

**NGSS Science and Engineering
Practices with Corresponding
ELD Standards**

1st Grade

1. Asking questions and defining problems

Students will inquire, identify, predict, describe, and define

- Ask questions based on observations to find more information about the natural and/or designed world(s).
- Ask and/or identify questions that can be answered by an investigation.
- Define a simple problem that can be solved through the development of a new or improved object or tool

(NGSS Appendix F)

General Strategies for All Students

- Provide an engaging context that peaks student curiosity (discrepant event, interesting scenario, hands-on activity, relevant situation, authentic problem)
- Keep class chart for student questions
- Encourage student to ask questions based on the crosscutting concepts, e.g. *What patterns do I observe? What causes...? Which is faster? Hotter? Bigger? What are the parts of...? How can I make ... with ...? How does the shape of ... relate to its function? What is the same about ...? What changes do I observe?* (For more possible questions see <http://crosscutsymbols.weebly.com/>)
- Recast students' incomplete or flawed questions, *So what you're asking is...? You're question then is ...?*
- Brainstorm with students a list of questions based on a shared experience and then together sort them into "testable" and "non-testable" questions
- Provide a context (real or imaginary) for students to define a problem they can be solved through engineering, e.g., playground or classroom environment, class pet habitat, cafeteria, etc.

Corresponding ELD Standards

Part 1. Interacting in Meaningful Ways: A. Collaborative: 1. Exchanging information/ideas; B. Interpretive: 5. Listening actively

Emerging

PI.A.1 Contribute to conversations and express ideas by asking *yes-no* and *wh-* questions using gestures, words, and simple phrases.

PI.B.5 Demonstrate active listening to read-alouds and oral presentations by asking *yes-no* and *wh-* questions with oral sentence frames and substantial prompting and support.

Expanding

PI.A.1 Contribute to class, group, and partner discussions by asking questions.

PI.B.5 Demonstrate active listening to read-alouds and oral presentations by asking questions with oral sentence frames and occasional prompting and support.

Bridging

PI.A.1 Contribute to class, group, and partner discussions, by asking questions.

PI.B.5 Demonstrate active listening to read-alouds and oral presentations by asking detailed questions with minimal prompting and light support.

Emerging	Expanding and Bridging
<p>Sentence frames: <i>What is ..?</i> <i>What does ..?,</i> <i>Where is ...?</i> <i>When I ... why does...?</i> <i>When does ... ?</i> <i>How does ..?</i> <i>Why is ..?</i> <i>Why does...?</i> <i>I predict ...</i></p> <p>Questions/Prompts: <i>Which of these questions are you wondering about?</i> <i>Which of these parts do you want to change?</i> <i>Could ... be the problem you might solve?</i></p>	<p>Sentence frames: <i>I wonder...</i> <i>What would happen if...?</i> <i>What causes...?</i> <i>If I change ..., what will happen to ...?</i> <i>I predict ... because ...</i> <i>The problem we will solve is ...</i></p> <p>Questions/Prompts: <i>What questions do you have about...?</i> <i>What questions do you have about what you might change?</i> <i>What questions could you ask to find out...?</i> <i>What is the problem we are trying to solve?</i> <i>How might we solve this problem?</i> <i>What do you need to know about ...?</i></p>

2. Developing and using models

Students compare, develop, represent, describe, explain, and revise

- Distinguish between a model and the actual object, process, and/or events the model represents.
- Compare models to identify common features and differences.
- Develop and/or use a model to represent amounts, relationships, relate scales (bigger, smaller), and/or patterns in the natural and designed world(s).
- Develop a simple model based on evidence to represent a proposed object or tool.

(NGSS Appendix F)

General Strategies for All Students

- Provide examples of models of familiar objects, processes, and events for students to discuss and compare, e.g., *how plants grow, how sounds travel, how shadows change*
- Model for students how to develop and use models (e.g., *diagrams, drawings, physical replica, dioramas, dramatizations, storyboards*) to represent their developing ideas.
- Regularly have students draw models in their notebooks to use as artifacts for discussion. Encourage students to revise their models based on new information.
- Provide supports for students to share their models and ask each other questions in pairs or small groups:

Student A. What does your model show?

Student B. My model shows...

Student A. What does ... mean?

Student B. It shows ...

Corresponding ELD Standards

Part 1. Interacting in Meaningful Ways: A. Collaborative: 2. Interacting via written English; C. Productive 9. Presenting

Emerging	Expanding	Bridging
PI.A.2 Collaborate with teacher and peers on joint writing projects of short informational texts, using technology where appropriate for publishing, graphics, etc.	PI.A.2 Collaborate with peers on joint writing projects of longer informational texts, using technology where appropriate for publishing, graphics, etc.	PI.A.2 Collaborate with peers on joint writing projects of longer informational texts, using technology where appropriate for publishing, graphics, etc.
PI.C.9 Plan and deliver very brief oral presentations (e.g., describing a picture).	PI.C.9 Plan and deliver brief oral presentations (e.g., recounting an experience, describing an organism).	PI.C.9 Plan and deliver longer oral presentations (e.g., describing a science experiment).

Emerging	Expanding and Bridging
<p>Sentence frames: <i>The model shows ...</i> <i>The model doesn't show ...</i> <i>The parts of my model are ...</i></p>	<p>Sentence frames: <i>The model represents ...</i> <i>These models all have ...</i> <i>This model is different because ...</i> <i>I changed my model because ...</i> <i>My model shows how ... changes ...</i></p>
<p>Questions/Prompts:</p> <p><i>What does this model represent?</i> <i>What do you observe in this model? What don't you observe in this model?</i> <i>How might you act out ...?</i> <i>What could you add to your model to show...?</i> <i>Does this part mean?</i> <i>Make a drawing in your notebook to explain ...</i></p>	<p>Questions/Prompts:</p> <p><i>How is this model different than a real ...?</i> <i>What is the same about these models? What is different?</i> <i>How does the model help you understand ...?</i> <i>What doesn't it explain?</i> <i>What ideas could you add to your model?</i> <i>What changes could you make?</i> <i>What is another way you could show?</i> <i>Make a diagram to explain ...</i> <i>Based on what you know about ... make a model of the tool you would use to ...</i></p>

3. Planning and carrying out investigations

Students design, sequence, predict, evaluate, describe, organize, compare, classify, draw, label

- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question.
- Evaluate different ways of observing and/or measuring a phenomenon to determine which way can answer a question.
- Make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons.
- Make observations (firsthand or from media) and/or measurements of a proposed object, tool, or solution to determine if it solves a problem or meets a goal.
- Make predictions based on prior experiences.

(NGSS Appendix F)

General Strategies for all Students

- Model the process for planning an investigation in a class notebook.
- Explain the process of producing data and how data can be used as evidence. Use simple examples to demonstrate the difference between data and evidence.
- Teach a mini-lessons on ways to record and organize data in student science notebooks (e.g., T-charts, lists, technical drawings, labeling)
- Practice making predictions based on prior experiences, not guessing. Push students to provide a reason for their prediction.
- Introduce equipment and procedural words beforehand (*separate, pour, measure, etc.*) and post on a class word wall or chart with images.
- After coming to a class or group consensus on a procedure for an investigation, document the steps on the board with illustrations so that all students have access to them.
- Have students work in small groups. Encourage and make collaboration a focus.

Corresponding ELD Standards

Part 1. Interacting in Meaningful Ways A. Collaborative: 1. Exchanging information/ideas; C. Productive 10. Writing

Emerging

PI.A.1 Contribute to conversations and express ideas by asking and answering yes-no and wh- questions and responding using gestures, words, and simple phrases.

Expanding

PI.A.1 Contribute to class, group, and partner discussions by listening attentively, following turn-taking rules, and asking and answering questions.

Bridging

PI.A.1 Contribute to class, group, and partner discussions by listening attentively, following turn-taking rules, and asking and answering questions.

1st Grade NGSS Science and Engineering Practices with Corresponding ELD standards

Emerging PI.C.10 Write very short informational texts (e.g., a description of the materials) using familiar vocabulary collaboratively with an adult (e.g., joint construction of texts), with peers, and sometimes independently.	Expanding PI.C.10 Write short informational texts (e.g., an informative text on a process) collaboratively with an adult (e.g., joint construction of texts), with peers, and with increasing independence.	Bridging PI.C.10 Write longer informational texts (e.g., an informative text on a process) collaboratively with an adult (e.g., joint construction), with peers and independently.
<p>Sentence frames: <i>First, we will ...</i> <i>Next, we will ...</i> <i>Then, we will ...</i> <i>We could change</i> <i>I predict ... because ...</i> <i>I observe ...</i></p> <p>Questions/Prompts: <i>Are you trying to find out if...?</i> <i>Have you considered ...?</i> <i>What will you do first?</i> <i>Second?</i> <i>Will you need ...?</i> <i>Is this the part you will change?</i> <i>Is ... your goal?</i> <i>Will ... solve the problem?</i></p>	<p>Sentence frames: <i>If we change ... then ...</i> <i>We need to find out ...</i> <i>If ... then ...</i> <i>We will compare ... to ...</i> <i>I think ... is a good idea because ...</i> <i>I think we should change ... because ...</i></p> <p>Questions/Prompts: <i>What are you trying to find out?</i> <i>How could you find out...?</i> <i>What part will you change?</i> <i>Is there another way?</i> <i>What materials will you need?</i> <i>What is your goal?</i> <i>How do you know ... will solve the problem?</i> <i>How well does ... solve the problem?</i> <i>What would you do to make it better?</i></p>	

4. Analyzing and interpreting data

Students compare, represent, classify, sequence, analyze

- Record information (observations, thoughts, and ideas).
- Use and share pictures, drawings, and/or writings of observations.
- Use observations (firsthand or from media) to describe patterns and/or relationships in the natural and designed world(s) in order to answer scientific questions and solve problems.
- Compare predictions (based on prior experiences) to what occurred (observable events).
- Analyze data from tests of an object or tool to determine if it works as intended.

(NGSS Appendix F)

Strategies for All Students

- Model ways of recording data in a class notebook. Use a think-aloud to demonstrate how to determine what is relevant information.
- Use joint construction of text and drawings. Do a mini-lesson on technical drawing.
- Facilitate sharing and critiquing of student notebook entries.
- Introduce and use a set of agreed upon expectations for data organization.
- Use focus questions to drive the inquiry and response.
- Record students' predictions and return to them throughout the investigations.
- Introduce ways to organize data (graphs, charts, Venn Diagrams, graphic organizers)
- Provide sentence frames for oral and written discourse.
- Chart the data that students collect and model how to use that data to analyze whether an object or tool meets the students' goals.

Corresponding ELD Standards

Part I. Interacting in Meaningful Ways B. Interpretive 6. Reading/Viewing closely;

Part II. Learning about How English Works A. Structuring Cohesive Text 1. Understanding text structure

Emerging	Expanding	Bridging
PI.B.6 Describe ideas, phenomena (e.g., plan life-cycle), and text elements (e.g., main idea, events) based on understanding of a select set of grade-level texts and viewing of multimedia, with substantial support.	PI.B.6 Describe ideas, phenomena (e.g., <i>how earthworms eat</i>), and text elements (e.g., main idea, events) in greater detail based on understanding of a variety of grade-level texts and viewing of multimedia with moderate support.	PI.B.6 Describe ideas, phenomena (e.g., <i>sound*</i>), and text elements (e.g., central message, events) using key details based on understanding of a variety of grade-level texts and viewing of multimedia with light support.

1st Grade NGSS Science and Engineering Practices with Corresponding ELD standards

<p>Emerging</p> <p>P.II.A.1 Apply understanding of how different text types are organized to express ideas (<i>e.g. how data is organized within a text*</i>) to comprehending and composing texts in shared language activities guided by the teacher with peers, and sometimes independently.</p>	<p>Emerging</p> <p>P.II.A.1 Apply understanding of how different text types are organized to express ideas (<i>e.g. how graphics relate to text*</i>) to comprehending and writing texts in shared language activities guided by the teacher and with increasing independence.</p>	<p>Bridging</p> <p>P.II.A.1 Apply understanding of how different text types are organized predictably to express ideas (<i>e.g. compare the different ways data is represented in a text*</i>), to comprehending texts and writing texts in shared language activities guided by the teacher and independently.</p>
<p><i>*Modified to align with NGSS</i></p>		
<p>Sentence frames:</p> <p><i>I observe ...</i> <i>It looks ...</i> <i>It feels ...</i> <i>It smells ...</i> <i>It sounds like ...</i> <i>I think ...</i> <i>... reminds me of ...</i> <i>My picture shows ...</i></p> <p>Questions/Prompts:</p> <p><i>Do you observe ...?</i> <i>Is this a pattern?</i> <i>Are these the same or different?</i> <i>Do you think it means...?</i> <i>Start by drawing ...</i> <i>Make a diagram to show ...</i> <i>Does this mean your design works?</i></p>	<p>Sentence frames:</p> <p><i>A pattern I observe is...</i> <i>... and ... are similar because they both...</i> <i>... and ... are different because ...</i> <i>I think ... because ...</i> <i>I used to think ..., but now I think ...</i></p> <p>Questions/Prompts:</p> <p><i>What do you observe?</i> <i>What surprised you?</i> <i>Does this change what you think about ...?</i> <i>What patterns do you observe?</i> <i>Does ... answer the question ...?</i> <i>How does ... show that your design works?</i></p>	

5. Using mathematics and computational thinking

Students enumerate, measure, graph, estimate, describe, organize

- Decide when to use qualitative vs. quantitative data.
- Use counting and numbers to identify patterns in the natural and designed world(s).
- Describe, measure, and/or compare quantitative attributes of different objects and display the data using simple graphs.
- Use quantitative data to compare two alternative solutions to a problem.

(NGSS Appendix F)

General Strategies for all Students

- Discuss the ways students use math to describe, measure, and compare their observations, (e.g., *My plant had 2 leaves yesterday; today it has 3. Today the air is 20°C; that's warmer than yesterday.*)
- Model through a think-aloud when to use quantities (counting and numbers) to describe observations and when to use comparative terms (e.g., bigger, higher, more, less, darker, softer).
- Mini-lessons on measurement and graphs when appropriate
- Provide simple tables for students to record data as they test their designs. Discuss what the data show.

Corresponding ELD Standards

Part 1. Interacting in Meaningful Ways A. Collaborative: 8. Analyzing language choice; C. Productive 10. Writing

Emerging

PI.A.8 Distinguish how two different frequently used words (e.g., *large vs. small*) produce a different effect on the audience.

PI.C.10 Write very short informational texts (e.g., a description of an insect) using familiar vocabulary collaboratively with an adult (e.g., joint construction of texts), with peers, and sometimes independently.

Expanding

PI.A.8 Distinguish how two different words with similar meaning (e.g., *large vs. enormous*) produce shades of meaning and a different effect on the audience.

PI.C.10 Write short informational texts (e.g., an informative text on the life cycle of an insect) collaboratively with an adult (e.g., joint construction of texts), with peers, and with increasing independence.

Bridging

PI.A.8 Distinguish how multiple different words with similar meaning (e.g., *big, large, huge, enormous, gigantic*) produce shades of meaning and a different effect on the audience.

PI.C.10 Write longer informational texts (e.g., an informative text on the life cycle of an insect) collaboratively with an adult (e.g., joint construction of texts), with peers, and independently.

Emerging	Expanding and Bridging
<p>Sentence frames:</p> <p><i>We counted...</i> <i>We measured ...</i> <i>There are more/less ...</i> <i>The ... is bigger/smaller ...</i> <i>We found out that ...</i> <i>The graph/table shows ...</i></p> <p>Questions/Prompts:</p> <p><i>How many?</i> <i>How much?</i> <i>How long?</i> <i>How could you find out how many?</i> <i>How could you find out how long?</i> <i>How could you find the mass?</i> <i>Do you observe a pattern in these numbers?</i> <i>Do you think the pattern means ... or ...?</i> <i>Make a graph to show ...</i> <i>Does the graph mean?</i> <i>Is this a way to show ... ?</i> <i>Do the numbers mean that ...?</i> <i>Does the difference in ... mean that ...?</i></p>	<p>Sentence frames:</p> <p><i>We counted ... in order to ...</i> <i>We measured ... in order to ...</i> <i>We compared ... and ... to find out ...</i> <i>We were surprised that ...</i> <i>We can use the graph/table to show</i></p> <p>Questions/Prompts:</p> <p><i>How should you record your observations?</i> <i>How would you measure...?</i> <i>What could you compare...?</i> <i>How will you describe how ... are different?</i> <i>What patterns do you observe in these numbers?</i> <i>What do you think the pattern means?</i> <i>How could you show this using a graph?</i> <i>Compare these numbers. Why are they the same or different?</i> <i>If you changed ... do you think the numbers would be different?</i></p>

6. Constructing explanations and designing solutions

Students infer, explain, provide evidence, design, identify, apply, solve, compare

- Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.
- Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.
- Generate and/or compare multiple solutions to a problem.

(NGSS Appendix F)

General Strategies for all Students

- Mini-lesson on language structures and norms for engaging in academic discussions
- Writing frames for explanatory writing
- Start with diagrams and graphic organizers to formulate ideas
- Think-Pair-Share to encourage building on the ideas of others
- Introduce engineering design process
- Whole class or small groups make concept maps
- Use crosscutting concepts to think about science ideas with another lens.

Corresponding ELD Standards

Part 1. Interacting in Meaningful Ways A. Collaborative: 1. Exchanging Information/Ideas; C. Productive: 12. Selecting language resources; C. Productive 10. Writing

Emerging

PI.A.1 Contribute to conversations and express ideas by asking and answering *yes-no* and *wh-* questions and responding using gestures, words, and simple phrases.

PI.C.12 Recount experiences using key words. b.) Use a select number of general academic and domain-specific words to add detail (e.g., using the word *thorax* to refer to insect anatomy) while speaking and writing.

Expanding

PI.A.1 Contribute to class, group, and partner discussions by listening attentively, following turn-taking rules, and asking and answering questions.

PI.C.12 Recount experiences using complete sentences and key words. b.) Use a growing number of general academic and domain-specific words to add detail, create an effect (e.g., *suddenly*) while speaking and writing.

Bridging

PI.A.1 Contribute to class, group, and partner discussions by listening attentively, following turn-taking rules, and asking and answering questions.

PI.C.12 Recount experiences using increasingly detailed complete sentences and key words. b.) Use a wide variety of general academic and domain-specific words, synonyms, antonyms, and non-literal language to create an effect, precision, and shades of meaning while speaking and writing.

1st Grade NGSS Science and Engineering Practices with Corresponding ELD standards

<p>Emerging</p> <p>PI.C.10 Write very short informational texts (e.g., a description of an insect) using familiar vocabulary collaboratively with an adult (e.g., joint construction of texts), with peers, and sometimes independently.</p>	<p>Expanding</p> <p>PI.C.10 Write informational texts (e.g., an informative text on life cycle of an insect) collaboratively with an adult (e.g., joint construction of texts), with peers, and with increasing independence.</p>	<p>Bridging</p> <p>PI.C.10 Write longer informational texts (e.g., an informative text on the life cycle of insects) collaboratively with an adult (e.g., joint construction), with peers and independently.</p>
<p>Sentence frames:</p> <p><i>I observed ...</i> <i>I think ... because...</i> <i>We could solve the problem by ...</i> <i>The best way to solve the problem is ...</i></p> <p>Questions/Prompts: <i>Are you saying ...?</i> <i>Does ... mean that ...?</i> <i>Is ... an example of ...?</i> <i>Do you think ... is a result of ...?</i> <i>Which ... caused ...?</i> <i>Does ... change ...?</i> <i>Is ... the same or different from ...?</i></p>	<p>Sentence frames:</p> <p><i>The evidence is ...</i> <i>I think the pattern shows ...</i> <i>I think ... causes ...</i> <i>When ... then ...</i> <i>The more..., the ...</i> <i>We think ... is the best solution because ...</i> <i>Both of these solutions...; however, ... is better because ...</i> <i>Why do you think that ...?</i></p> <p>Questions/Prompts: <i>Explain in your own words.</i> <i>What ideas show that ...?</i> <i>What does ... mean?</i> <i>Give an example.</i> <i>What is the effect of ...?</i> <i>What would happen if...?</i> <i>How did you use ... to ...?</i> <i>How is ... an example of ...?</i> <i>Why is ... important?</i> <i>How does what learned about ... help you explain ...?</i> <i>How does ... compare to ...?</i></p>	

7. Engaging in argument from evidence

Students discuss, compare, persuade, synthesize, negotiate, suggest, critique, evaluate, reflect

- Identify arguments that are supported by evidence.
- Distinguish between explanations that account for all gathered evidence and those that do not.
- Analyze why some evidence is relevant to a scientific questions and some is not.
- Distinguish between opinions and evidence in one’s own explanations.
- Listen actively to arguments to indicate agreement or disagreement based on evidence, and/or to retell the main points of the argument.
- Construct an argument with evidence to support a claim.
- Make a claim about the effectiveness of an object, tool, or solution that is supported by relevant evidence. (NGSS Appendix F)

General Strategies for all Students

- Provide norms and structures for students to discuss in pairs, small group, and whole class.
- Introduce and clarify terms such as *evidence, claim, argument, data, opinion*.
- Provide examples of arguments supported by evidence.
- Jointly sort examples of explanations supported by evidence and those that are not.
- Model and discuss expectations for argumentation.
- Encourage divergent ideas for discussion topics.
- Use common misconceptions as starting points for argumentation topics.
- Give students “concept cartoons” to discuss in pairs and small groups.
- Facilitate class debates.

Corresponding ELD Standards

Part I. Interacting in Meaningful Ways: A. Collaborative: 3. Offering Opinions;
B. Interpretive: 7. Evaluating Language Choices; C. Productive: 11. Supporting Opinions

Emerging	Expanding	Bridging
<p>PI.A.3 Offer opinions and ideas in conversations using a small set of learned phrases (e.g., <i>I think...</i>), as well as open responses, in order to gain and/or hold the floor.</p> <p>PI.B.7 Describe the language writers or speakers use to present an idea (e.g., words or phrases used to make an argument) with prompting and substantial support.</p>	<p>PI.A.3. Offer opinions and negotiate with others in conversations using an expanded set of learned phrases (e.g., <i>I think/don’t think ...; I agree with X.</i>), as well as open responses, in order to gain and/or hold the floor, elaborate on an idea, etc.</p> <p>PI.B.7 Describe the language writers or speakers use to present or support an idea (e.g., the vocabulary or phrasing used to make an argument based on evidence), with prompting and moderate support.</p>	<p>PI.A.3. Offer opinions and negotiate with others in conversations using an expanded set of learned phrases (e.g., <i>I think/don’t think ...; I agree with X.</i>), as well as open responses in order to gain and/or hold the floor, elaborate on an idea, etc.</p> <p>PI.B.7 Describe the language writers or speakers use to present or support an idea (e.g., whether the vocabulary used to present evidence is precise enough) with prompting and light support.</p>

1st Grade NGSS Science and Engineering Practices with Corresponding ELD standards

Emerging PI.C.11 Offer opinions and provide good reasons (e.g., <i>I think ... because ...</i>) referring to the text or relevant background knowledge.	Expanding PI.C.11 Offer opinions and provide good reasons and some textual evidence or relevant background (e.g., <i>paraphrased examples from text or knowledge of content</i>).	Bridging PI.C.11 Offer opinions and provide good reasons with detailed textual evidence or relevant background (e.g., <i>specific examples from text or knowledge of content</i>).
<p>Sentence frames:</p> <p><i>I claim...</i> <i>My evidence is ...</i> <i>I agree/disagree with ... because...</i> <i>What about...?</i> <i>I used to think... but now I think...</i> <i>My models shows...</i> <i>My data shows...</i></p> <p>Questions/Prompts: <i>Which argument is supported by evidence?</i> <i>Which explanation makes more sense to you?</i> <i>Which piece of evidence supports this claim?</i> <i>Is this an opinion or evidence?</i> <i>Do you agree or disagree?</i> <i>Do you think ... supports the idea that...?</i></p>	<p>Sentence frames:</p> <p><i>I would like to add ...</i> <i>I would argue that ...</i> <i>Have you thought about...?</i> <i>I have a different idea about ...</i> <i>You said that..., but, I think that...</i> <i>What is your evidence?</i> <i>I agree/disagree that ... supports the claim ...</i></p> <p>Questions/Prompts: <i>Why do you think this argument is supported by evidence?</i> <i>What is different about these explanations?</i> <i>Have we considered all of the evidence?</i> <i>What is missing from this explanation?</i> <i>Does this information help us answer the question...?</i> <i>Why do you think ... is evidence that supports this claim?</i> <i>Why do you think that is so?</i> <i>What is your evidence?</i> <i>Can you say more about ...?</i> <i>Explain why you agree/disagree that...</i> <i>Tell me how you know ... solves the problem.</i></p>	

8. Obtaining, evaluating, and communicating information

Students read, summarize, describe, compare, combine, explain, communicate

- Read grade-appropriate texts and/or use media to obtain scientific and/or technical information to determine patterns in and/or evidence about the natural and designed world(s).
- Describe how specific images (e.g., a diagram showing how a machine works) supports a scientific or engineering idea.
- Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) and other media that will be useful in answering a scientific question and/supporting a scientific claim.
- Communicate information or design ideas and/or solutions with others in oral and/or written forms using models, drawings, writing, or numbers that provide detail about scientific ideas, practices, and/or design ideas.

General Strategies for all Students

- Use reading comprehension strategies, read aloud, unpack complex text, and guided reading.
- Introduce visual literacy strategies for interpreting illustrations and creating diagrams.
- Discuss text features in informational text and multimedia.
- Introduce graphic organizers, use sticky notes to annotate text.
- Reinforce vocabulary using pictorials (review key concepts by illustrating and labeling on chart paper in front of students).
- Provide ample opportunities for students to talk, write, and read about their science experiences.

Corresponding ELD Standards

Part 1. Interacting in Meaningful Ways: All

Part 2. Learning How English Works: All