balancing the need for public access to the site and the need for student safety. Locating a joint-use pool, gym, or other facility on the edge of the campus and strategically placing fences are effective measures to ensure controlled and safe access to the site. The facility can be available on the weekend or after school hours while the rest of the campus is secure from vandalism.

La Jolla High School in the San Diego Unified School District allows community use of the pool facility for a fee during the school day. The membership fee allows lifeguards to be on duty during school hours, increasing supervision of both groups.



Cesar Chavez Elementary School gymnasium

Partnerships between schools and community entities help spread the financing and maintenance costs of these facilities among the partners.

La Jolla High School community pool

The CDE publication *School Site Selection and Approval Guide* offers a number of practical tips on a joint-use agreement.

Incorporating a technological infrastructure, such as an outdoor computer port, into school physical education facilities allows California students to utilize new tools to develop motor skills, demonstrate knowledge of movement concepts, assess personal levels of health-related physical fitness, and acquire and demonstrate knowledge related to fitness.

Students can also use technology to measure and thus improve fitness.

3 Incorporate Technology Opportunities in Physical Education Facilities

Incorporating a technological infrastructure, such as an outdoor computer port, into school physical education facilities allows California students to utilize new tools to develop motor skills, demonstrate knowledge of movement concepts, assess personal levels of health-related physical fitness, and acquire and demonstrate knowledge related to fitness. Physical education lessons can be designed to allow students to explore, understand, and interpret their own responses to physical activity with the use of such technology as heart rate monitors, performance training devices, and monitors of respiration, blood pressure, and muscle contraction. In addition, the technology-equipped school enhances a student's opportunity to learn and improve movement skills by using digital photos, video and audio tools, virtual reality technology, and handheld computers.

The technology-enhanced physical education facility can provide students with learning opportunities that match their interests and their need for increased physical activity. These facilities are fundamental in providing students with an active lifestyle and preparing them for a future of physical activity. Students can also use technology to measure and thus improve fitness and to create effective and enjoyable physical activity sessions that include both audio and visual technologies (e.g., listening to music, watching video images).

(See Appendix B, "Technology Needs for the Physical Education Program.")

Designate Physical Education Teaching Stations in Small Spaces for High-Quality Instruction in Challenging Environments

The typical elementary school playground has hundreds of children enjoying recess, students and teachers using an outdoor lab for science lessons, and the physical education class looking for enough safe space for the day's lesson—all at the same time.

An identified best practice for elementary school physical education instruction is the designation of a teaching station. The CDE publication *Guide to School Site Analysis and Development* (2000 edition) (at http://www.cde.ca.gov/ls/fa/sf/schoolsiteguide.asp) defines a physical education teaching station as "a play area adequate for one class to be taught by one teacher at one time so that pupils waste no time waiting turns because of lack of space and facilities."[6]

Even a relatively small area (approximately the size of a bas-ketball court) can provide important benefits:

- Space that provides for a sufficient amount of specialized equipment (e.g., targets to assess and improve accuracy, stations that provide for the development of striking skills by isolating ball movement, multiple goals for maximum practice opportunities) allows all students access to the equipment and sufficient time to develop the subject skills.
- Teaching stations that are isolated from other school activities allow uninterrupted instruction.
- Management tools (such as playground marking patterns) become a consistent tool for teacher and student use.

The physical education teaching station may be incorporated into the existing school facility or planned and developed as a part of a new construction project. This document provides a model for the teaching station and describes how it can best be used to deliver physical education instruction in keeping with the new physical education content standards.

(See Appendix C, "Designated Physical Education Teaching Stations.")

A physical education teaching station [is] "a play area adequate for one class to be taught by one teacher at one time so that pupils waste no time waiting turns because of lack of space and facilities."

5 Create Flexible-Use Spaces and Layouts

Where minimum acreage (set by California standards) is not available to a school, it is especially important to have at least one large turf field and one large hardcourt area, without poles and standards, for the physical education program. Large, rectangular fields and hardcourts provide the flexibility necessary to meet the diverse needs of the physical education instructional program.

An excellent example of this principle is seen at **Franklin Middle School** in the Long Beach Unified School District. At Franklin 1,500 students, grades six through eight, pursue their physical education program. There are 250 students

[6] *Guide to School Site Analysis and Development*. Sacramento: California Department of Education, 2000, p. 9.

each period on approximately 1.5 acres outdoors and in the gym. The acreage is divided between a rectangular hardcourt (which, not ideally, has basketball standards on part of it) and a rectangular grass field. Although the grass receives intense use throughout the school day, it is kept in excellent condition by faculty, the student body, and a professional maintenance staff. Activities of varying space requirements can be provided with the use of temporary space delineation tools, such as cones or chalk/painted lines. Six games of touch football (or any variety of physical education instructional activities) can go on simultaneously on the field, and an equivalent number of students can be engaged in conditioning and fundamental games on the hardcourt. Another class can be held in the fitness room in the gym. The flexible-use spaces provide for maximum student participation and make available multiple spaces that are individually designed to meet the requirements of each of the activities.

Tip: Maximize space by using temporary space delineation tools, such as cones or chalk/painted lines.

The site accommodates many activities and is well used by the students at Franklin during physical education classes, the lunch break, and before and after school. The flexible spaces also serve the school's intramural program. Removable basketball standards or half courts placed around the perimeter of the hardcourt area would have made the rectangular hardcourt even more adaptive. And having both a gym and a fitness center (a modified weight room) within the gymnasium creates additional opportunities.

Portable goals are just one of several tools that can be used to define specific spaces when a large, flexible-use space is available.

Palm Middle School in the Lemon Grove Elementary School District has a similar arrangement and the same flexibility. The major difference is that the grass field is owned and maintained by the City of Lemon Grove and is made available to the school by a community-minded city government.

Presidio Middle School in the San Francisco Unified School District has no turf area; however, it provides considerable flexibility for its physical education program in another way. Serving 1,200 students on only 3.3 acres, Presidio has three rectangular hardcourts—210 feet × 140 feet, 340 feet × 100 feet, and 175 feet × 65 feet—and two gymnasium floors. In addition, a variety of running/walking pathways have been designated, creatively utilizing campus spaces. The school also has lunchtime intramural games and an after-school program.

Baseball and softball diamonds are usually difficult to adapt to other uses because of their characteristic grass and dirt

configurations and, in the case of baseball, the pitcher's mound. As a result, baseball fields often get little use for much of the school year. **La Jolla High School,** in the San Diego Unified School District, which serves 1,700 students on 14.4 acres, however, has found an answer: In 2004 it installed an all-season, synthetic grass surface (see Best Practice 11). The infield is reddish brown "grass," level with the outfield, so that it can be used for a variety of physical activities without the hazards of an infield grass edge associated with a traditional baseball field.

(See Appendix D, "Flexible Layouts in Limited Space.")

6 Remodel Weight Rooms (for Athletic Use Only) into Fitness Rooms (for Physical Education)

Commercial athletic facilities do extensive market research on how to make their facility more inviting to members. These clubs know that well-lighted, colorful, and well-maintained facilities result in increased membership and increased use of the facilities. Using the model presented by commercial facilities, schools can provide an attractive environment that encourages students to exercise.

Providing a modern, up-to-date commercial-style fitness area does not always require the construction of a new facility. School districts have sometimes joined with private and public agencies to convert old, drab weight rooms into modern fitness facilities. A variety of modern resistance and cardiovascular fitness equipment is provided, and improved lighting and colorful paint make the facility stand out on the campus.

The facility must be large enough to accommodate all students (40 students or fewer is a preferable class size) comfortably. Careful planning with the school's physical education staff is essential to provide the broad range of activities needed to meet the curriculum standards and provide ample space for safety.

Hoover High School in the San Diego Unified School District has partnered with the American Council on Exercise to provide such a facility. This school is more than 70 years old and serves a diverse population in San Diego. Use of the fitness center for students during noninstructional hours is being explored as are similar opportunities for the community.

Fitness center at Orcutt Junior High School

Roosevelt Middle School fitness classroom

Tip: It is best not to remove existing plumbing that is not being used as trends may change.

7 Convert Locker Areas

Because towel services have been eliminated, school showers have received less and less student use over the years. Typically, students use showers only after participation in swimming activities.

Consequently, the shower area in many locker rooms has been converted to other uses. In some instances schools have sought to reconstruct shower areas for storage, lockers, or other permanent uses. The CDE does not support the elimination of shower areas, as showers are integral to a district's ability to provide a quality physical education program.

However, if a district decides to convert a shower area to another use, the CDE recommends that the rough plumbing be kept intact to allow the area to be readily reconverted to a shower room. Once plumbing is removed from the walls, it is difficult and expensive to reinstall. Removing the shower heads and capping the pipes is probably all that is necessary to remove the obstacles to convenient storage when it is necessary to convert shower space to storage space. Then as the requirements and trends change, these areas can economically be converted back to showers.

8 Provide Landscaping Maintenance

Many physical education lessons are best conducted on large grass fields where maintaining the turf is considered challenging by some. It is recommended that schools use irrigation heads that have rubber covers to prevent injury, implement watering schedules that allow for significant absorption before students arrive at school, and take advantage of low-usage periods.

Several varieties of grass wear well, even with continual use during school hours. Aerating the soil semiannually and overseeding turf also help maintain healthy turf fields.

Shade trees outside the perimeter of playfields offer students a brief cooling respite from the sun and heat and do not interfere with educational and athletic activities.

9 Allow Enough Space to Provide for Recess and Physical Education Space

Elementary schools require facilities that provide sufficient space and equipment for physical education instruction as well as for recess. Because 200 minutes of physical education instruction is mandated each ten school days for all students in grades one through six, it is vital for schools to

consider the planning, development, and effective use of facilities.

Planning

- Sufficient space should be allocated for multiple teaching stations (based on the enrollment, schedule, and class configuration).
- Facilities should be planned to meet the needs of the standards-based curriculum.
- Indoor facilities should be provided to accommodate the state-mandated physical education class requirements during periods of adverse environmental conditions, such as rain, snow, and poor air quality. (Districts should check with their local Air Quality Management District for recommendations on outdoor activities under local air quality conditions.)

Development

- Facilities should be designed to promote self-directed physical activity during recess (e.g., walking/running paths with distance markers, activities that can be done alone or with a partner, and colors/textures on playground equipment and surfaces that invite participation).
- Playground structures should not be viewed as physical education teaching stations.
- Consideration should be given to moving beyond the traditional sports-based facility model and replacing it with innovative and specialized facilities needed to deliver the curriculum (e.g., climbing walls for developing upper body strength, skill development stations, tumbling/gymnastics stations, and sufficient electrical outlets to provide music).

Effective Use

- The use of space designated as teaching stations for instruction should take priority over space for recess.
- Careful, consistent scheduling practices must be used and include time and space for recess periods.
- Scheduling for physical education instruction must not be limited to the afternoon hours.

Schools that enroll students in kindergarten through grade eight have additional challenges, including increased space requirements for the students in grades six through eight. Those schools need more diverse facilities to provide age-appropriate physical education instruction and physical activity opportunities for all students.

Indoor facilities should be provided to accommodate the state-mandated physical education class requirements during periods of adverse environmental conditions.

(See Appendix E, "Facilities Use Planning System for School Site Personnel.")

10 Ensure Proper Planning for Placement of Utilities

Additional usable space for physical education activities can often be secured with careful consideration of how and where utilities are placed on a school site.

Fire engine turnarounds are often required by the local fire marshal and, while occupying valuable space, can serve a dual purpose as a hardcourt area. Naturally, this turnaround space must be free of tetherball poles, fences, and basketball standards.

In a similar way aboveground utility structures (electrical vaults, transformers, fire hydrants, irrigation valves) must be placed in an areas that do not conflict with physical education areas and activities. In some cases they may be relocated underground. In all cases the architect needs to negotiate these locations with the utility companies for the benefit of the school rather than for the benefit of the utility. The *California Code of Regulations (CCR), Title 5, Section 14010*, lists the standards for school site selection. Section (c) states that the property line of the site, even if it is in a joint-use agreement (e.g., proposed for use but not being acquired by the local educational agency), shall be at least the following distances from the edge of respective power line easements: 100 feet for 50-133 kilovolts (kV), 150 feet for 220-230 kV, and 350 feet for 500-550 kV. By CDE policy above or underground power lines are included, and all usable portions of the school site, including parking lots, playfields, and hardcourts, must meet the setback. Setback exemption requests may be approved under certain qualifying circumstances, which includes the preparation of an Electromagnetic Field Mitigation Plan. Current CDE guidelines for power line setback exemptions can be found at http://www.cde.ca.gov/ls/fa/sf/powerlinesetback.asp.

The location of utilities in the physical education area should be carefully planned to avoid placement in the middle of space that is intended for instruction.

Proper grading and drainage facilities catch basins, drain pipelines, storm water sumps also add greatly to the usability of the playfields. Drainage considerations should include:

- A minimum gradient of 1.5 percent, with 2 percent preferred, for positive drainage of the playfield areas.
- Recognition of the importance of soils tests being conducted in the physical education areas.

- Consultation and coordination with soils engineers regarding soils issues at the school site.
- In some instances drainage facilities that may not be at or near capacity. A school district may need to consider the design of a drainage detention pond or basin to control runoff. Careful consideration and consultation with the end users, planners, and design team should occur. See also Best Practice 1, Develop Educational Specifications (Involving End Users in the Planning Process).

11 Consider Artificial Turf

Artificial turf can also be an ideal solution to drainage and many other problems. Although its initial cost is greater than that of natural turf, long-term maintenance costs are significantly less. No water, chemicals, or mowing is required. A durable material, artificial turf is not destroyed by constant use. Many artificial turf systems have drainage, which is integral to the system design, and can be used almost immediately after a heavy rainstorm. Permanent markings may be sewn into the material for primary field use. Secondary field uses may be marked with a water-based paint that lasts for one season. This method allows for flexible use of the field.

Although injuries from artificial turf, such as rug burn and turf toe, were associated with some of the older technologies, most modern artificial turf systems are improved so that those problems are greatly reduced.

Artificial turf has been used successfully in many schools throughout the state. The San Diego Unified School District's **La Jolla High School** and **Hoover High School** and the Folsom-Cordova Unified School District's **Folsom High School** use artificial turf.

However, artificial turf does not mean no maintenance. Like natural turf, artificial turf needs to be regularly maintained. As with any human-made product, artificial turf must be maintained according to the manufacturer's recommended guidelines to ensure top performance of the product.

La Jolla High School has used artificial turf to provide a flexible-use field that can stand up to constant use.

Benefits of artificial turf:

- *Lower maintenance costs*
- *No watering*
- *No mowing*
- *Greater flexibility*
- *Durable*

12 Maintain a Clean, Well-Organized, and Bright Environment

The psychological effect of a neat physical environment should not be underestimated. A well-kept environment helps promote school pride. However, an unkempt, shabby environment makes the inhabitants tend to feel indifference at best and complete disrespect or disdain at worst. Children's

A well-kept environment helps promote school pride.

reactions to their environment are no different from adults' reactions. Keeping an environment clean, well-organized, and bright promotes pride. This feeling, of course, helps motivate students in academic achievement as well as in physical education. Maintaining a clean, well-organized environment means the following measures are taken:

- Graffiti is painted over immediately, preferably before students arrive.
- The landscaping is maintained.
- Debris is removed from the grounds and buildings.
- An adequate number of trash receptacles are well placed.
- Stored items obstructing windows, hallways, or other spaces are removed.
- The facilities and the site are kept clean and in good working condition.

13 Plan Appropriate Equipment Storage

Because of the variety of learning experiences included in physical education, adequate and appropriate equipment storage is important. The design of a facilities project should include the following considerations:

- **Storage should be located near its point of usage.** Equipment storage areas should be included in all physical education facilities to allow proximity to where the equipment is most often used. An example is the wrestling mat storage in use at **La Jolla High School**. The wrestling room is a small, sunken room in the gymnasium building, and storage for wrestling mats is provided with the use of an upright rack. Maximum use of the limited floor space is made, and mats do not have to be moved from one room to another.
- **Storage for current and future usage.** Storage for equipment currently in use or that will be used at another time is an important consideration in the planning and construction of physical education facilities. Physical education equipment is often transported from the storage location to the class setting in large carts. Storage must be provided for a sufficient number of carts on a daily basis.
- **A variety of configurations.** Physical education equipment comes in many forms and requires appropriate storage spaces: shelves for boxes of small equipment; racks for nets, bats, and racquets; large, high-ceiling volume spaces for larger pieces of equipment; and spaces that

Schools use large rolling carts to transport equipment from the storage area to the instructional area several times each day. The storage area must include enough space for several large equipment carts to be placed simultaneously.

can be customized for equipment of specialized sizes and shapes.

- **Access to large equipment.** Some pieces of physical education equipment are oversized and bulky (high-jump pits, tumbling mats, balance beams) and require specialized storage with access provided through oversized or roll-up doors.

Too often insufficient storage is provided for the physical education equipment, so it is placed in seaworthy storage containers in the outdoor play spaces without consideration for how this will affect the usability of those spaces or the impact the placement may have on the teacher's ability to supervise students. Some facilities planning departments have begun to plan the locations of outdoor storage containers to maximize their use while minimizing their impact on the site. The Elk Grove Unified School District uses this best practice.

(See Appendix F, "Physical Education Equipment Storage Models.")

14 Provide Sufficient Equipment for Maximum Student Participation

Effective instruction in physical education depends on maximum opportunities for student learning to take place. To ensure engagement of all students, facilities and equipment (items that are expected to last more than five years) must be of sufficient quality and quantity so that waiting time and sharing of equipment with other students are avoided. Maximum use can be accomplished by two means:

- Plan for, procure, and maintain equipment and facilities at a ratio of two students to one piece of equipment.
- Equip teachers with instructional strategies that provide maximum use of time, equipment, and facilities in the learning process.

Teachers learn methods to keep all students active at all times. Because students learn best when they are actively involved in the learning process, careful consideration should be given to both of these key elements.

The physical education department at **Palm Middle School** in the Lemon Grove Elementary School District provides insight into best practices related to sufficient equipment and facilities. Physical education teachers at Palm have focused their efforts on providing high-quality equipment for every

Provide sufficient equipment for maximum student participation.

student in their program. To accomplish this important goal, they use the following strategies:

- An articulated long-term vision and planning for the use of instructional funds, allowing for new units of instruction to be added to the curriculum
- Regular inspection, repair, and maintenance of equipment
- Fund-raising activities that provide money for equipment and also physical activity opportunities for students

15 Plan for Future Growth

Plan for the future, not for today.

As communities grow, a realistic estimate of the long-range enrollment of the school needs to be considered in the planning stage. A school may operate at 1,000 students for the first several years of its existence, for example, but eventually grow to 2,000 students. Unlike classrooms, which can be added individually or in clusters, it is difficult and expensive to add incrementally to the gymnasium, playfields, hardcourts, and shower/locker rooms to provide for increased enrollment.

A master-planned site not only identifies where additional classrooms and other facilities will be located but also ensures that adequate physical education space will be available for these additional students.

16 Provide Adequate Drinking Water

Portable or permanent drinking fountains should be available for use by students during their physical education class.

Providing adequate drinking water:

- *Keeps students hydrated*
- *Maximizes instruction time*

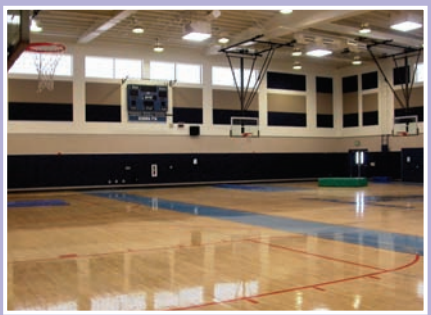
Portable or permanent drinking fountains should be available for use by students during their physical education class. In the *2001 Uniform Plumbing Code,* Table 4-1 requires one drinking fountain per 150 occupants. However, the CDE recommends providing drinking fountains in excess of the *Plumbing Code.* Providing an adequate number of drinking fountains (perhaps one per ten students) where students are participating in physical education will allow minimal time for keeping students hydrated, resulting in more instructional time. Some districts have developed mobile drinking fountains that can be attached to hoses to provide a large number of portable drinking fountains. Hoses must be rated potable in order to be used for drinking water.

Often, exterior drinking fountains are broken by vandals during nonschool hours, but the physical education classes need exterior drinking fountains. To ensure that these drinking fountains are not broken by vandals, schools should consider using vandal-resistant fixtures, particularly in areas where vandalism is a problem. Although these fixtures may

cost more initially, the long-term maintenance savings will more than make up for the additional up-front cost.

17 Maximize Usable Square Footage by Design

Irregular shapes can create unusable spaces in a physical education facility, resulting in inefficient use of construction dollars. When designing physical education spaces, planners must be careful not to create hidden nooks and alcoves that prevent visual supervision. Alcoves may be used for separate pullout tasks but only if they are large enough to allow a reasonable-size group to use the space and still provide for clear lines of vision between the main space and that side space. Designs using irregular shapes should be kept to a minimum—and used only after careful consideration of how those spaces will be used in the long term. Instead, schools should design spaces that maximize the amount of usable square footage by providing spaces of regular polygonal shapes (squares, rectangles, octagons, etc.).



Design spaces that maximize the amount of usable square footage by providing spaces of regular polygonal shapes.

18 Apply Striping on Hard Play Surfaces

Striping patterns on hard play surfaces are a cost-effective way for schools to maximize use of the facilities for effective teaching and learning in physical education. Well-designed striping can provide effective instructional environments, play an important role in the delivery of content, and provide students with guidance for age-appropriate skill practice during noninstructional physical activity.

The instructional environment is an integral part of quality physical education instruction. Striping patterns can be designed and used to help students organize themselves quickly for both instruction and practice opportunities. Large painted circles with markers to indicate individual positions provide for appropriate spacing for physical activity, and small groups of students can quickly locate a practice location if it is designated with color and dimension.

Delivery of content can be positively affected by using striping. Students can relate to the content being taught. Some examples of striping as a visual instructional tool are as follows:

- Elementary school students learn and practice locomotor movement patterns with the assistance of foot patterns painted on the playground surface.
- Middle school students develop knowledge about the spacing between offensive and defensive players by using a set of permanent striping lines designed for this purpose.

- High school students analyzing performance strategies use striping patterns to provide feedback and assess a change in performance level.

Students use school facilities to participate in physical activity during both school and nonschool hours. Striping patterns can provide age-appropriate practice by defining the dimensions where skills are practiced. Examples are as follows:

Well-designed striping can provide effective instructional environments, play an important role in the delivery of content, and provide students with guidance for age-appropriate skill practice during noninstructional physical activity.

- A fourth-grade student practicing basketball shooting skills during recess will use the free-throw line that has been striped on the playground several feet short of the regulation distance and that provides for age-appropriate and more successful practice.
- Smaller dimensions for regulation specifications are necessary at elementary and middle schools and, in some instances, are appropriate for high school facilities as well.

Because of the critical connection between facilities and instruction, striping is considered a best practice. Physical education teaching staff should be consulted in the design and implementation of the striping plan.

(See Appendix G, "Striping Patterns for Physical Education Instruction.")

19 Meet State Minimum Site-Size Standards for the Student Body

The focus of many of these best practices has been to take what one has been given and make the most of it. The California Department of Education's *Guide to School Site Analysis and Development* (2000) describes the acreage required for playfields and hardcourt areas for different student populations. (See Appendix H, "Legal Requirements.") Students need to have enough room to develop motor skills and establish personal traditions of physical activity for a lifetime. Their participation in regular physical activity will provide many benefits in their academic, family, and professional lives. "As physical education goes, so goes the school," observed one physical education teacher.

Ninety percent of the seventh-grade students at **Presidio Middle School** in the San Francisco Unified School District pass at least five of the six state-mandated fitness tests. The students and teachers have a mere 3.3-acre campus. This acreage represents approximately 15 percent of the standard acreage established by the state for a student population of

that size. The district proved its resourcefulness by supplementing the small school site with the nearby polo fields and Kezar Stadium in Golden Gate Park and Rossi Park for baseball and soccer. As a result, students and teachers have many acres of fields and facilities on which to pursue physical activities. San Francisco, unlike most urban areas in California, has many parks and playgrounds.

Communities and planning agencies need to set aside sufficient areas for developing the physical and mental fitness of its citizens, young and old. Where ample parks and recreational facilities are available to augment small urban school sites, students can still have the requisite space in which to pursue physical activities and education. Where communities and planning agencies have not reserved enough area for parks and recreational facilities, however, acquiring sufficient acreage for new and existing school campuses becomes a fiscal and political challenge for school district governing boards. It is often an uncomfortable and foreign experience for school boards and their administrations to deal with other government agencies and real estate interests. But that does not lessen the need for them to roll up their sleeves and be assertive in local politics.

The CDE School Facilities Planning Division (SFPD) can provide guidance to districts in determining minimum site-size recommendations. To contact the SFPD consultant for your particular area, see the list of consultants and the counties they serve at http://www.cde.ca.gov/ls/fa/sf.

Students need to have enough room to develop motor skills and establish personal traditions of physical activity for a lifetime.

20 Look Beyond the Traditional

The physical education content standards provide a clear focus for what students should know and be able to do at each grade level. These standards provide the *what* of physical education instruction, and careful consideration of the curriculum will provide some new ways of perceiving physical education facilities. The *how* is determined by the teacher and may include several learning experiences that are beyond the traditional sports and games of physical education programs of the past.

Physical education instruction that is focused on the learner will provide activities that engage students at all levels and may involve nontraditional physical education facilities. Indoor climbing walls, fencing strips, lacrosse fields, performance labs, and designated classrooms for physical education instruction are just a sample of the "new" facilities that

The outdoor play area is on the roof at Tenderloin Community Elementary School.

Designated classrooms for physical education instruction are increasingly common on school campuses.

An indoor climbing wall can be built safely in many currently existing spaces.

are increasingly common on school campuses. They provide students with the skills and knowledge needed for an active lifestyle. Off-campus activities (such as crew, surfing, sailing, golf, cross-country running, and walking) can be incorporated into a physical education program.

The adaptation of current facilities to nontraditional facilities is often considered first. An indoor climbing wall can be built safely in many existing spaces, and fitness labs are appearing in rooms previously used for other purposes.

Schools may also consider the use of off-campus facilities for activities such as golf, tennis, bowling, and aquatics.

Conclusion

Education leaders must strike a balance between training both the mind and the body as academic standards become more rigorous in the United States. A child's learning experience is greatly enhanced with proper nutrition and exercise. California cannot expect students to perform at their maximum potential without fueling their bodies and exercising their minds both inside and outside the classroom. To reverse the unhealthy trend of obesity among youths, schools and communities must do everything possible to encourage the adoption of healthier habits. By incorporating some or all of these best practices when planning, constructing, or renovating schools, districts can begin to address this problem. However, it is necessary to think beyond the traditional physical education and food services environments and, in some cases, even beyond the boundaries of the school property.

The majority of children used to walk or bicycle to school. They no longer do so as they are dropped off by their parents or ride a bus to school. Organizations, such as the Partnership for Active Communities, have conducted surveys to find out what obstacles keep children from walking to school. They have found a strong correlation in the distance between home and school and whether or not children walk to school. School planning should include strategies to encourage physical activity in everyday life. For example, schools may encourage children to walk by:

- Locating schools near students' homes
- Identifying safe walking routes to school
- Providing adequate crosswalks, signage, signals, multiple points of entry to the campus, bike paths in the community near the school, or other such devices

Another tactic to encourage physical activity before and after school hours might be to provide sufficient bicycle and skateboard racks. If there are enough safe places for children to lock up their bicycles and skateboards, they may be more inclined to ride them to school.

School districts should think beyond the traditional physical education environment.

The changes cannot end at the food services and physical education facilities. For the changes to be effective, schools need to shift their philosophy and integrate these new physical activity and nutrition habits throughout the entire campus. One cannot tell children that drinking sodas and eating fat-laden snacks are poor choices and then advertise those products on the scoreboard. Messages about the importance of physical activity and wise snack choices need to be reinforced in the curriculum, in the advertisements, and in the subconscious messages given to children.

This publication was designed to be the first step in addressing the role of school facilities in reversing the childhood obesity epidemic in California schools. The CDE will continue to advocate innovations in physical education and nutrition. Of course, the CDE also must continue to advocate the need for communities and families to participate in the physical well-being of their children.

The following key reports and research findings are available online:

Centers for Disease Control and Prevention. *Physical Activity and Health: A Report of the Surgeon General*. 1999.

> This report highlights the importance of physical education and exercise for youths and what communities can do.

National Institutes of Health. "Childhood Obesity on the Rise," *Word on Health* (June 2002).

> This report discusses the relevance of a healthy childhood to obesity and the profound effect obesity has on adulthood, as well as the importance of schools in fighting obesity.

The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity. 2001. http://www.surgeongeneral.gov/topics/obesity

> U.S. Surgeon General David Satcher identifies obesity as an epidemic and calls for schools to participate in the fight against it. He cites specifically the importance of food services in schools in fighting the crisis: "Schools are identified as a key setting for public health strategies to prevent and decrease the prevalence of . . . obesity." The report focuses on the need for schools to offer nutritious food and opportunities for exercise in physical education and daily recess and "encourage(s) the use of school facilities for physical activity programs . . . outside of school hours."

Appendixes

Appendix A

Facilities Planning for California High Schools

Legal Requirements for High School Physical Education

- All students in grades seven through twelve are mandated to receive a minimum of 400 minutes of physical education instruction every ten school days (*Education Code [EC]* 51222).
- Local school boards may exempt students from any two years of physical education in grades ten, eleven, or twelve.

Beginning in July 2007, students must pass the physical performance test administered in grade nine to receive the two-year exemption (*EC* 51241).

- If exempted, students must be provided a variety of physical education elective courses (*EC* 51222).
- High school physical education course content must include instruction in each of the eight content areas: The effect of physical activity upon dynamic health, mechanics of body movement, aquatics, individual/dual sports, gymnastics/tumbling, team sports, rhythms/dance, and combatives.

Facilities Planning for Instructional Requirements

Course Descriptions and Requirements

- General physical education—Requires a variety of facilities to provide required course content and instruction.
- Elective physical education—May require the use of a single facility for the duration of the course.
- Modified physical education—Courses that meet the needs of students with temporary conditions that restrict their participation in general physical education. Requires the use of a variety of facilities, typically a smaller class size.
- Adapted physical education—Courses that meet the needs of students with disabilities. May incorporate specialized equipment that is not shared with the general program.

Number of Physical Education Courses

The number of physical education courses based on 75 percent of the total school enrollment is calculated as total enrollment divided by appropriate class size for appropriate and safe instruction.

Example: School enrollment 2,800 × .75 = 2,100

2,100 students @ 40 students per section = 53 course sections

Sections added: modified physical education and adapted physical education (total of three sections)

56 sections per school day divided by number of instructional periods (56 divided by six periods per day)

Physical education teaching station requirements based on enrollment = a minimum of 10 each instructional period

Facilities Requirements for Physical Education and Athletics

In some cases physical education instruction may be provided during the time that facilities are needed by both the physical education program and the extracurricular athletic program. Additional facilities are needed for both the mandated instructional program and the extracurricular athletic program. In addition, exclusive use of specific facilities by one or more of these programs may limit the flexibility needed to meet minimum requirements.

Physical Education Teaching Stations Meeting the Content Requirements

A minimum number of teaching stations are required to meet the high school course content requirements (see below). This minimum requirement does not reflect the needs of student enrollment. The planned number of students enrolled in a high school will increase the number of teaching stations needed. The types of teaching stations should be increased, based on the frequency of use in meeting the content requirements.

Teaching station needs	*Aquatics*	*Body mechanics*	*Combatives*	*Gymnastics/ tumbling*	*Individual/ dual sports*	*Health and physical activity*	*Rhythms/ dance*	*Team sports*
Courts Area		x			x	x		x
Field					x	x		x
Gymnasium		x	x	x	x	x	x	x
Dance/ Wrestling Room		x	x	x	x	x	x	x
Fitness Room	x	x	x	x	x	x	x	x
Pool	x				x			x
Classroom	x	x	x	x	x	x	x	x

Needs of the Typical Physical Education Instructional Period

Physical education often requires the use of two or more facilities during a single class period as instruction may address one or more of the content requirements. Thus it is not feasible to develop the facilities plan based on one facility per class per instructional period. In addition, the development of school master schedules may not provide for even distribution of classes across the school day schedule. Decisions about planning facilities should include the minimum number of teaching stations based on content and enrollment plus a minimum of two additional stations to provide needed flexibility.

Determining Minimum Facility Requirements for Physical Education Instruction

Minimum number of teaching stations required to meet content requirements = 7

Teaching station needs based on enrollment = To be determined by each site

Flexibility factor = 2 teaching stations = 2

Total teaching stations required for this site = To be determined by each site

Examples

	High School A	*High School B*	*High School C*
Minimum number of teaching stations	7	7	7
School enrollment	900	1,400	3,800
Teaching station requirements based on enrollment (75% of enrollment, divided by course sections of 40, and 6 instructional periods per day)	4	6	12
Stations necessary to provide instructional flexibility	2	2	2
Total number of physical education teaching stations required for this school site	7	8	14

Determining Facility Requirements for Physical Education Instruction

Step 1 Include the seven physical education teaching stations meeting the content requirements.

Step 2 Include additional teaching stations based on frequency of use in meeting content requirements.

Formula: For each additional teaching station needed, select teaching stations in the order outlined below:

Courts
Field space
Dance/wrestling room
Courts
Field space

Appendix B

Technology Needs for the Physical Education Program

Basic considerations should include the need for proper lighting and wiring systems.

Lighting. Provide lighting systems that allow for darkness and return to full power with minimal wait time, sectional lighting patterns that allow for lights to be dimmed in the area of the instructional facilities using technology, and window coverings that can be easily adjusted to lower natural light.

Electrical infrastructure. Provide wiring for technology equipment use, including multiple electrical outlets, interior wiring, and wiring to meet the electrical needs of fitness equipment, and plan for future needs.

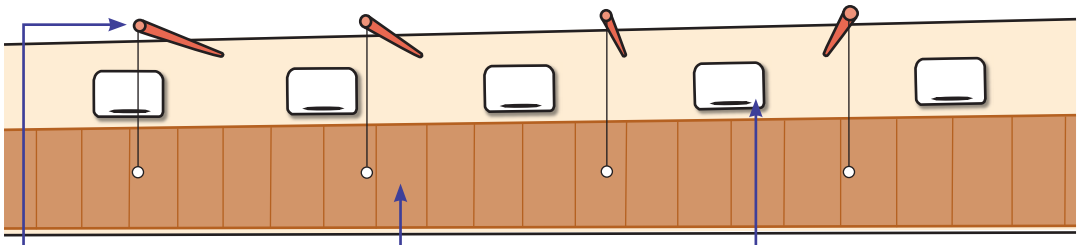
Instructional applications	*Requirements*
Computer presentations	Projection systems, including brackets in the ceiling, electrical outlets, and internal wiring for connection of the computer to projection system
Internet access	Internet wiring in all office and instructional spaces, including gymnasiums, activity rooms, fitness centers, and outdoor spaces
Computer use	Secure wall pockets designed for the permanent and secure use of computers in all instructional spaces (gym, activity rooms, fitness centers)
Image capture and study	Protected plasma screens on walls in existing facilities and recessed and protected screens in new facilities; appropriately placed electrical outlets
Sound equipment	Sound systems with internal wiring and individually controlled speakers, variable speed features, provisions for connecting with an MP3 player or computer

Appendix C

Designated Physical Education Teaching Stations

Model Elementary School Teaching Stations

The designation of space exclusively for physical education provides for specialized equipment, uninterrupted instruction, and management tools for more effective instruction.



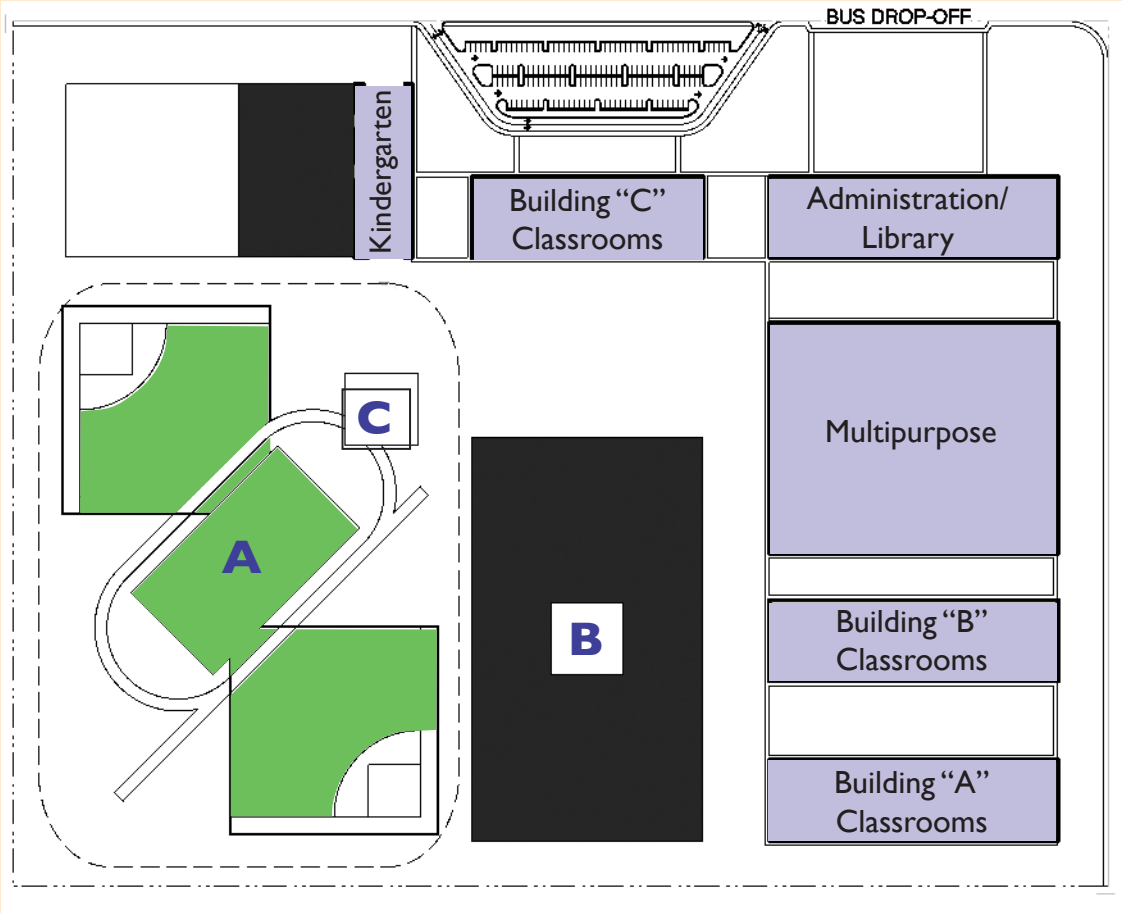
1. Poles with a hanging ball that can be removed when not in use allow students to practice and master striking skills.
2. Removable panels can be changed; for example, climbing wall panels may be converted to throwing target panels.
3. Numerous basketball backboards allow many students to practice ball skills, whereas regulation courts are subject to space requirements allowing only a few students to practice.

Sample Physical Education Plan

A Playfield

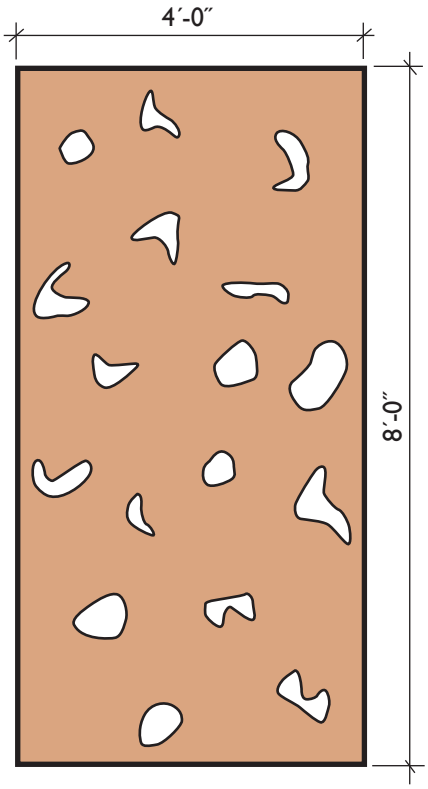
B Blacktop Area

C Designated Track Area

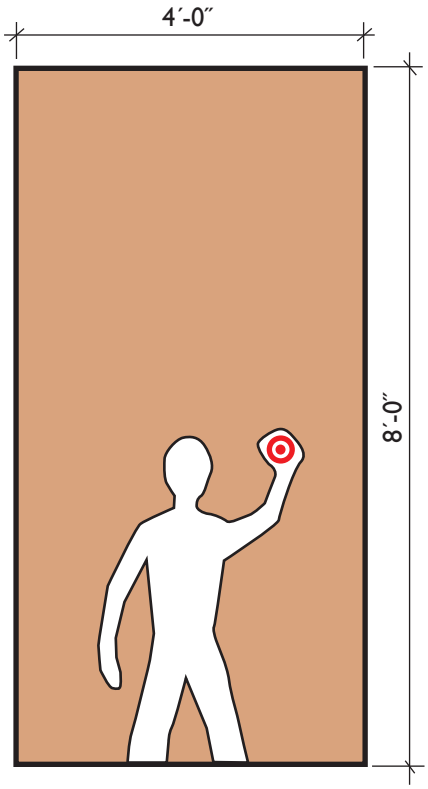


Elementary School Site Plan

Sample Use of Modular Panels



Climbing Wall Panel

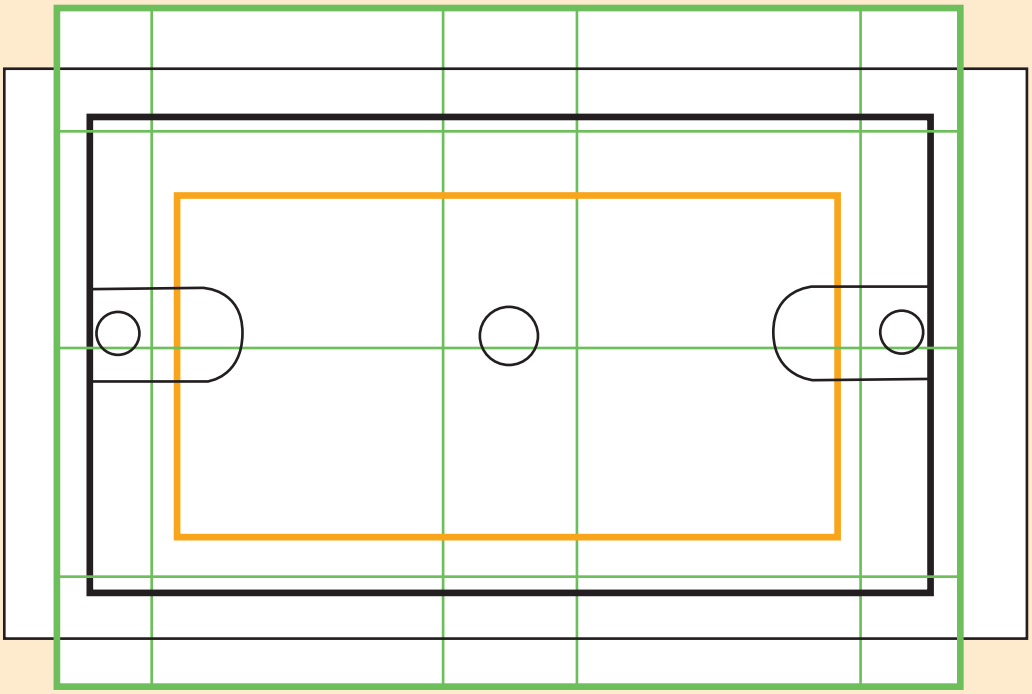


Throwing Target Panel

Modular panels provide flexibility in how a single space is used for physical education instruction. A variety of panels can be designed and used in skill-based teaching stations. Modular panels used in skill-based teaching stations can be changed to teach different sets of skills.

Appendix D

Flexible Layouts in Limited Space



Green–Paddle tennis

Yellow–Volleyball

Black–Basketball

Multiple-sport courts in one space allow for flexibility with minimal use of land. Multicolor striping (one color for each court) makes line recognition easy for students.

Appendix E

Facilities Use Planning System for School Site Personnel

Elementary School Site
Grades 1–5 (Separate Kindergarten Area)

Step 1. Determine number of classes based on enrollment.

Grades 1–3 Total enrollment divided by class size ratio of 20 students per class. _____

Grades 4–5 Total enrollment divided by class size ratio of 34 students per class. _____

Total number of self-contained classes _____

Step 2. Determine appropriate instructional minutes for physical education instruction.

A minimum of 200 minutes of instruction every 10 school days (*EC* 51210)

Appropriate daily instructional time in 30-minute time periods

Example: 8:25 a.m.–2:40 p.m. 12 × 30-minute instructional periods

Total number of 30-minute instructional time periods each day _____

Step 3. Designate physical education teaching stations.

(Each with sufficient space for motor-skill development, buffer from other classes, safety considerations, appropriate space/facility to meet learning objectives)

Total number of physical education teaching stations _____

Step 4. Schedule classes in four 25-minute instructional time periods each week. (4 × 25 min. = 100 per 5 days)

(Allows for clean-up and transition time within the 30-minute period)

Sample Daily Schedule

Instructional Time	*South Field*	*West Field*	*Court Area #1*
8:30–9:00		Class L	
9:00–9:30	Class A	Class O	Class D
9:30–10:00	Class B	Class P	Class Q
10:00–10:30			
10:30–11:00			
11:00–11:30	Class C	Class D	Class L
11:30–12:00			
12:00–12:30			
12:30–1:00	Class S	Class T	
1:00–1:30	Class H	Class G	Class M
1:30–2:00	Class I	Class K	Class N
2:00–2:30	Class J	Class F	Class R

Step 5. Schedule recess, lunch periods, and other noninstructional uses of the facility in the daily schedule.

Instructional Time	*South Field*	*West Field*	*Court Area #1*
8:30–9:00	Class L		
9:00–9:30	Class B	Class O	Class A
9:30–10:00	Class C	Class P	Class Q
10:00–10:30	Primary Recess	Primary Recess	Primary Recess
10:30–11:00	Upper Grade Recess	Upper Grade Recess	Upper Grade Recess
11:00–11:30	Class E	Class D	Class L
11:30–12:00	Lunch	Lunch	Lunch
12:00–12:30	Lunch	Lunch	Lunch
12:30–1:00	Class S	Class T	Clean up Lunch
1:00–1:30	Class H	Class G	Class M
1:30–2:00	Class I	Class K	Class N
2:00–2:30	Class J	Class F	Class R

Appendix F

Physical Education Equipment Storage Models

Elementary Schools

A minimum of 500 square feet for equipment storage is recommended. The equipment storage room should have sufficient lighting, an area for teachers to record equipment checkout, and space for equipment repair to take place.

Equipment	*Requirements*	*Features*
Small equipment (stored in boxes)	Shelf space that provides for maximum amount of storage space for boxes.	Shelves clearly labeled, with interchangeable labels.
Standards and nets	High, open ceiling space to allow for standards. Racks or cart space for net storage.	Ability to secure standards to walls for safe storage. Storage for times when nets are in use (carts, etc.) and not in use (racks, box, etc.).
Striking implements (rackets, bats, sticks, etc.)	Storage should be sufficient to accommodate one piece of equipment per student. Racks or special shelves for storing equipment.	Numbered racks for each implement.
Balls	Areas for storing inflated balls currently in use and noninflated balls for future use.	Floor space for carts/racks of inflated balls.
Jump ropes, hoops, scoops	Storage should be sufficient to accommodate one piece of equipment per student.	Racks or carts may be used for storage and transport.
Gymnastics equipment	Space for several folding mats and mats with special uses (wedges, etc.).	Folding mats may be stored on carts for easy transfer to the teaching station.
Fitness equipment	Space for specialized equipment, such as modified pull-up bars and sit-and-reach boxes.	Open space of irregular size and shapes.
Technology	Electrical infrastructure to support technology applications. Secure storage.	Security features, such as locked cabinets, are essential.
Class management tools (cones, field-marking equipment, etc.)	Open floor space for storage of heavy equipment.	Located near doors of equipment room for easy transport.

Middle Schools

A minimum of 1,000 square feet for equipment storage is recommended. Equipment storage should have sufficient lighting, an area designated for equipment repair, and easy access to equipment currently in use.

Equipment	*Requirements*	*Features*
Small equipment (stored in boxes)	Shelf space that provides for maximum amount of storage space for boxes.	Shelves clearly labeled, with interchangeable labels.
Standards and nets	High, open ceiling space to allow for standards. Racks or cart space for net storage.	Ability to secure standards to walls for safe storage. Storage for times when nets are in use (carts, etc.) and not in use (racks, box, etc.).
Striking implements (rackets, bats, sticks, etc.)	Storage should be sufficient to accommodate one piece of equipment per student. Racks or special shelves for storing equipment.	Numbered racks for each implement.
Balls	Areas for storing inflated balls currently in use and noninflated balls for future use.	Floor space for carts/racks used for inflated balls.
Jump ropes, hoops, scoops	Storage should be sufficient to accommodate one piece of equipment per student.	Racks or carts may be used for storage and transport.
Gymnastics equipment	Space for several folding mats and mats with special uses (wedges, etc.).	Folding mats may be stored on carts for easy transfer to the teaching station.
Large equipment	Large, open spaces for large equipment (used for track and field, gymnastics, fitness, etc.).	Roll-up doors for easy access and transport.
Fitness equipment	Space for specialized equipment, such as modified pull-up bars and sit-and-reach boxes.	Open space for irregular size and shapes.
Technology	Electrical infrastructure to support technology applications. Secure storage.	Security features, such as locked cabinets, are essential.
Class management tools (cones, field-marking equipment, etc.)	Open floor space for storage of heavy equipment.	Located near doors of equipment room for easy transport.
Laundry equipment	Washer and dryer.	Storage for supplies.

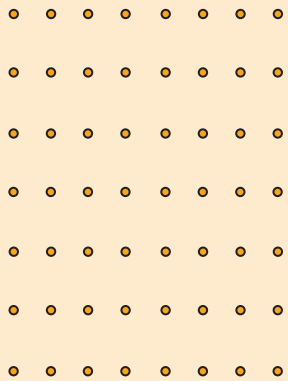
High Schools

A minimum of 2,500 square feet for equipment storage is recommended. The equipment storage facilities should be sufficient to serve the physical education instructional program and the interscholastic athletic program. Equipment storage should be located in several areas within the facilities.

Equipment	*Requirements*	*Features*
Small equipment (stored in boxes)	Shelf space that provides for maximum amount of storage space for boxes.	Shelves clearly labeled, with interchangeable labels.
Standards and nets	High, open ceiling space to allow for standards. Racks or cart space for net storage.	Ability to secure standards to walls for safe storage. Storage for times when nets are in use (carts, etc.) and not in use (racks, box, etc.).
Striking implements (rackets, bats, sticks, etc.)	Sufficient storage to accommodate one piece of equipment per student. Racks or special shelves for storing equipment.	Numbered racks for each implement.
Balls	Areas for storing inflated balls currently in use and noninflated balls for future use.	Floor space for carts/racks used for inflated balls.
Individual and dual sports equipment (golf, archery, etc.)	Sufficient storage to accommodate one piece of equipment per student.	Racks or carts for storage and transport.
Gymnastics and combatives equipment	Space for several folding mats and mats with special uses (wedges, etc.).	Folding mats stored on carts for easy transfer to the teaching station.
Large equipment	Large, open spaces for large equipment (used for track and field, gymnastics, fitness, etc.).	Roll-up doors for easy access and transport.
Fitness equipment	Space for specialized equipment, such as modified pull-up bars and sit-and-reach boxes.	Open space for irregular size and shapes.
Technology	Electrical infrastructure to support technology applications. Secure storage.	Security features, such as locked cabinets, are essential.
Class management tools (cones, field-marking equipment, etc.)	Open floor space for storage of heavy equipment.	Located near doors of equipment room for easy transport.
Laundry equipment	Commercial washer and dryer.	Storage for laundry supplies.
Safety equipment	Specific equipment located in specialty areas (aquatic facilities, etc.).	Communications equipment, first aid equipment, etc.
Athletic equipment	Minimum of 700 sq. ft.	Multiple secure areas for equipment to be stored by sport.

Appendix G

Striping Patterns for Physical Education Instruction



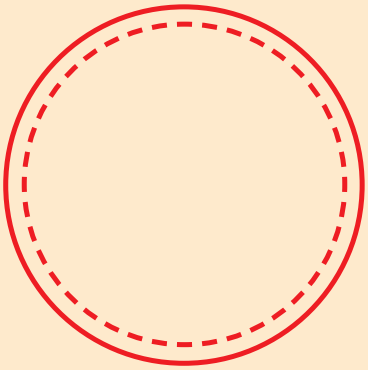
Class Meeting Location

4" dots evenly spaced

Recommendations:

Two or three sets of class meeting location dots per site.

1 on perimeter of field
1 on courts
1 in open playground area



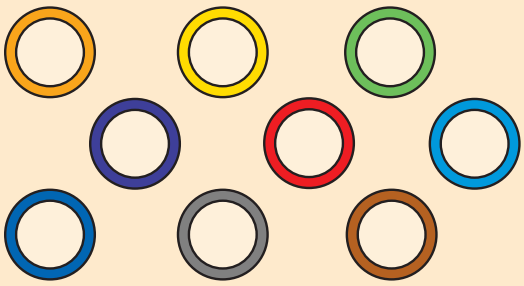
Large-Group Circle

35'-0" to 40'-0" diameter circle with 4" dots evenly spaced around circle

Recommendations:

Elementary school may include a smaller interior circle for use by smaller groups.

Middle school may include the large-group circle at two locations.



Small Circles for Smaller Group Use

8'-0" diameter circles clustered to allow for more safe and effective motor skill practice

Recommendations:

2 to 3 groups per site
Each group with circles of different colors

PACER Test Area

Used to administer Fitnessgram® assessment item called the PACER test.

Recommendations:

For all grade levels

Appendix H

Legal Requirements

The following section is a discussion about portions of the *California Code of Regulations, Title 5 (5 CCR),* as they pertain to food services and physical education facilities. The paragraphs in italics are commentary on the *Title 5* section that they follow. Occasionally, the *Title 5* paragraphs will include a subparagraph number followed by a dash (—), indicating that the subparagraph does not pertain to food services or physical education facilities.

The California Department of Education (CDE), as required by *Education Code* Section 17251, has established standards for the selection of school sites and the development of school construction and modernization plans. Those standards are contained in regulations adopted by the State Board of Education (5 *CCR* 14001 et seq.). All school districts are required to use these standards; for districts seeking state funds, the CDE's review and approval is required. These standards are the minimum requirements, and districts are encouraged to exceed these standards to better provide for their own unique needs.

The standards developed by the CDE for school sites and plans cover a range of school design issues, including physical education and food services. There are several *Title 5* requirements that are directly related to a district's efforts in physical education and the preparation and serving of healthful meals.

Because of the many unique design constraints districts need to accommodate in a project, *Title 5* also allows districts to request exemptions from standards if students' health and safety and educational appropriateness are not compromised.

A school site is a lasting part of a district and a community. A properly located school not only will provide an environment that supports the educational experience but also will enhance the overall community by providing open space, community meeting areas, and a focal point for the community. The following standards apply to the selection of all school sites but are particularly relevant to physical education.

California Code of Regulations, Title 5

Section 14001. Minimum Standards

Educational facilities planned by school districts shall be:

(a) Evolved from a statement of educational program requirements which reflects the district's educational objectives.

A school needs to be designed to support the program being provided by the district, including the physical education and food service requirements. Educational specifications will guide the architect in developing plans that support the delivery

of the educational program. Clearly articulated goals and space needs for physical education and food service will assist the architect in designing spaces. The development of educational specifications will assist the district in determining its own unique facility needs. The CDE has prepared a publication titled Educational Specifications—Linking Design of School Facilities to Educational Programs *to assist districts in the preparation of educational specifications.*

(b) Master-planned to provide for maximum site enrollment.

A realistic estimate of the long-range enrollment of the school needs to be considered in planning for physical education and food service. A school may operate at 1,000 students for the first several years of its existence and eventually grow to 2,000 students. Unlike classrooms, which can be added singly or in clusters, it is difficult and expensive to add incrementally to the shower locker rooms to provide additional lockers for the increased enrollment. Similarly, increasing a cafeteria by 500 feet to accommodate additional students is impractical.

A master-planned site not only identifies where additional classrooms and other facilities will be located but also ensures that adequate physical education space and food service space will be available for these additional students.

Section 14010. Standards for School Site Selection

(a) The net usable acreage and enrollment for a new school site shall be consistent with the numbers of acres and enrollment established in the 2000 Edition, "School Site Analysis and Development" [Tables 1–6] published by the California Department of Education and incorporated into this section by reference, in toto, unless sufficient land is not available or circumstances exist due to any of the following:

(1) Urban or suburban development results in insufficient available land even after considering the option of eminent domain.

(2) Sufficient acreage is available but it would not be economically feasible to mitigate geological or environmental hazards or other site complications which pose a threat to the health and/or safety of students and staff.

(3) Sufficient acreage is available but not within the attendance area of the unhoused students or there is an extreme density of population within a given attendance area requiring a school to serve more students on a single site. Choosing an alternate site would result in extensive long-term bussing of students that would cause extreme financial hardship to the district to transport students to the proposed school site.

(4) Geographic barriers, traffic congestion, or other constraints would cause extreme financial hardship for the district to transport students to the proposed school site.

Urban districts often find these standards difficult to achieve, and the CDE has established a policy on small school sites that recognizes the space savings created by the use of multistory buildings, for instance, on small sites. Rooftop play areas and underground parking are common in dense urban areas, such as San Francisco and Los Angeles.

The guide provides recommendations of necessary acreages for the three main components of a school site: building and circulation areas, field area, and parking and roads. The CDE has noted during its reviews of hundreds of school construction projects that even though a site may meet the total acreage recommendations, there is a trend for the playfields at elementary schools to be reduced to accommodate additional parking and student drop-off space.

(b) If a school site is less than the recommended acreage required in subsection (a) of this section, the district shall demonstrate how the students will be provided an adequate educational program including physical education as described in the district's adopted course of study. . . .

The CDE policy since July 2003 has been to require districts to demonstrate that a school site below 70 percent of the CDE's recommended acreage could provide an adequate physical education program. The justification uses the proposed enrollment and compares the physical education teaching stations needed to serve the proposed enrollment to the actual or proposed teaching stations or both. This guidance, especially when used early in the planning or educational specification process, will help districts to analyze the physical education needs of the master plan enrollment of a school.

(l) The site shall not be on major arterial streets with a heavy traffic pattern as determined by site-related traffic studies including those that require student crossings unless mitigation of traffic hazards and a plan for the safe arrival and departure of students appropriate to the grade level has been provided by city, county or other public agency in accordance with the "School Area Pedestrian Safety" manual published by the California Department of Transportation, 1987 edition.

(m) —

(n) The site shall be located within the proposed attendance area to encourage student walking and avoid extensive bussing unless bussing is used to promote ethnic diversity.

Although not directly related to a school's physical education program, placing schools that encourages students, by both location and safety, to walk, bicycle, skate, ride a scooter, or skateboard to school enhances student fitness and allows daily activities to build on the skills and knowledge provided during formal physical education instruction. Conveniently located schools also promote the use of the physical education areas after school and for weekend activities.

Schools that have a high percentage of students walking may also help to reverse the trend of school sites allocating parking and drop-off areas at the expense of playfields.

(o) The site shall be selected to promote joint use of parks, libraries, museums and other public services, the acreage of which may be included as part of the recommended acreage as stated in subsection (a) of this section.

Additional field areas, gyms, or other facilities available in a public park will allow increased physical education opportunities for students during the school day.

Joint-use agreements may also provide additional area and buildings for students. A joint-use area must also meet Title 5 requirements if the joint-use area is required to deliver the educational program.

(q) The district shall consider environmental factors of light, wind, noise, aesthetics, and air pollution in its site selection process.

Noise can be especially disruptive to outdoor instruction in physical education. Districts should select sites that have both a low overall noise impact as well as minimum exposure to single-noise events (airplanes, trucks) that can disrupt outdoor physical education instruction.

Section 14030. Standards for Development of Plans for the Design and Construction of School Facilities

The following standards for new schools are for the use of all school districts for the purposes of educational appropriateness and promotion of school safety:

(a) **Educational Specifications.** Prior to submitting preliminary plans for the design and construction of school facilities, and as a condition of final plan approval by the California Department of Education, school board-approved educational specifications for school design shall be prepared and submitted to the California Department of Education based on the school district's goals, objectives, policies, and community input that determine the educational program and define the following:

(1) Enrollment of the school and the grade-level configuration.

(2) Emphasis in curriculum content or teaching methodology that influences school design.

(3) Type, number, size, function, special characteristics of each space, and spatial relationships of the instructional area that are consistent with the educational program.

(4) Community functions that may affect the school design.

Educational specifications, as discussed previously, guide the design of a school. The needs for food service and physical education should be fully addressed in the educational specifications so that the school design supports these essential functions.

(b) **Site Layout.** Parent drop off, bus loading areas, and parking shall be separated to allow students to enter and exit the school grounds unless these features are unavailable due to limited acreage in urban areas or restrictive locations, specifically:

(1) —

(2) —

(3) Vehicle traffic pattern does not interfere with foot traffic patterns. Foot traffic does not have to pass through entrance driveways to enter school. Crosswalks are clearly marked to define desired footpath to school entrance.

(4) —

(5) —

The need to make sure that students can walk safely to the school site was also discussed. Plans should be developed that eliminate or minimize mixing pedestrian and vehicle traffic.

(c) **Playground and Field Areas.** Adequate physical education teaching stations shall be available to accommodate course requirements for the planned enrollment, specifically:

(1) A variety of physical education teaching stations are available to provide a comprehensive physical education program in accordance with the district's adopted course of study (including hardcourt, field area and indoor spaces).

(2) The physical education teaching stations are adequate for the planned student enrollment to complete the minimum instruction and course work defined in *Education Code* sections 51210(g), 51220(d) and 51225.3(a)(1)(F).

(3) Supervision of playfields is not obstructed by buildings or objects that impair observation.

(4) Joint-use for educational purposes with other public agencies is explored. Joint-use layout with parks is not duplicative and fulfills both agencies' needs.

The proper layout of a site will maximize supervision opportunities. Clear lines of sight not hindered by trees or poorly placed portable classrooms or storage units enhance the usability of the field and hard-court area.

Fire hydrants and electrical panels should be located so as not to interfere with field and hard-court areas. Often the master planning of a site will allow the thoughtful placement of these utilities to serve the growth of the campus.

(d) **Delivery and Utility Areas.** Delivery and service areas shall be located to provide vehicular access that does not jeopardize the safety of students and staff:

(1) Delivery/utility vehicles have direct access from the street to the delivery area without crossing over playground or field areas or interfering with bus or parent loading unless a fence or other barrier protects students from large vehicle traffic on playgrounds.

(2) Trash pickup is fenced or otherwise isolated and away from foot traffic areas.

The efficient delivery of food and other supplies will assist in developing a well-run food service program.

(e) **Future Expansion.** Site layouts shall have capability for expansion without substantial alterations to existing structures or playgrounds:

(1) Site layout designates area(s) for future permanent or temporary additions that are compatible with the existing site plans for playground layout and supervision.

(2) Utilities to the expansion area are included in the plans and have the capacity to accommodate anticipated growth.

(3) Exits, corridors, stairs, and elevators are located to accommodate capacity of additions, particularly in such buildings added as the multi-purpose/ cafeteria, administration, gymnasium/or auditorium.

Again, planning for future expansion allows a site to accommodate future growth.

(f) **Placement of Buildings.** Building placement shall consider compatibility of the various functions on campus and provide optimum patterns of foot traffic flow around and within buildings. Site layout of buildings, parking, driveways, and physical education areas shall be adequate to meet the instructional, security and service needs of the educational programs:

(1) Building placement is compatible with other functions on campus; e.g., band room is not next to library.

(2) Physical relationship of classrooms, auxiliary, and support areas allows unobstructed movement of staff and students around the campus.

The location of physical education buildings (gyms, shower/locker rooms) should be designed to flow with the field and turf areas used for physical education. This not only allows effective use and supervision but minimizes the time students need to prepare for physical education, allowing more time for instruction.

Physical education programs also require extensive storage. Oftentimes this storage is provided by using cargo containers or similar structures. The structures should be readily placed to allow timely access while maintaining effective lines of sight for supervision.

(h) **Specialized Classrooms and Areas.** Specialized classrooms shall be designed to reflect the function planned for that portion of the educational program. If any of the following classrooms are needed, these standards apply:

(1) Kindergarten Classrooms.

A. —

B. —

C. Play yard design provides a variety of activities for development of large motor skills.

Kindergarten students need to be provided a separate play area so they can have age-appropriate opportunities for physical activity in a secure setting.

(i) **Laboratories shall be designed in accordance with the planned curriculum.**

(1) Consumer Home Economics laboratory:

A. —

B. Cooking equipment reflects current home food preparation practices and/or commercial food preparation simulation.

C. There is the capability for technology which complements portions of the curriculum, such as fashion design, consumer economics, and nutritional analysis of foods.

Consumer education facilities may benefit by being near the school's food service building and having access to commercial quality food-processing equipment.

(7) Dance Studios:

A. Dance studios should be free from distractions and uninvited spectators.

B. Dance studios should be in a location convenient to the school auditorium.

C. —

D. Sprung wooden floors should be considered.

E. Dance studio should have mirrors, ballet bars, and electrical outlets.

F. Storage area and locker rooms should be provided.

G. A minimum of 2,000 square feet (or 3,500 square feet if performance space is needed) should be considered.

Dance studios can be part of a district's performing arts program. The studio may also be used as a physical education teaching station. Locating the dance studio to serve both areas, when possible, may be advantageous.

(j) **Gymnasium, shower/locker shall be designed to accommodate multiple use activities in accordance with the planned enrollment:**

(1) The gymnasium is secured from other parts of the campus for evening and weekend events or for public use purposes.

(2) The shower/locker area is of sufficient size to allow students enrolled in the physical education program to shower and dress each period.

(3) Toilets are available for the public in facilities intended for shared community use other than in shower/locker areas.

(4) Office space is provided for physical education teachers.

(5) Space is available for specialized age-appropriate physical education activities such as weight lifting, exercise equipment usage, aerobics.

Ample storage for wrestling/tumbling pads, portable basketball standards, and other equipment increases the flexibility of a gym to provide a broad range of physical activities. Storage for community equipment will allow increased joint-use opportunities.

In shower locker rooms a raised platform in the coach's office and the alignment of lockers to allow supervision are essential safety elements. Including a washer and

dryer machine in the coach's office will allow physical education equipment, such as uniforms, to be kept clean. "Loaner" gym clothes could be available for students who forget to bring them, thereby increasing student participation.

A trend noted by the School Facilities Planning Division is that school districts, for various reasons, are designing middle schools without shower facilities.

If a district is converting an existing shower room to another use (commonly storage), the rough plumbing should be retained to allow ready reconversion if showers are desired in the future.

Physical education programs also require the use of classrooms for lectures. Districts should consider incorporating lecture space in the physical education complex.

(k) **Auxiliary Areas.**

(1) Multipurpose/cafeteria area (indoor or outdoor) shall be adequately sized and flexibly designed to protect students from the elements and to allow all students adequate eating time during each lunch period and to accommodate such uses as physical education activities, assemblies, and extracurricular activities:

A. Tables and benches or seats are designed to maximize space and allow flexibility in the use of the space.

B. The location is easily accessible for student and community use, but is close to the street for delivery truck access.

C. —

D. Area for the cafeteria line is designed for the flow of traffic for each lunch period.

E. Design of kitchen reflects its planned function; e.g., whether for food preparation or warming only.

F. Space is available for refrigeration and preparation of foods to accommodate maximum number of students planned for the school.

G. Office, changing, and restroom area for food preparation staff is available and shall comply with local department of health requirements.

H. Ceiling height allows for clearance of light fixtures for physical education activities. . . .

The location of trash cans in containers along walls, rather than open cans in an aisle, will help to replicate the "food court" experience many students desire.

Design for the master-plan student enrollment so that all students have adequate space and therefore time to eat lunch.

Consider the usable space for instruction. Storage closets and alcoves may create "blind spots" that prevent supervision.

(n) **Plumbing**

(1) Refer to Part 5, Title 24 of the *California Code of Regulations.*

Portable or permanent drinking fountains should be available for students in field areas. Although the 2001 Uniform Plumbing Code requires one drinking fountain per 150 students, the CDE strongly recommends one fountain per 10 to 20 students. This practice will allow students to remain hydrated without affecting instruction time.

Some districts have developed mobile fountains that can be attached to potable hoses and provide a large number of portable drinking fountains.

Drinking fountains, similar to fire hydrants and storage sheds, should be strategically placed so as not to create unusable areas.

05-024 PR060007-00 10-06 7M