Appendix E: Sample Augmentation Documents

CA ELD Standards - Sample Grade Level (6) / Part I - Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Math	Math Practices	Sample Math Content Examples
A. Collaborative	1. Exchanging information and ideas	Engage in conversational exchanges and express ideas on familiar topics by asking and answering yes-no and wh-questions and responding using simple phrases.	Contribute to class, group, and partner discussions by following turn-taking rules, asking relevant questions, affirming others, adding relevant information, and paraphrasing key ideas.	Contribute to class, group, and partner discussions by following turn-taking rules, asking relevant questions, affirming others, adding relevant information and evidence, paraphrasing key ideas, building on responses, and providing useful feedback.	Working collaboratively provides students opportunities both to develop and to display understanding of important math concepts. While focusing on specific math content, students share perspectives, ask and answer questions, examine specific cases, and can address misconceptions.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others. 6. Attend to precision.	[No sample examples for Part I.]
	2. Interacting via written English	Engage in short written exchanges with peers and collaborate on simple written texts on familiar topics, using technology when appropriate.	Engage in longer written exchanges with peers and collaborate on more detailed written texts on a variety of topics, using technology when appropriate.	Engage in extended written exchanges with peers and collaborate on complex written texts on a variety of topics, using technology when appropriate.	Writing in math is often supported with graphs, sketches and drawings, or geometric constructions. Working collaboratively, students can generate several examples and create a better overall picture of various math situations. Sharing their work, they may make generalizations or justify their thinking with step-by-step reasoning.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others. 6. Attend to precision.	[No sample examples for Part I.]
	3. Offering opinions	Negotiate with or persuade others in conversations (e.g., to gain and hold the floor or ask for clarification) using basic learned phrases (e.g., I think . . . , Would you please repeat that?), as well as open responses.	Negotiate with or persuade others in conversations (e.g., to provide counter-arguments) using an expanded set of learned phrases (I agree with X, but . . .), as well as open responses.	Negotiate with or persuade others in conversations using appropriate register (e.g., to reflect on multiple perspectives) using a variety of learned phrases, indirect reported speech (e.g., I heard you say X, and Gabriel just pointed out Y), as well as open responses.	In making mathematical arguments and critiquing the reasoning of others, students need to connect and/or counter others' ideas with mathematical justification. EL students need to learn the precise and appropriate vocabulary and sentence structures to actively engage in these kinds of interactions in the math classroom.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others. 6. Attend to precision.	[No sample examples for Part I.]
	4. Adapting language choices	Adjust language choices according to social setting (e.g., classroom, break time) and audience (e.g., peers, teacher).	Adjust language choices according to purpose (e.g., explaining, persuading, entertaining), task, and audience.	Adjust language choices according to task (e.g., facilitating a science experiment, providing peer feedback on a writing assignment), purpose, task, and audience.	Students need to use language relevant to the task, purpose, and audience when providing evidence to support reasoning used to defend mathematical arguments, interpretations, and procedures.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others. 6. Attend to precision.	[No sample examples for Part I.]
B. Interpretive	5. Listening actively	Demonstrate active listening in oral presentation activities by asking and answering basic questions, with prompting and substantial support.	Demonstrate active listening in oral presentation activities by asking and answering detailed questions, with occasional prompting and moderate support.	Demonstrate active listening in oral presentation activities by asking and answering detailed questions, with minimal prompting and support.	Students participate in discussions about math content, carefully listening to one another, questioning, and contributing their own insights and understandings.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others.	[No sample examples for Part I.]

CA ELD Standards - Sample Grade Level (6) / Part I - Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Math	Math Practices	Sample Math Content Examples
B. Interpretive	6. Reading/viewing closely	a. Explain ideas, phenomena, processes, and text relationships (e.g., compare/contrast, cause/effect, problem/solution) based on close reading of a variety of grade-level texts and viewing of multimedia, with substantial support.	a. Explain ideas, phenomena, processes, and text relationships (e.g., compare/contrast, cause/effect, problem/solution) based on close reading of a variety of grade-level texts and viewing of multimedia, with moderate support.	a. Explain ideas, phenomena, processes, and text relationships (e.g., compare/contrast, cause/effect, problem/solution) based on close reading of a variety of grade-level texts and viewing of multimedia, with light support.	In mathematics, close reading and viewing is often required in the context of examining, interpreting, and creating graphs and other models in real-world problem situations. Supporting EL students to describe with precision what they are examining, creating, or interpreting scaffolds both mathematical thinking and language development.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others. 6. Attend to precision.	[No sample examples for Part I.]
		b. Express inferences and conclusions drawn based on close reading of grade-level texts and viewing of multimedia using some frequently used verbs (e.g., shows that, based on).	b. Express inferences and conclusions drawn based on close reading of grade-level texts and viewing of multimedia using a variety of verbs (e.g., suggests that, leads to).	b. Express inferences and conclusions drawn based on close reading of grade-level texts and viewing of multimedia using a variety of precise academic verbs (e.g., indicates that, influences).	As students interpret or analyze mathematical content, they draw inferences and conclusions, and explain their reasoning.	1. Make sense of problems and persevere in solving them. 6. Attend to precision.	[No sample examples for Part I.]
		c. Use knowledge of morphology (e.g., affixes, roots, and base words), context, reference materials, and visual cues to determine the meaning of unknown and multiple-meaning words on familiar topics.	c. Use knowledge of morphology (e.g., affixes, roots, and base words), context, reference materials, and visual cues to determine the meaning of unknown and multiple-meaning words on familiar and new topics.	c. Use knowledge of morphology (e.g., affixes, roots, and base words), context, reference materials, and visual cues to determine the meaning, including figurative and connotative meanings, of unknown and multiple-meaning words on a variety of new topics.	Many terms have a different meaning in math than they do in ELA or everyday language. Multiple-meaning words, or words that take on new meaning in mathematics, include "product," "equal," "difference," or "proper/improper." Unknown words may include "segment," "parallel," or "pictograph." In a word problem or instructions, there may also be unknown words students need to figure out from context or morphological clues in order to do the math (e.g,, [specimens] in an insect collection). EL students need to be able to use their morphological knowledge and context (the words or symbols around the unknown word) to derive the meaning of unknown words or multiple meaning words in mathematics. Implications for teaching include teaching morphology, teaching domain-specific and multiple-meaning words explicitly, and teaching students to use morphology and context to gain meaning of unknown terms.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others.	[No sample examples for Part I.]
	7. Evaluating language choices	Explain how well writers and speakers use language to support ideas and arguments with detailed evidence (e.g., identifying the precise vocabulary used to present evidence, or the phrasing used to signal a shift in meaning) with substantial support.	Explain how well writers and speakers use specific language to present ideas or support arguments and provide detailed evidence (e.g., showing the clarity of the phrasing used to present an argument) with moderate support.	Explain how well writers and speakers use specific language resources to present ideas or support arguments and provide detailed evidence (e.g., identifying the specific language used to present ideas and claims that are well supported and distinguishing them from those that are not) with light support.	In order to critique others' presentations and writing, students must be able to explain the concepts and defend their reasoning using appropriate and precise language.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others.	[No sample examples for Part I.]

CA ELD Standards - Sample Grade Level (6) / Part I - Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Math	Math Practices	Sample Math Content Examples
B. Interpretive	8. Analyzing language choices	Explain how phrasing or different common words with similar meaning (e.g., choosing to use the word cheap versus the phrase a good saver) produce different effects on the audience.	Explain how phrasing, different words with similar meaning (e.g., describing a character as stingy versus economical), or figurative language (e.g., The room was like a dank cave, littered with food wrappers, soda cans, and piles of laundry) produce shades of meaning and different effects on the audience.	Explain how phrasing, different words with similar meaning (e.g., stingy, economical, frugal, thrifty), or figurative language (e.g., The room was depressed and gloomy. The room was like a dank cave, littered with food wrappers, soda cans, and piles of laundry) produce shades of meaning, nuances, and different effects on the audience.	While analzying language choices does not directly correspond to math practices or standards, understanding and analyzing the meaning of words and phrases is related to the types of describing, explaining, and critiquing students do in the other ELD interpretive mode standards above.	1. Make sense of problems and persevere in solving them. 6. Attend to precision.	[No sample examples for Part I.]
C. Productive	9. Presenting	Plan and deliver brief oral presentations on a variety of topics and content areas.	Plan and deliver longer oral presentations on a variety of topics and content areas, using details and evidence to support ideas.	Plan and deliver longer oral presentations on a variety of topics and content areas, using reasoning and evidence to support ideas, as well as growing understanding of register.	Students may plan and deliver formal oral presentations in order to share their thinking and findings by explaining or describing the math content, providing supporting evidence, and, in many cases, using graphics or demonstrations as part of an oral presentation.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others. 6. Attend to precision.	[No sample examples for Part I.]
	10. Composing/ Writing	a. Write short literary and informational texts (e.g., an argument for protecting the rain forests) collaboratively (e.g., with peers) and independently.	a. Write longer literary and informational texts (e.g., an argument for protecting the rain forests) collaboratively (e.g., with peers) and independently using appropriate text organization.	a. Write longer and more detailed literary and informational texts (e.g., an argument for protecting the rain forests) collaboratively (e.g., with peers) and independently using appropriate text organization and growing understanding of register.	Students can write detailed informational text in mathematical settings to model relationships and solve problems in context, justifying steps in the process and verifying conclusions.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others. 6. Attend to precision.	[No sample examples for Part I.]
		b. Write brief summaries of texts and experiences using complete sentences and key words (e.g., from notes or graphic organizers).	b. Write increasingly concise summaries of texts and experiences using complete sentences and key words (e.g., from notes or graphic organizers).	b. Write clear and coherent summaries of texts and experiences using complete and concise sentences and key words (e.g., from notes or graphic organizers).	Students summarize and focus on being concise in a variety of mathematical contexts, particularly when modeling. Students analyze relationships and represent them symbolically, using appropriate quantities.	1. Make sense of problems and persevere in solving them. 6. Attend to precision.	[No sample examples for Part I.]
	11. Justifying/ arguing	a. Justify opinions by providing some textual evidence (e.g., quoting from the text) or relevant background knowledge, with substantial support.	a. Justify opinions or persuade others by providing relevant textual evidence (e.g., quoting from the text or referring to what the text says) or relevant background knowledge, with moderate support.	a. Justify opinions or persuade others by providing detailed and relevant textual evidence (e.g., quoting from the text directly or referring to specific textual evidence) or relevant background knowledge, with light support.	Students provide textual evidence in mathematical contexts as they explain procedures, justify solutions grounded in mathematical concepts, and model situations using specified parameters.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others. 6. Attend to precision.	[No sample examples for Part I.]

	CA ELD Standards - Sample Grade Level (6) / Part I - Interacting in Meaningful Ways						
	ELD Standard	**Emerging**	**Expanding**	**Bridging**	**Applying ELD Standards to Math**	**Math Practices**	**Sample Math Content Examples**
C. Productive		b. Express attitude and opinions or temper statements with some basic modal expressions (e.g., can, has to).	b. Express attitude and opinions or temper statements with a variety of familiar modal expressions (e.g., maybe/probably, can/could, must).	b. Express attitude and opinions or temper statements with nuanced modal expressions (e.g., probably/certainly/definitely, should/would, might) and phrasing (e.g., In my opinion . . .).	Students may need to use modal expressions when explaining their decisions based on reasonable estimates of known quantities to find unknown quantities.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others.	[No sample examples for Part I.]
	12. Selecting language resources	a. Use a select number of general academic words (e.g., author, chart) and domain-specific words (e.g., scene, cell, fraction) to create some precision while speaking and writing.	a. Use a growing set of academic words (e.g., author, chart, global, affect), domain-specific words (e.g., scene, setting, plot, point of view, fraction, cell membrane, democracy), synonyms, and antonyms to create precision and shades of meaning while speaking and writing.	a. Use an expanded set of general academic words (e.g., affect, evidence, demonstrate, reluctantly), domain-specific words (e.g., scene, setting, plot, point of view, fraction, cell membrane, democracy), synonyms, antonyms, and figurative language to create precision and shades of meaning while speaking and writing.	For precision in communicating about mathematics, students need to use math-specific terminology.	1. Make sense of problems and persevere in solving them. 6. Attend to precision.	[No sample examples for Part I.]
		b. Use knowledge of morphology to appropriately select affixes in basic ways (e.g., She likes X).	b. Use knowledge of morphology to appropriately select affixes in a growing number of ways to manipulate language (e.g., She likes X. That's impossible).	b. Use knowledge of morphology to appropriately select affixes in a variety of ways to manipulate language (e.g., changing observe -> observation, reluctant -> reluctantly, produce -> production, and so on).	EL students need to select appropriate forms of words to communicate precisely about mathematical concepts and explain their reasoning.	1. Make sense of problems and persevere in solving them. 6. Attend to precision.	[No sample examples for Part I.]

CA ELD Standards - Sample Grade Level (6) / Part II - Learning How English Works

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Math	Math Practices	Sample Math Content Examples
A. Structuring Cohesive Texts	1. Understanding text structure	Apply basic understanding of how different text types are organized to express ideas (e.g., how a narrative is organized sequentially with predictable stages versus how arguments are organized around ideas) to comprehending texts and writing basic texts.	Apply growing understanding of how different text types are organized to express ideas (e.g., how a narrative is organized sequentially with predictable stages versus how arguments are structured logically around reasons and evidence) to comprehending texts and writing texts with increasing cohesion.	Apply increasing understanding of how different text types are organized to express ideas (e.g., how a historical account is organized chronologically versus how arguments are structured logically around reasons and evidence) to comprehending texts and writing cohesive texts.	Students often participate in mathematical discussions involving questions including “How did you get that?”, “Explain your thinking,” and “Why is that true?” They explain their own thinking and also listen to others and ask questions. As they explain procedures, justify solutions grounded in mathematical concepts, describe concepts, etc., they use their understandings about how the language is structured (e.g., what information is need first, what information is needed using mathematical symbols or words) so that their communication is clear to their audiences.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others. 6. Attend to precision.	For example, when students explain how they solved a word problem involving multiplication of a fraction by a whole number by using visual fraction models and equations to represent the problem (4.NF.4c), they need to show the visual model they used to solve the problem, explain how they used the visual model, and justify their solution/conclusion with the visual model. This needs to be structured in such a way that makes sense to a listener or reader (rather than merely providing the solution without the structured explanation).
	2. Understanding cohesion	a. Apply basic understanding of language resources for referring the reader back or forward in text (e.g., how pronouns refer back to nouns in text) to comprehending texts and writing basic texts.	a. Apply growing understanding of language resources for referring the reader back or forward in text (e.g., how pronouns or synonyms refer back to nouns in text) to comprehending texts and writing texts with increasing cohesion.	a. Apply increasing understanding of language resources for referring the reader back or forward in text (e.g., how pronouns, synonyms, or nominalizations refer back to nouns in text) to comprehending texts and writing cohesive texts.			
		b. Apply basic understanding of how ideas, events, or reasons are linked throughout a text using a select set of everyday connecting words or phrases (e.g., first/next, at the beginning) to comprehending texts and writing basic texts.	b. Apply growing understanding of how ideas, events, or reasons are linked throughout a text using a variety of connecting words or phrases (e.g., for example, in the first place, as a result, on the other hand) to comprehending texts and writing texts with increasing cohesion.	b. Apply increasing understanding of how ideas, events, or reasons are linked throughout a text using an increasing variety of academic connecting and transitional words or phrases (e.g., consequently, specifically, however, moreover) to comprehending texts and writing cohesive texts.			
B. Expanding and Enriching Texts	3. Using verbs and verb phrases	Use a variety of verb types (e.g., doing, saying, being/having, thinking/feeling), tenses (e.g., present, past, future, simple, progressive) appropriate to the text type and discipline (e.g., simple past and past progressive for recounting an experience) on familiar topics.	Use various verb types (e.g., doing, saying, being/having, thinking/feeling, reporting), tenses (e.g., present, past, future, simple, progressive, perfect) appropriate to the task, text type, and discipline (e.g., simple present for literary analysis) on an increasing variety of topics.	Use various verb types (e.g., doing, saying, being/having, thinking/feeling, reporting), tenses (e.g., present, past, future, simple, progressive, perfect) appropriate to the task, text type, and discipline (e.g., the present perfect to describe previously made claims or conclusions) on a variety of topics.	In mathematics, oral and written problems have long noun phrases. Students need to be able to identify what the main noun is and also use the detailed information around the noun in order to understand the problem. They also need to be able to provide more detail in their explanations and arguments by expanding noun phrases themselves.	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others. 6. Attend to precision.	For example, when students read the following, " Use a visual fraction model to represent ...," they need to understand that the main thing (or noun) that they need to use is a "model" but that it's a special kind of model (a "visual fraction model"). They also need to expand their noun phrases in their own explanations. In other words, rather than merely calling something a "model," they can add precision by expanding the noun phrase into "a visual fraction model." (4.NF.4a)
	4. Using nouns and noun phrases	Expand noun phrases in simple ways (e.g., adding a sensory adjective to a noun) in order to enrich the meaning of sentences and add details about ideas, people, things, and the like.	Expand noun phrases in a variety of ways (e.g., adding comparative/ superlative adjectives to noun phrases or simple clause embedding) in order to enrich the meaning of sentences and add details about ideas, people, things, and the like.	Expand noun phrases in an increasing variety of ways (e.g., adding comparative/superlative and general academic adjectives to noun phrases or more complex clause embedding) in order to enrich the meaning of sentences and add details about ideas, people, things, and the like.			

CA ELD Standards - Sample Grade Level (6) / Part II - Learning How English Works

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Math	Math Practices	Sample Math Content Examples
B. Expanding and Enriching Texts	5. Modifying to add details	Expand sentences with simple adverbials (e.g., adverbs, adverb phrases, prepositional phrases) to provide details (e.g., time, manner, place, cause) about a familiar activity or process.	Expand sentences with an increasing variety of adverbials (e.g., adverbs, adverb phrases, prepositional phrases) to provide details (e.g., time, manner, place, cause) about a familiar or new activity or process.	Expand sentences with a variety of adverbials (e.g., adverbs, adverb phrases and clauses, prepositional phrases) to provide details (e.g., time, manner, place, cause) about a variety of familiar and new activities and processes.			
C. Connecting and Condensing Ideas	6. Connecting ideas	Combine clauses in a few basic ways to make connections between and join ideas (e.g., creating compound sentences using and, but, so).	Combine clauses in an increasing variety of ways (e.g., creating compound and complex sentences) to make connections between and join ideas, for example, to express a reason (e.g., He stayed at home on Sunday to study for Monday's exam) or to make a concession (e.g., She studied all night even though she wasn't feeling well).	Combine clauses in a wide variety of ways (e.g., creating compound and complex sentences) to make connections between and join ideas, for example, to express a reason (e.g., He stayed at home on Sunday because he had an exam on Monday), to make a concession (e.g., She studied all night even though she wasn't feeling well), or to link two ideas that happen at the same time (e.g., The students worked in groups while their teacher walked around the room).	When explaining their thinking or listening to/reading the explanations or arguments of others, students need to understand how ideas are connected and condensed."	1. Make sense of problems and persevere in solving them. 3. Construct viable arguments and critique the reasoning of others. 6. Attend to precision.	For example, when explaining how they solved a problem using multiplication and fractions (4.NF.3d), a student needs to connect the ideas "This is 8 feet of wrapping paper," "That's the total amount of wrapping paper altogether," and "They have enough wrapping paper to do their packaging." These connected ideas are expressed in mathematics contexts as: "Altogether, this is 8 feet of wrapping paper, which means they have enough to do their packaging."
	7. Condensing ideas	Condense ideas in simple ways (e.g., by compounding verbs, adding prepositional phrases, or through simple embedded clauses or other ways of condensing as in, This is a story about a girl. The girl changed the world. | This is a story about a girl who changed the world) to create precise and detailed sentences.	Condense ideas in an increasing variety of ways (e.g., through various types of embedded clauses and other ways of condensing, as in, Organic vegetables are food. They're made without chemical fertilizers. They're made without chemical insecticides) | Organic vegetables are foods that are made without chemical fertilizers or insecticides) to create precise and detailed sentences.	Condense ideas in a variety of ways (e.g., through various types of embedded clauses, ways of condensing, and nominalization as in, They destroyed the rain forest. Lots of animals died | The destruction of the rain forest led to the death of many animals) to create precise and detailed sentences.			

CA ELD Standards Sample Grade Level (4) / Part I Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
A. Collaborative	1. Exchanging information and ideas	Contribute to conversations and express ideas by asking and answering yes-no and wh- questions and responding using short phrases.	Contribute to class, group, and partner discussions, including sustained dialogue, by following turn-taking rules, asking relevant questions, affirming others, and adding relevant information.	Contribute to class, group, and partner discussions, including sustained dialogue, by following turn-taking rules, asking relevant questions, affirming others, adding relevant information, building on responses, and providing useful feedback.	**Applying ELD Standards to Science** In science and engineering, EL students engage in class, small group, and partner conversations where they ask and respond to questions, build on others' ideas, and work collaboratively to define problems, plan and carry out investigations, construct explanations, and design solutions. During these conversations, they refer to details and examples from scientific or technical texts, their notes and journals, or other sources to explain (and better understand through discussion) inferences they've made, events, procedures, ideas, and concepts. **Sample Science Content Example** Example: For example, EL students work in small groups to observe phenomena related to objects colliding. They ask questions about the collision and predict outcomes about the changes in energy that occur when objects collide. During the collaborative conversation, they ask and respond to questions; build on, affirm, and provide feedback on one another's ideas; add relevant information; and collectively make a prediction. After experimentation, in which they gathered and recorded observations and measurements in their science notebooks, EL students access relevant sections from the science texts they are reading. Then, using evidence from the experimentation and the text, the group collaboratively constructs an explanation about the relationship between the speed of an object to the energy of the object. **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 3. Planning and carrying out investigations 6. Constructing explanations (for science) and designing solutions (for engineering) Science and Engineering Performance Expectation: 4-PS3-1 and 4-PS-3
	2. Interacting via written English	Collaborate with peers on joint writing projects of short informational and literary texts, using technology where appropriate for publishing, graphics, and the like.	Collaborate with peers on joint writing projects of longer informational and literary texts, using technology where appropriate for publishing, graphics, and the like.	Collaborate with peers on joint writing projects of a variety of longer informational and literary texts, using technology where appropriate for publishing, graphics, and the like.	**Applying ELD Standards to Science** In science and engineering, EL students conduct short research projects to build knowledge through investigation. They recall relevant information from experiences or gather relevant information from print and digital sources, take notes and categorize information, use credible and relevant sources to provide evidence, and represent their research in writing and through multimedia. **Sample Science Content Example** For example, students have been engaged in the phenomena of energy transformation. They are ready to explore natural resources used as sources of energy. Students work in small groups to conduct a short research project on different aspects of human impact on earth's resources. They obtain and combine information to explain how energy and fuels are derived from natural resources (e.g. wind energy, water in dams, nonrenewable energy resources- fossil and fissile materials) and how their uses affect the environment (e.g. loss of habitat by use of dams or surface mining, or air pollution by use of fossil fuels). The students use books, internet sources, and other reliable media to work together to construct a coherent explanation of how human uses of energy derived from natural resources has effects on the environment in multiple ways, how some resources are renewable while others are not, and possible actions humans could take in the future. The small group co-constructs the written explanation and prepares a digital presentation with relevant graphics to present their research. **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 6. Constructing explanations (for science) and designing solutions (for engineering) 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information Science and Engineering Performance Expectation: 4-ESS3-1

CA ELD Standards Sample Grade Level (4) / Part I Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
A. Collaborative	3. Offering opinions	Negotiate with or persuade others in conversations using basic learned phrases (e.g., I think . . .), as well as open responses, in order to gain and/or hold the floor.	Negotiate with or persuade others in conversations using an expanded set of learned phrases (e.g., I agree with X, but . . .), as well as open responses, in order to gain and/or hold the floor, provide counterarguments, and so on.	Negotiate with or persuade others in conversations using a variety of learned phrases (e.g., That's a good idea. However . . .), as well as open responses, in order to gain and/or hold the floor, provide counterarguments, elaborate on an idea, and so on.	**Applying ELD Standards to Science** In science and engineering, EL students participate in collaborative conversations where they engage in argument from evidence. During these conversations, they construct arguments and support them with reasons and evidence, and they critique the scientific methodology, and explanations or solutions proposed by their peers by citing relevant evidence. In order to persuade others that their arguments are reasonable and supported by evidence, gain and/or hold the floor, provide counterarguments respectfully, or elaborate on a peer's idea, students learn to use particular language that enables them to achieve these purposes in respectful and productive – and increasingly academic - ways. **Sample Science Content Example** For example, students work in small groups to construct an argument that animals have internal and external structures that function to support survival, growth, behavior, and reproduction. The students have observed through pictures and realia different structures and functions. The students build on those experienced by using their science texts and notes as they collaboratively construct the argument, and they use evidence from all of these sources to support their claims. During their conversations, the students refer to a large chart on the classroom wall that contains several options for entering a conversation (e.g., One/another piece of evidence that supports our argument is …); agreeing and disagreeing (e.g., I can see your point, however, …); elaborating on an idea (e.g., That's a good point, and I'd like to add that …); etc. **Science and Engineering Practices** 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information Science and Engineering Performance Expectation: 4-LS1-1
	4. Adapting language choices	Adjust language choices according to social setting (e.g., playground, classroom) and audience (e.g., peers, teacher), with substantial support.	Adjust language choices according to purpose (e.g., persuading, entertaining), task (e.g., telling a story versus explaining a science experiment), and audience, with moderate support.	Adjust language choices according to purpose, task (e.g., facilitating a science experiment), and audience, with light support.	**Applying ELD Standards to Science** In science and engineering, EL students conduct short research projects to build knowledge through investigation. They engage in collaborative conversations about the topic, gather relevant information from print and digital sources, take notes and categorize information, use credible and relevant sources to provide evidence, and represent their research in writing and through multimedia. **Sample Science Content Example** For example, students have observed hazardous phenomena (e.g., earthquakes, tornadoes). They next work in small groups to conduct a short research project on reducing the impacts of natural Earth processes on humans with a culminating task of a written explanation and an oral presentation using multi-media. When they engage in collaborative conversations about the information they are gathering in their research, they choose to use more "everyday" English, strategically selecting some domain-specific vocabulary they are learning through the research (e.g., nonrenewable energy resources, fossil and fissile materials). As they prepare their written explanation report, first, the group uses more everyday English, again with strategically selected domain-specific vocabulary, to co-construct the explanation orally, which keeps them focused on the science and engineering concepts. As the small group begins to collaboratively construct the written explanation, they discuss which language is most appropriate and powerful to use, based on purpose (to explain multiple solutions to the design problem), task (providing clear and coherent information in written form, using topic-relevant technical terms), and audience (their peers and teacher). **Science and Engineering Practices** 6. Constructing explanations (for science) and designing solutions (for engineering) 8. Obtaining, evaluating, and communicating information Science and Engineering Performance Expectation: 4-ESS3-1, 3-5-ETS1-2

CA ELD Standards Sample Grade Level (4) / Part I Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
B. Interpretive	5. Listening actively	Demonstrate active listening of read-alouds and oral presentations by asking and answering basic questions, with prompting and substantial support.	Demonstrate active listening of read-alouds and oral presentations by asking and answering detailed questions, with occasional prompting and moderate support.	Demonstrate active listening of read-alouds and oral presentations by asking and answering detailed questions, with minimal prompting and light support.	**Applying ELD Standards to Science** Students listen to oral presentations about science and engineering topics and teacher read alouds of science informational texts. They demonstrate their active listening by asking and answering detailed questions about what they heard. **Sample Science Content Example** For example, students, after observing videos of various types of energy resources, listen to a teacher read aloud of an informational text about renewable and non-renewable energy sources and how their uses affect the environment. At strategic points during the teacher read aloud, students discuss in pairs open-ended, detailed questions designed to promote extended discourse (e.g., In what ways does surface mining affect the environment? How do we know?). **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 8. Obtaining, evaluating, and communicating information Science and Engineering Performance Expectation: 4-ESS3-1
	6. Reading/viewing closely	a. Describe ideas, phenomena (e.g., volcanic eruptions), and text elements (main idea, characters, events, and the like) based on close reading of a select set of grade-level texts, with substantial support.	a. Describe ideas, phenomena (e.g., animal migration), and text elements (main idea, central message, and the like) in greater detail based on close reading of a variety of grade-level texts, with moderate support.	a. Describe ideas, phenomena (e.g., pollination), and text elements (main idea, character traits, event sequence, and the like) in detail based on close reading of a variety of grade-level texts, with light support.	**Applying ELD Standards to Science** In science and engineering, EL students obtain and combine information from books and other reliable media to explain phenomena. They read closely to evaluate the merit and accuracy of ideas and methods and to explain the variables that describe and predict phenomena. They gather relevant information from print and digital sources, take notes and categorize information and provide a list of sources, and draw evidence from informational texts to support analysis, reflection and research. Students refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. **Sample Science Content Example** For example, in order to better explain the phenomena of renewable and non renewable energy resources, students work in small groups to conduct a short research project. They read texts closely to explain how energy and fuels are derived from natural resources (e.g. wind energy, water in dams, nonrenewable energy resources- fossil and fissile materials) and how their uses affect the environment (e.g. loss of habitat by use of dams or surface mining, or air pollution by use of fossil fuels). The students gather evidence and draw inferences from books, internet sources, and other reliable media as they work together to construct a coherent explanation of how human uses of energy derived from natural resources has effects on the environment in multiple ways, how some resources are renewable while others are not, and possible actions humans could take in the future. The small group co-constructs the written explanation and prepares a digital presentation with relevant graphics to present their careful reading and interpretation of the textual sources used in their research. **Science and Engineering Practices** 4. Analyzing and interpreting data 6. Constructing explanations (for science) and designing solutions (for engineering) 8. Obtaining, evaluating, and communicating information Science and Engineering Performance Expectation: 4-ESS3-1

CA ELD Standards Sample Grade Level (4) / Part I Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
B. Interpretive		b. Use knowledge of frequently used affixes (e.g., un-, mis-) and linguistic context, reference materials, and visual cues to determine the meaning of unknown words on familiar topics.	b. Use knowledge of morphology (e.g., affixes, roots, and base words), linguistic context, and reference materials to determine the meaning of unknown words on familiar topics.	b. Use knowledge of morphology (e.g., affixes, roots, and base words) and linguistic context to determine the meaning of unknown and multiple-meaning words on familiar and new topics.	**Applying ELD Standards to Science** In science and engineering, students obtain and combine information from books and other reliable media to explain phenomena. They observe experiences and read closely to identify patterns in scientific practices and language as they analyze data and construct explanations. They gather relevant information from print and digital sources, take notes and categorize information to generate and compare multiple solutions to a problem, or to define a simple design to a need through reflection and research. Students refer to classroom-generated reference lists of frequently used words, roots and affixes in science, and examples of texts to recognize patterns in order to contextualize meaning of related words. **Sample Science Content Example** For example, when students are observing and explaining the phenomenon of energy transformations, they may begin by categorizing the varying forms of energy (light, sound, heat, electric current, mechanical and chemical) and creating list of existing examples for each, accessing experiential knowledge and language reservoirs. To emphasize energy transference from one place to another, explorations with tangible materials (e.g., transform movement into sound, or chemical energy of batteries into electrical currents) allow for use of the terms, and explicit connections to related words, such as 'transport', 'transfer,' 'transform', 'transformer', and 'transferred' to identify the root meaning: "to move something from one place to another". As a cognate for Spanish speaking students, it also serves to facilitate meaning (i.e. transportar, transformar, transferir). Several students might have experienced 'being transferred schools', or playing with a 'transformer toy', which would allow for constructing explanations related to their lives and experiences; thus, allowing opportunities for bridging to new language used in context with science concepts. **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 3. Planning and Carrying Out Investigations 6. Constructing explanations (for science) and designing solutions (for engineering) Cross Cutting Concept: Influence of Engineering, and Technology on Society and the Natural World. Science and Engineering Performance Expectation: 4-PS3-2
	7. Evaluating language choices	Describe the specific language writers or speakers use to present or support an idea (e.g., the specific vocabulary or phrasing used to provide evidence), with prompting and substantial support.	Describe how well writers or speakers use specific language resources to support an opinion or present an idea (e.g., whether the vocabulary or phrasing used to provide evidence is strong enough), with prompting and moderate support.	Describe how well writers and speakers use specific language resources to support an opinion or present an idea (e.g., the clarity or appealing nature of language used to present evidence), with prompting and light support.	**Applying ELD Standards to Science** In science and engineering students plan and carry out investigations, producing data as evidence for explanations of phenomena or for testing a designed solution. As part of the scientific practices, they ask questions, design and use models, use mathematical and computational thinking, and obtain, evaluate and communicate information about phenomena, processes and solutions. Emphasis on identifying evidence is key as the students engage in collecting data, analyzing it, and most importantly, presenting their findings, interpretations and understanding. Through ample opportunities for construction of explanations, nascent argumentation skills emerge through guided support, so claims can be grounded on evidence that is truly based on scientific and engineering principles and practices. **Sample Science Content Example** For example, as students observe, discuss and build their models of how an energy glowing and buzzing ball toy (or a flashlight) works, they explore the concept of energy transformation. As students listen to others and work in pairs to record their initial ideas via illustrations, labels and written explanations on posters, they are negotiating one another's perspectives and constructing explanations. Further sharing and analysis of the posters through a 'museum walk' allows each student to compare information across models, give oral/written feedback to peers, and gain insight for further refinement on own pair's design. These steps, along with whole class debriefings and pair presentations of the model's design and final written poster review emulate scientific practices. **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 2. Developing and using models 4. Analyzing and interpreting data 6. Constructing explanations (for science) and designing solutions (for engineering) 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information. Cross Cutting Concept: Influence of Engineering, and Technology on Society and the Natural World. Science and Engineering Performance Expectation: 4-PS3-2

CA ELD Standards Sample Grade Level (4) / Part I Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
B. Interpretive	8. Analyzing language choices	Distinguish how different words with similar meanings produce different effects on the audience (e.g., describing a character's actions as whined versus said).	Distinguish how different words with similar meanings (e.g., describing a character as smart versus an expert) and figurative language (e.g., as big as a whale) produce shades of meaning and different effects on the audience.	Distinguish how different words with related meanings (e.g., fun versus entertaining versus thrilling, possibly versus certainly) and figurative language produce shades of meaning and different effects on the audience.	**Applying ELD Standards to Science** In science and engineering, students conduct investigations, gather data and analyze it, sharing information and conducting short research projects to delve deeper into specific content. They listen, collaborate and ask questions to refine their understanding and build new schema. The teacher provides plenty of opportunities for them to develop, use and explain their models about events and abstract representations. They also are given multiple and frequent opportunities to use language to identify and describe variables involved in their investigations. They use their creativity and inquisitive minds to ask questions and develop both their mental models of understanding and the scientific model representations of phenomena or processes being studied. They participate in small and whole group facilitated debrief discussions about process, content, accuracy and design. These opportunities build clarity, meaning and knowledge, helping them zero-in on ways to express evidence with accuracy, and to provide support for their explanations. **Sample Science Content Example** For example, the use of a model to explain the phenomenon of light reflecting from objects allowing objects to be seen provides many opportunities to help students distinguish words with related meanings about light, shades of illumination and darkness, shadows, transparency and translucency. In order to build-in accuracy in the construction of their explanations, students need to be specific about the observations being made, and about the use of descriptors and variables in the light investigation. In considering the instructional piece using the words "model" and "light" (both homonyms) also requires careful attention and clarification with meaningful and contextual use throughout the investigations. The related-meaning words such as 'light', 'bright', 'dull', 'opaque', 'transparent', 'clear' and 'translucent' all serve to describe meaning without ambiguity and greater precision. **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 2. Develop and use models 6. Constructing explanations (for science) and designing solutions (for engineering) Science and Engineering Performance Expectation: 4-PS4-2

CA ELD Standards Sample Grade Level (4) / Part I Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
C. Productive	9. Presenting	Plan and deliver brief oral presentations on a variety of topics and content areas (e.g., retelling a story, explaining a science process, reporting on a current event, recounting a memorable experience, and so on), with substantial support.	Plan and deliver longer oral presentations on a variety of topics and content areas (e.g., retelling a story, explaining a science process, reporting on a current event, recounting a memorable experience, and so on), with moderate support.	Plan and deliver oral presentations on a variety of topics in a variety of content areas (e.g., retelling a story, explaining a science process, reporting on a current event, recounting a memorable experience, and so on), with light support.	**Applying ELD Standards to Science** In science and engineering, EL students are engaged in practices that involve both scientific sense-making and language use. Students participate in classroom science discourse, listening, speaking, reading, writing and visually representing models being developed and refined. Students utilize all mediums of communication as they develop, construct and share their explanations. By engaging in scientific practices, asking questions, arguing from evidence, analyzing and interpreting data, evaluating obtained information and communicating it to others through multiple mediums, ELs are simultaneously building on their understanding of science and their language capacity to do more with language. Opportunities to present information in small groups and as part of collaborative groups to the class promote language and content development. Classrooms that set up safe norms for risk-taking and growth mindset (Dweck, 2008), foment student efficacy and learning takes place. For ELs, it is essential to have a safe environment to present to the group using less-than-perfect English, yet to be acknowledged as a contributing member of the learning community. **Sample Science Content Example** For example, students work in small groups to investigate and collect evidence to explain the relationship of speed of an objet to the energy of that object. Different teams are assigned a challenge to use given materials (i.e., a toy car, a ramp, timer and meter) under different conditions (i.e., different slopes), each team focuses on collecting data to be able to present it in an organized and clear manner to the class. As a whole group, the students interpret the collective information with teacher facilitation. In the process, terms such as 'force' and 'table' are used. Explaining the terms in the context of the small groups' investigation facilitates clarification of these multiple meaning words for ELs. "Force in everyday context has a connotation about physical power or effort; while in the scientific context, it is referred to as "something that causes an object to move or change speed or direction, such as the force of gravity." Likewise, using the term "table" in the context of constructing data organizers calls for context and use of terms such as putting information in rows and columns, or inside boxes. This clarifies its scientific meaning in context with the investigation. Mathematical thinking skills can also help to contextualize the use of graphic organizers for quantifiable data collection. If the students' strengths in this area can be tapped, it further reinforces this scientific practice, while providing an opportunity to further contribute to the collective work. When these types of supports are provided throughout the various investigation pieces, the recording of data (in writing), and in small group interactions, the ELs are better prepared to utilize the acquired language during presentations to the whole class and understand with greater meaning the presentations of others. Repetition and opportunities to move from concrete to abstract, and from pairs and quads to small group presentations to whole class presentations further support their ability to feel sufficiently confident to contribute with their ideas. Also, these practices support nascent argumentation, and understanding of opinion and the peer-review process during presentations. **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations (for science) and designing solutions (for engineering) 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information. Science and Engineering Performance Expectation: 4-PS3-1

CA ELD Standards Sample Grade Level (4) / Part I Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
C. Productive	10. Composing/ Writing	a. Write short literary and informational texts (e.g., a description of a flashlight) collaboratively (e.g., joint construction of texts with an adult or with peers) and sometimes independently.	a. Write longer literary and informational texts (e.g., an explanatory text on how flashlights work) collaboratively (e.g., joint construction of texts with an adult or with peers) and with increasing independence using appropriate text organization.	a. Write longer and more detailed literary and informational texts (e.g., an explanatory text on how flashlights work) collaboratively (e.g., joint construction of texts with an adult or with peers) and independently using appropriate text organization and growing understanding of register.	**Applying ELD Standards to Science** In science and engineering, students engage in scientific investigations to describe a phenomenon, to collect data as evidence, or to test a theory or model of how the world works. They also engage in engineering investigations to improve a design or to compare solutions to a problem. As students plan investigations and hold discussions using texts or visual representations to advance inquiry, it is important that they state the goal of the investigation, predict outcomes and plan their course of action to generate and acquire the necessary data and evidence to support their conclusions. As opportunities to engage with a variety of science text representations take place, students are able to analyze existing models of scientific writing and illustrations, and begin emulating them. Throughout investigations, model building and attending to how scientific and technical information is organized, all serve to enhance their written skills and grow in understanding of this writing register. **Sample Science Content Example** For example in assigned groups, students look explanation of the earth's features by looking for patterns on Earth's features, recognizing the representation and distribution of mountains, volcanoes and earthquakes. Then, collectively, they overlay the information from each team, and independently write in their notebooks the team's process, the patterns found, and the debriefing whole group discoveries at the global scale, based on the localized assignments by type of feature, or by region. **Science and Engineering Practices:** 4. Analyzing and interpreting data 6. Constructing explanations (for science) and designing solutions (for engineering) 8. Obtaining, evaluating, and communicating information. Science and Engineering Performance Expectation: 4-ESS2-2
		b. Write brief summaries of texts and experiences using complete sentences and key words (e.g., from notes or graphic organizers).	b. Write increasingly concise summaries of texts and experiences using complete sentences and key words (e.g., from notes or graphic organizers).	b. Write clear and coherent summaries of texts and experiences using complete and concise sentences and key words (e.g., from notes or graphic organizers).	**Applying ELD Standards to Science** In classrooms where engineering and science activities support student learning of engineering and science practices, students engage in design and problem solving from multiple perspectives. As students conduct investigations, they record information as evidence to support their conclusions. Teacher modeling and student independent practice support the use of different formats of graphic organizers for data entry, interpretation and analysis. In tandem with conceptual development, students analyze information about structures of plants and animals in nature, or use multi-media simulations to observe function and structure relationships. In the process, ELs experience different forms of communicating information in science. They also sequence interactions into flow charts and diagrams to represent motion, and transfer of energy. **Sample Science Content Example** For example, students notice that a car light on an animal at night reveals the animal's shining eyes. To explain this phenomenon students observe the structure and function of the human eye, and compare it to those of other organisms. They may create tables with brief descriptions that characterize the placement of the eyes and the rationale for it (i.e. side placement allows animals to see both in front and behind, so as to be aware of predators). A virtual dissection of a cow's eye will show the 'abalone looking backing' that animals such as cows and deer have, which allows them to see better at night, Then, using arrows and concise sentences, they may illustrate and describe how light enters the human eye, as compared to a deer's eye, and use evidence to support their claims **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 3. Planning and carrying out investigations 4. Analyzing and interpreting data 6. Constructing explanations (for science) and designing solutions (for engineering) 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information. Science and Engineering Performance Expectations: 4-4LS1-1 and 4-PS4-2

CA ELD Standards Sample Grade Level (4) / Part I Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
C. Productive	11. Supporting opinions	a. Support opinions by expressing appropriate/accurate reasons using textual evidence (e.g., referring to text) or relevant background knowledge about content, with substantial support.	a Support opinions or persuade others by expressing appropriate/accurate reasons using some textual evidence (e.g., paraphrasing facts) or relevant background knowledge about content, with moderate support.	a. Support opinions or persuade others by expressing appropriate/accurate reasons using detailed textual evidence (e.g., quotations or specific events from text) or relevant background knowledge about content, with light support.	**Applying ELD Standards to Science** In science and engineering, students share information to ask questions and plan investigations, collect data and analyze it, while beginning to make claims about phenomena or conclusions using evidence from their investigation. These behaviors, modeled by the teacher and reinforced in a learning environment that acknowledges the value of making mistakes and having differences of opinion, allow for practice of nascent argumentation, and accuracy in evidence gathering to provide reasonable justifications to their claims. Teacher think-aloud further reinforces these practices. **Sample Science Content Example** For example, examining layers of soil with different evidence of change through time, students ask questions about the layers. They work in pairs to determine the order of events in the layers and the type of evidence that each provides. Ensuing investigations and reading connects fossil fuel sources, their use and potential hazards to the environment, opening the discourse for argumentation and interpretations, engaging students in the art of persuasion, using evidence and gathering more information to corroborate their position and claims. **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 4. Analyzing and interpreting data 6. Constructing explanations (for science) and designing solutions (for engineering) 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information. Science and Engineering Performance Expectations: 4-ESS1-1 and 4-ESS3-1
		b. Express ideas and opinions or temper statements using basic modal expressions (e.g., can, will, maybe).	b. Express attitude and opinions or temper statements with familiar modal expressions (e.g., maybe/probably, can/must).	b. Express attitude and opinions or temper statements with nuanced modal expressions (e.g., probably/certainly, should/would) and phrasing (e.g., In my opinion . . .).	**Applying ELD Standards to Science** In science and engineering, students share information to ask questions and plan investigations, collect data and analyze it, while beginning to make claims about phenomena or conclusions using evidence from their investigation. These behaviors, modeled by the teacher and reinforced in a learning environment that acknowledges the value of making mistakes, allow for practice of nascent argumentation, and accuracy in evidence gathering to provide reasonable justifications to their claims. Teacher think-aloud further reinforces these practices. **Sample Science Content Example** For example, following modeling of the Earth's layers, ensuing investigations and reading connected to fossil fuel sources, their use and potential hazards to the environment, opens the discourse for argumentation and interpretations, engaging students in the art of persuasion, using evidence and gathering more information, such as quantitative relative measures of impact from fossil fuel use to corroborate their position, express their ideas with the needed emphasis and expressions. **Science and Engineering Practices** 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations (for science) and designing solutions (for engineering) 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information Science and Engineering Performance Expectation: 4-ESS3-1

CA ELD Standards Sample Grade Level (4) / Part I Interacting in Meaningful Ways

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
C. Productive	12. Selecting language resources	a. Use a select number of general academic and domain-specific words to create precision while speaking and writing.	a. Use a growing number of general academic and domain-specific words, synonyms, and antonyms to create precision and shades of meaning while speaking and writing.	a. Use a wide variety of general academic and domain-specific words, synonyms, antonyms, and figurative language to create precision and shades of meaning while speaking and writing.	**Applying ELD Standards to Science** In science and engineering, EL students work collaboratively in teams developing models to quantify criteria that are not easy to quantify (e.g., energy efficiency of a house design, effectiveness of a water filter) and collect data. In small groups, students compare different design solutions as they analyze the data and information gathered through experiments, interviews from invited guests, or other trustworthy resources. Students would use these data to generate design solutions that meet the criteria or needs in order to optimize a given design. Students need to refer to details and examples from scientific resources and illustrated texts, their notes and journals, or other sources to explain with precision (and better understand through discussion) inferences they've made, events, procedures, ideas, and concepts. **Sample Science Content Example** For example, they may work on models of rates of erosion under different conditions, using erosion tables, real-world data from local mud slides after a storm, images of effects of weathering and erosion, and charts of collected data during their group investigations. They need to use specific language while measuring their tested models and results, and recording and discussing their ideas with others; such as to the slope of the table, the quantitative data units used for time, weight and volume of material being eroded by water. They clarify to others their ideas for the process, ensuring the team work is productive, accurate and testing the questions inherent in the investigation and in creating solutions to flood-related problems in their scenarios and/or local communities. **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 3. Planning and carrying out investigations 4. Analyzing and interpreting data 6. Constructing explanations (for science) and designing solutions (for engineering) 8. Obtaining, evaluating, and communicating information. Science and Engineering Performance Expectations: 3-5-ETS1-2 and 4ESS2-1
		b. Select a few frequently used affixes for accuracy and precision (e.g., She walks, I'm unhappy).	b. Select a growing number of frequently used affixes for accuracy and precision (e.g., She walked. He likes . . . , I'm unhappy).	b. Select a variety of appropriate affixes for accuracy and precision (e.g., She's walking. I'm uncomfortable. They left reluctantly).	**Applying ELD Standards to Science** In science and engineering students plan and carry out investigations, producing data as evidence for explanations of phenomena or for testing a designed solution. As part of the scientific practices, they ask questions, design and use models, use mathematical and computational thinking, and obtain, evaluate and communicate information about phenomena, processes and solutions both orally and in writing. **Sample Science Content Example** For example, as the teacher and students engage in engineering design, they need to and identify the most critical criteria and constraints about a given challenge, such as building a sequence of moving objects that uses at least one of each of the types of simple machines - lever (ramp), wheel and axel and pulley - to make a bell ring. Students are given a set of the same materials: cardboard, toy cars, cups, string, balls and a bell. They design models and collaboratively analyze the trade-offs they may have to make in their designs. Throughout the process, students record data in their notebooks and prepare to make presentations to their peers. They also are required to explain who contributed to which part of the model. In so doing, they need to properly use affixes expressing actions and who did what portion of the task. **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 3. Planning and carrying out investigations 6. Constructing explanations (for science) and designing solutions (for engineering) 8. Obtaining, evaluating, and communicating information. Science and Engineering Performance Expectations: 4-PS3-4 and 3-5-ETS1-2

CA ELD Standards Sample Grade Level (4) / Part II Learning About How English Works

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
A. Structuring Cohesive Texts	1. Understanding text structure	Apply basic understanding of how different text types are organized to express ideas (e.g., how a narrative is organized sequentially with predictable stages versus how arguments are organized around ideas) to comprehending texts and writing basic texts.	Apply growing understanding of how different text types are organized to express ideas (e.g., how a narrative is organized sequentially with predictable stages versus how arguments are structured logically around reasons and evidence) to comprehending texts and writing texts with increasing cohesion.	Apply increasing understanding of how different text types are organized to express ideas (e.g., how a historical account is organized chronologically versus how arguments are structured logically around reasons and evidence) to comprehending texts and writing cohesive texts.	**Applying ELD Standards to Science** In a science and engineering classroom, students conduct short research projects to build knowledge through investigations, while organizing their ideas in journals for reference, evidence gathering, refining of concepts and reporting. The different types of language representation in science may include simulations, videos, diagrams, charts, tables, informational narrative, graphics and labeled illustrations depicting processes, structures and relationships - among others. EL students increase understanding of text by using it in context with the content and investigations, and by having explicit instruction about the organization of the text and its purpose. **Sample Science Content Example** For example, as students conduct observations of images of various types of animals to identify features for survival, the teacher may create a “T-chart” for students to write the name of the animal on one column, while writing descriptive characteristics for each animal on the other column. In this manner, students are able to reference evidence about a particular animal much quicker than if the text had been written in narrative format. Then, in completing a challenge to build a model of an organism that meets certain criteria, students would use a chronological writing format to be able to have their model replicated by others. "First, you cut...; then, you use ... to make... ; finally, put together ... in order to represent... of the organism." **Science and Engineering Practices** 4. Analyzing and interpreting data 6. Constructing explanations (for science) and designing solutions (for engineering) 8. Obtaining, evaluating, and communicating information. Science and Engineering Performance Expectation:4-LS1-1
	2. Understanding cohesion	a. Apply basic understanding of language resources for referring the reader back or forward in text (e.g., how pronouns refer back to nouns in text) to comprehending texts and writing basic texts.	a. Apply growing understanding of language resources for referring the reader back or forward in text (e.g., how pronouns or synonyms refer back to nouns in text) to comprehending texts and writing texts with increasing cohesion.	a. Apply increasing understanding of language resources for referring the reader back or forward in text (e.g., how pronouns, synonyms, or nominalizations refer back to nouns in text) to comprehending texts and writing cohesive texts.	**Applying ELD Standards to Science** In science and engineering classrooms, teachers facilitate close reading and inquiry with texts, by chunking paragraph texts –and distributing different sections to teams in order to “jigsaw” the information on the text. The selection of texts needs to have relevant and engaging events related to the concept, such as floods and erosion, and include data gathered and written through erosion investigations from their teams. Each pair of students analyzes the assigned section, and as a team, they re-construct orally their understanding, to then write a collective summary of the article or data interpretations in their journals. **Sample Science Content Example** For example, they may read in the book: “the group conducted an investigation about erosion”, while the teacher may restate, or bring to their attention that “the group investigated about erosion.” To build more detail in their reporting about erosion tables with or without preventive strategies, students may say: “There was a lot of erosion on the model of land from flooding it without any preventive strategies” and as they compare models with those using preventing strategies, they may say and write: “The floods with preventive strategies eroded the model of land less”. **Science and Engineering Practices** 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations (for science) and designing solutions (for engineering) 8. Obtaining, evaluating, and communicating information. Science and Engineering Performance Expectation: 4-ESS2-1

CA ELD Standards Sample Grade Level (4) / Part II Learning About How English Works

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
A. Structuring Cohesive Texts		b. Apply basic understanding of how ideas, events, or reasons are linked throughout a text using a select set of everyday connecting words or phrases (e.g., first/next, at the beginning) to comprehending texts and writing basic texts.	b. Apply growing understanding of how ideas, events, or reasons are linked throughout a text using a variety of connecting words or phrases (e.g., for example, in the first place, as a result, on the other hand) to comprehending texts and writing texts with increasing cohesion.	b. Apply increasing understanding of how ideas, events, or reasons are linked throughout a text using an increasing variety of academic connecting and transitional words or phrases (e.g., consequently, specifically, however, moreover) to comprehending texts and writing cohesive texts.	**Applying ELD Standards to Science** In science and engineering classrooms, teachers make consistent and purposeful use of 'sentence frames' to facilitate visible language references, while modeling their use and the corresponding conditions under which each can be used. For example, to express cause: because, when…; to express condition, "if… then"; "provided that …" or "what if we …", to conclude: "In summary", etc. When reading text closely, the teacher explicitly identifies and models the use of transitional words or phrases, and posts them onto a word wall by utility categories as reference. **Sample Science Content Example** For example, as students test how systematic increase of weights can affect the speed of an object sliding down a ramp, they also read about the engineering behind roads, with concepts such as comparing speeds posted on freeways that are fast vs. speed on hilly roads or mountain crossing freeways, opening opportunities for nascent argumentation and student interpretation of real-world scenarios in context with the science and engineering content they are learning. The students may ask: "what if we add one weight at a time?" Or, they may comment "If we change the slope, we need to keep the weight the same", or find a relationship and report: "because the weight increased, the car moved faster downhill on the flat ramp". Through frequent opportunities to use transitional words students are better prepared to negotiate which variables they need to control or manipulate, and how to interpret information to use it as evidence in their claim building, as well as to connect their models and investigations to real-world situations.
B. Expanding and Enriching Texts	3. Using verbs and verb phrases	Use a variety of verb types (e.g., doing, saying, being/having, thinking/feeling), tenses (e.g., present, past, future, simple, progressive) appropriate to the text type and discipline (e.g., simple past and past progressive for recounting an experience) on familiar topics.	Use various verb types (e.g., doing, saying, being/having, thinking/feeling, reporting), tenses (e.g., present, past, future, simple, progressive, perfect) appropriate to the task, text type, and discipline (e.g., simple present for literary analysis) on an increasing variety of topics.	Use various verb types (e.g., doing, saying, being/having, thinking/feeling, reporting), tenses (e.g., present, past, future, simple, progressive, perfect) appropriate to the task, text type, and discipline (e.g., the present perfect to describe previously made claims or conclusions) on a variety of topics.	**Applying ELD Standards to Science** In science and engineering, EL students work in pairs or small groups to conduct investigations and brief research projects, sharing their findings, questions and interpretations with peers or the whole class via oral or written reports. The teacher models, the use of the present perfect form of the verb, as a format that more accurately describes investigations done over time and allows for more objective reporting in science. **Sample Science Content Example** For example, as students report testing how to attach and secure a model of a house made of straws, clay and pins, to resist an 'earthquake' from a shake table built to test their designs, the teacher models and records on the board ways students may report their steps in their design process (i.e. our team has completed three trials. We have tested two types of attachments. So far, we have found that...) **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations (for science) and designing solutions (for engineering) 8. Obtaining, evaluating, and communicating information.
	4. Using nouns and noun phrases	Expand noun phrases in simple ways (e.g., adding a sensory adjective to a noun) in order to enrich the meaning of sentences and add details about ideas, people, things, and the like.	Expand noun phrases in a variety of ways (e.g., adding comparative/ superlative adjectives to noun phrases or simple clause embedding) in order to enrich the meaning of sentences and add details about ideas, people, things, and the like.	Expand noun phrases in an increasing variety of ways (e.g., adding comparative/superlative and general academic adjectives to noun phrases or more complex clause embedding) in order to enrich the meaning of sentences and add details about ideas, people, things, and the like.	**Applying ELD Standards to Science** In science and engineering, EL students conduct short research projects to build knowledge through investigation. They engage in collaborative conversations about the topic, gather relevant information from print and digital sources, take notes and categorize information, use credible and relevant sources to provide evidence, and represent their research in writing and through multimedia. **Sample Science Content Example** For example, while looking at the Mercalli scale of damage to buildings according to how much evidence of damage exists, the students may refer to the Richter scale value for comparison, and use their own language to describe and compare the data: "When the quake is weaker – like on a scale 2 in the Richter, there is no damage. When the quake is stronger, within the range in the Richter of 6-8, there is major damage. The strongest quake in Alaska did not do too much damage because not many people lived there." **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations (for science) and designing solutions (for engineering) 8. Obtaining, evaluating, and communicating information. Science and Engineering Performance Expectation: 4-ESS3-2

CA ELD Standards Sample Grade Level (4) / Part II Learning About How English Works

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
B. Expanding and Enriching Texts	5. Modifying to add details	Expand sentences with simple adverbials (e.g., adverbs, adverb phrases, prepositional phrases) to provide details (e.g., time, manner, place, cause) about a familiar activity or process.	Expand sentences with an increasing variety of adverbials (e.g., adverbs, adverb phrases, prepositional phrases) to provide details (e.g., time, manner, place, cause) about a familiar or new activity or process.	Expand sentences with a variety of adverbials (e.g., adverbs, adverb phrases and clauses, prepositional phrases) to provide details (e.g., time, manner, place, cause) about a variety of familiar and new activities and processes.	**Applying ELD Standards to Science** In science and engineering students plan and carry out investigations, producing data as evidence for explanations of phenomena or for testing a designed solution. As part of the scientific practices, they ask questions, design and use models, use mathematical and computational thinking, and obtain, evaluate and communicate information about phenomena, processes and solutions both orally and in writing. In order to more accurately describe details in their investigations, or to interpret information in texts, the teacher models how to identify and use adverbs. **Sample Science Content Example** For example, as students build and test a mechanical model to test how the speed of an object relates to the energy in the object, and they have been given a set of materials and constraints for their design, the teacher guides students to be able to identify specific details in sections of the design and their purpose by using descriptive language (i.e., when we pushed the car gently - (manner), it only-(manner) traveled 5 ft (quantity). Then (time), when we pushed the car harder (manner), it traveled 10 ft. (quantity). We marked on the ground the starting and finishing location with tape so we could measure how much (quantity) distance there was from here to there (place) (showing an illustration where the start and ending locations are). We decided to try it again (time) on carpeting (circumstance) to compare the results… **Science and Engineering Practices** 1. Asking questions (for science) and defining problems (for engineering) 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations (for science) and designing solutions (for engineering) 8. Obtaining, evaluating, and communicating information. Science and Engineering Performance Expectation: 4-PS3-1
C. Connecting and Condensing Ideas	6. Connecting ideas	Combine clauses in a few basic ways to make connections between and join ideas (e.g., creating compound sentences using and, but, so).	Combine clauses in an increasing variety of ways (e.g., creating compound and complex sentences) to make connections between and join ideas, for example, to express a reason (e.g., He stayed at home on Sunday to study for Monday's exam) or to make a concession (e.g., She studied all night even though she wasn't feeling well).	Combine clauses in a wide variety of ways (e.g., creating compound and complex sentences) to make connections between and join ideas, for example, to express a reason (e.g., He stayed at home on Sunday because he had an exam on Monday), to make a concession (e.g., She studied all night even though she wasn't feeling well), or to link two ideas that happen at the same time (e.g., The students worked in groups while their teacher walked around the room).	**Applying ELD Standards to Science** In science and engineering students plan and carry out investigations, producing data as evidence for explanations of phenomena or for testing a designed solution. As part of the scientific practices, they ask questions, design and use models, use mathematical and computational thinking, and obtain, evaluate and communicate information about phenomena, processes and solutions both orally and in writing. Also, as part of science and engineering practices, building connections and explaining to others how things relate to one another is part of the discourse. ELs at first might use oral language and common every day terminology to do so, but as they engage in use of the academic language through frequent and meaningful investigations, they can apply academic language to each new context in writing and with greater complexity. Modeling and think aloud by the teacher will facilitate this process, making explicit how ideas that show connectivity can be shared. **Sample Science Content Example** For example, as students provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents, students discourse surrounding their investigations with circuits and building a model to make a doorbell ring may include combining clauses in the following ways: "The doorbell did not ring, even though the switch was closed." (concession building) "We put two batteries on the circuit because one barely made it work." (reason) "We tested how long it would last on, while we wrote our notes." (simultaneity) "When we connect all the wires, the battery, the switch and the bell, then it rings." (reason). **Science and Engineering Practices** 3. Planning and carrying out investigations 4. Analyzing and interpreting data 6. Constructing explanations (for science) and designing solutions (for engineering) 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information. Science and Engineering Performance Expectation: 4-PS3-2

CA ELD Standards Sample Grade Level (4) / Part II Learning About How English Works

	ELD Standard	Emerging	Expanding	Bridging	Applying ELD Standards to Science
C. Connecting and Condensing Ideas	7. Condensing ideas	Condense ideas in simple ways (e.g., by compounding verbs, adding prepositional phrases, or through simple embedded clauses or other ways of condensing as in, This is a story about a girl. The girl changed the world. ∟This is a story about a girl who changed the world) to create precise and detailed sentences.	Condense ideas in an increasing variety of ways (e.g., through various types of embedded clauses and other ways of condensing, as in, Organic vegetables are food. They're made without chemical fertilizers. They're made without chemical insecticides)∟ Organic vegetables are foods that are made without chemical fertilizers or insecticides) to create precise and detailed sentences.	Condense ideas in a variety of ways (e.g., through various types of embedded clauses, ways of condensing, and nominalization as in, They destroyed the rain forest. Lots of animals died ∟ The destruction of the rain forest led to the death of many animals) to create precise and detailed sentences.	[No sample examples for Standard 7.]