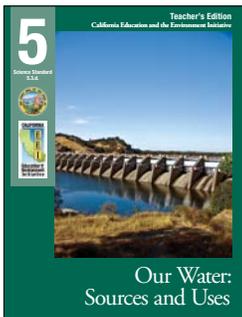




TEACH COMMON CORE STANDARDS WITH THE EEI CURRICULUM

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.d.—Our Water: Sources and Uses



In this unit, students learn about sources and uses of our fresh water supply. Students examine how people use and conserve water, and how human practices affect its limited availability. Students analyze the consequences of changing the characteristics of fresh water on the ecosystems and human communities within a watershed. They tour through California’s reservoir system and recognize how water moves naturally between the different natural reservoirs. Students also identify the level of water quality and analyze when low quality water can be used. Conservation methods are discussed and case studies examined so that students can determine when and how water can be treated. The unit concludes with a presentation, where the students have synthesized the information and predicted the consequences of changing the characteristics of water on the natural and human communities.

		RI.5.1	RI.5.3	RI.5.4	RI.5.5	RI.5.6	RI.5.7	RI.5.9	RI.5.10	W.5.1	W.5.2	W.5.4	W.5.8	W.5.9	SL.5.1	SL.5.2	SL.5.3	SL.5.4	SL.5.5	L.5.4	L.5.5
LESSONS	California Connections		✓	✓			✓		✓								✓			✓	
	1		✓	✓			✓	✓	✓		✓				✓		✓			✓	
	2		✓	✓		✓	✓			✓	✓		✓		✓		✓			✓	✓
	3	✓		✓	✓		✓	✓			✓	✓			✓					✓	
	4			✓			✓	✓			✓		✓			✓	✓			✓	
	5	✓		✓			✓	✓			✓		✓	✓	✓		✓	✓	✓	✓	
	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 pages 19–20 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, (optional) partners
- **Lesson 2:** Group of 3, whole class
- **Lesson 3:** Whole class, (optional) partners, group of 3
- **Lesson 4:** Whole class, partners
- **Lesson 5:** Whole class, small group
- **Lesson 6:** Whole class, small group

National Geographic Resources

- **People and the Environment** wall map (Lesson 5)
- **Political** wall map (Lesson 5)
- **Water for Life** wall map (Lesson 1, 5)

Unit Assessment Options

Assessments	Common Core Standards and Applications
Traditional Assessment	
<p>Students answer multiple choice, fill-in-the-blank, and short answer questions. Then they label multiple diagrams showing the methods in wastewater treatment and describe ways water can influence the human community.</p>	<p>W.5.2b: Develop the topic with facts, definitions, concrete details...or other information and examples...</p>
Alternative Assessment	
<p>Students create a brochure about a fictional town demonstrating the students' understanding that fresh water is limited and should be recycled and preserved.</p>	<p>SL.5.4: Report on a topic...sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.</p> <p>Suggestion: <i>Brochures can be constructed manually or digitally.</i></p> <p>Optional: <i>If suggestion is used and digital path is chosen.</i></p> <p>SL.5.5: Include multimedia components (e.g., graphics, sound) and visual displays in presentations...</p> <p>W.5.2d: Use precise language and...vocabulary to inform...</p>

Lesson 1: Reservoirs Revealed

Students read California Connections: California Drought as an introduction to the importance of water in California. They discuss natural and human-made reservoirs, and take a photographic tour of natural reservoirs in California. As a class, they discuss water movement among reservoirs.



National Geographic Resources

- **Water for Life** wall map

Use this correlation in place of the **Procedures** on pages 40–41 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. These documents are provided separately.</p> <p>Tip: Word Wall Cards may be used at the beginning, as the words come up in the lesson, or as a review at the end.</p> <p>Tip: If Dictionary needs to be reused from year to year, students should not write in them.</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>Explain to students that they are beginning a unit about the amount of fresh water available. They will learn about how the quality of water can affect the environment and living things, and what we can do to reduce our use of our limited freshwater supply. Review the term “fresh water” with students.</p>	n/a
Step 2	
<p>Tell students that they are going to read about David, a boy their age who lives in San Diego, and his experience with limited rainfall in California. Use the Word Wall Cards to review the definitions of the terms “agriculture,” “aquifer,” “drought,” and “precipitation.” Distribute a Student Edition to each student. Tell them to turn to California Connections: California Drought (Student Edition, pages 2–5). Have students read the story silently.</p>	<p>RI.5.10: ...read and comprehend informational texts, including...science...</p> <p>Suggestion: Students can identify difficult words or ideas as they independently read that the teacher and/or other students can address at the end of reading.</p>

Procedures	Common Core Standards and Applications
Step 3	
<p>When students have finished reading, tell them that, like David, all humans rely on fresh water. Ask students, “Where on Earth do we find fresh water naturally?” (<i>Lakes, rivers, snowpack, glaciers, underground</i>) Explain that these are the sources of the fresh water we use daily. Ask if all of these sources of fresh water are found in every place on Earth; have students provide examples to support their answers. (<i>No; glaciers are only found in very cold places; snowpack is found in cold places and places at higher elevations; rivers, lakes, and groundwater may be found in almost all other places.</i>)</p>	<p>SL.5.3: ...explain how each claim is supported by reasons and evidence...</p>
Step 4	
<p>Review the term “reservoir” with students. Explain that the definition of “reservoir” includes areas where water is stored naturally and areas created by people to store water. Ask which of the water features mentioned in Step 3 might be considered natural reservoirs. (<i>Lakes, snowpack, glaciers, underground</i>)</p> <p>Tell students to turn to California’s Lakes and Reservoirs (Student Edition, page 6). Point out some of the dams marked on the Water for Life wall map. Tell students to locate these reservoirs on California’s Lakes and Reservoirs. Explain that people create reservoirs by building dams across rivers. The dams stop the flow of water, creating artificial lakes that store water for communities to use.</p> <p>Ask students whether water stays in one place or whether it moves over time among these reservoirs. (<i>Moves over time</i>) If necessary, review the water cycle to help students understand that, for instance, water in a lake may evaporate and fall into a river in a different area.</p>	<p>RI.5.4: Determine the meaning of general academic and domain-specific words and phrases in a text...</p> <p>RI.5.7: Draw on information from multiple print...sources, demonstrating the ability to locate an answer to a question quickly...</p> <p>Suggestion: Ask students “What does this diagram/image tell you about the topic?”</p> <p>RI.5.9: Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.</p> <p>Suggestion: Students can research local dams and see the affect they had on the community.</p> <p>SL.5.1: Engage effectively in...discussions...with diverse partners...building on others’ ideas and expressing their own clearly.</p> <p>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.</p> <p>b) Follow agreed-upon rules for discussions and carry out assigned roles.</p> <p>c) Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.</p> <p>d) Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.</p>
Step 5	
<p>Tell students that they are going to take a photographic tour of freshwater sources in California. Project Reservoir, Snowpack, Lake, Aquifer, Freshwater Marsh, Small Stream, and River (Visual Aids #1–7). Identify each image. Ask students to think about the water cycle to determine from where the fresh water in this image may have come and where it could move next. (<i>Answers may include precipitation, other streams or rivers, evaporation flow to the ocean, be redirected to a water treatment plant.</i>) Repeat for each of the visual aids.</p>	<p>RI.5.3: Explain the relationships or interactions between two or more...events, ideas, or concepts...</p> <p>SL.5.3: ...explain how each claim is supported by reasons and evidence...</p> <p>Suggestion: Compare and contrast the similarities and differences in how each fresh water source gets and loses water. Which way seems most prevalent (rain) and why.</p>

Procedures	Common Core Standards and Applications
Step 6	
<p>Ask students how the reservoirs they looked at on the Water for Life wall map, California's Lakes and Reservoirs, and the visual aids relate to California Connections: California Drought, which they read at the beginning of class. (<i>When there is a drought in a region, the reservoirs may not fill, and therefore less water is available for living things and for natural systems. The human reservoirs can be manipulated, to a certain extent, to increase water availability in a particular location. This can be done, for instance, by opening a dam and releasing water into another human-made reservoir to refill it.</i>)</p>	<p>RI.5.3: Explain the relationships or interactions between two or more...events, ideas, or concepts...based on specific information in the text.</p> <p>RI.5.7: Draw on information from multiple print or digital sources, demonstrating the ability...solve a problem efficiently.</p> <p>Suggestion: <i>Could be completed in partners first then whole class.</i></p>
Step 7	
<p>Distribute a Student Workbook to each student. Tell students to turn to Sources of Fresh Water (Student Workbook, page 2). Instruct them to answer the questions for homework.</p> <p>Gather Student Editions.</p> <p>Collect Student Workbooks and use Sources of Fresh Water for assessment.</p> <p>Tip: <i>The Sources of Fresh Water assignment asks students to look at the Water for Life map. Assignment might be better to complete in class.</i></p> <p>Tip: <i>If Student Workbooks need to be reused from year to year, students should not write in them. Some strategies teachers use to preserve the workbooks are:</i></p> <ul style="list-style-type: none"> ■ <i>Have students use binder paper or other lined or unlined paper</i> ■ <i>Have students use a sheet protector over the page and write with a whiteboard marker</i> ■ <i>Do together as a class on a projector or chart paper</i> ■ <i>Project the digital fill-in version and do together as a class</i> 	<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>

Lesson 2: Water Consumption Considered

Students work in groups to brainstorm ways in which people use water. They classify the uses into general categories based on how the water is used, then identify the quality of water—potable and non-potable—required for each of the uses.



Use this correlation in place of the **Procedures** on pages 58–59 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>Ask students, “How often do you need fresh water?” (<i>Many times every day</i>) Have a few students share ways in which they use water.</p> <p>Tell students they are going to brainstorm ways people use water in other aspects of their lives. They will work together to categorize water uses and will discuss the different levels of water quality needed for different uses.</p>	n/a
Step 2	
<p>Organize students into groups of three. Give each group a pad of sticky notes, a piece of chart paper, and a marker.</p> <p>Ask groups to brainstorm as many human uses of water as they can. Have them write each use on a different sticky note. Tell them to think about how water is used at home, at school, throughout the community, and throughout the state. Give students 10 minutes to brainstorm uses.</p>	<p>SL.5.1: Engage effectively in a range of collaborative discussions (...in groups...) with diverse partners...</p> <p>a) Come to discussions prepared...explicitly draw on...other information known about the topic...</p> <p>W.5.8: Recall relevant information from experiences...</p>
Step 3	
<p>When they have finished listing water uses, ask students to group the sticky notes with similar ideas and give each group a title that identifies the category. Have them write each category heading on their piece of chart paper, and physically place the sticky notes under each category. Give students 10 minutes to complete this task. (<i>Note: Supply additional sticky notes as needed.</i>)</p>	<p>RI.5.3: Explain the relationships...between two or more... events, ideas, or concepts...</p> <p>W.5.2a: ...group related information logically...</p>

Procedures	Common Core Standards and Applications
Step 4	
<p>Once the students have categorized their water uses, initiate a class discussion. Have each group share their categories. List all the categories on the board.</p> <p>Have students share some of their ideas under each category. As students share, ask them to note when other groups duplicate any of their ideas and whether the other group has categorized them in similar or different ways. Consider whether categories can be combined. Get students to agree on a few general categories into which all their water uses can be classified. Write the category names on the board with a few examples under each one. (<i>Personal Uses: brushing teeth, drinking, watering houseplants and gardens, flushing the toilet; Community Uses: firefighting, filling public pools, watering public gardens; Agricultural Uses: watering crops, processing food, watering cattle; Industrial Uses: power generation, cooling, product creation</i>)</p>	<p>SL.5.3: Summarize the points a speaker...and explain how each claim is supported by reasons or evidence, and identify and analyze any logical fallacies. CA</p> <p>Suggestion: <i>Students should discuss and defend their reasons for having separate categories or combining the categories. Other groups could agree/disagree and base reasoning on opinion and evidence.</i></p>
Step 5	
<p>Review the terms “non-potable” and “potable” with students. Have students examine the water uses listed on the board and identify which level of water quality might be needed for each use. Discuss their reasoning and record their thoughts next to each item. Point out that water uses within the same category may require different levels of water quality. For instance, we can flush our toilets with non-potable water, but need potable water for other personal uses, such as brushing our teeth.</p>	<p>RI.5.6: Analyze multiple accounts of the same event or topic, noting important similarities and differences...</p>
Step 6	
<p>Ask the students where they think we get potable and non-potable water. (<i>Answers will vary.</i>) Explain that this varies with geographic location (developing versus developed countries) and the specific water sources (for example, the Ganges River, which is extremely polluted, versus the Klamath River, which is relatively clean). Acknowledge that there is no one single answer to this question. Help students understand that human uses of water require different levels of water quality and that water, by law and state and federal standards, is treated before use. Explain that while water treatment is common in the United States, it is an expensive process that sometimes requires advanced technology, and therefore is not available throughout all human communities of the world. Have the students reflect on the information on the board.</p>	<p>L.5.5c: Use the relationship between particular words...to better understand each of the words.</p> <p>Suggestion: <i>Provide background information and examples of developing countries. Show pictures or short video clips of polluted and clean water sources.</i></p> <p>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.</p>

Procedures	Common Core Standards and Applications
Step 7	
<p>Review the terms “acre-foot” and “crop” with students. Explain that large quantities of water are measured in acre-feet. Explain that the amount of water in an acre-foot of water (1233 cubic meters), approximately 326,000 gallons (1,233,500 liters), is enough for two small families a year in California.</p> <p>Project How Precipitation is Used in California (Visual Aid #8). Tell students that the average annual precipitation in California is 202.5 million acre-feet per year. The natural environment, California’s land and water ecosystems, use about 79% of the annual precipitation. Agriculture uses approximately 34 million acre-feet (17% of the total precipitation) for crop irrigation. Urban uses, including homes, businesses and industry consume 8 million acre-feet (about 4% of the annual precipitation).</p> <p>Have students identify the water quality needed—potable or non-potable—for each of these uses: photosynthesis, crops, cities and industries, and landscaping and other uses. (<i>Photosynthesis: probably non-potable in the form of rain and runoff; Crops: mostly non-potable if the source is relatively clean; Cities, industries, landscaping and recreation; both potable and non-potable, depending on use.</i>)</p>	<p>RI.5.7: Draw on information from multiple print...sources...</p> <p>Suggestion: <i>Discuss how the graph supports an understanding of the concept.</i></p>
Step 8	
<p>Redistribute students’ individual Student Workbooks. Tell them to turn to Human Uses of Water (Student Workbook, pages 3–4). For homework, tell students they are to use the categories decided on by the class to classify at least 10 human uses of water they notice in their after-school activities, at home, on the television, or going back and forth to school. Have students record the class categories in the designated area on Human Uses of Water before completing the rest of the chart.</p> <p>Collect Student Workbooks and use Human Uses of Water for assessment.</p>	<p>RI.5.6: Analyze multiple accounts of the same event or topic, noting important similarities and differences...</p> <p>W.5.1b: Provide...reasons that are supported by facts and details.</p> <p>Suggestion: <i>Have students defend why human use would have a potable or non-potable water quality, using complete sentences.</i></p>

Lesson 3: Working with Wastewater

Students discuss why humans need to clean wastewater. They study diagrams of the natural water cycle and the wastewater treatment process to learn how nature and humans clean water. They complete a Venn diagram to compare and contrast these two methods.

The image shows a page from a curriculum with the title "Lesson 3: Working with Wastewater". It features a photograph of a wastewater treatment plant with large circular tanks. To the right, there is a diagram of the water cycle and a Venn diagram comparing natural water cycle and wastewater treatment. The page includes text boxes with "Learning Objectives", "Background", and "Vocabulary" sections.

Use this correlation in place of the **Procedures** on pages 68–69 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	
Have several students volunteer to share why they think our supply of fresh water is limited. (<i>Fresh water is trapped in ice at poles, in glaciers, in the atmosphere; most of water on Earth is salt water in the oceans.</i>) (Note: You may want to mention that in some developing countries, some water is too polluted to use, and it is too expensive to clean it. Use the Lesson Background information to supplement students’ knowledge as needed.)	n/a
Step 2	
Ask students what they think happens to water once we have used it in our homes, factories, restaurants, and industries. (Accept any answer.) Review the term “wastewater” with students.	n/a
Step 3	
Remind students that the water cycle helps clean water naturally. Ask students, “Why do people need to clean wastewater if the natural water cycle already does this?” (<i>We use more fresh water than the water cycle can produce; it helps to prevent disease and reduce pollution.</i>) Tell students that they are going to learn how wastewater is treated and cycled back into the environment. Tell students that they will also compare and contrast wastewater treatment to the parts of the water cycle that naturally clean water.	<p>SL.5.1d: Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.</p> <p>Suggestion: Have students paraphrase the information in partners.</p>

Procedures	Common Core Standards and Applications
Step 4	
<p>Review the terms “filter,” “pollutant,” and “settling” with students. Distribute a Student Edition to each student. Tell them to turn to Wastewater Treatment (Student Edition, pages 7–8). Review the diagrams, briefly describing three methods of water treatment. Be sure students understand that primary treatment happens first, followed by the secondary and advanced treatments, so water gets progressively cleaner with each type of treatment.</p> <ul style="list-style-type: none"> ■ Primary treatment: Wastewater is pushed through a filter. This filter catches and removes large particles from the wastewater. The filtered wastewater then enters a big pool, called a settling tank. Chemicals are added to the wastewater in the tank and these chemicals cause the remaining particles in the wastewater to clump together. When clumped, the particles are heavy and settle to the bottom of the tank. The water above the settled particles is drained off into ponds. ■ Secondary treatment: Air is pumped into the wastewater in the ponds. Tiny organisms (bacteria) are put into the wastewater. The bacteria eat the organic particles that are still in the wastewater. Then, a chemical (chlorine) is added to the water to kill the bacteria. ■ Advanced treatment: The water from the ponds is pushed through another filter with smaller holes than the one used in the primary treatment. This micro-filter traps very tiny particles, as well as the particles that the bacteria did not eat. The water may also be boiled at this step. When the water evaporates, any remaining particles stay behind. The water vapor is cooled and collected. Chemicals to disinfect the water are added, and then the water is ready for use. <p>Tell students that the advanced treatment is an expensive process. Water treatment plants in different communities may or may not use advanced treatment to treat their wastewater.</p>	<p>RI.5.1: Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.</p> <p>RI.5.9: Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.</p> <p>SL.5.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 5 topics and texts</i>, building on others’ ideas and expressing their own clearly.</p> <ol style="list-style-type: none"> 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 and carry out assigned roles. c) Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others. d) Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions. <p>Suggestion: Have students read the correlating lesson on wastewater treatment in their state adopted science book, or any other resource found to supplement the teacher’s explanation of the levels of treatment.</p> <p>Suggestion: Students in small groups can become “experts” on a level of treatment, making a poster with a model and descriptions. Then students will “Jigsaw”, or expert share, the information between groups.</p>
Step 5	
<p>Tell students to turn to Water Cycle (Student Edition, page 9). Project Water Cycle (Visual Aid #9) and review the diagram and the following terms with students: “evaporation,” “storage,” and “percolation.” Briefly describe the parts of the water cycle that naturally remove pollutants from water.</p> <ul style="list-style-type: none"> ■ Evaporation: When water evaporates, it leaves behind some of the heavy pollutants. The water vapor is cleaner than the liquid water. ■ Storage: When water collects in one place, heavier pollutants sink to the bottom. This helps clean the water. ■ Percolation: (Also known as infiltration) When water soaks into the ground through sand and gravel, some pollutants are left behind. 	<p>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.</p>

Procedures	Common Core Standards and Applications
Step 6	
<p>Redistribute students' individual Student Workbooks. Tell them to turn to Cleaning Water (Student Workbook, pages 5–7). Ask students to compare and contrast the ways in which the processes described in Wastewater Treatment and Water Cycle clean water. Have them focus on finding the similarities between the two processes.</p> <p>Review the instructions for completing the Venn diagram on Cleaning Water. Organize the class into groups of three and tell students that they can discuss their ideas within their groups, but that each student is responsible for completing Cleaning Water.</p> <p>Allow approximately 15 minutes for students to complete the Venn diagrams.</p>	<p>RI.5.5: Compare and contrast the...concepts, or information in two or more texts.</p> <p>SL.5.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 5 topics and texts</i>, building on others' ideas and expressing their own clearly.</p> <p>d) Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.</p>
Step 7	
<p>Bring the class back together and call students' attention to the Cleaning Water Venn Diagram. Have one group share one similarity or difference between the ways in which water is cleaned through wastewater treatment and the natural water cycle. Write the idea in the appropriate space on the diagram. Ask each group to add one idea from their diagram until the class diagram includes all the similarities and differences identified by the groups. Encourage students to modify their Venn diagrams as necessary to reflect accurate and thorough information. (<i>Note: An Answer Key and Sample Answers for the Cleaning Water Comparison Venn Diagram are provided on page 71, as part of the Sample Answers for Cleaning Water.</i>)</p>	<p>RI.5.9: Integrate information...on the same topic in order to write or speak about the subject knowledgeably.</p>
Step 8	
<p>Tell students to answer the questions in Part 2 of Cleaning Water. Gather Student Editions.</p> <p>Collect Student Workbooks and use Cleaning Water for assessment.</p>	<p>W.5.2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p> <p>b) Develop the topic with facts, definitions, concrete details,... or other information and examples related to the topic.</p> <p>c) Link ideas within and across categories of information using words, phrases, and clauses (<i>e.g., in contrast, especially</i>).</p> <p>d) Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e) Provide a concluding statement or section related to the information or explanation presented.</p> <p>W.5.4: Produce clear and coherent writing...in which the development and organization are appropriate to task, purpose and audience...</p>

Lesson 4: What Would You Do with the Water?

Students read a series of California case studies to learn about water conservation methods. They identify different strategies and consider their scale (individual to state) and their degree of influence. As homework, students discuss water conservation practices with their families.



Use this correlation in place of the **Procedures** on pages 82–83 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>Ask a few students to describe, in general, what they learned in the previous lesson. (<i>Cleaning water in the water cycle and in wastewater treatment systems.</i>) Distinguish for them the difference between treating wastewater and decreasing the use of water. Explain that treating wastewater is a useful technological advance; however, if human communities decrease their consumption of water, then less water needs to be treated and the demand for water decreases, which puts less pressure on our natural systems.</p> <p>Review the term “conserve” with students. Explain that in this lesson they will learn about a variety of ways that individuals, residences, businesses, schools, and human communities conserve water.</p>	<p>SL.5.2: Summarize...information...orally. Suggestion: <i>Oral summary can be done in partners.</i></p> <p>W.5.8: Recall relevant information from experiences... summarize or paraphrase information in notes and finished work...</p>
Step 2	
<p>Redistribute students’ individual Student Workbooks and a Student Edition to each student. Tell them to turn to Water Conservation Analysis (Student Workbook, pages 8–9) and Water Conservation Case Studies (Student Edition, pages 10–12). Review the instructions for Water Conservation Analysis as a class:</p> <ul style="list-style-type: none"> ■ In the first blank column, students should briefly describe how water is being conserved in the case study. ■ Under “Who Uses Them,” in the second column, students should place an “X” in the column under the person or group of persons most likely to perform the activity. There may be more than one response. ■ In the last column, students should decide how much of an effect the activity could have on water conservation. They choose between “small,” “large,” and “could add up.” In this case, “could add up” means the action is one that one person or business might take, but the effect would become greater if many took the same action. 	<p>RI.5.7: Draw on information...demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.</p> <p>SL.5.3: Summarize the points...and explain how each claim is supported by reasons and evidence...</p> <p>Suggestion: <i>Tell students they need to have a verbal justification ready for each of their choices.</i></p>

Procedures	Common Core Standards and Applications
Step 2 (Continued):	
<p>Tell students to read each case study and fill out the corresponding section of Water Conservation Analysis. Allow 30 minutes for the students to complete the activity individually. (<i>Note: Consider giving students the option of working in pairs.</i>)</p>	<p>RI.5.7: Draw on information...demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.</p> <p>SL.5.3: Summarize the points...and explain how each claim is supported by reasons and evidence...</p> <p>Suggestion: Tell students they need to have a verbal justification ready for each of their choices.</p>
Step 3	
<p>Review Water Conservation Analysis as a class. (<i>Accept all reasonable answers.</i>) Encourage students to add, delete, or revise information on Water Conservation Analysis during the discussion. Point out that the effects of any action can add up if done by many people, businesses, or communities. (<i>Note: An Answer Key and Sample Answers for Water Conservation Analysis are provided on pages 86–87.</i>)</p>	<p>RI.5.9: Integrate information...on the same topic in order to write or speak about the subject knowledgeably.</p>
Step 4	
<p>Focus the discussion on Case #5 from Water Conservation Case Studies. Project Water Recycling (Visual Aid #10). Remind students that, to recycle or “reclaim” water, wastewater receives advanced treatment which includes biological, chemical, and mechanical cleaning. Explain that, in some communities, the cleaned water is then pumped into lakes designed to recharge groundwater. Tell students that there it is naturally filtered as it moves through the soil. Point out that, eventually, it is drawn up through wells, disinfected, and delivered through the drinking water distribution system.</p>	<p>RI.5.7: Draw on information from multiple print...sources...</p> <p>Suggestion: Discuss how the diagram supports an understanding of the concept.</p>
Step 5	
<p>Tell students to turn to Talking About Water Conservation (Student Workbook, page 10). For homework, ask students to discuss the water conservation activities they learned about with an adult with whom they live.</p> <p>On the following day, tell students to turn to Talking About Water Conservation and complete it based on the what they discussed with the adult on the previous day.</p> <p>Gather Student Editions.</p> <p>Collect Student Workbooks and use Talking About Water Conservation for assessment.</p>	<p>W.5.2b: Develop the topic with...examples related to the topic.</p>

Lesson 5: What a Difference Water Makes

In groups, students consider scenarios from different watersheds in which the quality or quantity of water changes. Through discussion and a map study, they determine some possible consequences of the change on the ecosystems and human communities in the watershed.



National Geographic Resources

- **People and the Environment** wall map
- **Political** wall map
- **Water for Life** wall map

Session 1

Use this correlation in place of the **Procedures** on pages 96–97 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	
<p>Tell students they will learn about water in different parts of the state and predict what might happen if there is a change to a body of water. Explain that changes can affect the quality of the water, the amount of water in one place, or even where the water flows.</p> <p>Ask students the following questions:</p> <ul style="list-style-type: none"> ■ What kinds of things could people do that would change the water in a river or how the river flows? (<i>Build a dam, construct a channel for the river, pollute the water, pump water to another location, use the water for irrigation or drinking.</i>) ■ What natural events might cause changes to a river? (<i>Heavy rainfall or snowmelt might cause flooding; a fire might remove trees and cause more soil to run into the river.</i>) ■ If the quantity or quality of the water in a river or lake changes, what might happen to the surrounding ecosystem? (<i>Plants may not grow as well, animals might get sick from drinking polluted water, animals might become thirsty and move away, and fish and amphibians might not survive.</i>) ■ If the quantity or quality of the water in a river or lake changes, what might happen to people who live nearby or use that water? (<i>People might get sick from drinking polluted water, they may not have enough water for their plants or yards, their homes may be flooded.</i>) 	n/a

Procedures	Common Core Standards and Applications
Step 2	
<p>Review the terms “consequence,” “runoff,” and “watershed” with students. Organize students into six groups. Give each group one of the Watershed Scenarios (Teacher’s Masters, pages 2–4) and a sheet of writing paper. Explain that each group is studying a different scenario. Each scenario describes something that could possibly happen to California’s water supplies. Some situations are real and some are imaginary. Each group is to consider the consequences their situation might have for natural systems and human communities. They will write down their ideas and present their situation to the rest of the class. (Note: You may choose to discuss the answers to the first scenario, Sacramento River, as a class. In this case, the class should be divided into five groups, one for each remaining scenario.)</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. When needed use the Dictionary to further clarify meanings.</p>
Step 3	
<p>Redistribute students’ individual Student Workbooks and a Student Edition to each student. Tell them to turn to California’s Watersheds (Student Edition, page 13) and to What a Difference Water Makes (Student Workbook, page 11).</p> <p>Ask students to read their Watershed Scenarios and use the California’s Watersheds to locate the watershed involved in their scenario. As students are reading, visit each group and give them one or two examples of possible consequences, related to their scenario, from the Teacher Background for Watershed Scenarios, provided on pages 98–99. Instruct groups to discuss possible consequences of their scenario for ecosystems and human communities in the watershed. Encourage groups to use the People and the Environment, Political, and Water for Life wall maps to learn about their watershed. Explain that the nearby geographic features, such as mountains, valleys, rivers, lakes, and cities and towns might affect the situation they are studying, and they should consider this information as they discuss possible consequences.</p>	<p>RI.5.7: Draw on information from multiple print..sources...</p> <p>RI.5.9: Integrate information...in order to...or speak about the subject knowledgeably.</p> <p>SL.5.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 5 topics and texts</i>, building on others’ ideas and expressing their own clearly.</p> <p>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.</p> <p>b) Follow agreed-upon rules for discussions and carry out assigned roles.</p> <p>c) Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.</p> <p>d) Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.</p>
Step 4	
<p>Give the groups 20 minutes to read their Watershed Scenarios and find out all they can about the watershed that they have been assigned. Tell students to make notes about their watershed on What a Difference Water Makes. Ask groups to discuss possible consequences of their the events in their scenario on the ecosystems and human communities in the watershed.</p>	<p>RI.5.1: Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.</p> <p>W.5.9: Draw evidence from...informational texts to support analysis...and research.</p>

Procedures	Common Core Standards and Applications
Step 5	
<p>When time is up, ask the groups to decide on the two most significant consequences to ecosystems and the two most significant consequences to human communities of changes in the watershed they were assigned. Have them write the consequences on their copies of What a Difference Water Makes. (Note: An Answer Key and Sample Answers for What a Difference Water Makes are provided on page 108.)</p> <p>Tell students to prepare a brief presentation for their classmates. The presentation should include a description of the situation they have studied and their answers to the questions on What a Difference Water Makes. Tell students they should also be prepared to explain why they chose the consequences they listed and be able to point out their watershed on the Water for Life wall map.</p> <p>Gather Student Editions and Watershed Scenarios.</p> <p>Assessment takes place during the presentation in Session 2. What a Difference Water Makes is ungraded but used by students to prepare their presentations in Session 2.</p>	<p>RI.5.1: Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.</p> <p>SL.5.4: Report on a topic or text...using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.</p> <p>SL.5.5: Include multimedia components...and visual displays in presentations...</p> <p>Suggestion: <i>Presentation can be prepared manually or digitally.</i></p> <p>W.5.9: Draw evidence from...informational texts to support analysis...and research.</p>

Session 2

Use this correlation in place of the **Procedures** on page 100 of the Teacher’s Edition.

Procedures	Common Core Standards and Applications
Step 1	
<p>Redistribute students’ individual Student Workbooks and a Student Edition to each student. Have students rejoin their groups from Session 1. Return the groups’ Watershed Scenarios.</p> <p>Tell students to turn to Presentation Guidelines (Student Workbook, page 12). Project Presentation Guidelines (Visual Aid #11). Review the components of the presentation listed on Presentation Guidelines. Distribute chart paper, colored markers, and crayons or color pencils to each group. Give the students 15 minutes to regroup and finalize their presentations using all the information they have in the Student Editions, Water for Life wall map, and What a Difference Water Makes (Student Workbook, page 11).</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 2	
<p>When time is up, tell students to turn to Water’s Influence on Ecosystems (Student Workbook, pages 13–14) and take notes on the other students’ presentations. Explain that they will need their notes to complete their homework assignment.</p>	<p>SL.5.3: Summarize the points a speaker...makes and explain how each claim is supported...and analyze any logical fallacies. CA</p> <p>Suggestion: <i>Have students share their notes with a partner, adding any missed information.</i></p>

Procedures	Common Core Standards and Applications
Step 3	
<p>Have each group give a five-minute presentation to the class summarizing their scenario and the consequences. Use the Teacher Background for Watershed Scenarios, provided on pages 98–99, to assess students’ work. Make sure each group uses the People and the Environment, Water for Life, and Political wall maps to show the class where their watershed is located.</p>	<p>SL.5.4: Report on a topic or...present...sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.</p> <p>SL.5.5: Include multimedia components...and visual displays in presentations...</p>
Step 4	
<p>When all groups have finished their presentations, instruct students to answer the questions on page 13 of Water’s Influence on Ecosystems for homework, using their notes from the group presentations.</p> <p>Gather Student Editions and student maps.</p> <p>Collect Student Workbooks and use Water’s Influence on Ecosystems for assessment.</p>	<p>W.5.2b: Develop the topic with facts...and examples related to the topic.</p> <p>W.5.8: ...summarize or paraphrase information in notes...</p>

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.
 - 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.5.5:** Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
 - c) Use the relationship between particular words (e.g., synonyms, antonyms, homographs) to better understand each of the words.

Reading Standards for Informational Text

- **RI.5.1:** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the 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.5.5:** Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.
- **RI.5.6:** Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.
- **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.5.9:** Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.
- **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.5.1:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 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 and carry out assigned roles.
 - c) Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
 - d) Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
- **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**
- **SL.5.4:** Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- **SL.5.5:** Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

Writing Standards

- **W.5.1:** Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
 - b) Provide logically ordered reasons that are supported by facts and details.
- **W.5.2:** Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
 - a) Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
 - 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.
 - e) Provide a concluding statement or section related to the information or explanation presented.
- **W.5.4:** Produce clear and coherent writing (**including multiple-paragraph texts**) in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) **CA**
- **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.
- **W.5.9:** Draw evidence from literary or informational texts to support analysis, reflection, and research.