An Introduction to Designated and Integrated English Language Development

March 22, 2019
CABE Conference
Long Beach, California
Presentation Goals

1. Provide an overview on the relationship of the California English Language Development Standards (CA ELD Standards) to the California state standards for English language arts (ELA), math, and science.

2. Provide insight on how the CA ELD Standards can be utilized to support the language and subject content area learning for English learners.
Castañeda v. Pickard 1981

Dual Obligation
• Overcome language barriers
• Recoup academic deficits that may be incurred while learning English

Three Prongs
• Program is based on sound educational theory
• Adequate resources are provided to fully implement the theory
• An evaluation of the strategies and resources to show efficient and effective educational practice
CA ELD Standards Correspond to State Content Standards

- ELD standards must “align with” state content and achievement standards in math, reading/language arts and science
  Every Student Succeeds Act 1111[b][1][F]
- CA ELD standards “shall be comparable in rigor and specificity to the standards for English language arts…the standards for mathematics…, and the standards for science…”
  (Education Code [EC] Section 60811)
- Assessment for initial identification and summative assessment “shall be aligned with the standards for English language development adopted by the state board…” (EC sections 60810[c][5], 60810[e][7])
English Learner Roadmap Policy

Reflects the current national research consensus on second language learning, bilingualism, program effectiveness, and policy research

Includes:
- Vision
- Mission
- Four principles
Stop and Smell the Roses

• If someone said this to you, what are they trying to tell you?
• Turn to a neighbor and discuss.
• Popcorn!
ELA/ELD Framework
Circles of Implementation
CA ELD Standards Amplify Content Standards

CA ELD Standards

Using English Purposefully:
- Describing, explaining, persuading, informing, justifying, negotiating, entertaining, retelling, etc.

Meaningful Interaction:
- Collaborating with others
- Interpreting meaning
- Producing meaningful messages

Knowledge of Language:
- Structuring cohesive texts
- Expanding and enriching ideas
- Combining and condensing ideas

The Why: Purposes

The How: Processes

The What: Resources
## Proficiency Level Descriptors for CA ELD Standards

<table>
<thead>
<tr>
<th>Student Capacities</th>
<th>ELD Proficiency Level Continuum</th>
<th>Lifelong Language Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emerging</td>
<td>Expanding</td>
</tr>
<tr>
<td></td>
<td>Overall Proficiency</td>
<td>Overall Proficiency</td>
</tr>
<tr>
<td>Native Language</td>
<td>English learners enter the Emerging level having limited receptive and productive English skills. As they progress through the Emerging level, they start to respond to more varied communication tasks using learned words and phrases with increasing ease.</td>
<td>As English learners progress through the Expanding level, they move from being able to refashion learned phrases and sentences in English to meet their immediate communication and learning needs toward being able to increasingly engage in using the English language in more complex, cognitively demanding situations.</td>
</tr>
<tr>
<td></td>
<td>Students who have reached “proficiency” in the English language (as determined by state and/or local criteria) continue to build increasing breadth, depth, and complexity in comprehending and communicating in English in a wide variety of contexts.</td>
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</tr>
</tbody>
</table>

### High-Level Thinking with Linguistic Support

- **Substantial**: Students at the early stages of the Emerging level can engage in complex, cognitively demanding social and academic activities requiring language when provided substantial linguistic support; as they develop cognitive flexibility and ease with understanding and using English, support may be moderate or light for familiar tasks or topics.
- **Moderate**: Students at the early stages of the Expanding level can engage in complex, cognitively demanding social and academic activities requiring language when provided moderate linguistic support; as they develop increasing ease with understanding and using English in a variety of contexts, support may be light for familiar tasks or topics.
- **Light**: Students at the early stages of the Bridging level can engage in complex, cognitively demanding social and academic activities requiring language when provided light linguistic support; as they develop increasing ease with understanding and using highly technical English, support may not be necessary for familiar tasks or topics using everyday English.
- **Occasional**: Students who have exited the Bridging level benefit from occasional linguistic support in their ongoing learning of English.
# Proficiency Level Descriptors

## ELD Proficiency Level Continuum

<table>
<thead>
<tr>
<th>Mode of Communication</th>
<th>Emerging</th>
<th>Expanding</th>
<th>Bridging</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collaboration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Express basic personal and safety needs and ideas, and respond to questions on social and academic topics with gestures and words or short phrases.</td>
<td>Express basic personal and safety needs and ideas, and respond to questions on social and academic topics with phrases and short sentences.</td>
<td>Express a variety of personal needs, ideas, and opinions and respond to questions using short sentences.</td>
<td>Express increasingly complex feelings, needs, ideas, and opinions in a variety of settings; respond to questions using extended and more elaborate discourse.</td>
</tr>
<tr>
<td>Use basic social conventions to participate in conversations</td>
<td>Participate in simple, face-to-face conversations with peers and others.</td>
<td>Initiate simple conversations on social and academic topics.</td>
<td>Initiate and sustain dialogue on a variety of grade-level academic and social topics.</td>
</tr>
<tr>
<td><strong>Interpretive</strong></td>
<td>Comprehend frequently occurring words and phrases in immediate physical surroundings.</td>
<td>Comprehend a sequences of information on familiar topics as presented through stories and face-to-face conversations.</td>
<td>Comprehend detailed information with fewer context clues on unfamiliar topics.</td>
</tr>
<tr>
<td>Read very brief grade-appropriate text with simple sentences and familiar vocabulary, supported by graphics and pictures.</td>
<td>Read brief grade-appropriate text with simple sentences, supported by graphics and pictures.</td>
<td>Read increasingly complex grade-level text while relying on context and prior knowledge to obtain meaning from print.</td>
<td>Comprehend concrete and abstract topics and begin to recognize language subtleties in a variety of communication settings.</td>
</tr>
<tr>
<td>Comprehend familiar words, phrases, and questions drawn from content areas.</td>
<td>Demonstrate understanding of words and phrases from previously learned content material.</td>
<td>Read more complex text supported by graphics or pictures.</td>
<td>Read with limited comprehension difficulty, a variety of grade-level and technical text in all content areas.</td>
</tr>
<tr>
<td><strong>Productive</strong></td>
<td>Produce basic statements and ask questions in direct informational exchanges on familiar and routine subjects.</td>
<td>Produce sustained informational exchanges with others on an expanding variety of topics.</td>
<td>Produce, initiate, and sustain extended interactions tailored to specific purposes and audiences.</td>
</tr>
<tr>
<td>Express ideas using visuals such as drawings, charts, or graphic organizers.</td>
<td>Express ideas using information and short responses within structured contexts.</td>
<td>Write and express ideas to meet most social and academic needs through the recombination of learned vocabulary and structures with support.</td>
<td>Write and express ideas to meet increasingly complex academic demands for specific purposes and audiences.</td>
</tr>
<tr>
<td>Write or use familiar words and phrases related to everyday and academic topics.</td>
<td>Write or use expanded vocabulary drawn from academic content areas.</td>
<td>Write and express ideas to meet increasingly complex academic demands for specific purposes and audiences.</td>
<td>Produce, initiate, and sustain spontaneous interactions on a variety of topics.</td>
</tr>
</tbody>
</table>

*At the early stages of the Emerging level, students are able to perform the following tasks: Upon exit from the Emerging level, students are able to perform the following tasks: At the early stages of the Expanding level, students are able to perform the following tasks: Upon exit from the Expanding level, students are able to perform the following tasks: At the early stages of the Bridging level, students are able to perform the following tasks: Upon exit from the Bridging level, students are able to perform the following tasks:*
<table>
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<td><strong>Emerging</strong></td>
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<tr>
<td>At the early stages of the Emerging level, students are able to perform the following tasks:</td>
<td></td>
</tr>
<tr>
<td>Apply to their learning of English an emerging awareness of:</td>
<td></td>
</tr>
<tr>
<td>• differences and similarities between their native language and English;</td>
<td></td>
</tr>
<tr>
<td>• ways in which different kinds of language are appropriate for different tasks, purposes, and audiences:</td>
<td></td>
</tr>
<tr>
<td>• how to intentionally and purposefully use mostly everyday a limited range of vocabulary, phrases, and memorized statements and questions in English related to familiar topics.</td>
<td></td>
</tr>
<tr>
<td><strong>Expanding</strong></td>
<td></td>
</tr>
<tr>
<td>At the early stages of the Expanding level, students are able to perform the following tasks:</td>
<td></td>
</tr>
<tr>
<td>Apply to their learning of English an emerging awareness of:</td>
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<tr>
<td>• differences and similarities between their native language and English;</td>
<td></td>
</tr>
<tr>
<td>• ways in which language may be different based on task, purpose, and audience;</td>
<td></td>
</tr>
<tr>
<td>• how to intentionally and purposefully use mostly everyday vocabulary, and an expanding range of general academic and domain-specific vocabulary in English related to familiar topics;</td>
<td></td>
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<tr>
<td>• how to extend discourse in a variety of ways in a range of conversations;</td>
<td></td>
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<tr>
<td>• how to recognize language differences, engage in some self-monitoring, and adjust oral and written language.</td>
<td></td>
</tr>
<tr>
<td><strong>Bridging</strong></td>
<td></td>
</tr>
<tr>
<td>At the early stages of the Bridging level, students are able to perform the following tasks:</td>
<td></td>
</tr>
<tr>
<td>Apply to their learning of English a sophisticated awareness of:</td>
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</tr>
<tr>
<td>• differences and similarities between their native language and English;</td>
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<tr>
<td>• ways in which language may be different based on task, purpose, and audience;</td>
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<tr>
<td>• how to intentionally and purposefully use a range of precise and varied grade-level general academic and domain-specific vocabulary in English related to new topics;</td>
<td></td>
</tr>
<tr>
<td>• how to extend grade-level academic discourse in a variety of ways in a range of conversations and written texts of varying lengths and complexities;</td>
<td></td>
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<tr>
<td>• how to recognize language differences, engage in some self-monitoring, and adjust oral and written language in a range of contexts across disciplines.</td>
<td></td>
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</table>

**Metalinguistic Awareness**

- Be comprehensible when using memorized or copied words or phrases.
- Produce English but may exhibit frequent errors in pronunciation, grammar, and writing conventions that often impede meaning.
- Produce English but may exhibit frequent errors in pronunciation, grammar, and writing conventions that sometimes impede meaning.
- Be comprehensible when using simple and some expanded sentences and discourse or texts.
- Produce English but may exhibit fairly frequent errors in pronunciation, grammar, and writing conventions that may sometimes impede meaning.
- Be comprehensible when using expanded sentences, discourse or texts.
- Produce English but may exhibit frequent errors in pronunciation, grammar, and writing conventions that usually do not impede meaning.
- Be comprehensible when using a variety of grade-level expanded discourse or texts.
- Produce English but may exhibit some minor errors in pronunciation, grammar, and writing conventions that do not impede meaning.

**Accuracy of Production**

**Using Foundational Literacy Skills**

- Native language and literacy should be assessed for potential transference to English language and literacy.
- Similarities between the native language and English should be highlighted.
- Differences between the native language and English should be highlighted.

**Fluency**

- Be comprehensible when using a variety of grade-level expanded discourse or texts.
- Produce English but may exhibit some minor errors in pronunciation, grammar, and writing conventions that do not impede meaning.
Native English

Designated ELD

Concepts in Subject Matter

Integrated ELD
Designated ELD

Designated ELD is a protected time during the regular school day where teachers use the CA ELD Standards as the focal standards.

- Build into and from content instruction
- Support English learners to develop the discourse practices, grammatical structures, and vocabulary
- Actively engage English learners in collaborative discussions
- Strong emphasis is on oral language development and some level of reading and writing tasks
- Attend to the proficiency levels for maximizing growth or progress
Principle Two: Intellectual Quality of Instruction and Meaningful Access

English learners engage in intellectually rich, developmentally appropriate learning experiences that foster high levels of English proficiency. These experiences integrate language development, literacy, and content learning as well as provide access for comprehension and participation through native language instruction and scaffolding. English learners have meaningful access to a full standards-based and relevant curriculum and the opportunity to develop proficiency in English and other languages.
Integrated ELD

• It is language development instruction provided throughout the day and in each of the disciplines (teaching how to use language to articulate, finding knowledge of content)

• Content area teachers with English learners in their classrooms should use the CA ELD Standards in addition to ELA, math, science, history/social studies and other content standards to support English learners’ linguistic and academic development

• All teachers provide the language instruction and support needed for students to engage in rigorous coursework
## CA ELD Standards Related to the Content: ELA/Literacy

<table>
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<tr>
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<td>Offer opinions and negotiate with others in conversations using an expanded set of learned phrases (e.g., I agree with __ and __), as well as open responses in order to gain and/or hold the floor, provide counter-arguments, etc.</td>
<td>Offer opinions and negotiate with others in conversations using a variety of learned phrases (e.g., That’s a good idea, but __), as well as open responses in order to gain and/or hold the floor, provide counter-arguments, elaborate on an idea, etc.</td>
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### CA CCSS ELA/Literacy

#### Speaking and listening Standards 3.1,6

1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others’ ideas and expressing their own clearly.

   a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

   b. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).

   c. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

   d. Explain their own ideas and understanding in light of the conversation.

6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See grade 3 Language standards 1 and 3 for specific expectations.)

#### Language Standards 3.1,6

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

   a. Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.

   b. Form and use regular and irregular plural nouns.

   c. Use abstract nouns (e.g., childhood).

   d. Form and use regular and irregular verbs.

   e. Form and use the simple (e.g., I walked; I walk; I will walk) verb tenses.

   f. Ensure subject-verb and pronoun-antecedent agreement.

   g. Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.

   h. Use coordinating and subordinating conjunctions.

   i. Produce simple, compound, and complex sentences.

   j. Write legibly in cursive or joined italics, allowing margins and correct spacing between letters in a word and words in a sentence. CA

   k. Use reciprocal pronouns correctly. CA

6. Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships (e.g., After dinner that night we went looking for them).
CA ELD Standards Relationship
Math and Science Standards

- CA ELD Standards address the full range and rigor of the language demands across all grade levels for math and science:
  - Standards for Mathematical Practice
  - Science and Engineering Practices and Performance Expectations
- Relationship is strong but implicit
- Modifications to the CA ELD Standards are not necessary
- Study supported the development of the English Language Proficiency Assessments for California (ELPAC)
# CA ELD Standards Related to the Content: Mathematics

<table>
<thead>
<tr>
<th>CA ELD Standards</th>
<th>Grade 3</th>
<th>Part I</th>
<th>A.3</th>
<th>Offering Opinions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emerging</strong></td>
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<td></td>
<td></td>
<td>Offer opinions and negotiate with others in conversations using basic learned phrases (e.g., <em>I think ___</em>), as well as open responses in order to gain and/or hold the floor.</td>
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<td><strong>Expanding</strong></td>
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<td></td>
<td></td>
<td>Offer opinions and negotiate with others in conversations using an expanded set of learned phrases (e.g., <em>I agree with ___ and ___</em>), as well as open responses in order to gain and/or hold the floor, provide counter-arguments, etc.</td>
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<tr>
<td><strong>Bridging</strong></td>
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<td></td>
<td></td>
<td>Offer opinions and negotiate with others in conversations using a variety of learned phrases (e.g., <em>That’s a good idea, but ___</em>), as well as open responses in order to gain and/or hold the floor, provide counter-arguments, elaborate on an idea, etc.</td>
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</table>

<table>
<thead>
<tr>
<th>CA CCSS Mathematics Operations and Algebraic Thinking 3.OA.2, 5, 6</th>
<th>CA CCSS Mathematics Mathematical Practices 1, 3, 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Interpret whole-number quotients of whole numbers.</td>
<td>1. Make sense of problems and persevere in solving them.</td>
</tr>
<tr>
<td>5. Apply properties of operations as strategies to multiply and divide.</td>
<td>3. Construct viable arguments and critique the reasoning of others.</td>
</tr>
</tbody>
</table>

### Additional Information
- **CA ELD Standards:** These standards are part of the California English Language Development (ELD) framework designed to help students develop language skills necessary for academic success.
- **Grade 3:** This refers to the third grade level.
- **Part I:** This section likely includes foundational language skills.
- **A.3:** This standard focuses on the ability to offer opinions and negotiate in conversations.
- **Offering Opinions:** This standard requires students to express their thoughts and ideas, as well as engage in discussions with others.
- **CA CCSS Mathematics:** These standards are part of the Common Core State Standards for Mathematics, which outline what students should understand and be able to do in their study of mathematics.
- **Operations and Algebraic Thinking (3.OA.2, 5, 6):** These standards focus on the development of operations and algebraic thinking skills in third grade.
- **Mathematical Practices (1, 3, 6):** These standards emphasize the practices that students should engage in while learning mathematics, including constructing viable arguments and attending to precision.
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\begin{align*}
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\underline{9} & \\
3 & \\
\hline
\frac{9}{x} & = 3
\end{align*}
\]
## CA ELD Standards Related to the Content: Science

<table>
<thead>
<tr>
<th>CA ELD Standards</th>
<th>Grade 9–10</th>
<th>Part</th>
<th>C.12.a</th>
<th>Selecting Language Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emerging</strong></td>
<td></td>
<td></td>
<td></td>
<td>a. Use familiar general academic (e.g., temperature, document) and domain-specific (e.g., characterization, photosynthesis, society, quadratic functions) words to create clear spoken and written texts.</td>
</tr>
<tr>
<td><strong>Expanding</strong></td>
<td></td>
<td></td>
<td></td>
<td>a. Use an increasing variety of grade-appropriate general academic (e.g., dominate, environment) and domain-specific (e.g., characterization, photosynthesis, society, quadratic functions) academic words accurately and appropriately when producing increasingly complex written and spoken text.</td>
</tr>
<tr>
<td><strong>Bridging</strong></td>
<td></td>
<td></td>
<td></td>
<td>a. Use a variety of grade-appropriate general academic (e.g., anticipate, transaction) and domain-specific (e.g., characterization, photosynthesis, society, quadratic functions) academic words and phrases, including persuasive language, accurately and appropriately when producing complex written and spoken text.</td>
</tr>
</tbody>
</table>

### Next Generation Science Standards

#### Matter and Energy in Organisms and Ecosystems

**HS–LS1–6**

- **HS–LS1–6**. Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.
  
  *Clarification Statement: Emphasis is on using evidence from models and simulations to support explanations. [Assessment Boundary: Assessment does not include the detail of the specific chemical reactions or identification of macromolecules.]*

#### Science and Engineering Practices 2

- **Developing and Using Models**
  - Modeling in 9–12 builds on K–8 experiences and progresses to using, synthesizing, and developing models to predict and show relationships among variables between systems and their components in the natural and designed worlds.
  - Use a model based on evidence to illustrate the relationships between systems or between components of a system. (HS-LS1-5),(HS-LS1-7)
  - Develop a model based on evidence to illustrate the relationships between systems or components of a system. (HS-LS2-5)
6CO₂ + 6H₂O → C₆H₁₂O₆ + 6O₂

Sunlight energy

CO₂ = carbon dioxide
H₂O = water
Light energy is required
C₆H₁₂O₆ = glucose
O₂ = oxygen
Integrating the CA ELD Standards into K–12 Mathematics and Science Teaching and Learning

A Supplementary Resource for Educators
Implementing in Tandem the California English Language Development Standards, the California Common Core State Standards for Mathematics, and the Next Generation Science Standards for California Public Schools

Rachel Lagunoff
Pamela Spycher
Robert Linguanti
Cathy Carroll
Kathy DiRanna

December 16, 2015
## Integrating CA ELD Standards into Mathematics Teaching and Learning

### Grades 3, 4, and 5

#### CA ELD Standards

**Part I: Interacting in Meaningful Ways**

**A. Collaborative**

### 3. Offering Opinions

<table>
<thead>
<tr>
<th>Grade</th>
<th>Emerging</th>
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<th>Bridging</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Offer opinions and negotiate with others in conversations using basic learned phrases (e.g., <em>I think...</em>), as well as open responses in order to gain and/or hold the floor.</td>
<td>Offer opinions and negotiate with others in conversations using an expanded set of learned phrases (e.g., <em>I agree with X, and...</em>), as well as open responses in order to gain and/or hold the floor, provide counterarguments, and the like.</td>
<td>Offer opinions and negotiate with others in conversations using a variety of learned phrases (e.g., <em>That’s a good idea, but...</em>), as well as open responses in order to gain and/or hold the floor, provide counterarguments, elaborate on an idea, and the like.</td>
</tr>
<tr>
<td>4</td>
<td>Negotiate with or persuade others in conversations using basic learned phrases (e.g., <em>I think...</em>), as well as open responses, in order to gain and/or hold the floor.</td>
<td>Negotiate with or persuade others in conversations using an expanded set of learned phrases (e.g., <em>I agree with X, but...</em>), as well as open responses, in order to gain and/or hold the floor, provide counterarguments, and so on.</td>
<td>Negotiate with or persuade others in conversations using a variety of learned phrases (e.g., <em>That’s a good idea. However...</em>), as well as open responses, in order to gain and/or hold the floor, provide counterarguments, elaborate on an idea, and so on.</td>
</tr>
<tr>
<td>5</td>
<td>Offer opinions and negotiate with others in conversations using learned phrases (e.g., <em>I think X</em>), as well as open responses, in order to gain and/or hold the floor.</td>
<td>Negotiate with or persuade others in conversations using an expanded set of learned phrases (e.g., <em>I agree with X, but...</em>), as well as open responses, in order to gain and/or hold the floor, provide counterarguments, and so on.</td>
<td>Negotiate with or persuade others in conversations using a variety of learned phrases (e.g., <em>That’s an interesting idea. However...</em>), as well as open responses, in order to gain and/or hold the floor, provide counterarguments, elaborate on an idea, and so on.</td>
</tr>
</tbody>
</table>

### Applying ELD Standards to Mathematics

In making mathematical arguments and critiquing the reasoning of others, students need to connect and/or counter others’ ideas, using mathematical justification.

### Corresponding Standards for Mathematical Practice

- **MP.1** Make sense of problems and persevere in solving them.
- **MP.3** Construct viable arguments and critique the reasoning of others.
  - Understand and use stated assumptions, definitions, and previously established results in constructing arguments.
  - Justify their conclusions, communicate them to others, and respond to the arguments of others.
- **MP.6** Attend to precision.
  - Try to use clear definitions in discussion with others and in their own reasoning.

### Sample Mathematics/ELD Classroom Close-up

**4.NF.1:** Explain why a fraction a/b is equivalent to a fraction (n x a)/(n x b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

While using visual fraction models (MP.4) to explain the equivalence of fractions, students use definitions and previously established results to justify their reasoning, providing counterexamples as appropriate. During a whole-class discussion, students are asked to explain the error in a student’s reasoning that “6/8 is greater than 3/4 because 6 is greater than 3 and 8 is greater than 4.” During the discussion, students use common phrases as they attempt to use and justify alternative, correct ways to recognize that the fractions are equal. One student says: “I *agree that* comparing the numerators is a good way to check if fractions are equal, but that simple comparison only works when the denominators are equal. *I can show that 6/8 is equal to 3/4 by drawing a picture of 3/4 and cutting each fourth into two equal pieces.*”

### Sample-Specific Standards for Mathematical Practice

**MP.4** Model with mathematics.
### Integrating CA ELD Standards into Science Teaching and Learning
**Grades 9–10 and 11–12**

#### CA ELD Standards
**Part I: Interacting in Meaningful Ways**
**A. Collaborative**

<table>
<thead>
<tr>
<th>Grades</th>
<th>Emerging</th>
<th>Expanding</th>
<th>Bridging</th>
</tr>
</thead>
<tbody>
<tr>
<td>9–10</td>
<td>Negotiate with or persuade others in conversations using learned phrases (e.g., <em>Would you say that again? I think . . .</em>), as well as open responses to express and defend opinions.</td>
<td>Negotiate with or persuade others in conversations (e.g., to provide counter-arguments) using a growing number of learned phrases (<em>I see your point, but . . .</em>) and open responses to express and defend nuanced opinions.</td>
<td>Negotiate with or persuade others in conversations in appropriate registers (e.g., to acknowledge new information in an academic conversation but then politely offer a counterpoint) using a variety of learned phrases, indirect reported speech (e.g., <em>I heard you say X, and I haven’t thought about that before. However . . .</em>), and open responses to express and defend nuanced opinions.</td>
</tr>
<tr>
<td>11–12</td>
<td>Negotiate with or persuade others in conversations (e.g., ask for clarification or repetition) using learned phrases (e.g., <em>Could you repeat that please? I believe . . .</em>) and open responses to express and defend opinions.</td>
<td>Negotiate with and persuade others (e.g., by presenting counter-arguments) in discussions and conversations using learned phrases (e.g., You make a valid point, but my view is . . .) and open responses to express and defend nuanced opinions.</td>
<td>Negotiate with or persuade others in discussions and conversations in appropriate registers (e.g., to acknowledge new information and politely offer a counterpoint) using a variety of learned phrases (e.g., You postulate that X. However, I’ve reached a different conclusion on this issue.) and open responses to express and defend nuanced opinions.</td>
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#### Applying ELD Standards to Science
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.

#### Corresponding Science & Engineering Practices
7. Engaging in argument from evidence (HS-PS4-3)

#### Sample Science/ELD Classroom Close-up
Students research experimental evidence (phenomena could include resonance, interference, diffraction, or photoelectric effect) and present the evidence to support a claim and to explain how a theory is generally modified in light of new evidence (HS-PS4-3). The teacher guides students in a "four corners" strategy, in which all those who agree on an explanation gather in a corner to discuss the similarities in their argument and then produce a Venn diagram that illustrates those similarities. Each corner group will then pair with a corner group with a differing explanation, to try to persuade others that their ideas are reasonable and supported by appropriate evidence, using learned phrases to respectfully offer counterarguments or to elaborate on a peer’s idea.

#### Sample-Specific Standards for Science & Engineering Practices
4. Analyzing and interpreting data
Resources

• California English Language Development Standards
• California Common Core State Standards for English Language Arts
  and Literacy for History/Social Studies, Science, and Technical Subjects
• ELA/ELD Framework
  http://www.cde.ca.gov/ci/rl/cf/elaeldfrmwrksbeadopted.asp
• Integrating the CA ELD Standards into K–12 Mathematics and Science
  Teaching and Learning
  http://www.cde.ca.gov/sp/el/er/documents/fnl1516agmnteldstndab899.doc
• CA ELD Standards Professional Learning Module
  http://www.myboe.org/portal/default/Group/Viewer/GroupView?action=2&gid=2996
Resources

• California Common Core Mathematics

• Mathematics Framework
  https://www.cde.ca.gov/ci/ma/cf/mathfwchapters.asp

• Next Generation Science Standards
  https://www.cde.ca.gov/pd/ca/sc/ngssstandards.asp

• Science Framework
  https://www.cde.ca.gov/ci/sc/cf/scifwprepubversion.asp

• English Learner Roadmap
  https://www.cde.ca.gov/sp/el/rm/
Questions?
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