• Multi-step problem-solving questions written with depth and complexity.

• Targeted instruction for each of four leveled books:
  - Approaching
  - On Level
  - Beyond
  - Spanish

• Blackline worksheets provide real-world problem solving aligned to each book.

• Each book reinforces Science or Social Studies content aligned to NGSSS.
Consultants and Reviewers

Macmillan/McGraw-Hill wishes to thank the following professionals for their feedback. They were instrumental in providing valuable input toward the development of this component.

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Children’s Author, Speaker  
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**Sharon Gilbert**  
Reading Recovery® Specialist  
Marion, Ohio

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Author of 50 books including the mathematical classic *How Much is a Million?*, David M. Schwartz is an accomplished speaker and storyteller. His presentations lead children on entertaining and educational journeys that combine math, science, reading, and writing. David reviewed and commented on each of the *Real-World Problem Solving* readers in this series.
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The first official American flag had 13 stripes and 13 stars. As our country grew, more stars were added. Today, the flag has 13 stripes and 50 stars. Each star represents a state in the country.

June 14, 1777
Continental Congress passes the first flag act

Act of April 4, 1818
States the flag will have 13 stripes and 1 star for each state

Act of January 13, 1794
Flag given 15 stripes and 15 stars

June 24, 1912
Executive order of President Taft sets new design for flag after New Mexico and Arizona become states

In this painting, Betsy Ross shows how she cut the stars for the American flag.

1. Look at page 3. Where do you see perpendicular and parallel lines on the current United States flag? What kinds of angles can you find on the flag?

2. Look at page 8. Explain how to find how much time passed from the time the Continental Congress adopted our first flag until our modern flag with 50 stars was created.

3. Look at the state flag of Ohio on page 15. This flag has a different shape than all other state flags. What kind of shape has five sides? Name what kinds and how many of each angle the shape has.

4. Look at the state flag of Arkansas on page 18. There is a shape centered on this state flag. Is this shape a rectangle or a rhombus? Explain.

5. Look at pages 12 and 20. Create a Venn diagram that compares the state flags of Iowa and Texas using geometric terms.

6. Look at the flags throughout the story. Except for Ohio, what geometric shape makes up the flags?
Differentiated Instruction:  
Approaching, Beyond, and Spanish Titles  
Meeting the instructional needs of all learners within the classroom community is a daily challenge for teachers. Organizing instruction of *Real-World Problem Solving* might occur in various ways:

- whole-class instruction with struggling readers, ELLs, and students with mild to moderate disabilities using the approaching texts;
- whole class instruction with struggling readers, ELLs, and students with mild to moderate disabilities grouped using the approaching books. Parallel instructional support may be provided by an instructional aide, intervention specialist, or ELL teacher who monitors and supports understanding;
- small group instruction for struggling readers, ELLs, and students with mild to moderate disabilities;
- each page of teacher support contains a box for approaching level instruction. These tips are intended to activate prior knowledge. As such, they should be used during pre-reading;
- some tips could apply to whole-class instruction, regardless of whether students are reading on-level or approaching texts. These tips might address idiomatic language or other concepts that learners might struggle with. In other cases, the tips address cultural or contextual background building more appropriate for ELL or special education populations.
- each page of teacher support also contains a box for beyond-level instruction. These activities are suited to support intended learners. Some activities provide opportunities for students to conduct independent research on particular aspects of a *Real-World Problem Solving* reader they have read. Other activities provide opportunities for extensive writing and demonstrating listening/speaking skills.
- students from varying ability groups might work together to explore some of the problems included in the blackline masters. Pair learners in small groups. You might isolate one problem for student groups to solve, or encourage students to make the choice. This collaboration could result in a short response answer, an extended response answer, or even spark debate among students.
What Makes a Good Problem?
Problem solving and reasoning are processes that students go through as they apply what they know and are able to do when solving a particular problem.

A good math problem:
- engages and appeals to the reader;
- lends itself to a variety of problem-solving solution strategies;
- involves the understanding or use of a math concept or skill;
- has multiple solutions;
- provides opportunities for extension and critical thinking.

The Real-World Problem Solving readers are unique in that they feature math problems throughout each story. Each reader ends with a set of 4 to 6 higher-level questions. These questions vary anywhere from a Level 2 question (comprehension) to a Level 4 question (synthesis). (The level of each question is indicated in the annotated pages at the end of the Teacher Guide. Refer to the chart at the bottom of this page to determine what each level means.)

Students are expected to return to the story and find information in the text or in charts, tables, or graphs to answer the questions. Students will solve simple one-step problems all the way up through multi-step, complex problems.

Just as solving problems helps students make sense of the world around them, justifying and explaining their solutions to a particular problem enables them to develop and expand their reasoning skills. Real-World Problem Solving readers provide numerous opportunities for the student to read the story and then solve problems, including problems at the higher levels of Bloom’s Taxonomy or the Depths of Knowledge.

The Depths of Knowledge include:

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<td>Recall the Basics</td>
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<tr>
<td>Level 2</td>
<td>Use Basic Concepts and Procedures</td>
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<td>Level 3</td>
<td>Reason and Communicate Understanding</td>
</tr>
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<td>Level 4</td>
<td>Evaluate, Extend, and Generalize</td>
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</table>
Communicating Mathematically
It is very important that students communicate mathematically by having them talk or write about the mathematics they are doing. A **Real-World Problem Solving** worksheet master (available in English or Spanish) is provided at the end of the master section. This format guides students through the four-step problem-solving plan and allows them to write the process they used to solve the problem. This is a very important piece of the problem solving process—explaining or justifying the answer to a real-world problem.

**Real-World Problem-Solving Worksheets**
### Correlation Chart

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<th><strong>Real-World Problem Solving Readers</strong></th>
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<th><strong>NGSSS Reading/Language Arts</strong></th>
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<td>Exploring the World by Sea</td>
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<tr>
<td>How Big Is the Solar System?</td>
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<td>Inside a Science Museum</td>
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<td>Water Works</td>
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<td>LA.5.1.6</td>
<td>SC.5.E.7.1</td>
<td></td>
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</tbody>
</table>
Summary
*A Growing Nation* focuses on changes in the United States in the 1800s as a result of the Industrial Revolution. Students will interpret data in charts and graphs and use fractions to solve problems.

**Preview and Predict**
Review the following vocabulary to activate prior knowledge: economy, factories, immigrants, immigration, Industrial Revolution, population.

Ask:
- Do you know anyone who came to the United States from a different country? Where did the person come from?
- What are some reasons it is easier to build a car with machines than it is for a few people to build it by hand?
- What year do you think the photo on the cover was taken?

**Read and Respond**
Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:

- Look at page 7. American exports dropped from $108 million in 1807 to $22 million in 1808. Write that as a fraction and reduce it to its simplest form. \(\frac{22}{108} = \frac{11}{54}\), approximately \(\frac{1}{5}\).
- Look at page 23. About how many days did the first transcontinental train trip take? about \(3\frac{1}{2}\) days. How did you figure that out? Rounded up. Divided 24 into 84.

**Real-World Problem Solving**
- Have volunteers summarize main points of this selection. List responses on the board.

**Real-World Extensions**
- Form four groups. One group will be assigned to each of four modes of transportation: wagon, horse, train, and on foot. Ask each group to determine how long it would take them to travel from New York City to San Francisco using their assigned mode of transportation. Have each group express their results using fractions. Then have each group compare their times to one another using fractions.
- Have students choose an invention from the 1700s or 1800s and tell how it made life better for people.
- Have students research one of the nineteenth century inventors mentioned in the book or any others during this time period. Suggest that they find information about their lives, the development of their inventions, and their inventions’ impact on people’s lives. Invite students to write a report of their findings and share it with the class.

**Approaching**
*Immigrants* and *economy* may be unfamiliar concepts to students. Create a word association chart. Draw a three-column chart on the board. In Column 1, write each word. Label it Vocabulary. Label Column 2 Before Reading, and the last, After Reading. Ask students what they know about each word. Write responses in Column 2. After reading the selection, ask students to complete Column 3.

**Beyond**
Have students research one of the nineteenth century inventors mentioned in the book or any others during this time period. Suggest that they find information about their lives, the development of their inventions, and their inventions’ impact on people’s lives. Invite students to write a report of their findings and share it with the class.
City Planning

MA.5.A.1.4 Divide multi-digit whole numbers fluently, including solving real-world problems, demonstrating understanding of the standard algorithm and checking the reasonableness of results.

SS.5.G.4.2 Use geography concepts and skills such as recognizing patterns, mapping, graphing to find solutions for local, state, or national problems.

Available in four levels: Approaching, On Level, Beyond, and Spanish

Summary
City Planning introduces elements necessary to the plan of a city, using major United States cities as examples. Students will use mapping and customary measurement skills to gather information.

Preview and Predict
Review the following vocabulary to activate prior knowledge: city planner, green space, gridiron pattern, public place, statehouse.

Ask:
• If you were going to develop a city, what is the first thing you would do?
• What important things should a city have?
• Why would a city planner decide to place historical sites in the center of the city?

Read and Respond
Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:
• Why is green space important to a city?
  Answers might include: it provides beauty; it is relaxing; it provides places to visit and play; it provides space for wild animals.
• Look at page 15. How would you determine the number of square feet in the National Mall? Convert six miles to feet. Multiply the result by 400 feet.
• Have volunteers classify and categorize different considerations that go into city planning. Afterward ask students what their priority would be in city planning. Be sure they justify their responses with information from the selection.

Real-World Problem Solving
• Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
• Encourage struggling students to work in pairs to solve each problem.
• Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
• Use the worksheet form on pages 47–48.

Real-World Extensions
• Have students work in small groups to plan a small city or town. They should lay out streets, housing areas, shopping areas, schools, emergency services, utility services, parks, libraries, and any other services they think are important.
• Using the map on pages 16 and 17, have students take turns giving directions from one point to another. For example, explain the best way to get from the Capitol Building to the Washington Monument.

LA.5.2.2.1 Use and explain information from text features

Have students look at the map of Washington, D.C. on pages 16–17. Give them street directions to help them locate specific sites on the map. Then have students use the map to ask questions of each other.

Approaching AL
Distribute chart paper to students. Ask them to plot the essential features of a city. Ask them to label each feature and to write a brief justification for each choice. After reading ask them to return to their plan. Have them use another color of ink to modify their original plans. Explain that city planners also must modify their ideas as they learn new details while planning a city.

Beyond BL
Have students work in pairs to plan and lay out the design of their ideal city. Suggest that they carefully consider the street layout and the placement of all green spaces, the town center, playgrounds, schools, and all public buildings. Invite pairs to present their city design to the class and defend their decisions.
Early American Settlements focuses on Native American peoples living on this continent hundreds of years before European explorers. Students will use maps and graphs to interpret data.

Preview and Predict
Review the following vocabulary to activate prior knowledge: council, migrated, nomads, settlements, theories.

Ask:
- What are some reasons groups of people move long distances? Answers might include food, safety, disasters, adventure.
- How would you decide where to move?
- What types of clues about the past might you find at ruins like Pueblo Bonito?

Read and Respond
Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:
- Look at page 18. What are some ways horses changed people's lives? Sample answers: horses made travel faster; horses could carry and pull heavier loads than people could.
- Look at page 20. Why do you think some people decided to stay in the far north where it is cold most of the year? Perhaps they had lived in the same climate before migrating; they liked cold weather.
- Have volunteers use evidence from the selection to explain the author's purpose. List responses on the board.

Real-World Problem Solving
- Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
- Encourage struggling students to work in pairs to solve each problem.
- Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
- Use the worksheet form on pages 47–48.

Real-World Extensions
- Using the map on page 5 and an atlas or map of North America, have teams of students estimate distances between two points. For example, students could estimate how far an early American had to walk to go from present-day Juneau, Alaska, to Seattle, Washington. Some students can convert the distance measurements into either metric or customary lengths.
- Let students make up math problems about travel distances and then quiz one another. For example, “A family group walked 364.52 miles the first year, and 493.65 miles the second year. What is the total distance they walked?”

LA.5.1.5 Demonstrate ability to read fluently with expression
Select a chapter from the book and read it with expression. Then read one sentence at a time, having students echo-read after you. Instruct students to silently read a different chapter, planning how they will use expression and pauses. Then have students chorally read the pages.

Approaching
Ask students what kinds of clues about the past can be found in ruins. They might explain that artifacts and shelter could tell about what life was like. Explain that scientists use other clues to draw conclusions about the past. Have students look at the map on pages 4 and 5. Explain that scientists consider how past geographical features might have affected how people lived.

Beyond
Have students research one of the early American settlements mentioned in the book. Tell them to find information about the way of life of its people. Then have students pretend to be one of these people and write a journal entry about a day in his or her life. Invite students to read their journal entries to the class.
Exploring the World by Sea

MA.5.G.3.2 Describe, define and determine surface area and volume of prisms by using appropriate units and selecting strategies and tools.

SS.5.A.3.2 Investigate (nationality, sponsoring country, motives, dates and routes of travel, accomplishments) the European explorers.

Summary
Exploring the World by Sea shows the routes pre-colonial explorers traveled. Students will interpret maps and timelines.

Preview and Predict
Review the following vocabulary to activate prior knowledge: empires, expedition, goods, inland, voyages.

Ask:
• Have you ever sailed on a large ship? What was it like? Where did you travel?
• If you had a ship, where would you go?
• What kinds of measurements could you make of the ship’s sails?

Read and Respond
Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:
• Look at pages 10 and 11. How much longer was Captain Cook at sea than Ferdinand Magellan? 5 years
• What is the total number of years covered by this timeline? about 800 years
• How many years did Vasco da Gama travel at sea? 27 years
• Look at page 12. What is the volume of the knarr described on page 12? 160 cubic meters
• Have volunteers summarize main points of this story. List responses on the board.

Real-World Problem Solving
• Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
• Encourage struggling students to work in pairs to solve each problem.
• Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
• Use the worksheet form on pages 47–48.

Real-World Extensions
• Encourage students to find out more about some of the early explorers and map some of their routes.
• Give students simple world maps. Have students select two or three spots to visit and plan ocean travel routes.

LA.5.2.2.3 Organize information through charting
Have students show their understanding of the last chapter by charting the information about the different European explorations. Help students decide how to label the columns and rows. Then have them provide information to complete the chart. Review the final chart with the class.

Approaching
Have students look at pages 10 and 11. Ask them to identify the beginning and end dates used in this timeline. Have them make predictions about this story based on the amount of time this timeline spans. After reading, ask students if their predictions were confirmed. If not, have students revise their predictions based on what they read.

Beyond
Have students research one of the European explorers discussed in the book to learn more about his life and explorations. Have students write a report about what they learn and read it to the class.
Summary
Flags: Shaping History focuses on the history and design of flags used to represent the United States and its individual states. Students will identify geometric shapes and angles in many flags.

Preview and Predict
Review the following vocabulary to activate prior knowledge: cavalry, coat of arms, colony, national anthem, symbols.
Ask:
• Have you ever seen an old United States flag? What did it look like?
• If we made a flag for our class, what might we put on it?
• Why do you think the flag on the cover has only 13 stars?

Read and Respond
Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:
• Look at page 3. If we were going to figure out how many angles are on this flag, what are some shortcuts we could use? Answers might include: multiply the number of stripes by 4; add 4 for the flag itself; add 4 for the star field; multiply the number of stars by 10.
• Look at page 17. What shapes do you see in the flag of Maryland? rectangle, parallelogram, rhombus, trapezoid, semi-circle

• Have volunteers infer how a state’s flag might symbolize its state. Have students use textual evidence to support their claims.

Real-World Problem Solving
• Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
• Encourage struggling students to work in pairs to solve each problem.
• Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
• Use the worksheet form on pages 47–48.

Real-World Extensions
• Encourage students to design a flag for a fifty-first state. Tell students that the flag should have 13 stripes and 1 star for each state.
• Many of the flags featured in Flags: Shaping History contain geometric shapes and designs. Have students work independently to classify shapes on various flags.

LA.5.1.5 Demonstrate ability to read fluently with expression
Select a chapter from the book and read it with expression. Then read one sentence at a time, having students echo-read after you. Instruct students to silently read a different chapter, planning how they will use expression and pauses. Then have students chorally read the pages.

Approaching AL
Draw some of the geometric shapes used in the flags in this selection on the board. Then write various figure names (i.e., quadrilateral, square, rhombus, and so on) next to the drawings. Have students come up and choose from this list to write the corresponding names beneath each figure.

Beyond BL
Have students research a state flag not mentioned in the book. Have them draw the flag and explain the significance of its design. Invite students to present their flag and report to the class. Then display the flags for all to see.
Summary
How Big Is the Solar System? focuses on the solar system and relationships among the planets. Students will interpret data from tables and diagrams.

Preview and Predict
Review the following vocabulary to activate prior knowledge: astronomer, galaxy, satellite, solar system.

Ask:
• What are the names of the planets in our solar system? Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune
• What galaxy is our solar system in? Milky Way
• The Sun appears massive on the cover. Do you think that it is actually that much larger than Earth?

Read and Respond
Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:
• Look at page 9. Write a fraction that shows the scale used on the chart. 1cm/1,000,000 km
• Look at page 13. What is an Astronomical Unit? the distance from Earth to the Sun, about 150 million kilometers or 93 million miles
• Look at page 21. About how long would it take to travel across our galaxy at the speed of light? about 100,000 light years

• Have volunteers summarize main points of this story. List responses on the board.

Real-World Problem Solving
• Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
• Encourage struggling students to work in pairs to solve each problem.
• Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
• Use the worksheet form on pages 47–48.

Real-World Extensions
• NASA’s Jet Propulsion Laboratory has an excellent video about the Voyager spacecraft on the NASA Web site. Have students consult it and write a Did You Know? about the Voyager.
• Challenge students to find out what math skills are required of astronauts or the space shuttle ground crew.

LA.5.2.2.1 Use and explain information from text features
Have students look at the table on page 15. Ask them questions about the information shown in the table. Then have students use the table to ask questions of each other.

Approaching AL
Have students turn to pages 10 and 11. Ask them if they are surprised by the difference in size between the Sun and the planets. Ask them to predict how each planet’s location in proximity to the Sun might affect it. After reading, ask students if their predictions were confirmed. If not, have students revise their predictions based on what they read.

Beyond BL
Have students research what scientists have learned about Mars, the planet most like Earth. Then have them pretend to be the first astronaut to set foot on Mars and explain, in the first person, what they find and experience. Encourage them to use sensory details. Invite students to read their reports to the class.
Inside a Science Museum

Summary

*Inside a Science Museum* takes students on a tour of science museums, focusing on chemistry, outer space, the deep ocean, and tropical rain forests.

Preview and Predict

Review the following vocabulary to activate prior knowledge: *element, exhibit, force.*

Ask:
- What science museums have you been to or have you seen on television?
- What is your favorite exhibit?
- What are a few items you would expect to find inside a science museum?

Read and Respond

Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:

- Look at pages 6 and 7. Use the coordinates to tell how to get from the Simple Machines Exhibit to the Tropical Rain Forest Exhibit.
- Look at page 19. Write a number sentence to show how much deeper the Pacific Ocean is than the Indian Ocean. $36,000 - 25,000 = x$
- Have volunteers make connections between this selection and a trip they might have taken to a similar place. Have students rewrite this selection, using the first-person point of view to describe each exhibit.

Real-World Problem Solving

- Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
- Encourage struggling students to work in pairs to solve each problem.
- Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
- Use the worksheet form on pages 47–48.

Real-World Extensions

- Have students choose a simple machine, such as an inclined plane, a wheel, or a lever, and draw a diagram with labels to show how it uses force to do work.
- Encourage students to learn more about lightning. You might have them research interesting Web sites and share results with the class.

LA.5.2.2.1 Use and explain information from text features

Have students look at the map on page 7. Ask them questions about the location of each exhibit. Then have students use the map to ask questions of each other.

Approaching AL

Display a coordinate grid similar to the one on page 7. Draw a few classroom landmarks on it. Ask volunteers to name the coordinates for each landmark, and write the coordinates in a table. Discuss with students how mapping on a coordinate plane could be useful in other situations. Have volunteers share stories of using a map to navigate their way to a new place.

Beyond BL

Have students research one of the science museums in Florida. Tell them to find information about the different exhibits and the activities they can enjoy there. Have students use this information to create a brochure for the museum. Then invite them to share their brochures with the class.
**Summary**

*Into Uncharted Territory* is the story of Meriwether Lewis, William Clark, and the expedition to map the route from St. Louis, Missouri, to the Pacific Ocean. Students will use maps and graphs to interpret data.

**Preview and Predict**

Review the following vocabulary to activate prior knowledge: *expedition*, *interpreter*, *port*, *prosperity*, *purchase*.

Ask:
- If you were going to take a long hike across the country, how would you keep track of what you saw and did?
- Why would it be important to make a map of a new part of the country?
- If you had to travel across the country in 1803, what method of transportation would you most likely have used?

**Read and Respond**

Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:
- Look at page 13. Use the frequency table to make a line plot.
- Look at page 23. How much land did the people on the expedition get in all? How did you figure it out? 16,000 acres; multiply and add
- Have volunteers compare and contrast this journey to a modern journey, such as hiking the Appalachian Trail.

**Real-World Problem Solving**

- Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
- Encourage struggling students to work in pairs to solve each problem.
- Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
- Use the worksheet form on pages 47–48.

**Real-World Extensions**

- Have students review the United States maps on pages 2 and 5. Then ask them to use both customary and metric scales to measure distances between cities. Also, compare the two maps to find how much land the Louisiana Purchase added to the United States.
- What happened to members of the crew after the Lewis and Clark expedition? Have students use the Internet, biographies, and encyclopedias to research the life of a crew member after 1806.

**Approaching**

Ask students what they think the title *Into Uncharted Territory* might mean. If they have difficulty understanding, prompt them to look at pages 10 and 11. Ask how the tools and the list shown might have aided the exploration of new land. Tell them *uncharted* means “unrecorded, unknown.”

**Beyond**

Have students research one of the Native American tribes Lewis and Clark met on their journey. Tell them to select a tribe from the map on page 14. Have students write a report that gives a complete picture of the tribe’s way of life. Then invite students to read their reports to the class.
Life in Colonial America

**MA.5.A.2.2** Add and subtract fractions and decimals fluently and verify the reasonableness of results, including in problem situations.

**SS.5.A.4.4** Demonstrate an understanding of political, economic, and social aspects of daily colonial life in the thirteen colonies.

For blackline masters in English and Spanish, see pages 33–34.

**Summary**

*Life in Colonial America* focuses on social and economic data of the times, including settlement and trading patterns.

**Preview and Predict**

Review the following vocabulary to activate prior knowledge: blacksmith, colonies, port, tax.

*Ask:*

- What would you have liked best about being a pioneer in the “new world”?
- What are some problems people new to this land might have had?
- What are some differences between colonial life and life today?

**Real-World Problem Solving**

- Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
- Encourage struggling students to work in pairs to solve each problem.
- Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
- Use the worksheet form on pages 47–48.

**Real-World Extensions**

- Have students research and write a description of one of the early colonial settlements, such as Roanoke or Williamsburg.
- Have students choose a colonial product, such as horseshoes, fabric, bread, or work boots, and create a flowchart showing the steps in making the product.

**LA.5.1.7.4** Identify cause-and-effect relationships in text

Draw a two-column chart on the whiteboard and label the columns *Cause* and *Effect*. Tell students to look for cause-and-effect relationships in the book and write them in the chart. Suggest that students look for an action or event in the story and ask what caused it or what was its result or effect. Review the final chart with the class.

**Approaching**  

Have students browse the selection and write questions in response to what they learn from reading each caption. After reading, ask students to work with a partner and answer one another’s questions based on their knowledge of the text. If they cannot answer a question, encourage students to locate the answer in another source.

**Beyond**  

Have students research one of the trades that colonial American children might have learned from their parents—blacksmithing, cooking, weaving, candlemaking, building wagons, making saddles. Have students write a simple instruction manual explaining the procedure and then read it to the class.
Summary

*Matter All Around* focuses on states of matter such as solids, liquids, and gases. Students will read diagrams and use the Periodic Table of Elements to answer questions.

**Preview and Predict**

Review the following vocabulary to activate prior knowledge: *atom, compound, compressed, electron, element, matter, molecule, neutron, proton.*

Ask:

- Some things can take more than one form. What three forms can water take? solid [ice], liquid [liquid water], gas [steam, water vapor, fog]
- What gas is in an inflated balloon? (air, helium)

**Read and Respond**

Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:

- **What is matter?** Answers might include: what things are made of; atoms. **What is made of matter?** Answers should indicate anything that has mass, takes up space.
- **Name some solids.** Ice, brick, wood **Name some liquids.** Water, juice, soda **Name some gases.** Oxygen, helium, water vapor
- Ask students what new vocabulary they learned in this selection. Have them write clues for words and share their riddles with a partner. Afterward, have students share their riddles with the class.

**Real-World Problem Solving**

- Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
- Encourage struggling students to work in pairs to solve each problem.
- Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
- Use the worksheet form on pages 47–48.

**Real-World Extensions**

- Try some fun experiments with matter. Have students identify experiments on the Internet.
- Have teams of students create a graphic organizer for solids, liquids, and gases. Then have them use the organizer for classifying common objects.

**LA.5.1.6** Student uses multiple strategies to develop vocabulary

Discuss the meanings of the words *atom, compound, electron, element, molecule, neutron,* and *proton.* Have students write a cloze sentence for each word. Then have them exchange sentences with a partner and complete the sentences.

**Approaching (AL)**

Tell students that *less* and *more* can have different meanings. Ask them how an object is *more* when it is placed on a scale or next to another object. Explain that there are different ways to test whether objects are *more* or *less* than other objects. Display a large box of puffed oats and a small box of oatmeal. Ask them which is more, and to explain their answer.

**Beyond (BL)**

Have students list five containers with flat sides used in their classroom. Have them measure and record the length, width, and height of each container. Then have them exchange lists with another student who should use the measurements to determine the volume of each container.
Summary

Nature’s Delicate Balance focuses on the circle of life and health ecosystems. Students interpret data from charts, diagrams, and maps.

Preview and Predict

Review the following vocabulary to activate prior knowledge: carnivores, decomposers, deforestation, herbivores, omnivores, reforestation.

Ask:
- What can happen to animals when a forest is cut down? Answers might include: animals lose their homes and food; animals have to relocate.
- What problems do dirty rivers cause? Answers might include: animals and people get sick; plants can’t breathe; water and air smell bad.
- How are the turtle and fish helping each other?

Read and Respond

Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:
- Look at pages 8–9. How many insects could 100 bats eat in one night? 200,000
- Look at the chart on page 13. How can you determine how much faster a pronghorn antelope is than an elk? subtract 45 from 61
- What is the difference in speed? 16 miles per hour.
- Have volunteers summarize the sequence of events in a food chain. List responses on the board.

Real-World Problem Solving

- Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
- Encourage struggling students to work in pairs to solve each problem.
- Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
- Use the worksheet form on pages 47–48.

Real-World Extensions

- Encourage students to research and graph wolf, bison, bobcat, and/or bear populations in Yellowstone National Park from 1990 to the present. Then ask them to describe the patterns they see.
- Have teams of students create visuals of special body structures and how they are used, such as teeth, claws, eyes, and beaks.

LA.5.1.6.3 Use context clues to determine meanings

Have students write sentences using the definitions of vocabulary words as context clues. For example, The plant was decayed, or rotted and decomposed. Then have students trade papers with a partner and underline the context clues in each sentence.

Approaching AL

Call students’ attention to the Venn diagram on page 15. Draw a Venn diagram on the board with the same headings. Ask volunteers to use the information from the book’s Venn diagram to fill each region of this Venn diagram. If a student disagrees with another’s response, be sure to have him or her support his or her claim.

Beyond BL

Have students research several animals from a specific region of the world and tell how their body structure helps them survive in their environment. Invite students to add their information to a master chart and display this for all to see and discuss.
Our Nation’s 50 States

Available in four levels: Approaching, On Level, Beyond, and Spanish

Summary
Our Nation’s 50 States reviews the regions of the United States, focusing on state capitals and other population data in graph form.

Preview and Predict
Review the following vocabulary to activate prior knowledge: climate, democracy, nation, region, state, statehood, unsettled.
Ask:
- What state were you born in?
- Have you lived in or visited other states? What state do you like best?
- Why do you think this United States map uses the colors brown and green? About how many states are mostly brown?

Read and Respond
Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:
- Look at page 16. Which of the cities shown on the map get about the same amount of rain each year? Oklahoma City and Austin. A desert usually gets less than 10 inches of rain a year. Which city is in a desert? Phoenix.
- Look at page 12. Why is a circle graph a good way to show this information? It is a good way to show parts of a whole. What other kinds of graphic organizers could have been used to show the information about crops in the Midwest? Picture graph or bar graph.
- Have volunteers compare the regions they read about in this story. List responses on the board.

Real-World Problem Solving
- Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
- Encourage struggling students to work in pairs to solve each problem.
- Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
- Use the worksheet form on pages 47–48.

Real-World Extensions
- Have teams of students write questions for a state trivia game. Categories might include state capitals, flowers, flags, crops, and industries. Then let students play the game.
- Challenge students to find out what math skills are needed to make accurate maps. Then ask them to create maps of the neighborhoods around their homes or school.

Approaching
Ask students to turn to the map on pages 6 and 7. Ask why it might be advantageous to divide a large country into regions. Encourage them to explain what features might be used to create these divisions (weather, culture, river/lake boundaries). Write students’ responses on the board. Later, have them tell whether their explanations were confirmed by what they read.

Beyond
Have students contribute to a bulletin board display that celebrates the state of Florida. Have students select different aspects of the state (climate, tourism, industry, animal and plant life, etc.) to research. Suggest that they write a brief explanation of their topic and illustrate it. Then display students’ contributions.

LA.5.1.7.5 Identify the text structure an author uses (e.g., spatial order)
Ask students how the author organizes and presents information about the 50 states. Create a chart listing the six regions and have students fill in common characteristics of the states in each region. Discuss why spatial order is the best structure to use.
Taking to the Skies

**MA.5.A.1.4** Divide multi-digit whole numbers fluently, including solving real-world problems, demonstrating understanding of the standard algorithm and checking the reasonableness of results.

**SC.5.P.9.1** Investigate and describe that many physical and chemical changes are affected by temperature.

For blackline masters in English and Spanish, see pages 41–42.

**Summary**

*Taking to the Skies* focuses on human fascination with flight, specifically hot air balloon flight. Students write and use algebraic expressions to answer questions.

**Preview and Predict**

Review the following vocabulary to activate prior knowledge: altitude, atmosphere, jet stream, variables, volume.

**Ask:**
- How do you think a hot air balloon ride would be different from an airplane ride?
- Why do you think people want to fly?
- How are hot air balloons fueled? How is the fuel stored?

**Real-World Problem Solving**

- Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
- Encourage struggling students to work in pairs to solve each problem.
- Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
- Use the worksheet form on pages 47–48.

**Real-World Extensions**

- Have students find and graph balloon altitude and distance records over the past 200 years. Researching this on Web sites might be helpful.
- Have students work in teams to plan extended hot air flights. The teams can design their balloons, decide who will travel in the balloons, and what supplies they will need. Encourage them to use the graphic features in the selection to demonstrate how their balloon will fly.

**LA.5.2.2.1** Use and explain information from text features

Have students look at the diagram on page 5. Ask them questions about the formula to determine whether or not a boat will float. Then have students use the diagram to ask questions of each other.

**Approaching **

Use riddles that answer *What Am I?* to introduce one word from each chapter in this selection. For example, a clue for escape (page 12) might be: “I am the result of leaking out. What am I?” Afterward, have students write their own riddles for the glossary words on page 24.

**Beyond**

Have students research how to fill, launch, operate, and land a hot air balloon. Assign students to the different stages of ballooning. Tell them to write an explanation of their stage and explain it to the class in sequential order. Suggest that students use illustrations or photos from books to explain their stage.
The Shifting Nature of Weather

MA.5.A.1.3 Interpret solutions to division situations including those with remainders depending on the context of the problem.

SC.5.E.7.3 Recognize how air temperature, barometric pressure, humidity, wind speed and direction, and precipitation determine the weather in a particular place and time.

Summary
The Shifting Nature of Weather explains the work of the United States Weather Service, including how meteorologists predict weather. Students will gather data by interpreting diagrams and weather maps.

Preview and Predict
Review the following vocabulary to activate prior knowledge: barometer, forecasts, knot, meteorologist, radar.

Ask:
• Why are weather forecasts important?
• Have you ever been caught in bad weather? What happened?
• The weather can change rather suddenly. What are some clues you might notice when a severe storm is coming?

Read and Respond
Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:
• Look at page 7. About how long have scientists been using weather maps? about 140 years
• Look at page 14. What does “increase frequency” mean? Answers should indicate that the number of times something happens becomes greater. What does “decrease frequency” mean? Answers should indicate that the number of times something happens lessens.
• Have volunteers summarize main points of this story. List responses on the board.

Real-World Problem Solving
• Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
• Encourage struggling students to work in pairs to solve each problem.
• Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
• Use the worksheet form on pages 47–48.

Real-World Extensions
• Ask students to make a visual display explaining a weather system such as the formation of a tornado or hurricane.
• Encourage students to learn more about Doppler radar and its inventor, Christian Johann Doppler (1803–1853).

LA.5.1.6 Student uses multiple strategies to develop vocabulary
Discuss the meanings of the words barometer, cumulonimbus, forecasts, knot, meteorologist, and radar. Have students write a clue about each word. Then have them exchange clues with a partner and match them to the correct word.

Approaching
Ask students to define weather based on what they already know. Have them brainstorm conditions (cold, heat, sunshine, humidity) that may affect the weather. Write responses on the board. After reading, ask students to add to the list, based on what they learned while reading the selection.

Beyond
Have students research Hurricane Andrew’s path of destruction in Southern Florida in 1992. Tell them to pretend to be a meteorologist and write the script of a weather report they might have given at that time. Then invite students to read their reports to the class.
Summary
Water Works focuses on the water cycle and the effects of rainfall and drought on Earth. Students will gather and interpret data from diagrams, maps, charts, and graphs.

Preview and Predict
Review the following vocabulary to activate prior knowledge: condensation, evaporates, groundwater, precipitation, water cycle.
Ask:
• Where does our drinking water come from?
• What happens to bath water after we use it?
• We often see fog in the morning and then it seems to disappear. What do you think happens to it?

Read and Respond
Conduct informal assessment of comprehension. Encourage students to apply math skills as they respond to each question. Use prompts such as the following:
• Look at pages 8 and 9. What are the high clouds called? cumulonimbus, cirrus, cirrocumulus Which type of cloud is very tall? cumulus
• Look at pages 14 and 15. What coastal area is very dry? southern California Describe rainfall in the middle section of the United States. very dry to dry
• Have students write a summary of the water cycle sequence shown on pages 4 and 5.

Real-World Problem Solving
• Have students solve the problems using the four-step plan. Then ask them to share which strategy they used to solve.
• Encourage struggling students to work in pairs to solve each problem.
• Ask students to work in pairs or independently to write their own problem. Have them trade problems with one another and solve.
• Use the worksheet form on pages 47–48.

Real-World Extensions
• Have students draw diagrams that show a system for water desalinization and purification. These can be simple systems that we might use at home or complex systems for a city. Encourage students to identify helpful Web sites as they conduct research.
• Sinkholes are one result of drops in ground water. Encourage students to investigate causes and remedies of sinkholes. Have them write a summary of the sequence involved in the formation of sinkholes.

Approaching
Explain to students that Earth’s fresh water was once part of the ocean. This selection will help them understand how salt water becomes fresh water suitable for drinking. Have students browse the selection and write one or two questions based on a photo or diagram. After reading, have students work with a partner to answer each question.

Beyond
Have students research the rainfall in three consecutive months in Florida and two other states. Have them create a bar graph similar to the one on page 16 to record their findings. Then invite them to share their graphs with the class.

LA.5.1.6 Student uses multiple strategies to develop vocabulary
Discuss the meanings of the words condensation, evaporates, groundwater, precipitation, and water cycle. Have students write a cloze sentence for each word. Then have them exchange sentences with a partner and complete the sentences.
1. Write each percent from the circle graphs on page 6 as a fraction in simplest form. (A percent can be written as a fraction with a denominator of 100. For example, $50\% = \frac{50}{100}$, or $\frac{1}{2}$.) Order your answers from greater to lesser. [Section I]

2. Look at page 9. How many beats would a half note get in $\frac{3}{4}$ time? Justify your reasoning. [Section III]

3. Look at page 14. How could Elias Howe have determined that his machine made stitches 5 times faster than hand sewers? Explain your reasoning. [Section III]

4. Use the information on page 16 to find the fraction of the day that factory workers spent at work. Use the simplest form to compare that to the fraction of the day that was not spent at work. [Section II]

5. Look at page 20. Write a mixed number to describe the speed of a steamboat in miles per hour. How did you change from a decimal to a mixed number? [Section III]
Resuelve problemas concretos

1. Escribe cada porcentaje de las gráficas circulares en la página 6 como una fracción en forma reducida. (Un porcentaje puede ser escrito como una fracción con un denominador de 100. Por ejemplo, $50\% = \frac{50}{100} \text{ ó } \frac{1}{2}$.) Ordena tus respuestas de mayor a menor. [Sección 1]

2. Observa la página 9. ¿Cuántos compases tendrá una media nota en un tiempo de $\frac{3}{4}$? Justifica tu razonamiento. [Sección 3]

3. Observa la página 14. ¿Cómo pudo haber determinado Elias Howe que su máquina hacía puntadas 5 veces más rápido que las puntadas a mano? Explica tu razonamiento. [Sección 3]

4. Usa la información de la página 16 para calcular la fracción del día que los obreros pasaban en la fábrica. Usa la forma reducida para comparar eso con la fracción del día que no se pasaba en la fábrica. [Sección 2]

5. Observa la página 20. Escribe un número mixto para describir la rapidez de un bote a vapor en millas por hora. ¿Cómo cambiaste de un decimal a un número mixto? [Sección 3]
Real-World Problem Solving

1. Look at page 5. How many feet long is the New York City subway system? Tell which operation you used to determine your answer. [Section 2]

2. Look at page 7. What are possible lengths and widths for Chicago’s Millennium Park? [Section 3]

3. Look at page 8. How many yards of bookshelves are there in the Library of Congress? [Section 4]


5. Read about gridiron patterns on page 16. If the roads running east to west are perpendicular to the roads running north to south, what angle will the roads make? Tell how you know. [Section 8]

6. Look at page 21. How many inches tall is the dome on Maryland’s statehouse? Explain how to solve the problem. [Section 9]
1. Observa la página 5. ¿De cuántos pies de longitud es el sistema de tren subterráneo de la ciudad de New York? Indica qué operación usaste para determinar tu respuesta. [Sección 2]

2. Observa la página 7. ¿Cuáles son las longitudes y profundidades posibles del Parque Millennium en Chicago? [Sección 3]


5. Lee sobre los patrones de cuadrícula en la página 16. Si las calles que van de este a oeste son perpendiculares a las calles que van de norte a sur, ¿qué ángulo formarán las calles? Indica cómo lo sabes. [Sección 8]

6. Observa la página 21. ¿Cuántas pulgadas de alto tiene el domo de la Casa de Gobierno de Maryland? Explica cómo resolver el problema. [Sección 9]
Real-World Problem Solving

1. Suppose a hunter traveled 58.16 miles across the land bridge of Asia and North America 25,000 years ago. How many miles would the hunter walk if he or she turned around and went back to where he or she started? [Section 1]

2. Refer to the Did You Know? problem on page 6. If land costs $0.02 for one acre, explain how you would find the cost of 12 acres. [Section 1]

3. The earliest people lived in tribes. People living in a tribe can save time by working together. If it takes one person 2 hours to finish all the daily chores, about how long would it have taken 4 people working together? [Section 2]

4. One village in the Eastern Woodlands had 720 people living in 6 long houses. How many people would be living in each longhouse if each longhouse held the same number of people? [Section 5]

5. Refer to the Did You Know? box on page 19. There were 100 million bison in 1850. Today, there are only 350,000 bison. How many more bison were there in 1850? [Section 6]

6. Look at the photo on page 23. The tallest totem pole ever made is 173 feet tall. Describe how to convert that measurement into yards. [Section 8]
1. Supón que un cazador viajó 58.16 millas a través del puente terrestre de Asia y Norteamérica hace 25,000 años. ¿Cuántas millas caminó el cazador si él o ella dio la vuelta y regresó al sitio de partida? [Sección 1]

2. Consulta el problema ¿Sabías que? de la página 6. Si un terreno cuesta $0.02 por acre, explica cómo calcularías el costo de 12 acres. [Sección 1]

3. Los seres humanos más antiguos vivían en tribus. Las personas que viven en tribus ahorran tiempo cuando trabajan juntas. Si una persona demora 2 horas en terminar todas las tareas diarias, ¿cuánto demorarán 4 personas trabajando juntas? [Sección 2]

4. En uno de los pueblos de los Bosques Orientales, 720 personas vivían en 6 casas alargadas. ¿Cuántas personas vivirían en cada casa alargada, si cada una coibiera al mismo número de personas? [Sección 5]


6. Observa la foto de la página 23. El poste totemico más alto jamás construido mide 173 pies. Describe cómo se convierte esa cantidad a yardas. [Sección 8]
Real-World Problem Solving

Exploring the World by Sea

1. Use the information on pages 4 and 5 to explain how to find the area of the world’s land that does not include Asia. \(\text{Hint: Find 10\% of the world’s land first.}\) [Section 2]

2. Find the volume of Christopher Columbus’ ship described on page 8. Is the volume greater than or less than 300 cubic meters? Describe how you can find the answer. \(\text{Hint: } V = lwh\) [Section 4]

3. Could more crew members have fit in Christopher Columbus’ ship described on page 8 or in a knarr as described on page 12? How can you find the answer without calculating the volume? [Section 5]

4. Use the information on pages 12 and 13 to apply formulas that could help you find the area and volume of the sails used on drakkars. [Section 5]


Resuelve problemas concretos Exploración del mundo por mar

1. Usa la información en las páginas 4 y 5 para explicar cómo calcular el área terrestre del mundo que no incluya a Asia. (Ayuda: primero calcula 10% de la tierra del mundo) [Sección 2]

2. El volumen del barco de Cristóbal Colón descrito en la página 8 ¿es mayor o menor de 300 metros cúbicos? Describe cómo puedes calcular la respuesta. (Ayuda: \( V = lwh \)) [Sección 4]

3. ¿Dónde podían caber más personas, en el barco de Cristóbal Colón descrito en la página 8 o en el knarr descrito en la página 12? ¿Cómo puedes calcular la respuesta sin calcular el volumen? [Sección 5]

4. Usa la información en las páginas 12 y 13 para escribir expresiones numéricas que puedan ayudarte a calcular el área de las velas usadas en los drakkars. [Sección 5]

5. Observa la página 14. ¿Aproximadamente cuánto dinero (en dólares y centavos) ganaban los pilotos de los barcos por un mes de trabajo? [Sección 5]

6. Observa la página 19. ¿Qué parte de la tripulación de Magallanes regresó a España? [Sección 5]
Real-World Problem Solving

1. Look at page 3. Where do you see perpendicular and parallel lines on the current United States flag? What kinds of angles can you find on the flag? [Section 1]

2. Look at page 8. Explain how to find how much time passed from the time the Continental Congress adopted our first flag until our modern flag with 50 stars was created. [Section 2]

3. Look at the state flag of Ohio on page 15. This flag has a different shape than all other state flags. What kind of shape has five sides? Name what kinds and how many of each angle the shape has. [Section 3]

4. Look at the state flag of Arkansas on page 18. There is a shape centered on this state flag. Is this shape a rectangle or a rhombus? Explain. [Section 3]

5. Look at pages 12 and 20. Create a Venn diagram that compares the state flags of Iowa and Texas using geometric terms. [Section 3]

6. Look at the flags throughout the story. Except for Ohio, what geometric shape makes up the flags?
Resuelve problemas concretos  Banderas: Cómo han moldeado la historia

1. Observa la página 3. ¿Dónde ves rectas perpendiculares y paralelas en la bandera actual de Estados Unidos? ¿Qué tipos de ángulos puedes encontrar en la bandera? [Sección 1]

2. Observa la página 8. Explica cómo calcular el tiempo transcurrido desde el momento en que el Congreso Continental adoptó nuestra primera bandera hasta la creación de nuestra bandera actual con 50 estrellas. [Sección 2]

3. Observa la bandera estatal de Ohio en la página 15. Esta bandera tiene una figura distinta a las demás banderas estatales. ¿Qué tipo de figura tiene cinco lados? Nombra los tipos de ángulos y la cantidad de ellos que tiene la figura. [Sección 3]

4. Observa la bandera estatal de Arkansas en la página 18. ¿Es la figura en el centro de esta bandera estatal un rectángulo o un rombo? Explica. [Sección 3]

5. Observa las páginas 12 y 20. Crea un diagrama de Venn que compare las banderas estatales de Iowa y Texas usando términos geométricos. [Sección 3]

6. Observa las banderas a lo largo de la historia. A excepción de Ohio, ¿qué figura geométrica tienen las banderas?
Real-World Problem Solving How Big Is the Solar System?

1. Look at page 5. One year on Mars is 687 days. Explain how you would determine your age in years on Mars. [Section 1]

2. Look at the scale model on pages 10 and 11. Would it be better to measure the diameter of Mars using meters or kilometers? Explain your reasoning. [Section 3]

3. Look at page 11. Convert the diameter of Jupiter from kilometers to meters. (Hint: 1 kilometer = 1,000 meters) [Section 3]

4. Use the data from page 15 to order the planets from hottest to coldest on a number line. [Section 4]

5. Look at page 16. Suppose the Voyager 1 spacecraft travels through space at about 88,500 kilometers per hour. Create a ratio table to show the distance the Voyager 1 can travel in 2, 3, and 4 hours. [Section 5]

6. Use the table on page 19 to create a bar graph or pictograph showing the number of moons for each planet. [Section 6]
Resuelve problemas concretos ¿De qué tamaño es el sistema solar?

1. Observa la página 5. Un año en Marte son 687 días. Explica cómo determinarías tu edad en años en Marte. [Sección 1]

2. Observa el modelo a escala de las páginas 10 y 11. ¿Sería mejor medir el diámetro de Marte en metros o kilómetros? Explica tu razonamiento. [Sección 3]

3. Observa la página 11. Convertir el diámetro de Júpiter de kilómetros a metros. Ayuda: 1 kilómetro = 1,000 metros. [Sección 3]

4. Usa los datos de la página 15 para ordenar los planetas del más caliente al más frío en una recta numérica. [Sección 4]

5. Observa la página 16. Supón que la nave espacial Voyager 1 viaja por el espacio a aproximadamente 88,500 kilómetros por hora. Crea una tabla de proporción para mostrar la distancia que el Voyager 1 puede viajar en 2, 3 y 4 horas. [Sección 5]

6. Usa la tabla de la página 19 para crear una gráfica de barras o un pictograma que muestre el número de lunas para cada planeta. [Sección 6]
1. Look at Talk About It on page 2. What fraction represents the number of exhibits that use water? [Section 1]


2. Look at page 12. What is the atomic number for nitrogen? Suppose krypton has an atomic number that is 6 times greater than nitrogen. Write a multiplication expression that could be used to find its atomic number. Explain how you solved the problem. [Section 4]


3. Look at page 16. Write a number sentence to show how many more days Earth has in a year compared with Mercury. [Section 5]


4. Look at page 19. About how much deeper is the Atlantic Ocean than the Arctic Ocean? Write a number sentence to show how to solve this problem. Explain your answer. [Section 5]


5. Look at page 23. Suppose you pushed a 15-pound box across a room that is 25 feet long. Could you use the equation on this page to determine how much work is done? Justify your reasoning. [Section 8]
Resuelve problemas concretos

1. Observa Coméntalo en la página 2. ¿Qué fracción representa el número de exhibiciones que usan agua? [Sección 1]

2. Observa la página 12. ¿Cuál es el número atómico del nitrógeno? Supón que el criptón tiene un número atómico 6 veces mayor que el del nitrógeno. Escribe una expresión de multiplicación para calcular su número atómico. Explica cómo resolviste el problema. [Sección 4]

3. Observa la página 16. Escribe una expresión numérica para mostrar cuántos días más tiene la Tierra en un año, comparada con Mercurio. [Sección 5]


5. Observa la página 23. Supón que empujaste una caja de 15 libras a través de una habitación que mide 25 pies de largo. ¿Puedes usar la ecuación en esta página para determinar cuánto trabajo se hizo? Justifica tu razonamiento. [Sección 8]
1. Use page 5 to find out how many whole acres could be purchased for $1. [Chapter 1]

2. Look at page 9. About how many men were soldiers or trappers? [Chapter 2]

3. Find the mean, median, and range of the tribe populations found on page 14. [Chapter 3]

4. Look at page 13. Choose and create an appropriate graph to represent the data in the tally chart. Why did you choose this representation? [Chapter 3]

5. Use the timeline on pages 18 and 19 to determine how old Sacagawea was when she died. Explain your reasoning. [Chapter 4]

1. Consulta la página 5 para calcular cuántos acres completos podrían comprarse con $1. [Capítulo 1]

2. Observa la página 9. ¿Alrededor de cuántos hombres eran soldados o tramperos? [Capítulo 2]

3. Calcula la media, la mediana y el rango de las poblaciones de tribus que se encuentran en la página 14. [Capítulo 3]

4. Observa la página 13. Elige y crea una gráfica apropiada para representar los datos de la tabla de conteo. ¿Por qué elegiste esta representación? [Capítulo 3]

5. Consulta la línea del tiempo de las páginas 18 y 19 para determinar qué edad tenía Sacagawea al morir. Explica tu razonamiento. [Capítulo 4]

6. Observa la página 23. ¿Cuántos acres de terreno recibieron en conjunto Lewis y Clark? [Capítulo 6]
1. Look at page 4. Explain how you would find the fraction of colonies that were called The Middle Colonies. [Section 1]

2. Look at page 9. If the cotton and tobacco were weighed together, what would the total weight be? [Section 3]

3. Look at page 9. Before setting sail, another $1 \frac{2}{3}$ tons of fish were loaded onto this ship. What is the total weight of the fish? [Section 3]

4. Refer to the recipe card on page 19. Imagine that you want to make a double batch of gingerbread. How much of each ingredient will you need? Justify your reasoning. [Section 5]

5. Turn to the trade list found on page 21. Determine how much of each crop would be left after trading. [Section 5]

6. Look at page 23. How much time elapsed from the time Jacob and Caleb ate supper to the time they read and went to sleep? [Section 6]
Nombre
Fecha

Resuelve problemas concretos

1. Observa la página 4. Explica cómo calcularías la fracción de las colonias que se llamaban Las colonias del medio. [Sección 1]

2. Observa la página 9. De pesarse juntos el algodón y el tabaco, ¿cuál sería el peso total? [Sección 3]

3. Observa la página 9. Antes de zarpar, se cargaron otras $1\frac{2}{3}$ toneladas de pescado en este barco. ¿Cuál es el peso total del pescado? [Sección 3]

4. Consulta la tarjeta con la receta de la página 19. Imagina que deseas preparar una receta doble de pan de jengibre. ¿Cuánto necesitarás de cada ingrediente? Justifica tu razonamiento. [Sección 5]

5. Dirígete al listado comercial de la página 21. Determina cuánto de cada cosecha quedaría después del intercambio. [Sección 5]

6. Observa la página 23. ¿Cuánto tiempo transcurrió desde que Jacob y Caleb cenaron hasta que leyeron y se fueron a dormir? [Sección 6]
1. Look at the Periodic Table of Elements on pages 6 and 7. Describe the fraction of the elements that are metal. (*Hint:* Refer to the key.) [Section 1]

2. Look at page 10. How many hydrogen atoms would be in 45 water molecules? Explain your reasoning. [Section 1]

3. Look at page 11. Suppose the area of the front of the sugar box shown has one-half the area of the front of another brand. Explain how to find the possible length and width of the other brand’s sugar box. [Section 1]

4. Look at the first photograph of containers on page 17. How could you use an empty aquarium to find the volume of the combined liquids shown in the various containers? [Section 2]

5. Look at page 21. Suppose the balloons shown can each hold 50 cubic inches of helium. What is the maximum volume of helium that can be held in the balloons shown? [Section 4]
1. Mira la tabla periódica de los elementos en las páginas 6 y 7. Describe la fracción de los elementos que son metales. *(Ayuda: Consulta la clave.)* [Sección 1]

2. Mira la página 10. ¿Cuántos átomos de hidrógeno hay en 45 moléculas de agua? Explica tu razonamiento. [Sección 1]

3. Mira la página 11. Suponte que el área del frente de la caja de azúcar que se muestra tiene la mitad del área del frente de la caja de la otra marca. Explica cómo calcularías la longitud y grosor de la caja de azúcar de la otra marca. [Sección 1]

4. Mira la primera fotografía de los recipientes en la página 17. ¿Cómo usarías un acuario vacío para calcular el volumen combinado de los líquidos que contienen los distintos recipientes? [Sección 2]

5. Mira la página 21. Suponte que cada uno de los globos que se muestran puede contener 50 pulgadas cúbicas de helio. ¿Cuál es el máximo volumen de helio que pueden contener estos globos? [Sección 4]
1. Look at the *Did You Know?* box on page 7. Suppose the giraffe ate for longer than 15 hours but less than 20 hours. Additionally, the number of hours it ate has factors of 1, 2, 4, 8, and 16. How much of the day did it spend eating? [Section 2]

2. Look at page 8. About how many miles farther can a hawk see if a human can see for $1 \frac{1}{2}$ miles? Explain. [Section 2]

3. Look at the table on page 13. List each animal’s speed into two categories, *prime* or *composite*. [Section 3]

4. Look at the line graph about unhealthy ecosystems on page 19. When the number of herbivores is at 700, how many plants are there? Explain why this could be a problem. [Section 5]

5. In one section of a rain forest, $\frac{1}{2}$ of the animals are herbivores, $\frac{3}{8}$ of the animals are carnivores, and $\frac{2}{16}$ of the animals are omnivores. List the fractions of animals in order from least to greatest. [Section 5]
Resuelve problemas concretos

1. Observa la casilla de ¿Sabías qué? en la página 7. Supón que la jirafa come por más de 15 horas pero por menos de 20. Además, el número de horas que come tiene como factores a 1, 2, 4, 8 y 16. ¿Qué parte del día pasó comiendo? [Sección 2]

2. Observa la página 8. Aproximadamente, ¿cuántas millas más lejos puede ver un halcón, si un humano puede ver $\frac{1}{2}$ millas? Explica. [Sección 2]

3. Observa la tabla de la página 13. Ordena la velocidad de cada animal en dos categorías, primo o compuesto. [Sección 3]

4. Observa la gráfica lineal sobre los ecosistemas enfermos de la página 19. ¿Cuántas plantas hay cuando el número de herbívoros está en 700? Explica por qué esto puede ser un problema. [Sección 5]

5. Observa los mapas de la página 21. Asigna una fracción para cada mapa que representa el área de Estados Unidos cubierta por bosques en cada momento. [Sección 6]
1. How many of the states would you be touching when visiting the Four Corners? Write this as a decimal. [Section 1]

2. Using the timeline on pages 4 and 5, order these states from first to become a state to the last: Arizona, California, Delaware, Florida, Georgia, Iowa, Louisiana, North Carolina, Ohio, Oregon, Vermont. [Section 1]

3. Look at pages 6 and 7. Out of the 50 states, what fraction does the New England region represent? What fraction do the South and Southwest regions represent combined? Explain how you solved the problem. [Section 3]

4. Look at page 9. Order the capital cities of the New England region by their population. Order them from least to greatest. [Section 3]

5. According to the circle graph on page 12, which grain represents about \( \frac{1}{4} \) of the total Midwest grain production? Explain how you know. [Section 5]
Resuelve problemas concretos Los 50 estados de nuestra nación

1. ¿Cuántos de los estados estarías tocando al visitar las Cuatro Esquinas? Escribe esto como un decimal. [Sección 1]

2. Consulta la línea del tiempo de las páginas 4 y 5 para ordenar estos estados del primero en convertirse en estado al último en hacerlo: Arizona, California, Delaware, Florida, Georgia, Iowa, Louisiana, Carolina del Norte, Ohio, Oregon, Vermont. [Sección 1]

3. Observa las páginas 6 y 7. De los 50 estados, ¿qué fracción representa la región de Nueva Inglaterra? ¿Qué fracción representan las regiones del Sur y del Suroeste combinados? Explica cómo resolviste el problema. [Sección 3]

4. Observa la página 9. Ordena las capitales de la región de Nueva Inglaterra por sus poblaciones. Ordénalas de menor a mayor. [Sección 3]

5. Según la gráfica circular de la página 12, ¿qué grano representa alrededor de $\frac{1}{4}$ del total de la producción de granos del Medio Oeste? Explica cómo lo sabes. [Sección 4]
1. Revisit the *Did You Know?* box on page 2. Explain how to find the distance the 1905 airplane could fly in about 1 hour and 40 minutes. [Chapter 1]

2. Look at page 5. Use the inequality for determining whether an object will float to solve this problem. Will a boat float that weighs 3,000 pounds and is 300 cubic feet? [Chapter 1]

3. Look at pages 6–7. How many years was it from Roger Bacon’s idea to the French military using hot air balloons for spying? [Chapter 1]

4. Look on page 9. Explain how to find the heights of the Montgolfier balloon flights in yards. [Chapter 1]

5. Revisit the *Did You Know?* box on page 17. If the temperature at sea level is 82°, what is the temperature at an altitude of 1,000 feet? 3,000? Create a function table with your results. [Chapter 3]

6. Look on page 21. On average, how many miles did Steve Fossett travel per day? [Chapter 4]
1. Mira de nuevo la sección ¿Sabías que? de la página 2. Explica cómo encontrar la distancia que un avión del 1905 podía volar en aproximadamente 1 hora y 40 minutos. [Capítulo 1]

2. Mira la página 5. Para resolver el problema, usa la desigualdad para determinar si un objeto flotará. ¿Flotará un barco que pese 3,000 libras y tenga 300 pies cúbicos? [Capítulo 1]

3. Mira las páginas 6 y 7. ¿Cuántos años pasaron entre la idea de Roger Bacon respecto al uso de los globos aerostáticos y el espionaje llevado a cabo por los militares franceses? [Capítulo 1]

4. Mira la página 9. Explica cómo encontrar las alturas en yardas de las trayectorias del globo Montgolfier. [Capítulo 1]

5. Mira de nuevo la caja ¿Sabías que? de la página 17. Si la temperatura al nivel del mar es de 82°, ¿cuál es la temperatura a una altura de 1,000 pies? ¿Y de 3,000 pies? Crea una tabla de funciones con tus resultados [Capítulo 3]

Real-World Problem Solving  The Shifting Nature of Weather

1. Look at the Did You Know? on page 2. About how many feet of rain did Alvin, Texas, receive on that record-breaking day? [Section 1]

2. Look at the weather map on pages 10 and 11. Predict the likelihood that the state of Indiana will be rainy based on the map. Justify your reasoning. [Section 3]

3. Look at the picture of two satellites orbiting Earth on page 16. Write a word problem that describes the difference in heights between the two satellites. [Section 6]

4. Look at page 18. Suppose the weather is partly cloudy. Draw the symbol that represents this cloud cover. [Section 7]

5. Use the table on page 19 to draw a wind symbol. The symbol should be for wind blowing from the north at 60 knots. Explain your work. [Section 7]

6. Look at page 22. What is the wind speed if a tornado is pushing automobiles off the road? [Section 9]
Resuelve problemas concretos

La naturaleza cambiante del tiempo

1. Observa la silla de ¿Sabías que? en la página 2. ¿Aproximadamente cuánta lluvia recibió Alvin, Texas en ese día que se rompió el récord? [Sección 1]

2. Observa el mapa meteorológico en las páginas 10 y 11. Predigan la posibilidad de que llueva en el estado de Indiana, en base al mapa. [Sección 3]

3. Observa la figura de los dos satélites orbitando la Tierra en la página 16. Escribe un problema en palabras que describa la diferencia de las alturas entre los dos satélites. [Sección 6]

4. Observa la página 18. Supón que el estado del tiempo está parcialmente nublado. Dibuja el símbolo que representa este manto de nubes. [Sección 4]

5. Usa la tabla en la página 19 para dibujar un símbolo de viento. El símbolo debe ser de un viento que sople desde el norte a 60 nudos. Explica tu trabajo. [Sección 7]

6. Observa la página 22. ¿Cuál es la velocidad del viento si un tornado está arrastrando los carros fuera de la carretera? [Sección 9]
1. Look at page 5. Describe how to find the fraction of Earth’s water that is not made up of the ocean. [Section 2]

2. Look at page 15. One city receives rain 17 more days than Tucson. Write a fraction to represent this part of a year. Use a simplified fraction. [Section 3]

3. Look at page 16. Find the average monthly rainfall in New York City from February to May. (Hint: find the total amount of precipitation and then divide by four.) [Section 3]

4. Look at page 16. Explain why Luis chose to make a bar graph instead of a circle graph to represent the data in the table. [Section 3]

5. Look at page 16. What information can you get from the bar graph? [Section 3]
Resuelve problemas concretos

El agua en acción

1. Miren la página 5. Describan cómo se calcula la fracción del agua en la Tierra que no forma parte de los océanos. [Sección 2]

2. Miren la página 15. Una ciudad recibe 17 días más de lluvia que Tucson. Escriban una fracción que represente esta parte del año. Usen una fracción reducida. [Sección 3]

3. Miren la página 16. Calculen la precipitación pluvial promedio en la ciudad de Nueva York, de febrero a mayo. (Ayuda: calculen la cantidad total de precipitación y luego divídanlo entre cuatro.) [Sección 3]

4. Miren la página 16. Expliquen por qué Luis prefirió hacer una gráfica de barras en lugar de una circular, para representar los datos de la tabla. [Sección 3]

5. Miren la página 16. ¿Qué información pueden obtener de la gráfica de barras? [Sección 3]
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<thead>
<tr>
<th>Problem:</th>
<th>What do I know?</th>
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<th>What do I need to find?</th>
<th>What strategy can I use?</th>
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<th>How will I solve the problem?</th>
<th>How can I model the problem?</th>
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<th>Is my answer reasonable? Why?</th>
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<td><strong>Problema:</strong></td>
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<th><strong>¿Qué necesito encontrar?</strong></th>
<th><strong>¿Qué estrategia puedo usar?</strong></th>
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<th><strong>¿Cómo resolveré el problema?</strong></th>
<th><strong>¿Cómo puedo representar el problema?</strong></th>
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<th><strong>Respuesta:</strong></th>
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<tr>
<th><strong>¿Es razonable mi respuesta? ¿Por qué?</strong></th>
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</table>
1. Write each percent from the circle graphs on page 6 as a fraction in simplest form. (A percent can be written as a fraction with a denominator of 100. For example, \(50\% = \frac{50}{100} = \frac{1}{2}\)) Order your answers from greater to lesser. [Section I]

\[
\begin{array}{cccc}
9 & 17 & 3 & 1 \\
10 & 20 & 10 & 10
\end{array}
\]

2. Look at page 9. How many beats would a half note get in \(\frac{3}{4}\) time? Justify your reasoning. [Section III]

2 beats; Sample answer: Since a quarter note receives one beat, a half note is double a quarter note therefore it gets 2 beats.

3. Look at page 14. How could Elias Howe have determined that his machine made stitches 5 times faster than hand sewers? Explain your reasoning. [Section III]

Sample answer: Elias Howe could have counted the number of stitches a hand sewer and a sewing machine made in a minute. (Taking an average would be more accurate).

4. Use the information on page 16 to find the fraction of the day that factory workers spent at work. Use the simplest form to compare that to the fraction of the day that was not spent at work. [Section II]

\[
\frac{7}{12} > \frac{5}{12}
\]

5. Look at page 20. Write a mixed number to describe the speed of a steamboat in miles per hour. How did you change from a decimal to a mixed number? [Section III]

\[
\frac{7}{10} \text{ miles per hour. Sample answer: The whole number stays the same. 0.7 is the same as seven-tenths or } \frac{7}{10}.
\]

1. Escribe cada porcentaje de las gráficas circulares en la página 6 como una fracción en forma reducida. (Un porcentaje puede ser escrito como una fracción con un denominador de 100. Por ejemplo, \(50\% = \frac{50}{100} = \frac{1}{2}\)) Ordena tus respuestas de mayor a menor. [Sección I]

\[
\begin{array}{cccc}
9 & 17 & 3 & 1 \\
10 & 20 & 10 & 10
\end{array}
\]

2. Observa la página 9. ¿Cuántos compases tendrá una media nota en un tiempo de \(\frac{3}{4}\)? Justifica tu razonamiento. [Sección 3]

2 compases; Ejemplo de respuesta: Como un cuarto de nota recibe un compases, una media nota es el doble de un cuarto de nota y por lo tanto recibe 2 compases.

3. Observa la página 14. ¿Cómo pudo haber determinado Elias Howe que su máquina hacía puntadas 5 veces más rápido que las puntadas a mano? Explica tu razonamiento. [Sección 3]

Ejemplo de respuesta: Elias Howe pudo haber contado el número de puntadas que se hacían a mano y en la máquina en un minuto. (Sacar un promedio sería más preciso).

4. Usa la información de la página 16 para calcular la fracción del día que los obreros pasaban en la fábrica. Usa la forma reducida para comparar eso con la fracción del día que no se pasaba en la fábrica. [Sección 2]

\[
\frac{7}{12} > \frac{5}{12}
\]

5. Observa la página 20. Escribe un número mixto para describir la rapidez de un bote a vapor en millas por hora. ¿Cómo cambiaste de un decimal a un número mixto? [Sección 3]

\[
\frac{7}{10} \text{ millas por hora. Ejemplo de respuesta: El número entero permanece igual. 0.7 es igual que siete décimos o } \frac{7}{10}.
\]
<table>
<thead>
<tr>
<th>Real-World Problem Solving</th>
<th>City Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Look at page 5. How many feet long is the New York City subway system? Tell which operation you used to determine your answer. [Section 2]</td>
<td>3,463,680 feet; multiplication</td>
</tr>
<tr>
<td>2. Look at page 7. What are possible lengths and widths for Chicago's Millennium Park? [Section 3]</td>
<td>Sample answer: l = 5000 feet, w = 217.431 feet or l = 500 ft, w = 2174.31 ft</td>
</tr>
<tr>
<td>5. Read about gridiron patterns on page 16. If the roads running east to west are perpendicular to the roads running north to south, what angle will the roads make? Tell how you know. [Section 8]</td>
<td>90 °; sample answer: all perpendicular lines that intersect form 90 ° angles</td>
</tr>
<tr>
<td>6. Look at page 21. How many inches tall is the dome on Maryland's statehouse? Explain how to solve the problem. [Section 9]</td>
<td>1356 inches; sample answer: there are 12 inches in 1 foot. So to convert from inches to feet you multiply the number of inches by 12.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Resuelve problemas concretos</th>
<th>Planificación urbana</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Observa la página 5. ¿De cuántos pies de longitud es el sistema de tren subterráneo de la ciudad de New York? Indica qué operación usaste para determinar tu respuesta. [Sección 2]</td>
<td>3,463,680 pies; multiplicación</td>
</tr>
<tr>
<td>2. Observa la página 7. ¿Cuáles son las longitudes y profundidades posibles del Parque Millennium en Chicago? [Sección 3]</td>
<td>Ejemplo de respuesta: l = 5000 pies, w = 217.431 pies o l = 500 pies, w = 2174.31 pies</td>
</tr>
<tr>
<td>5. Lee sobre los patrones de cuadrícula en la página 16. Si las calles que van de este a oeste son perpendiculares a las calles que van de norte a sur, ¿qué ángulo formarán las calles? Indica cómo lo sabes. [Sección 8]</td>
<td>90 °; ejemplo de respuesta: todas las rectas perpendiculares que se intersecan forman ángulos de 90 °</td>
</tr>
<tr>
<td>6. Observa la página 21. ¿Cuántas pulgadas de alto tiene el domo de la Casa de Gobierno de Maryland? Explica cómo resolver el problema. [Sección 9]</td>
<td>1356 pulgadas; Vea el trabajo de los estudiantes.</td>
</tr>
</tbody>
</table>
1. Suppose a hunter traveled 58.16 miles across the land bridge of Asia and North America 25,000 years ago. How many miles would the hunter walk if he or she turned around and went back to where he or she started? [Section 1]

116.32 miles

2. Refer to the Did You Know? problem on page 6. If land costs $0.02 for one acre, explain how you would find the cost of 12 acres. [Section 1]

See students’ work.

3. The earliest people lived in tribes. People living in a tribe can save time by working together. If it takes one person 2 hours to finish all the daily chores, about how long would it have taken 4 people working together? [Section 2]

1 1/2 hour or 30 minutes

4. One village in the Eastern Woodlands had 720 people living in 6 long houses. How many people would be living in each longhouse if each longhouse held the same number of people? [Section 5]

120 people in each long house

5. Refer to the Did You Know? box on page 19. There were 100 million bison in 1850. Today, there are only 350,000 bison. How many more bison were there in 1850? [Section 6]

99,650,000 bison

6. Look at the photo on page 23. The tallest totem poll ever made is 173 feet tall. Describe how to convert that measurement into yards. [Section 8]

See students’ work.

— Real-World Problem Solving —

— Early American Settlements —

— Las primeras colonias en estados unidos —

1. Supón que un cazador viajó 58.16 millas a través del puente terrestre de Asia y Norteamérica hace 25,000 años. ¿Cuántas millas caminó el cazador si él o ella dio la vuelta y regresó al sitio de partida? [Sección 1]

116.32 millas

2. Consulta el problema ¿Sabías que? de la página 6. Si un terreno cuesta $0.02 por acre, explica cómo calcularías el costo de 12 acres. [Sección 1]

Vea el trabajo de los estudiantes.

3. Los seres humanos más antiguos vivían en tribus. Las personas que viven en tribus ahorran tiempo cuando trabajan juntos. Si una persona demora 2 horas en terminar todas las tareas diarias, ¿cuánto demorarán 4 personas trabajando juntas? [Sección 2]

1 1/2 horas ó 30 minutos

4. En uno de los pueblos de los Bosques Orientales, 720 personas vivían en 6 casas alargadas. ¿Cuántas personas vivían en cada casa alargada, si cada una cobijara al mismo número de personas? [Sección 5]

120 personas en cada casa alargada


99,650,000 bisontes

6. Observa la foto de la página 23. El poste totemico más alto jamás construido mide 173 pies. Describe cómo se convierte esa cantidad a yardas. [Sección 8]

Vea el trabajo de los estudiantes.
1. Use the information on pages 4 and 5 to explain how to find the area of the world’s land that does not include Asia. (Hint: Find 10% of the world’s land first.) [Section 2]

Sample answer: Set up a proportion to solve for the total area of the world. \( \frac{17,212,000}{100} = \frac{30}{100} \) Total = 57,373,333 mi\(^2\)

2. Find the volume of Christopher Columbus’ ship described on page 8. Is the volume greater than or less than 300 cubic meters? Describe how you can find the answer. (Hint: \( V = lwh \)) [Section 4]

greater; Multiply the length by width by height to find the volume. The volume is \( 18 \times 6 \times 3 = 324 \text{ m}^3 \)

3. Could more crew members have fit in Christopher Columbus’ ship described on page 8 or in a knarr as described on page 12? How can you find the answer without calculating the volume? [Section 5]

yes: By comparing the width, length and height of the ship and the knarrs. The ship is bigger than the knarrs.

4. Use the information on pages 12 and 13 to apply formulas that could help you find the area and volume of the sails used on drakkars. [Section 5]

\[ A = \frac{1}{2} \times l \times w \]


$200


\( \frac{1}{15} \)
1. Look at page 3. Where do you see perpendicular and parallel lines on the current United States flag? What kinds of angles can you find on the flag? [Section 1]

Sample answer: There are parallel lines in the stripes and perpendicular lines where the box of stars and strips intersect. There are 90° angles at the parallel and perpendicular lines and 72° angles at the stars.

2. Look at page 8. Explain how to find how much time passed from the time the Continental Congress adopted our first flag until our modern flag with 50 stars was created. [Section 2]

See students’ work.

3. Look at the state flag of Ohio on page 15. This flag has a different shape than all other state flags. What kind of shape has five sides? Name what kinds and how many of each angle the shape has. [Section 3]

See students’ work.

4. Look at the state flag of Arkansas on page 18. There is a shape centered on this state flag. Is this shape a rectangle or a rhombus? Explain. [Section 3]

rhombus

5. Look at pages 12 and 20. Create a Venn diagram that compares the state flags of Iowa and Texas using geometric terms. [Section 3]

See students’ work.

6. Look at the flags throughout the story. Except for Ohio, what geometric shape makes up the flags?

quadrilaterals
1. Look at page 5. One year on Mars is 687 days. Explain how you would determine your age in years on Mars. [Section 1]

   See students' work.

2. Look at the scale model on pages 10 and 11. Would it be better to measure the diameter of Mars using meters or kilometers? Explain your reasoning. [Section 3]

   Sample answer: kilometers because meters would make the number too large and difficult to compare with other planets.

3. Look at page 11. Convert the diameter of Jupiter from kilometers to meters. (Hint: 1 kilometer = 1,000 meters) [Section 3]

   142,983,000 m

4. Use the data from page 15 to order the planets from hottest to coldest on a number line. [Section 4]

   See students' work: number line should have the following order from right to left Venus, Mercury, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.

5. Look at page 16. Suppose the Voyager I spacecraft travels through space at about 88,500 kilometers per hour. Create a ratio table to show the distance the Voyager I can travel in 2, 3, and 4 hours. [Section 5]

   See students' work: should include 1 to 88,500; 2 to 177,000; 3 to 265,500; and 4 to 354,000

6. Use the table on page 19 to create a bar graph or pictograph showing the number of moons for each planet. [Section 6]

   See students' work.
1. Look at Talk About It on page 2. What fraction represents the number of exhibits that use water? [Section 1]

\[
\frac{5}{17}
\]

2. Look at page 12. What is the atomic number for nitrogen? Suppose krypton has an atomic number that is 6 times greater than nitrogen. Write a multiplication expression that could be used to find its atomic number. Explain how you solved the problem. [Section 4]

\[
7; 7 \times 6 = 42; \text{Sample answer: Multiply the atomic number for nitrogen by 6 because krypton is 6 times greater.}
\]

3. Look at page 16. Write a number sentence to show how many more days Earth has in a year compared with Mercury. [Section 5]

\[
365 - 88 = 277
\]

4. Look at page 19. About how much deeper is the Atlantic Ocean than the Arctic Ocean? Write a number sentence to show how to solve this problem. Explain your answer. [Section 5]

\[
\text{About 8,000; } 26,000 - 17,000 = 9,000; \text{Sample answer: Use the bar graph to estimate the depth of the Atlantic and Artic Oceans. Subtract Atlantic Ocean's depth from the depth of the Artic Ocean.}
\]

5. Look at page 23. Suppose you pushed a 15-pound box across a room that is 25 feet long. Could you use the equation on this page to determine how much work is done? Justify your reasoning. [Section 8]

\[
\text{Sample answer: No; The force to push the box is not known.}
\]
<table>
<thead>
<tr>
<th>Real-World Problem Solving</th>
<th>Into Uncharted Territory</th>
<th>Resuelve problemas concretos</th>
<th>Hacia un territorio desconocido</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Use page 5 to find out how many whole acres could be purchased for $1. [Chapter 1]</td>
<td><strong>See students' work.</strong></td>
<td>1. Consulta la página 5 para calcular cuántos acres completos podrían comprarse con $1. [Capítulo 1]</td>
<td><strong>Vea el trabajo de los estudiantes.</strong></td>
</tr>
<tr>
<td>3. Find the mean, median, and range of the tribe populations found on page 14. [Chapter 3]</td>
<td><strong>mean: 1390 median: 400 range: 3750</strong></td>
<td>3. Calcula la media, la mediana y el rango de las poblaciones de tribus que se encuentran en la página 14. [Capítulo 3]</td>
<td><strong>media: 1390 mediana: 400 rango: 3750</strong></td>
</tr>
<tr>
<td>4. Look at page 13. Choose and create an appropriate graph to represent the data in the tally chart. Why did you choose this representation? [Chapter 3]</td>
<td><strong>See students' work.</strong></td>
<td>4. Observe la página 13. Elige y crea una gráfica apropiada para representar los datos de la tabla de conteo. ¿Por qué elegiste esta representación? [Capítulo 3]</td>
<td><strong>Vea el trabajo de los estudiantes.</strong></td>
</tr>
<tr>
<td>5. Use the timeline on pages 18 and 19 to determine how old Sacagawea was when she died. Explain your reasoning. [Chapter 4]</td>
<td><strong>24; Sample Answer: Subtract the year Sacagawea died from the year she was born as shown on the timeline.</strong></td>
<td>5. Consulta la línea del tiempo de las páginas 18 y 19 para determinar qué edad tenía Sacagawea al morir. Explica tu razonamiento. [Capítulo 4]</td>
<td><strong>24; Ejemplo de respuesta: Resta el año en que Sacagawea murió del año en que nació como se muestra en el cronograma.</strong></td>
</tr>
</tbody>
</table>
1. Look at page 4. Explain how you would find the fraction of colonies that were called The Middle Colonies. [Section 1]

   **Sample Answer:** Place the number of Middle colonies over the total number of colonies.

2. Look at page 9. If the cotton and tobacco were weighed together, what would the total weight be? [Section 3]

   \[2 \frac{7}{5} \text{ tons, or } 17 \frac{2}{5} \text{ tons}\]

3. Look at page 9. Before setting sail, another \(1 \frac{2}{3}\) tons of fish were loaded onto this ship. What is the total weight of the fish? [Section 3]

   \[4 \text{ tons}\]

4. Refer to the recipe card on page 19. Imagine that you want to make a double batch of gingerbread. How much of each ingredient will you need? Justify your reasoning. [Section 5]

   **See students’ work.**

5. Turn to the trade list found on page 21. Determine how much of each crop would be left after trading. [Section 5]

   \[\text{Wheat } = 2 \frac{1}{4} \text{ bushels, Oats } = 1 \frac{1}{2} \text{ bushels, Corn } = 4 \frac{1}{6},\]
   \[\text{Apples } = 1 \frac{7}{8} \text{ bushels}\]

6. Look at page 23. How much time elapsed from the time Jacob and Caleb ate supper to the time they read and went to sleep? [Section 6]

   \[3 \text{ hours}\]

---

1. Observa la página 4. Explica cómo calcularías la fracción de las colonias que se llamaban Las colonias del medio. [Sección 1]

   **Ejemplo de respuesta:** Coloca el número de Las colonias del medio sobre el total del número de colonias.

2. Observa la página 9. De pesarse juntos el algodón y el tabaco, ¿cuál sería el peso total? [Sección 3]

   \[2 \frac{7}{5} \text{ toneladas, o } 17 \frac{2}{5} \text{ toneladas}\]

3. Observa la página 9. Antes de zarpar, se cargaron otras \(1 \frac{2}{3}\) toneladas de pescado en este barco. ¿Cuál es el peso total del pescado? [Sección 3]

   \[4 \text{ toneladas}\]

4. Consulta la tarjeta con la receta de la página 19. Imagina que deseas preparar una receta doble de pan de jengibre. ¿Cuánto necesitarás de cada ingrediente? Justifica tu razonamiento. [Sección 5]

   **Vea el trabajo de los estudiantes.**

5. Dirígete al listado comercial de la página 21. Determina cuánto de cada cosecha quedaría después del intercambio. [Sección 5]

   \[\text{Trigo } = 2 \frac{1}{4} \text{ fanegas, Avena } = 1 \frac{1}{2} \text{ fanegas, Maíz } = 4 \frac{1}{6}, \text{ Manzanas } = 1 \frac{7}{8} \text{ fanegas}\]

6. Observa la página 23. ¿Cuánto tiempo transcurrió desde que Jacob y Caleb cenaron hasta que leyeron y se fueron a dormir? [Sección 6]

   \[3 \text{ horas}\]
1. Look at the Periodic Table of Elements on pages 6 and 7. Describe the fraction of the elements that are metal. [Section 1]

2. Look at page 10. How many hydrogen atoms would be in 45 water molecules? Explain your reasoning. [Section 1]

Sample answer: There will be 90 hydrogen molecules; there are two hydrogen molecules for every water molecule.

3. Look at page 11. Suppose the area of the front of the sugar box shown has one-half the area of the front of another brand. Explain how to find the possible length and width of the other brand’s sugar box. [Section 1]

Sample answer: The area of the box shown is $9 \times 6 = 54$ in$^2$. So the area of the other brands is $54 \times 2 = 108$ in$^2$. Find different pairs of multiples with a product of 108. One example is 12 and 9.

4. Look at the first photograph of containers on page 17. How could you use an empty aquarium to find the volume of the combined liquids shown in the various containers? [Section 2]

See students’ work.

5. Look at page 21. Suppose the balloons shown can each hold 50 cubic inches of helium. What is the maximum volume of helium that can be held in the balloons shown? [Section 4]

600 in$^3$

1. Mira la tabla periódica de los elementos en las páginas 6 y 7. Describe la fracción de los elementos que son metales. [Sección 1]

2. Mira la página 10. ¿Cuántos átomos de hidrógeno hay en 45 moléculas de agua? Explica tu razonamiento. [Sección 1]

Ejemplo de respuesta: Habría 90 moléculas de hidrógeno; hay dos moléculas de hidrógeno por cada molécula de agua.

3. Mira la página 11. Suponte que el área del frente de la caja de azúcar que se muestra tiene la mitad del área del frente de la caja de la otra marca. Explica cómo calcularías la longitud y grosor de la caja de azúcar de la otra marca. [Sección 1]

Ejemplo de respuesta: El área de la caja que se muestra es $9 \times 6 = 54$ pulg$^2$. Por lo tanto, el área de las otras marcas es $54 \times 2 = 108$ pulg$^2$. Halla diferentes pares de múltiplos con un producto de 108. Un ejemplo es 12 y 9.

4. Mira la primera fotografía de los recipientes en la página 17. ¿Cómo usarías un acuario vacío para calcular el volumen combinado de los líquidos que contienen los distintos recipientes? [Sección 2]

Vea el trabajo de los estudiantes.

5. Mira la página 21. Suponte que cada uno de los globos que se muestran puede contener 50 pulgadas cúbicas de helio. ¿Cuál es el máximo volumen de helio que pueden contener estos globos? [Sección 4]

600 pulg$^3$
1. Look at the Did You Know? box on page 7. Suppose the giraffe ate for longer than 15 hours but less than 20 hours. Additionally, the number of hours it ate has factors of 1, 2, 4, 8, and 16. How much of the day did it spend eating? [Section 2]

16 hours

2. Look at page 8. About how many miles farther can a hawk see if a human can see for \(\frac{1}{2}\) miles? Explain. [Section 2]

12 miles; Sample answer: a hawk can see 8 times farther than a human so multiply the distance a human can see \(\frac{1}{2}\) miles by 8.

3. Look at the table on page 13. List each animal’s speed into two categories, prime or composite. [Section 3]

Prime = 61; Composite = 70, 50, 48, 45

4. Look at the line graph about unhealthy ecosystems on page 19. [Section 5]

When the number of herbivores is at 700, how many plants are there? Explain why this could be a problem.

about 250 plants; sample answer: should include the shortage of food for the herbivores.

5. In one section of a rain forest, \(\frac{1}{2}\) of the animals are herbivores, \(\frac{3}{8}\) of the animals are carnivores, and \(\frac{2}{16}\) of the animals are omnivores. List the fractions of animals in order from least to greatest. [Section 5]

\[
1620 = \frac{11}{16} \quad 1850 = \frac{3}{8} \quad 1920 = \frac{2}{4} \quad \text{Today} = \frac{1}{100}
\]

1620 = \(\frac{11}{16}\) 1850 = \(\frac{3}{8}\) 1920 = \(\frac{2}{4}\) Today = \(\frac{1}{100}\)

1. Observe la casilla de ¿Sabías qué? en la página 7. Supón que la jirafa come por más de 15 horas pero por menos de 20. Además, el número de horas que come tiene como factores a 1, 2, 4, 8 y 16. ¿Qué parte del día pasó comiendo? [Sección 2]

16 horas

2. Observa la página 8. Aproximadamente, ¿cuántas millas más lejos puede ver un halcón, si un humano puede ver \(\frac{1}{2}\) millas? Explica. [Sección 2]

12 millas; Ejemplo de respuesta: un halcón puede ver 8 veces más lejos que un humano, por lo tanto, multiplica la distancia a la que puede ver un humano \(1\frac{1}{2}\)

3. Observa la tabla de la página 13. Ordena la velocidad de cada animal en dos categorías, primo o compuesto. [Sección 3]

Primo = 61; Compuesto = 70, 50, 48, 45

4. Observa la gráfica lineal sobre los ecosistemas enfermos de la página 19. ¿Cuántas plantas hay cuando el número de herbívoros está en 700? Explica por qué esto puede ser un problema. [Sección 5]

cerca de 250 plantas; ejemplo de respuesta: debe incluir la escasez de alimento para los herbívoros.

5. Observa los mapas de la página 21. Asigna una fracción para cada mapa que representa el área de Estados Unidos cubierta por bosques en cada momento. [Sección 6]

\[
1\frac{16}{20} = \frac{2}{16} \quad 1\frac{8}{5} = \frac{3}{8} \quad 1\frac{2}{4} = \frac{2}{4} \quad \text{Hoy en día} = \frac{1}{100}
\]
1. How many of the states would you be touching when visiting the Four Corners? Write this as a decimal. [Section 1]  
4.0 states

2. Using the timeline on pages 4 and 5, order these states from first to become a state to the last: Arizona, California, Delaware, Florida, Georgia, Iowa, Louisiana, North Carolina, Ohio, Oregon, Vermont. [Section 1]  
Delaware, Georgia, North Carolina, Vermont, Ohio, Louisiana, Florida, Iowa, California, Oregon, Arizona

3. Look at pages 6 and 7. Out of the 50 states, what fraction does the New England region represent? What fraction do the South and Southwest regions represent combined? Explain how you solved the problem. [Section 3]  
New England: $\frac{6}{50}$; South and Southwest: $\frac{17}{50}$; The number of states in each region out of the total number of states.

4. Look at page 9. Order the capital cities of the New England region by their population. Order them from least to greatest. [Section 3]  
Montpelier, VT; Augusta, ME; Concord, NH; Hartford, CT; Providence, RI; Boston, MA.

5. According to the circle graph on page 12, which grain represents about $\frac{1}{4}$ of the total Midwest grain production? Explain how you know. [Section 5]  
Wheat; Sample answer: Wheat is 0.27 in decimal form which is close to $\frac{1}{4}$ which is 0.25 in decimal form.

1. ¿Cuántos de los estados estarías tocando al visitar las Cuatro Esquinas? Escribe esto como un decimal. [Sección 1]  
4.0 estados

2. Consulta la línea del tiempo de las páginas 4 y 5 para ordenar estos estados del primero en convertirse en estado al último en hacerlo: Arizona, California, Delaware, Florida, Georgia, Iowa, Louisiana, Carolina del Norte, Ohio, Oregon, Vermont. [Sección 1]  
Delaware, Georgia, North Carolina, Vermont, Ohio, Louisiana, Florida, Iowa, California, Oregon, Arizona

3. Observa las páginas 6 y 7. De los 50 estados, ¿qué fracción representa la región de Nueva Inglaterra? ¿Qué fracción representan las regiones del Sur y del Suroeste combinados? Explica cómo resolviste el problema. [Sección 3]  
Nueva Inglaterra: $\frac{6}{50}$; el Sur y el Suroeste: $\frac{17}{50}$; El número de estados en cada región del número total de estados.

4. Observa la página 9. Ordena las capitales de la región de Nueva Inglaterra por sus poblaciones. Ordénalas de menor a mayor. [Sección 3]  
Montpelier, VT; Augusta, ME; Concord, NH; Hartford, CT; Providence, RI; Boston, MA.

5. Según la gráfica circular de la página 12, ¿qué grano representa alrededor de $\frac{1}{4}$ del total de la producción de granos del Medio Oeste? Explica cómo lo sabes. [Sección 4]  
Trigo; Ejemplo de respuesta: Trigo es 0.27 en forma decimal que se aproxima a $\frac{1}{4}$, o sea, 0.25 en forma decimal.
1. Revisit the *Did You Know?* box on page 2. Explain how to find the distance the 1905 airplane could fly in about 1 hour and 40 minutes. [Chapter 1]

2. Look at page 5. Use the inequality for determining whether an object will float to solve this problem. Will a boat float that weighs 3,000 pounds and is 300 cubic feet? [Chapter 1]

3. Look at pages 6–7. How many years was it from Roger Bacon’s idea to the French military using hot air balloons for spying? [Chapter 1]

4. Look on page 9. Explain how to find the heights of the Montgolfier balloon flights in yards. [Chapter 1]

5. Revisit the *Did You Know?* box on page 17. If the temperature at sea level is 82°, what is the temperature at an altitude of 1,000 feet? 3,000? Create a function table with your results. [Chapter 3]

6. Look on page 21. On average, how many miles did Steve Fossett travel per day? [Chapter 4]

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1. Mira de nuevo la sección ¿Sabías que? de la página 2. Explica cómo encontrar la distancia que un avión del 1905 podía volar en aproximadamente 1 hora y 40 minutos. [Capítulo 1]

2. Mira la página 5. Para resolver el problema, usa la desigualdad para determinar si un objeto flotará. ¿Flotará un barco que pese 3,000 libras y tenga 300 pies cúbicos? [Capítulo 1]

3. Mira las páginas 6 y 7. ¿Cuántos años pasaron entre la idea de Roger Bacon respecto al uso de los globos aerostáticos y el espionaje llevado a cabo por los militares franceses? [Capítulo 1]

4. Mira la página 9. Explica cómo encontrar las alturas en yardas de las trayectorias del globo Montgolfier. [Capítulo 1]

5. Mira de nuevo la caja ¿Sabías que? de la página 17. Si la temperatura al nivel del mar es de 82°, ¿cuál es la temperatura a una altura de 1,000 pies? ¿Y de 3,000 pies? Crea una tabla de funciones con tus resultados. [Capítulo 3]

Real-World Problem Solving

1. Look at the Did You Know? on page 2. About how many feet of rain did Alvin, Texas, receive on that record-breaking day? [Section 1]

   3.58 feet

2. Look at the weather map on pages 10 and 11. Predict the likelihood that the state of Indiana will be rainy based on the map. Justify your reasoning. [Section 3]

   Sample answer: It is very likely that it will be rainy in Indiana because it is surrounded by rain storms headed toward that direction.

3. Look at the picture of two satellites orbiting Earth on page 16. Write a word problem that describes the difference in heights between the two satellites. [Section 6]

   Sample answer: How much higher above Earth is the Geostationary satellite than the Polar satellite?

4. Look at page 18. Suppose the weather is partly cloudy. Draw the symbol that represents this cloud cover. [Section 7]

   See students' work.

5. Use the table on page 19 to draw a wind symbol. The symbol should be for wind blowing from the north at 60 knots. Explain your work. [Section 7]

   See students' work.

6. Look at page 22. What is the wind speed if a tornado is pushing automobiles off the road? [Section 9]

   73mph–112mph

---

La naturaleza cambiante del tiempo

1. Observa la silla de ¿Sabías que...? en la página 2. ¿Aproximadamente cuánta lluvia recibió Alvin, Texas en ese día que se rompió el récord? [Sección 1]

   3.58 pies

2. Observa el mapa meteorológico en las páginas 10 y 11. Predigan la posibilidad de que llueva en el estado de Indiana, en base al mapa. [Sección 3]

   Ejemplo de respuesta: Es muy probable que llueva en Indiana porque está rodeado de tormentas lluviosas que se aproximan en esa dirección.

3. Observa la figura de los dos satélites orbitando la Tierra en la página 16. Escribe un problema en palabras que describa la diferencia de las alturas entre los dos satélites. [Sección 6]

   Ejemplo de respuesta: ¿A cuánta más altura sobre la Tierra está el satélite Geostationary que el satélite Polar?

4. Observa la página 18. Supón que el estado del tiempo está parcialmente nublado. Dibuja el símbolo que representa este manto de nubes. [Sección 7]

   Vea el trabajo de los estudiantes.

5. Usa la tabla en la página 19 para dibujar un símbolo de viento. El símbolo debe ser de un viento que sople desde el norte a 60 nudos. Explica tu trabajo. [Sección 7]

   Vea el trabajo de los estudiantes.

6. Observa la página 22. ¿Cuál es la velocidad del viento si un tornado está arrastrando los carros fuera de la carretera? [Sección 9]

   73mph–112mph
1. Look at page 5. Describe how to find the fraction of Earth’s water that is not made up of the ocean. [Section 2]
   Sample answer: Change 3.5% into a fraction. Since 0.5 is equal to \( \frac{1}{2} \), 3.5 is equal to \( 3 \frac{1}{2} \text{ or } \frac{7}{2} \).

2. Look at page 15. One city receives rain 17 more days than Tucson. Write a fraction to represent this part of a year. Use a simplified fraction. [Section 3]
   \( \frac{10}{73} \text{ of the year} \)

3. Look at page 16. Find the average monthly rainfall in New York City from February to May. (Hint: find the total amount of precipitation and then divide by four.) [Section 3]
   3.995 inches of rain, or 4 inches of rain

4. Look at page 16. Explain why Luis chose to make a bar graph instead of a circle graph to represent the data in the table. [Section 3]
   Sample answer: Different colored bars can be used to represent the precipitation during four months at each location. Four separate circle graphs would have to be made to represent each month or each location.

5. Look at page 16. What information can you get from the bar graph? [Section 3]
   Sample answer: You may see which months have the greatest amount of rainfall for the cities listed from February to May.

1. Miren la página 5. Describan cómo se calcula la fracción del agua en la Tierra que no forma parte de los océanos. [Sección 2]
   Ejemplo de respuesta: Convertir 3.5% en una fracción. Como 0.5 es igual a \( \frac{1}{2} \), 3.5 es igual a \( 3 \frac{1}{2} \text{ o } \frac{7}{2} \).

2. Miren la página 15. Una ciudad recibe 17 días más de lluvia que Tucson. Escriban una fracción que represente esta parte del año. Usen una fracción reducida. [Sección 3]
   \( \frac{10}{73} \text{ del año} \)

3. Miren la página 16. Calculen la precipitación pluvial promedio en la ciudad de Nueva York, de febrero a mayo. (Ayuda: calculen la cantidad total de precipitación y luego dividálo entre cuatro.) [Sección 3]
   3.995 pulgadas de precipitación, o 4 pulgadas de precipitación

4. Miren la página 16. Expliquen por qué Luis prefirió hacer una gráfica de barras en lugar de una circular, para representar los datos de la tabla. [Sección 3]
   Ejemplo de respuesta: Se pueden usar barras de colores diferentes para representar la precipitación durante cuatro meses para cada lugar. Se tendrían que hacer cuatro gráficas circulares diferentes para representar cada mes o cada lugar.

5. Miren la página 16. ¿Qué información pueden obtener de la gráfica de barras? [Sección 3]
   Ejemplo de respuesta: Pueden ver qué meses tienen la mayor y la menor cantidad de precipitación para las ciudades listadas de febrero a mayo.
Answers to *Talk About It* Features
By Book Title

**Note to teachers:** The *Talk About It* features in *Real-World Problem Solving* readers contain universal content; they are not differentiated for approaching or beyond books. You might use these questions in a whole-class setting to promote discussion and problem solving among all learners.

**A Growing Nation**
Page 6: Sample answer: In 1930, 5% more of the population were immigrants and 5% less were native born than the population in 1850.
Page 18: 5 stage coaches; answers will vary

**City Planning**
Page 21: Answers will vary.

**Early American Settlements**
Page 7: About 350 days
Page 9: Sample answer: Living in groups meant that people could share resources and communicate easily with one another.
Page 11: 120 inches
Page 12: 8 people
Page 13: 51 council members
Page 18: 204 bison
Page 20: 49
Page 22: 1.8 feet; 6.9 feet

**Exploring the World by Sea**
Page 8: 7,196.7 km
Page 15: Sample answer: First I would multiply 73 maravedis \( \times \) 2 bushels. Then multiply the answer by 10 cents since 1 maravedis = 10 cents. 1460 \( \times \) 10 = 14,600 cents = $146.00

**Flags: Shaping History**
Page 14: Sample answer: The opposite angles are equal, 2 acute and 2 obtuse.
Page 16: 8; all are right angles

**How Big is the Solar System?**
Page 22: 10%

**Inside a Science Museum**
Page 2: 5 + 12
Page 4: about 50%
Page 7: Sample answer: First I would find the exhibits on the coordinate plane. Next I would look down to the x coordinate and then go up to locate the y coordinate. The “Tropical Rain Forest” exhibit is at coordinates (16, 3). The “Your Senses” exhibit is found at (12, 10).
Page 9: Sample answer: If \( \frac{1}{3} \) are male, then \( \frac{2}{3} \) are female. I would find \( \frac{2}{3} \) of the 800,000 people.
About 53,333 females.
Page 12: 6 electrons; 6
Page 20: 90 feet of rain

**Into Uncharted Territory**
Page 3: about 600 miles
Page 13: Sample answer: The kinds of animals Lewis and Clark saw on their journey and how many times they saw them.
Page 19: Sample answer: I would subtract the year Sacagawea was born from the year she joined the Lewis and Clark expedition. 1805 - 1788 = 17 years old.

**Life in Colonial America**
Page 4: \( \frac{5}{13} \)
Page 8: \( \frac{73}{8} \) tons
Page 10: 4\( \frac{1}{2} \) logs; 6 logs; 3 logs; 6\( \frac{1}{2} \) logs
Page 13: 7\( \frac{3}{4} \) hours
Page 14: \( \frac{15}{16} \) gallon
Matter All Around
Page 6: 2,580 protons
Page 8: 3,126 oxygen atoms
Page 11: 30 inches
Page 12: 90 square inches
Page 17: Sample answer: The students can use a ruler to measure the length, width, and height of the fish tank in inches. Then the students can multiply the 3 numbers to find the volume.
Page 19: Answers will vary. Sample answer: 0°F; I could measure the temperature when a liquid freezes.
Page 21: about 100 pumps
Page 23: cubic meters

Nature's Delicate Balance
Page 14: Sample answer: It's important that different types of animals eat different foods because they need to be able to find their food in their own environment. If they all ate the same thing there might not be enough food to feed all the animals.

Our Nation's 50 States
Page 5: 5 states; \( \frac{5}{50} \) or \( \frac{1}{10} \)

The Shifting Nature of Weather
Page 9: Sample answer: With more accurate pictures the meteorologists will be able to better see patterns to predict the weather.
Page 12: 0.25; \( \frac{1}{4} \)
Page 18: 0% chance of sunshine

Water Works
Page 6: 54 ounces
Page 8: cumulus, altostratus, and altocumulus
Page 10: about 1.9
Page 15: 33 days
Page 17: Sample answer: In a table I can see all the exact numbers of a set of data. In a graph I can easily compare the data.
Page 18: about 2 inches
Page 20: 90,000,000
Page 23: 4 million wells