



TEACH COMMON CORE STANDARDS WITH THE EEI CURRICULUM

Created with your needs in mind, this document shows the correlation between the EEI Curriculum and the California Common Core State Standards. By teaching the EEI unit lessons in your classroom, you will be simultaneously addressing the Common Core standards depicted in this guide.

5.3.a.—Earth’s Water



In this unit, students learn where water is located, whether that water is available for human use, what goods and services freshwater, coastal, and ocean ecosystems provide people, and ways people manage water. They begin by reading about how the expanding need for water in the Los Angeles area led to water systems that brought water from increasingly distant locations. They explore the qualities of fresh, salt, and brackish water, and their corresponding ecosystems, completing an activity which demonstrates the relatively small amount of fresh water available for human use. Later students trace the pathways that freshwater follows in a watershed, and learn how water management practices influence water quantity and quality.

		RI.5.2	RI.5.3	RI.5.4	RI.5.7	RI.5.10	W.5.2	W.5.8	SL.5.2	SL.5.3	L.5.4	L.5.6
LESSONS	California Connections	✓	✓	✓		✓	✓		✓		✓	
	1	✓	✓	✓		✓	✓		✓		✓	
	2			✓			✓		✓		✓	✓
	3		✓	✓	✓	✓	✓	✓	✓	✓	✓	
	4	✓	✓	✓		✓	✓	✓	✓	✓	✓	
	Traditional Assessment						✓					
Alternative Assessment												
		COMMON CORE STANDARDS										

Note: For your reference, the list of California Common Core State Standards abbreviations is on the following page.

Using the EEI-Common Core Correlation Matrix

The matrix on the front page identifies a number of Common Core standards that are supported by this EEI unit. However, the check marks in the matrix do not necessarily signify that the Common Core standards checked will be taught to mastery by using this EEI unit alone. Teachers are encouraged to select which Common Core standards they wish to emphasize, rather than teaching to every indicated standard. By spending more time on selected standards, students will move toward greater Common Core proficiency in comprehension, critical thinking and making reasoned arguments from evidence. Teaching this EEI unit will provide opportunities for teachers to implement the shift in instructional practice necessary for full Common Core implementation.

California Common Core State Standards Abbreviations

- **CCSS:** California Common Core State Standards
- **L:** Language Standards
- **RI:** Reading Standards for Informational Text
- **SL:** Speaking and Listening Standards
- **W:** Writing Standards

Note: Since each Common Core standard includes a breadth of skills, in this correlation, the portion of the standard description that is featured in the Common Core standards and applications is cited, using “...” to indicate omitted phrases. For a list of the complete standard descriptions, please see the Common Core Reference Pages located on page 21 of this document.

A Note about Common Core Speaking and Listening Standards

Many of the EEI units provide various learning structures, materials, and groupings that lead toward students working in pairs or small groups to discuss concepts and ideas. This supports the skill in Speaking and Listening Standard 1 “Participate effectively in a range of collaborative discussions (one-on-one, groups...) with diverse partners.” With prior instruction in collaborative discussion techniques, students can be placed in pairs or small groups to discuss the lesson topics. To aid in teacher planning, the lessons are listed below along with their learning structures for whole class, pairs/partners, and/or small groups.

- **Lesson 1:** Whole class
- **Lesson 2:** Whole class, groups of 3
- **Lesson 3:** Whole class, optional partners
- **Lesson 4:** Whole class

National Geographic Resources

- **Political** wall map (Lesson 1)

Additional Resources

- **Glaciers on Earth** poster (Lesson 2)

Unit Assessment Options

Assessments	Common Core Standards and Applications
Traditional Assessment	
<p>Students complete multiple choice questions and sentence starters explaining why people need water and potable water. Then they answer questions by writing paragraphs describing ways water reaches the ocean, and the effect of a dam on an estuary.</p>	<p>W.5.2b: Develop the topic with facts, definitions, concrete details...or other information and examples...</p>
Alternative Assessment	
<p>Students analyze a diagram of a watershed and label water features, ecosystem locations, and features that describe the movement of water through natural and man-made water systems.</p>	<p>n/a</p>

Lesson 1: Water for Survival

Students read **California Connections: Water to Grow a City** in sections using a “reader’s theater” script that reveals information about the growth of Los Angeles from a small pueblo to the huge metropolis it is today. They discuss the importance of water to daily life and to the economy of the region.



National Geographic Resources

- Political wall map

Use this correlation in place of the **Procedures** on pages 34–35 of the Teacher’s Edition.

Procedures	Common Core Standards and Applications
Vocabulary Development	
Use the Dictionary and the vocabulary Word Wall Cards to introduce new words to students as appropriate. These documents are provided separately.	<p>L.5.4c: Consult reference materials...to...determine or clarify the precise meaning of key words and phrases...</p> <p>RI.5.4: Determine the meaning of general academic and domain-specific words and phrases in a text...</p>
Step 1	
Ask students what living things need to live and grow. (<i>Food, water, space</i>) Ask if this is true for people, as well as other plants and animals. (<i>Yes</i>) Ask if students can name some nonliving things that also grow. (<i>Cities and towns, freeways, and houses</i>) Ask what nonliving things need to be able to grow. (<i>They also need resources and space.</i>)	n/a
Step 2	
Project Water to Grow a City (Visual Aid #1) and explain that students are going to read aloud parts of a story about a mystery city in California and how it grew. Ask students to listen carefully for any clues to help them guess which city the story is about and to identify the resources the city needed so it could grow. Tell students that one important resource in particular was in limited supply. Tip: <i>This information prepares students for SL.5.2 and SL.5.3. Further prepare students by reviewing listening skills and how to summarize information presented orally, visually, and in text. Tell students to listen for main points and how each point is supported by reasons and evidence. This unit involves a great deal of information gained through oral presentations linked to visuals. When appropriate, preview listening skills at the beginning of each presentation.</i>	n/a

Procedures	Common Core Standards and Applications
Step 3	
<p>Distribute a Student Edition to each student. Tell them to turn to California Connections: Water to Grow a City (Student Edition, pages 2–5). Project It Started with a Pueblo (Visual Aid #2). While projecting the visual aid, have a student read the first section of the story, It Started with a Pueblo.</p> <p>Point out the Political wall map and help students orient themselves to the locations of the San Gabriel Mountains and Pacific Ocean. Then ask students the following questions:</p> <ul style="list-style-type: none"> ■ Why was the site of the pueblo a good place for people to live? (<i>The river supplied water for drinking and farming. The climate was mild and dry.</i>) ■ What were some of the resources the area provided? (<i>Water, rocks, wood, soil for farming</i>) 	<p>RI.5.2: Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.</p> <p>RI.5.10: ...read and comprehend informational texts, including...science...texts,...independently and proficiently.</p>
Step 4	
<p>Have individual students read aloud the remaining sections of the California Connections: Water to Grow a City story. As students read the parts of the story, project the corresponding images on Visual Aids #3–12. Continue to use the Political wall map to orient students to locations mentioned in the reading.</p> <p>As each visual aid is projected, use the following questions to guide discussion and check comprehension after each “section” of the story is read:</p> <p>A Little River Runs Free (Visual Aid #3)</p> <ul style="list-style-type: none"> ■ As the pueblo grew, what challenges did the river present? (<i>The amount of water available changed from season to season. In winter, the river flooded the fields and town.</i>) <p>Coming Up with a Plan (Visual Aid #4)</p> <ul style="list-style-type: none"> ■ How did the Gold Rush affect the pueblo? (<i>It grew into a town. The population grew. There were lots of jobs providing food and supplies to miners. New businesses arose. They needed more water.</i>) ■ How did the town meet its need for water? (<i>The people continued to take water from the river, as well as pumping water from underground.</i>) <p>New Uses for the River (Visual Aid #5)</p> <ul style="list-style-type: none"> ■ In what new ways did people use the river as the town grew? (<i>They dumped garbage in the river to send it to the bay.</i>) ■ How did the surrounding environment help clean the river water? (<i>The water was filtered as it soaked into the ground through rocks and sand. The plants in ponds where the water settled also helped remove some of the pollutants.</i>) <p>Farming Requires More Water (Visual Aid #6)</p> <ul style="list-style-type: none"> ■ What industry became popular after the Gold Rush? (<i>Farming, especially orange, lemon, and avocado orchards</i>) ■ Did the river provide enough water to meet the farmers’ needs? (<i>No, there was a shortage of water.</i>) 	<p>L.5.4a: Use context...as a clue to the meaning of a word or phrase.</p> <p>L.5.4b: Use common, grade-appropriate Greek and Latin affixes...as clues to the meaning of a word...</p> <p>Suggestion: <i>Have students identify the context that defines the words pueblo, reservoirs, and aqueduct. With aqueduct, focus on the suffix “duct”, its meaning, and other words that use it.</i></p> <p>RI.5.2: Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.</p> <p>Suggestion: <i>Have students identify the details that support the main ideas.</i></p> <p>RI.5.3: Explain the relationships or interactions between two or more...events, ideas, or concepts in a...scientific...text.</p> <p>Suggestion: <i>As the story progresses, have students discuss how each event is related to the previous events.</i></p> <p>RI.5.4: Determine the meaning of general academic and domain-specific words and phrases in a text...</p> <p>RI.5.10: ...read and comprehend informational texts, including...science...texts,...independently and proficiently.</p> <p>Suggestion: <i>To increase independent reading proficiency, have students reread the text with a partner, alternating paragraphs and paraphrasing the main idea in each paragraph or section.</i></p> <p>SL.5.2: Summarize a written text read aloud or information presented in diverse media and formats, including visually... and orally.</p> <p>Suggestion: <i>After reading the text, have students summarize the story, including key events and excluding less important details.</i></p>

Procedures	Common Core Standards and Applications
Step 4 (Continued)	
<p>Strategies to Move and Clean Water (Visual Aid #7)</p> <ul style="list-style-type: none"> ■ What steps did city leaders take to solve the problems with water that they faced? <i>(They built reservoirs to store water from the river for times when there were droughts and dry seasons. They put the river in a channel to control its flow. They built storm drains to carry waste away from the city, and they built a sewage plant where they could store the waste.)</i> ■ What happened when the ponds were filled with concrete to make more room to build the city? <i>(The ponds no longer cleaned the water before it reached the bay, so the bay became polluted and marine life died.)</i> <p>Moving Water from the Sierra Nevada (Visual Aid #8)</p> <ul style="list-style-type: none"> ■ Why did the need for water continue to grow? <i>(The population continued to expand, and the people needed water for drinking, washing, and cooking. Farmers planted more orchards; the trees also needed water to grow. The movie industry brought more people to the city. More houses were built; the city grew, and more water was needed.)</i> ■ How did city leaders try to solve the water shortage? <i>(They built a long aqueduct and moved snowmelt from the Owens Valley.)</i> <p>Water Demand Increases after World War II (Visual Aid #9)</p> <ul style="list-style-type: none"> ■ After World War II, where did the growing city turn to get more water? <i>(Mono Basin and the Colorado River)</i> ■ How did people move the water from these places? <i>(They built dams and aqueducts.)</i> <p>California State Water Project (Visual Aid #10)</p> <ul style="list-style-type: none"> ■ Why did California build the California State Water Project in the 1960s? <i>(To move water from northern California to cities and farms in central and Southern California.)</i> <p>Sewage Treatment: A Solution (Visual Aid #11)</p> <ul style="list-style-type: none"> ■ How did the city deal with the growing problem of water pollution? <i>(They built a large, modern sewage treatment plant in 1950 and expanded it in 1986.)</i> ■ Did this help? <i>(Yes, today the water in the bay is cleaner and marine life is returning.)</i> 	<p>See previous page for the standards and suggestions for applying them to each section of the California Connections selection.</p>

Procedures	Common Core Standards and Applications
Step 5	
<p>Ask students if they know which city the story is about. (<i>Los Angeles</i>) Project The “Never Ending” Story (Visual Aid #12) as you read aloud “The ‘Never Ending’ Story” the final section of California Connections: Water to Grow a City.</p> <p>Distribute a Student Workbook to each student. Tell them to turn to Water for Life (Student Workbook, page 2). Have students complete the assignment for homework if necessary.</p> <p>Gather Student Editions.</p> <p>Collect Student Workbooks and use Water for Life for assessment.</p>	<p>W.5.2: Write informative/explanatory texts...</p> <p>b) Develop the topic with facts, definitions, concrete details... or other information and examples...</p> <p>c) Link ideas within and across categories of information using words, phrases, and clauses...</p> <p>Suggestion: <i>Have students read the writing prompt on Water for Life. Then review the sequence of visual aids along with the California Connections narrative, asking students to identify supporting evidence and detail to include as they write their answers.</i></p> <p><i>Before students write, discuss linking words and phrases they can use to connect more than one idea and make their writing flow. With students, generate a short list of terms they should use in their answers. Discuss the difference between vague details and specific details, giving an example of an answer using each:</i></p> <ul style="list-style-type: none"> ■ Student Workbook, page 2, answer #2, example of vague answer: <i>The people decided they needed to get more water from other places to bring to Los Angeles.</i> ■ Student Workbook, page 2, answer #2, example of specific answer: <i>At first, the people of Los Angeles used water only from the river and underground. Then, they built reservoirs to store water to use during the dry seasons. Later they built a long aqueduct to move water from the Owens Valley, and after WWII, they brought in water from Mono Basin and the Colorado River. In the 1960s, the California State Water Project built aqueducts and canals to move water from northern California to Southern California.</i>

Lesson 2: Earth's Water Sources

Students conduct a “taste test” of three water samples and describe the qualities of the water in each. In groups, students investigate global surface water sources and estimate the fractions of salt water and fresh water on Earth.



Resources

- **Glaciers on Earth** poster

Use this correlation in place of the **Procedures** on pages 56–57 of the Teacher’s Edition.

Procedures	Common Core Standards and Applications
Vocabulary Development	
Use the Dictionary and the vocabulary Word Wall Cards to introduce new words to students as appropriate.	<p>L.5.4c: Consult reference materials...to...determine or clarify the precise meaning of key words and phrases...</p> <p>RI.5.4: Determine the meaning of general academic and domain-specific words and phrases in a text...</p>
Step 1	
Remind students that water is a basic need for living things (including people) and for human communities. Ask students to name ways that water is important to them and to their community. (<i>Drinking, washing, cooking, community gardens, agriculture, and manufacturing</i>)	n/a
Step 2	
<p>Explain that students are going to taste-test three water samples. Each represents a different type of water found on Earth. Note that these are the same three types of water that were available to the people of Los Angeles as the city grew and the people needed to find water that they could use for drinking and farming.</p> <p>Organize students into groups of three. Redistribute students’ individual Student Workbooks. Tell them to turn to Earth’s Water (Student Workbook, pages 3–4).</p> <p>Give three stirrers to each student. Give each group one set of prepared water samples. (Cups A, B, and C.) Demonstrate the proper procedure for conducting a taste test by dipping one end of the stirrer into one of the water samples and touching the side of the tongue near the tip. Explain that students should use a new stirrer when tasting a new sample.</p> <p>Direct students to taste each of the three samples and describe the taste of each in the “Taste” column of the chart in Part 1 of Earth’s Water.</p>	n/a

Procedures	Common Core Standards and Applications
Step 3	
<p>Ask students to share their descriptions of each water sample. "How do the samples differ?" (<i>They vary in how salty they taste.</i>) Ask which sample they think is the most potable (drinkable) and have them explain why. (<i>Sample A, because it does not taste like salt.</i>)</p>	n/a
Step 4	
<p>Explain that Sample A is fresh water, which is water that contains very little salt. People need fresh water to survive. Ask students what kinds of freshwater ecosystems (or habitats) they know about. (<i>Rivers and lakes</i>) Explain to students that the plants and animals that live in freshwater ecosystems (habitats) need the water to be fresh in order to survive. Instruct students to write the term "fresh water" in the "Type of Water" column of the Earth's Water chart and "freshwater ecosystem" (habitat) in column 3.</p> <p>Ask students which water sample tasted the saltiest. (<i>Sample C</i>) Explain that this sample is saline, or salt water, similar to the water found in the ocean. Very special plants and animals live in saltwater ecosystems; these ecosystems are called marine habitats. Have students add the terms "saline" and "marine" to the "Type of Water" and "Ecosystem" columns for Sample C on Earth's Water chart.</p> <p>Explain that Sample B is brackish water. Brackish water is found where fresh water and saline water mix. Ask students where this might happen. (<i>Where a river meets the ocean, like in a bay or an estuary</i>) Tell students that these ecosystems are generally found along the coast and so are called coastal habitats. The plants and animals in these ecosystems must have brackish water. Too little salt or too much salt, and they will not survive. But brackish water, like saline water, is too salty for people to drink. Have students add the terms "brackish" and "coastal" to the "Type of Water" and "Ecosystem" columns for Sample B on Earth's Water chart.</p>	<p>SL.5.2: Summarize...information presented...visually, ...and orally.</p> <p>Suggestion: After discussing student observations and the ecosystem information, ask students to summarize the similarities and differences between these three types of water and the ecosystems they support.</p>
Step 5	
<p>Project Sources of Earth's Water (Visual Aids #13–18) one at a time. While projecting each image, ask students to name a source of water they see and identify whether it is fresh water or salt water. (<i>Ocean, salt; glacier/ice, fresh; snow, fresh; river, fresh; lake, fresh; stream, fresh</i>)</p> <p>Call students' attention to the Glaciers on Earth poster. Point out where the world's glaciers are located, explaining that there are many sources of fresh water on Earth's surface, but glaciers and snow are special because the water in them is solid instead of being liquid as it is in rivers, lakes, oceans, and streams.</p>	<p>L.5.6: Acquire and use accurately grade-appropriate...domain-specific words and phrases...</p> <p>Suggestion: Ensure students use complete sentences that embed and clarify the meaning of each water source.</p>

Procedures	Common Core Standards and Applications
Step 6	
<p>Ask students, “How much fresh water do you think there is on Earth?” Distribute a globe to each group. Ask groups to work together, using the globe, to estimate the fractions of fresh and salt water on the surface of Earth. Tell students to use 100 as their denominator and write their estimates in the “Estimated Fraction” column of Part 2 on Earth’s Water chart.</p> <p>Tip: <i>If you do not have globes for each group, use a world map (not included, but found in most social studies textbooks) instead.</i></p>	n/a
Step 7	
<p>Project Where’s the Water? (Visual Aid #19) and discuss the meaning of the figures in the “Distribution of Earth’s Water” pie chart. Have the students write down the actual figures in their chart on Earth’s Water and compare their fractions with the actual data. Emphasize to the class how much of Earth’s water is in salty oceans and how little of Earth’s water is fresh and able to be used by people.</p> <p>Ask students to describe what the “Distribution of Fresh Water” pie chart indicates. (<i>The chart shows where Earth’s fresh water—the water people can use—is located.</i>) Point out that 69/100 parts of the fresh water is frozen in ice caps and glaciers, and that just 31/100 is in lakes, swamps, rivers, and groundwater. Ask students to guess what groundwater might be. (<i>Answers will vary.</i>) Explain that groundwater is water found below Earth’s surface and that students will learn more about this source of water in the next lesson.</p> <p>Tip: <i>You can reinforce fraction concepts during this activity by having students compare the different fractions, expressing the degree of difference in each of the numbers, and converting them to decimals.</i></p> <p><i>Have students pair-share information to better prepare them for the Student Workbook activity.</i></p>	n/a
Step 8	
<p>Have students complete Part 3 of Earth’s Water for homework.</p> <p>Gather water samples and stirrers from each group.</p> <p>Collect Student Workbooks and use Earth’s Water for assessment.</p>	<p>W.5.2: Write informative/explanatory texts...</p> <p>b) Develop the topic with facts, definitions, concrete details... or other information and examples...</p>

Lesson 3: From Fresh to Salt Water

In Session 1, students use an aerial view of a watershed to explore the pathways that fresh water follows from land to ocean or aquifer. In Session 2, students examine the ecosystem goods provided by estuaries and other aquatic ecosystems.



Session 1

Use this correlation in place of the **Procedures** on pages 72–73 of the Teacher’s Edition.

Procedures	Common Core Standards and Applications
Vocabulary Development	
Use the Dictionary and the vocabulary Word Wall Cards to introduce new words to students as appropriate.	<p>L.5.4c: Consult reference materials...to...determine or clarify the precise meaning of key words and phrases...</p> <p>RI.5.4: Determine the meaning of general academic and domain-specific words and phrases in a text...</p>
Step 1	
Project Where’s the Water? (Visual Aid #19) and point out how much water is groundwater. Remind students that groundwater is water that is stored under the ground, and ask them how they think the water might get there. (<i>Accept any answers.</i>)	n/a
Step 2	
<p>Distribute a Student Edition to each student. Tell them to turn to Underground Fresh Water (Student Edition, page 6). Have student volunteers read paragraphs aloud while the rest of the class follows along.</p> <p>As students start reading paragraph four about aquifers, project An Aquifer (Visual Aid #20) to illustrate how an aquifer works.</p> <p>At the end of the article, project California’s Groundwater (Visual Aid #21) and have students locate their community and its nearest source of groundwater.</p>	<p>L.5.4c: Consult reference materials...to...determine or clarify the precise meaning of key words and phrases...</p> <p>Suggestion: Have students identify the surrounding context that reveals the meanings of words such as aquifer, pores, saturated, unsaturated, water table, byproducts, and contaminate. When needed, use the unit Dictionary to further clarify meanings.</p> <p>RI.5.3: Explain the relationships...between two or more... ideas, or concepts in a...scientific...text based on specific information in the text.</p> <p>Suggestion: Have students explain how aquifers form and its relationship with where groundwater is found.</p> <p>RI.5.4: Determine the meaning of...domain-specific words and phrases in a text...</p> <p>Note: See suggestion under standard L.5.4c.</p> <p>RI.5.7: Draw on information from multiple print...sources...</p> <p>Suggestion: Discuss how the map supports an understanding of the text.</p> <p>RI.5.10: ...read and comprehend informational texts, including...science...texts...independently and proficiently.</p> <p>Suggestion: Students can reread the information with partners, pausing to paraphrase or summarize the information after each paragraph, to further develop independent reading skills.</p>

Procedures	Common Core Standards and Applications
Step 3	
<p>Ask students how fresh water on land ends up underground. (<i>It seeps, or percolates, down through spaces in the soil and ends up in an aquifer.</i>) Discuss the reasons why some communities might have access to groundwater, while other communities may not. (<i>It depends on the soil and how far underground the water is.</i>)</p> <p>Tip: Remind students to use their listening skills for the next several steps, as they will be asked to summarize the main idea and supporting points.</p>	n/a
Step 4	
<p>Project Aerial View of a Watershed (Visual Aid #22). Help students interpret the image by tracing the ridge lines and explaining that these are mountaintops where snow is most likely to be. Point out the rivers and streams and their headwaters. Explain how gravity moves rain and melting snow downhill over land (called runoff), forming rivers and streams in the lowest local points and then traveling down the mountains to the lake and bay and finally out to the ocean. Point out each of these geographic features on Aerial View of a Watershed.</p> <p>Have student volunteers trace one or two pathways that water might take from the mountains to the ocean on Aerial View of a Watershed. Demonstrate how the area that drains into one stream or into one river is called its watershed. The watershed of a river may include the watersheds of one or more streams. The watershed is bounded by the highest and lowest points in the region.</p> <p>Tip: Students use listening skills to prepare for summarizing the points.</p>	<p>SL.5.2: Summarize...information presented...visually... and orally.</p> <p>Suggestion: After the explanation, have students turn to a partner and, using Aerial View of a Watershed as a reference, interpret the image, explaining the information it displays.</p>
Step 5	
<p>Ask students if all of the water in a watershed ends up in the streams and rivers. (<i>No, some of the water soaks into the ground, or is used by animals and people.</i>) Explain that the amount of water that soaks into the ground depends on how many spaces there are in the soil (whether it is loose like sand and gravel, or packed like clay) and how much water is already underground.</p> <p>Tell students that in cold climates, water may stay solid in snow or ice. Very little water moves underground in these places, and, if it does, it moves very slowly.</p> <p>Tip: Students use listening skills to prepare for summarizing the points.</p>	n/a

Procedures	Common Core Standards and Applications
Step 6	
<p>Review the variety of pathways that water might take from the point where it falls to Earth. For example, rain falling on a lake might enter a stream and flow down to an ocean, or it may seep into the ground below the lake. Remind students that the water may be fresh, brackish, or saline, depending on where it is at the moment. Again, project Aerial View of a Watershed and ask students where they would find freshwater, coastal, and marine ecosystems. (<i>Fresh: in the rivers, streams, and lakes; coastal: at the beaches and on the coast; marine: in the bays, harbors, and in the open ocean</i>)</p>	<p>SL.5.2: Summarize...information presented...visually... and orally.</p> <p>Suggestion: Have students summarize the information shared in Steps 3, 4, 5, and 6, connecting it to the visuals and the text in Underground Fresh Water (Student Edition, page 6).</p>
Step 7	
<p>Redistribute students' individual Student Workbooks. Tell them to turn to From Fresh to Salt Water (Student Workbook, page 5). Assign students to complete From Fresh to Salt Water for homework.</p> <p>Gather Student Editions.</p> <p>Collect Student Workbooks and use From Fresh to Salt Water for assessment.</p>	<p>W.5.2: Write informative/explanatory texts...</p> <p>b) Develop the topic with facts...details...</p> <p>c) Link ideas within...categories of information using words, phrases, and clauses...</p> <p>d) Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>Suggestion: Develop a student generated list of vocabulary terms to use in the answer for number 4 on the workbook page. It may be valuable for students to write their paragraphs on lined paper so they have more room for a complete explanation. Possible vocabulary terms to include: gravity, flows, flowing, soaks, aquifers, headwaters, stream, bay, ocean, groundwater, etc.</p>

Session 2

Use this correlation in place of the **Procedures** on page 74 of the Teacher’s Edition.

Procedures	Common Core Standards and Applications
Step 1	
<p>Project Aerial View of a Watershed and review the paths fresh water takes over land to the ocean or under the ground. Point out places on the map where fresh water meets the ocean. Ask students to describe what the water in these coastal ecosystems would be like. (<i>Brackish; a mixture of fresh and salt water</i>)</p>	n/a
Step 2	
<p>Project Estuary Habitat, Estuary Plants, and Estuary Animals 1 and 2 (Visual Aids #23–26) and ask students to describe what they see. (<i>Note: Consider creating a word web, recording their responses on the board.</i>) Explain to students that estuaries are located where a river meets the ocean. Mention that estuaries are bodies of water created where water from the ocean (salt water) mixes with fresh water from a river to produce “brackish water.” Explain that estuaries have a gradient of salt from very low, where the fresh water enters, to high, where the estuary meets the ocean. Point out that the amount of fresh water that flows into an estuary may be affected by seasonal rains. Tell students that some estuaries are seasonal, where there is no river but where rain runoff plays the role of the river. Explain that plants and animals that live in estuaries have features that allow them to live and survive in the brackish water. Tell students that some of the plants and animals presented in the visual aids live in different parts of an estuary, with different salinity levels.</p>	<p>SL.5.2: Summarize...information presented...visually... and orally.</p> <p>Suggestion: Have students summarize, with partners, the information presented in this step.</p>
Step 3	
<p>Ask students to think about the growing city (Los Angeles) which they read about in the first lesson. Recall the ponds of water that the city drained and filled in with dirt, which allowed the city to grow. Project An Aquifer (Visual Aid #20) and explain that these ponds were part of an estuary. As water flowed from the river into the estuary, it passed through rocks and soil before settling in the estuary. The rocks and the roots of plants living in the estuary removed some of the waste and chemicals that were in the river water.</p> <p>Tip: Ask students to suggest ideas about how having the estuaries filled in with dirt might impact the water quality in the area.</p>	n/a

Procedures	Common Core Standards and Applications
Step 4	
<p>Project California’s Coastal Estuaries (Visual Aid #27). Point out the protected estuaries in the state. Ask students if they notice anything about the locations of protected estuaries. <i>(Many are located near large cities.)</i> Discuss reasons this might be so. <i>(Estuaries near cities might be at greater risk of becoming polluted. Since many people and activities are concentrated in cities, many waste products are created. Many of these are disposed of through the city’s wastewater system. If the estuaries are not protected, more waste and chemicals might enter the estuary than it is able to clean. These pollutants can seep into groundwater and pollute water people need.)</i></p> <p>Ask students to give reasons why estuaries are important ecosystems. <i>(They help clean the fresh water flowing into them. They are also home to many plants and animals.)</i></p>	<p>SL.5.2: Summarize...information presented...visually... and orally.</p>
Step 5	
<p>Redistribute students’ individual Student Workbooks. Tell them to turn to Ecosystem Essentials (Student Workbook, page 6) and work with a partner to complete the diagram.</p> <p>Collect Student Workbooks and use Ecosystem Essentials for assessment.</p>	<p>SL.5.3: Summarize the points a speaker...makes and explain how each claim is supported by reasons and evidence...</p> <p>W.5.8: ...summarize or paraphrase information in notes...</p> <p>Suggestion: <i>This workbook page is a graphic organizer students use to summarize the information presented in the lesson.</i></p>

Lesson 4: Human Communities and Water Management Practices

Students take notes during a presentation to learn how water management practices influence water quantity and quality in different ecosystems. They explore how some of these practices affect part of the water cycle.



Use this correlation in place of the **Procedures** on pages 92–93 of the Teacher’s Edition.

Procedures	Common Core Standards and Applications
Vocabulary Development	
<p>Use the Dictionary and the vocabulary Word Wall Cards to introduce new words to students as appropriate.</p>	<p>L.5.4c: Consult reference materials...to...determine or clarify the precise meaning of key words and phrases...</p> <p>RI.5.4: Determine the meaning of general academic and domain-specific words and phrases in a text...</p>
Step 1	
<p>If time permits, distribute Student Editions and have students reread the 11 parts of California Connections: Water to Grow a City (Student Edition, pages 2–5). If not, ask students, “What were some of the techniques used by people in Los Angeles to manage their water?” (<i>Dams and channels</i>) “To get more water?” (<i>Aqueducts and digging wells</i>) List the students’ ideas on the board.</p>	<p>RI.5.2: Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.</p> <p>Suggestion: <i>Have students review the details that support the main ideas, analyzing the overall structure of the story, including how one idea is connected to the next idea.</i></p> <p>RI.5.3: Explain the relationships or interactions between two or more...events, ideas, or concepts in a...scientific...text.</p> <p>Suggestion: <i>Have students review how each event is related to the previous events.</i></p> <p>RI.5.10: ...read and comprehend informational texts, including...science...texts...independently and proficiently.</p>
Step 2	
<p>Explain that students will learn about these water management techniques in a presentation about water management. As they learn about different water management techniques, encourage students to think about what happens to rivers, the coast, and ocean ecosystems when humans try to manage water through the use of dams and other human-made structures.</p> <p>Redistribute students’ individual Student Workbooks. Tell them to turn to Human Communities and Water (Student Workbook, pages 7–9). Review the instructions for taking notes. Explain that students are to take notes on this page for each section of the presentation.</p> <p>Tip: <i>Before students start taking notes, review together each category and the “what, where, why and how” questions.</i></p>	<p>n/a</p>

Procedures	Common Core Standards and Applications
Step 3	
<p>Begin by presenting Managing California’s Water (Visual Aid #28), Uses of Water (Visual Aid #29), Channels and Levees (Visual Aid #30), and Levees (Visual Aid #31), while reading from the script provided on pages 94–95. (Note: The slide numbers associated with the text are indicated on the script.)</p> <p>While projecting Setback Levees (Visual Aid #32), ask students:</p> <ul style="list-style-type: none"> ■ What are levees made of? (Earth, rock, and sand, or concrete) ■ How can we distinguish between the two types of levees? (Channelized levees are close to the river channel; setback levees are farther away from the river channel.) ■ What are some of the advantages and disadvantages of building levees? (Levees help control flooding and protect communities along the river. They also change the way the river flows, which affects habitats in and along the river. Setback levees help maintain some of the natural habitat.) <p>Have students complete the “Channels and Levees” section on Human Communities and Water.</p>	<p>SL.5.2: Summarize...information presented...visually... and orally. <i>Suggestion:</i> Have students summarize the information each visual aid represents.</p> <p>SL.5.3: Summarize the points a speaker...makes and explain how each claim is supported by reasons and evidence... <i>Suggestion:</i> Have students explain the reasons and evidence that support each main point.</p> <p>W.5.2: Write informative/explanatory texts... <i>Suggestion:</i> For these workbook pages, identify specific questions where students should write extended explanations, such as all the “how” questions, as well as some of the “why” questions, and the “what” question under Collecting and Treating Water.</p> <p>W.5.8: Recall relevant information from experiences or... from print and digital sources; summarize or paraphrase information in notes...</p>
Step 4	
<p>Continue with Dams and Reservoirs (Visual Aid #33) and Dams (Visual Aid #34), while reading the corresponding script on pages 94–95. While projecting Reservoirs (Visual Aid #35), ask students:</p> <ul style="list-style-type: none"> ■ Why do people build dams, and what happens to water that is stored behind the dams? (People build dams to store water and control flooding. They use the water for irrigation, to recharge groundwater, and for many uses in homes.) ■ What effects might dams have on freshwater (river), coastal, and ocean ecosystems. (Dams flood the lands around rivers, so the plants and animals affected can no longer live in those areas. They also affect downstream ecosystems because there is less water flowing down the river. Because of this, less water reaches coastal and marine ecosystems, which may become saltier. Plants and animals in coastal areas that cannot tolerate saline conditions are affected.) <p>Have students complete the “Dams and Reservoirs” section on Human Communities and Water.</p>	<p>SL.5.2: Summarize...information presented...visually... and orally. <i>Suggestion:</i> Have students summarize the information each visual aid represents, either as a whole class or with partners or small groups.</p> <p>SL.5.3: Summarize the points a speaker...makes and explain how each claim is supported by reasons and evidence... <i>Suggestion:</i> Have students explain the reasons and evidence that support each main point.</p> <p>W.5.2: Write informative/explanatory texts... <i>Suggestion:</i> For these workbook pages, identify specific questions where students should write extended explanations, such as all the “how” questions, as well as some of the “why” questions, and the “what” question under Collecting and Treating Water.</p> <p>W.5.8: Recall relevant information from experiences or... from print and digital sources; summarize or paraphrase information in notes...</p>

Procedures	Common Core Standards and Applications
Step 5	
<p>Continue with Water Collection Systems (Visual Aid #36) and Water Treatment Plants (Visual Aid #37), while reading the corresponding script provided on pages 94–95. While projecting Storm Drains (Visual Aid #38), ask students:</p> <ul style="list-style-type: none"> ■ Have you ever seen water disappearing down a storm drain? (<i>Answers will vary.</i>) ■ Why do people construct storm drains? (<i>To avoid flooding of streets.</i>) ■ Where does water go after it goes down a storm drain? (<i>Eventually to the ocean, sometimes by way of streams, rivers, and lakes.</i>) ■ In most cities, how does the storm drain system differ from the sewage system? (<i>Storm drains collect water flowing in city streets and it goes straight into a river, lake, or the ocean, carrying any pollutants with it. The sewage system collects water used inside buildings and takes it through pipes to a wastewater treatment plant. It is cleaned before it is released into the ocean.</i>) <p>Have students complete the “Collecting and Treating Water” section on Human Communities and Water.</p>	<p>SL.5.2: Summarize...information presented...visually... and orally. <i>Suggestion: Have students summarize the information each visual aid represents.</i></p> <p>SL.5.3: Summarize the points a speaker...makes and explain how each claim is supported by reasons and evidence... <i>Suggestion: Have students explain the reasons and evidence that support each main point.</i></p> <p>W.5.2: Write informative/explanatory texts... <i>Suggestion: Identify specific questions where students should write extended explanations, such as the “what” and “how” questions on this workbook page.</i></p> <p>W.5.8: Recall relevant information from experiences or... from print and digital sources; summarize or paraphrase information in notes...</p>
Step 6	
<p>Continue with Treated Wastewater Returns to the Ocean (Visual Aid #39), while reading the corresponding script provided on pages 94–95. After projecting Treated Wastewater Returns to the Ocean, tell students to follow the instructions to complete the diagram on Human Communities and Water, adding levees, a dam and reservoir, and a wastewater treatment station to the diagram. (<i>Note: Consider allowing students to work in pairs on this activity. This section can also be assigned for homework.</i>)</p> <p>Tip: <i>Students use the information from the presentation and apply it to completing this workbook page.</i></p> <p><i>It may be helpful to have students first review and share information about how levees, dams, and a treatment plant can change the river, ocean, and land before they write.</i></p>	<p>SL.5.2: Summarize...information presented...visually... and orally. <i>Suggestion: Have students summarize the information each visual aid represents.</i></p> <p>SL.5.3: Summarize the points a speaker...makes and explain how each claim is supported by reasons and evidence... <i>Suggestion: Have students explain the reasons and evidence that support each main point.</i></p> <p>W.5.2: Write informative/explanatory texts... <i>Suggestion: Identify specific questions where students should write extended explanations, such as the “what” and “how” questions on this workbook page.</i></p> <p>W.5.8: Recall relevant information from experiences or... from print and digital sources; summarize or paraphrase information in notes...</p>

Procedures	Common Core Standards and Applications
Step 7	
<p>When students have completed their diagrams, ask the following questions:</p> <ul style="list-style-type: none"> ■ What will happen to the water in the river once the levees are built near town “A”? (<i>The water will not flood the town, but will move faster in the river channel, affecting the ecosystems on the riverbanks.</i>) ■ What will happen after engineers build the dam above town “B”? (<i>A reservoir will form behind it, flooding the valley, changing the ecosystem. There will be less water in the river below the dam, so less water will reach the ocean. This will change the quantity of fresh water in the bay, which affects the quality of the water in the bay.</i>) ■ What will happen to the water in the bay when the wastewater treatment plant opens and starts putting some treated wastewater into the ocean? (<i>The water quality in the bay may change. With less fresh river water entering the bay due to the dam, the water in the bay may be less “clean” than before the dam was built.</i>) <p>Tip: Encourage students to generate questions regarding the diagrams before asking the questions in the Procedures.</p> <p>Be sure students explain how each area and structure affects the rest of the ecosystem. Ask students to clearly state the relationship between each area, structure, and the ecosystems both nearby and far away.</p>	<p>SL.5.2: Summarize...information presented...visually... and orally.</p> <p>Suggestion: Have students summarize the information each visual aid represents.</p> <p>SL.5.3: Summarize the points a speaker...makes and explain how each claim is supported by reasons and evidence...</p> <p>Suggestion: Have students explain the reasons and evidence that support each main point.</p> <p>W.5.2: Write informative/explanatory texts...</p> <p>Suggestion: Identify specific questions where students should write extended explanations, such as the “what” and “how” questions on this workbook page.</p> <p>W.5.8: Recall relevant information from experiences or... from print and digital sources; summarize or paraphrase information in notes...</p>

Procedures	Common Core Standards and Applications
Step 8	
<p>Project The Water Cycle (Visual Aid #40). Ask the students which of the boxes represent the processes of runoff and percolation and label the two boxes accordingly. (Note: <i>Sample Answers for The Water Cycle</i> are provided on page 96.) Discuss which processes in the cycle are directly affected by what people do, such as changing where water flows, changing vegetation, or changing the ground surface. Circle those areas on the diagram. Tell students that these processes are changed when people build dams and create reservoirs (which affects runoff); pave over the land with concrete or asphalt (which affects runoff and percolation); or remove trees and other plants (which affects percolation). Human communities do these things so that we can grow food, collect water, and build roads and homes—all things we need. Explain that many people work to make sure that, in building and doing these things, we do not affect the water cycle in a negative way, because that could mean bigger problems for the community later on.</p> <p>Give students the remaining class time to finish their diagrams on Human Communities and Water.</p> <p>Gather Student Editions, if used.</p> <p>Collect Student Workbooks and use Human Communities and Water for assessment.</p> <p><i>Tip: As you finish the unit, guide students to reflect on the text, visual, and oral media that were used in presenting the information. Have students explain how each source of the information worked together to increase understanding of the main ideas and key supporting points.</i></p>	<p>SL.5.2: Summarize...information presented...visually and orally.</p> <p>Suggestion: <i>Using this diagram, students are summarizing the information presented in the previous steps.</i></p>

Unit Assessment

Refer to the introduction pages at the front of this document for information regarding the Traditional and Alternative Assessments for this unit and their Common Core correlations.

California Common Core State Standards Descriptions

Language Standards

- **L.5.4:** Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 5 reading and content*, choosing flexibly from a range of strategies.
 - a) Use context (e.g., cause/effect relationships and comparisons in text) as a clue to the meaning of a word or phrase.
 - b) Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., *photograph*, *photosynthesis*).
 - c) Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases **and to identify alternate word choices in all content areas. CA**
- **L.5.6:** Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., *however*, *although*, *nevertheless*, *similarly*, *moreover*, *in addition*).

Reading Standards for Informational Text

- **RI.5.2:** Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
- **RI.5.3:** Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
- **RI.5.4:** Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a *grade 5 topic or subject area*. **(See grade 5 Language standards 4–6 for additional expectations.) CA**
- **RI.5.7:** Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
- **RI.5.10:** By the end of the year, read and comprehend informational texts, including history-social studies, science, and technical texts, at the high end of the grades 4–5 text complexity band independently and proficiently.

Speaking and Listening Standards

- **SL.5.2:** Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- **SL.5.3:** Summarize the points a speaker **or media source** makes and explain how each claim is supported by reasons and evidence, **and identify and analyze any logical fallacies. CA**

Writing Standards

- **W.5.2:** Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
 - b) Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
 - c) Link ideas within and across categories of information using words, phrases, and clauses (e.g., *in contrast*, *especially*).
 - d) Use precise language and domain-specific vocabulary to inform about or explain the topic.
- **W.5.8:** Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.