



Learning Objectives

Students will:

- identify the main ideas and supporting details of the text.
- write a magazine article that includes a main idea and supporting details.
- identify adaptations that help animals survive.

Standards

- **Reading:** Determine the main idea of a text and explain how it is supported by key details; summarize the text.
- **Writing:** Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
- **Content:** Know that living organisms have distinct structures and body systems that serve specific functions in growth, survival, and reproduction.
- **Language:** Communicate information, ideas, and concepts necessary for academic success in the content area of Science.

Lesson Timeline

Day 1

Task

Introductory and Lab Activities (page 73)

Summary of Student Learning Activities

Investigate how blubber insulates animals from the cold.

Day 2

Task

Before Reading (page 74)

Summary of Student Learning Activities

Preview the book to find details that support two main ideas.

Day 3

Task

During Reading (page 75)

Summary of Student Learning Activities

Identify the main ideas of sections of the text, and write a magazine article about adaptations.

Day 4

Task

After Reading (page 76)

Summary of Student Learning Activities

Write the main idea and details of different paragraphs.

Day 5

Task

Activity from the Book (page 76) and **Assessments** (pages 81–82)

Summary of Student Learning Activities

Use tools to simulate animal adaptations, and take the assessments.



Materials

- copies of the *Animal Coverings* activity sheet (page 77)
- 2 gallon-sized zipper plastic bags
- big bowl or bucket
- ice cubes
- duct tape
- shortening
- spoon
- water

Day 1

Investigate how blubber insulates animals from the cold.

Introductory Activity

Engage

1. Ask students what they do to stay warm when they are cold. Discuss how people often put on more clothing, such as a sweater or a jacket, when they are cold.
2. Explain that animals in the wild cannot put on clothing to keep warm. Ask students what adaptations animals in cold climates might have. Record their responses on the board. Tell students that they will learn more about animal adaptations.

Lab Activity

Explore & Explain

1. Place students in small groups. Distribute a set of lab materials to each group. Have groups fill their bowls or buckets with water and add the ice. **Note:** You may wish to set up bowls of ice water in stations around the classroom.
2. Have students fill one bag with shortening. Have them insulate their hands by placing a bag over one hand and then placing it into the bag of shortening. Have them move the shortening around until their hand is covered with shortening.
3. Have students remove their hands from both bags, fold the top of the inner bag over the outer bag, and duct tape the top of the two bags together to prevent leaks.
4. Have students place their hands back into both bags and place them in the ice water. Tell students to place their other hands in the water to compare.
5. Distribute copies of the *Animal Coverings* activity sheet (page 77) to students. Have them use the sheet to record their observations. **STEM**
6. Ask questions to guide students to the idea that the shortening insulates their hands like blubber.
 - Which hand is colder? Why?
 - What kind of adaptation does the shortening mimic?
 - What kind of animal might have this adaptation? How would it be helpful?
7. Bring the class together for instruction. Discuss students' results and conclusions. Explain that the shortening simulates blubber, which insulates animals and helps them stay warm. Clarify misconceptions by having students explain their understandings using logic and evidence to support their ideas.

Day 2

Preview the book to find details that support two main ideas.

Materials

- Adaptations books
- copies of the *Types of Adaptations* activity sheet (page 78)
- chart paper

Vocabulary Word Bank

- climate
- habitat
- instincts
- offspring
- species
- traits

Before Reading

Elaborate

1. Write the vocabulary words on separate sheets of chart paper, and discuss their meanings as a class. Post the sheets of chart paper around the room. Have groups of students rotate around the room, drawing pictures and writing words that relate to each vocabulary word. Discuss how the words and drawings relate to each vocabulary word. Keep the chart papers as a reference for students to use throughout the lesson.
2. Explain to students that living things slowly change, or adapt, over long periods of time. Tell students that animal adaptations can be behavioral (a change in an animal's habits or actions) or physical (a change in an animal's body). For example, sleeping at night is a behavioral adaptation of humans. Having eyelashes is a physical adaptation of humans.
3. Distribute the *Adaptations* books and copies of the *Types of Adaptations* activity sheet (page 78) to students. Have them use the book to find examples of behavioral and physical adaptations of different animals. Examples of physical adaptations include: ducks have webbed feet, bats have fingers on their wings, rabbit fur changes to white in winter, and alligators have eyes on top of their heads to peek out of the water. Examples of behavioral adaptations include: beavers build dams in rivers, bats hunt at night, geese fly south in winter, and bears sleep in winter.
 - You may wish to have students digitally annotate the PDF of the text to identify behavioral and physical adaptations.
4. Discuss students' findings. Explain how these details support the main ideas that animals have physical adaptations and animals have behavioral adaptations. Tell students that they will learn more about adaptations as they read the book.



Materials

- *Adaptations* books
- copies of the *Science Magazine* activity sheet (page 79)

Day 3

Identify the main ideas of sections of the text, and write a magazine article about adaptations.

During Reading

Elaborate

1. Distribute the *Adaptations* books to students. For the first reading, have students take turns reading pages of the book aloud. Pause periodically and identify the main idea of the text. For example, the main idea on page 4 is that traits are what make us different from one another. The main idea on page 8 is that every living thing has adaptations to help it survive. The main idea on page 16 is that carnivores must be strong hunters to survive.
 - You may choose to display the Interactiv-eBook for a more digitally enhanced reading experience.
2. For the second reading, have students read the text in pairs. Tell students to pause after each page spread and discuss the main idea of the text.
 - For **below-level learners** and **English language learners**, you may choose to play the audio recording as students follow along to serve as a model of fluent reading. This may be done in small groups or at a listening station. The recording will help struggling readers practice fluency and aid in comprehension.
3. Distribute copies of the *Science Magazine* activity sheet (page 79) to students. Tell students to use what they learned from the *Adaptations* book to write a summary in the form of a magazine article. Tell them to include a main idea and support it with details from the text. Explain that the picture should help a reader better understand the text. Explain to students that news articles give facts only (no opinions) and include the five Ws (Who, What, Where, When, Why). Help students brainstorm ideas to answer the five Ws before having them begin the assignment.
 - Have **below-level learners** and **English language learners** pick one animal to focus on for their articles. Help them find the correct section of the book and organize the information into a main idea with supporting details before they begin writing.
 - Challenge **above-level learners** to incorporate direct quotes from the *Adaptations* book to support their writing.



Days 4&5

Write the main idea and details of different paragraphs. Use tools to simulate animal adaptations, and take the assessments.

Materials

- *Adaptations* books
- copies of the *Main Idea and Details*, *Adaptations Quiz*, and *Protection from the Cold* activity sheets (pages 80–82)
- copies of *Rearranging Sentences* from the Digital Resources (rearranging.pdf)
- scissors

After Reading

Elaborate & Evaluate

1. Write the vocabulary words on the board, and review their definitions. Then, have students write a riddle for one of the words. For example, a riddle for the word *traits* might be, “I make living things different from one another. Sometimes people use the word *characteristic* when they talk about me. What am I?” Have students take turns saying their riddles and guessing the correct answer. Tell students that they must meet five other riddles before sitting down.
2. Place students in small groups. Distribute copies of *Rearranging Sentences* from the Digital Resources (rearranging.pdf) to groups. Have groups collaborate to assemble the sentences so that the main idea comes first, followed by the three detail sentences. Discuss how each group arranged the sentences. Discuss how the first sentence explains the main idea and how the detail sentences support it.
3. Distribute copies of the *Main Idea and Details* activity sheet (page 80) to students. Have students use the book to complete the activity sheet. Discuss their answers as a class.

Activity from the Book

Read the Your Turn! prompt aloud from page 32 of the *Adaptations* book. Have students use the following scale to rate the ease of use for each tool: 1 (difficult), 3 (so-so), or 5 (easy).

1. A short posttest, *Adaptations Quiz* (page 81), is provided to assess student learning from the book.
2. A data analysis activity, *Protection from the Cold* (page 82), is provided to assess students' understanding of how to analyze scientific data. Explain to students that the chart shows the difference in temperature when the covered cups were placed in ice water. **STEM**
3. The Interactiv-eBook activities may be used as a form of assessment (optional).



Name: _____ Date: _____

Animal Coverings

STEM

Directions: Record your observations from the lab activity in the chart. Then, answer the questions below.

With Shortening	Without Shortening

1 How did the shortening protect your hand?

2 How is this similar to wearing a jacket?

3 What animals do you think need this type of covering?

4 Where might animals with this type of covering live? Explain.



Name: _____ Date: _____

Types of Adaptations

Directions: List examples of behavioral and physical adaptations.

Behavioral Adaptations	Physical Adaptations

Name: _____ Date: _____

Main Idea and Details

Directions: Write one main idea for each group of details below. Then, write two details from the text to support the main idea.

1 Main Idea: _____

Detail: Like fish, sharks have a dorsal fin on their back. This keeps them stable and balanced.

Detail: Ducks use their webbed feet like paddles to push against the water.

2 Main Idea: _____

Detail: Cactuses have long roots that stay close to the surface of the ground. This way, the roots can soak up the smallest bit of rain.

Detail: Many plants that live in the desert have glossy leaves that reflect heat from the sun to keep cool.

3 Main Idea: Animals have adaptations that allow their young to survive and thrive. (page 24)

Detail: _____

Detail: _____



Name: _____ Date: _____

Adaptations Quiz

Directions: Read each question. Choose the best answer. Fill in the bubble for the answer you have chosen.

- 1** Which animal is adapted for both land and water?
- (A) sharks
 - (B) penguins
 - (C) ducks
 - (D) B and C
- 2** Which adaptation is important for animals living in a desert environment?
- (A) being able to eat sand
 - (B) having blubber for extra warmth
 - (C) storing food for long periods of time
 - (D) breathing underwater
- 3** Which is NOT an example of a trait?
- (A) offspring
 - (B) color
 - (C) speed
 - (D) sleeping at night
- 4** Which detail supports the idea that an animal's feet may be adapted to help it survive?
- (A) Deer are fast runners to help them escape predators.
 - (B) Polar bears have feet covered in fur.
 - (C) People use shoes to protect their feet.
 - (D) Fish use fins to keep their balance.
- 5** Based on your answer to the previous question, which animal likely has feet adapted for cold weather?
- (A) polar bears
 - (B) deer
 - (C) humans
 - (D) fish
- 6** Animals must adapt when the _____ changes.
- (A) survival
 - (B) climate
 - (C) offspring
 - (D) species

Name: _____ Date: _____

Protection from the Cold

STEM

Directions: Enrique tested materials to find out which material would best keep an animal warm. He poured water into three cups. He wrapped each cup with a different covering: fur, feathers, or vinyl (to represent skin). Then, he placed each cup in ice water. He measured the starting temperature of each cup. After 10 minutes, he measured their temperatures again. Use his data to answer the questions.

Covering	Starting Temperature	Temperature After 10 Minutes	Temperature Change
fur	12°C	6°C	6 degrees
feathers	12°C	4°C	8 degrees
vinyl (skin)	12°C	3°C	9 degrees

1 How did Enrique calculate the change in temperature?

2 Which animal covering kept the water in the cup the warmest? How can you tell?

3 What other materials might Enrique have tested? Which animal coverings would they mimic?

The Quest for Speed: Vehicles Reader

Learning Objectives

Students relate new vocabulary to familiar words.

(Nonfiction Reading Objective)

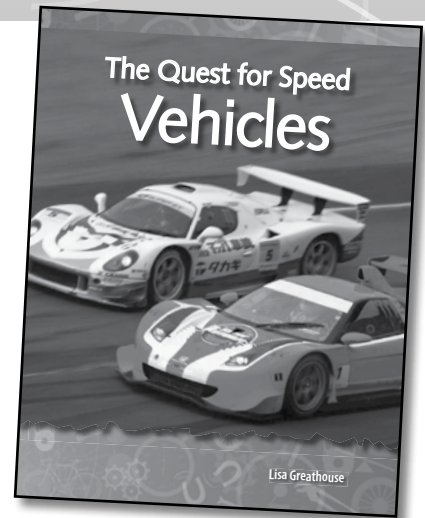
Students use strategies to write for a variety of purposes.

(Writing Objective)

Students know that when a force is applied to an object, the object speeds up, slows down, or goes in a different direction.

(Science Objective)

Students multiply, divide, and compare whole numbers and decimals. (Mathematics Objective)



Materials

- *The Quest for Speed: Vehicles* Reader (vehicles.pdf; vehicles.ppt)
- calculator
- chart paper and markers
- sports equipment for the Introductory Activity (page 47)
- *How Fast Is Fast?* activity sheet (page 55; page55.pdf)
- *The Force Against Us* activity sheet (page 56; page56.pdf)
- *Riding on Air* PDF file (air.pdf)
- *Riding on Air* activity sheet (pages 57–58; page57.pdf)
- *Reader Quiz* (page 59; page59.pdf)
- materials for Lab activity (page 51)

Before Reading

- 1 Complete the Introductory Activity (page 47) with the whole class. Then, divide the students into reading groups. On- or above-grade-level students should read this reader.
- 2 Next, introduce the vocabulary words found in the text. Write on the board, the four boldface words shown below. Using the glossary, have students define each word and use it in a sentence. Go over additional words as needed.

Vocabulary

motion	speedometer	energy	thrust
force	knot	aerodynamics	drag
mass	velocity	friction	
gravity	acceleration	NASA	
momentum	deceleration	speed of sound	
engineer	machine	lift	

Before Reading (cont.)

- 3 Brainstorm a list of the fastest vehicles the students can think of. Then, have students brainstorm a list of the slowest vehicles they know of. Ask the students what all of the vehicles have in common. Explain that the students will learn about different vehicles and compare their speeds. To measure speed, people compare the distance traveled by the time it takes for them to get there. Have students use the glossary in the reader to find information about knots. They should read this information and then compare the speeds listed on page 13 of the reader. Distribute copies of the *How Fast Is Fast?* activity sheet (page 55). The students will conduct the calculations (a calculator may be needed) and compare all the speeds. Ask which is fastest: 1 knot, 1 mile per hour, or 1 kilometer per hour. (*knot*)
- 4 What is the fastest speed the students have ever traveled? How did the people operating the vehicles keep the students safe while in motion? Discuss how people stay safe when they are moving. Use their list of the fastest and slowest vehicles from step 3 above. What possible harm could people face traveling by each method? For each method of travel, list the safety equipment and devices used by people to stay safe. As they read, students should add to the list of safety equipment and devices they read about or see in pictures.
- 5 Discuss what makes vehicles move. Have students think about vehicles that use: human power, mechanical power, electrical power, wind power, and solar power. Which do they believe is most common? Explain that, during their reading, they will learn about how vehicles use all these kinds of energy to move.

During Reading

- 6 Decide whether this reader will be read as a group, in pairs, or independently. Then, have students read through the reader once.
- 7 Have students consider the methods of transportation listed in the timeline on pages 4 and 5 in the reader. How are they alike? How are they different? Have students consider what came before the timeline begins. If they were to fast-forward into the future, what might they expect to see listed another hundred years from now?
- 8 Reread page 6 in the reader. Discuss how mass affects the force for movement in the vehicles from the previous page of the reader.
- 9 Have each student divide a plain sheet of paper into four sections and label each section with one of the following words: *speed*, *velocity*, *acceleration*, and *deceleration*. Students can use the glossary and context of the words to help them write the definitions in their own words. Have them include an example and illustration for each term.
- 10 Reread pages 18–19 in the reader. Discuss how friction applies to Newton’s laws of motion. Distribute copies of the activity sheet *The Force Against Us* (page 56) to further explore the idea of friction. The students should use the words *gravity*, *mass*, *momentum*, and *friction* to label each section of the backside of the paper used in step 9. Have them follow the same steps to explain and illustrate each of these concepts.

After Reading

- 11 After completing the text, discuss the need for safety. Why do the students think the author included information about safety in this book? Besides equipment and devices, what else helps people stay safe when in motion? (*speed limit laws*) Do the students think speed limit laws are a good idea? Why or why not? If so, why do the students think some places don't have them? (See the caption on page 27 of the reader.)
- 12 Revisit what affects the motion of vehicles the students discussed in step 4 (page 53). Besides human power, mechanical power, electrical power, wind power, and solar power, what else did the students read about? (*magnets, fuels, aerodynamics, friction, gravity*) Display the *Riding on Air* PDF file (air.pdf), found on the Teacher Resource CD. Read about this method of travel. Compare it to the other methods learned in the book. Distribute copies of the *Riding on Air* activity sheet (pages 57–58) to students and allow them time to complete the page.
- 13 Use the *Reader Quiz* (page 59) to further assess student learning.
- 14 Gather students together as a whole class to complete the Lab activity (pages 50–51).
- 15 As a class, complete the Concluding Activity (page 48).

Extension Idea

Have students read “Scientists Then and Now” on the back page of the reader. Have them think about why understanding motion is important in the work of each scientist. They can use vocabulary from their readers to summarize how either scientist applies an understanding of motion in his or her work.

Note: Additional extension ideas may be found in the Differentiation Strategies section (page 49) of this unit.

Name _____

How Fast Is Fast?

Speed is the rate of motion. To calculate average speed, divide the distance traveled by the time it took to travel that distance.

Example: George walks to school. The distance is 2 miles. He gets there in 30 minutes. His average speed is $2 \text{ miles} \div 30 \text{ minutes} = .067 \text{ miles per minute}$.

Convert it! 30 minutes is .5 hours. $2 \text{ miles} \div .5 \text{ hours} = 4 \text{ miles per hour}$.

Directions: Use the information above and data from the conversion table to calculate the average speeds.

Speed Conversion Chart					
Speed	Conversion	Speed	Conversion	Speed	Conversion
1 knot	1.15 mph	1 km/h	.62 mph	1 mph	1.61 km/h
1 knot	1.85 km/h	1 km/h	.54 knots	1 mph	.87 knots
mph = miles per hour		km/h = kilometers per hour		knot = nautical miles per hour	

- Amy rode her bike 3 miles. She arrived at the store in 20 minutes. How fast did she ride to the store? _____ miles per minute; _____ miles per hour; _____ kilometers per hour
- Finn likes sailing. With a good gust, he can soar 20 knots. With this average speed, how far will he travel in 1 hour? _____ nautical miles; _____ miles, _____ kilometers
- If Finn sails 20 miles per hour, will he sail a farther or shorter distance?

- How far will Finn travel if he continues to sail with an average speed of 20 knots for 3 hours? _____ nautical miles; _____ miles; _____ kilometers
- Will Finn have sailed farther in nautical miles, miles, or kilometers?

- Why do these calculations use an average speed? Use the information from the book to explain your answer. Use the terms *acceleration* and *deceleration* in your explanation.

Name _____

The Force Against Us

Mrs. Fielding's science class experimented to learn how different surfaces affect the speed of moving objects. They placed four surfaces on a stack of books to form ramps of the same angle. They used wood, a shiny poster, carpet, and sandpaper. An identical marble was placed at the top of each ramp at the same starting point. The marbles were released at the same time, and each marble rolled down its surface and onto the tile floor. A student was assigned to each marble to time how long the marble rolled, and measure the distance it traveled on the tile floor. The class's findings are in the table below.

Surface	Time	Distance
Wood	11 seconds	431 cm
Poster	13 seconds	495 cm
Carpet	8 seconds	355 cm
Sandpaper	10 seconds	444 cm

Directions: Use the information above and from *The Quest for Speed: Vehicles* reader to complete the summary of the lab for the class. Use these words. (You will use two of the words twice.)

accelerated velocity gravity friction mass decelerate momentum
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- As the marbles began to roll, they _____ down the ramp.
- The force of _____ pulled them downward.
- Once they began their descent, their _____ continued to move them in a forward motion.
- The surface of the ramp created _____.
- This force caused the marbles to _____.
- Eventually, the force of _____ became greater than the force of _____. The marbles slowed, and then stopped.
- Since they changed position, we were able to measure the marbles' _____.
- If we wanted to change the speed of the marbles, we could have changed their _____.
- What did Mrs. Fielding's science class learn about motion from this experiment?

Name _____

Riding on Air

Hovercrafts are vehicles that use air to reduce friction as they travel over surfaces. This allows hovercrafts to ride smoothly over otherwise bumpy land and water. The world's largest hovercraft is 185 feet long and weighs 305 tons. It can carry up to 418 passengers and 60 cars.

Directions: Use the information provided by your teacher and *The Quest for Speed: Vehicles* reader to answer the questions below.

1. What force keeps an object from continuing in a forward motion?

2. A hovercraft uses air to reduce what?

3. What force pulls the hovercraft down?

4. Why doesn't the air beneath the hovercraft send it rocketing through the air?

5. Which of Newton's three laws of motion is demonstrated at the point when the craft pushes down with an equal force as the air pushing up?

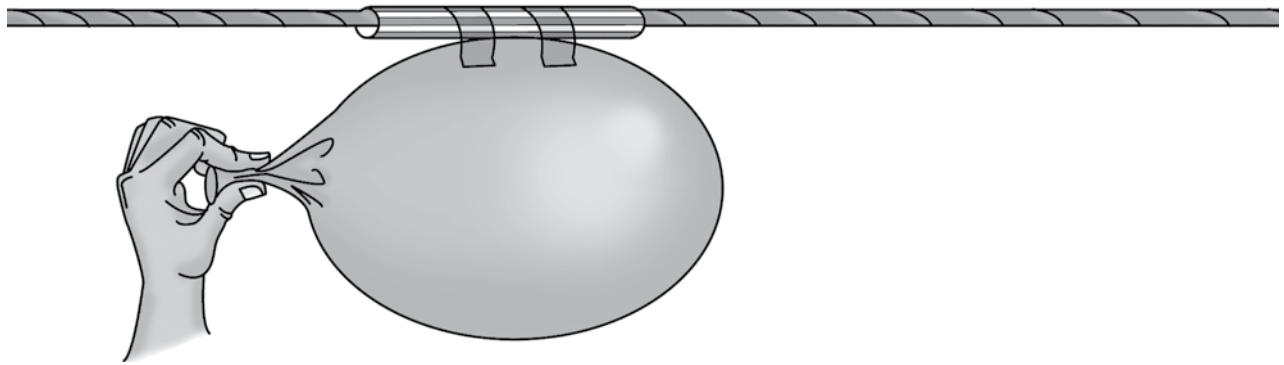
6. According to Newton's laws, would the hovercraft move with just lift? Explain.

7. According to Newton's laws, what must happen for the hovercraft to slow or stop?

8. Describe two ways to slow and then stop a hovercraft.

9. Describe a situation when a hovercraft would be a good means of transportation.

Riding on Air *(cont.)*



If this person were to let go of the balloon, air would push the balloon forward. The balloon would follow the path of the string.

Directions: Look at the illustration of the balloon. Use what you know about motion to answer the questions.

10. How is this model like and different from a hovercraft?

11. What two things might make the balloon travel farther or faster along the string?

12. When will the balloon begin to decelerate?

Challenge! Design your own balloon or air-powered vehicle below or on the back of this sheet.

Name _____

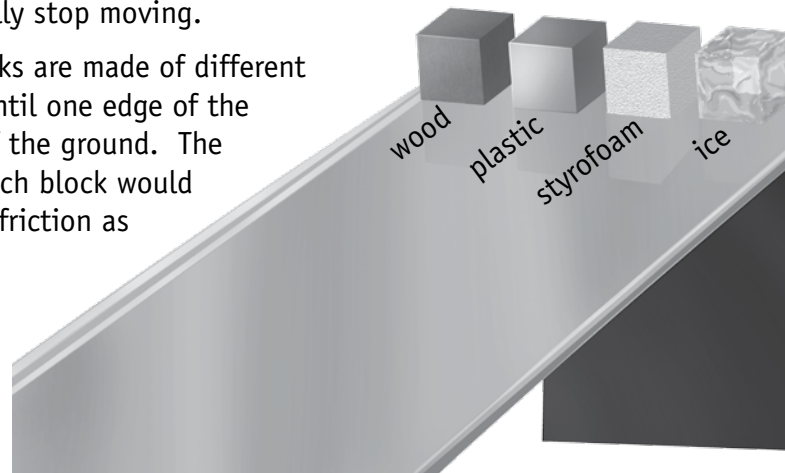
Reader Quiz

Directions: Circle the best answer.

- What is true about how vehicles have changed over the years?
 - Each new vehicle was bigger than the last.
 - Each new vehicle was faster than the last.
 - Vehicles changed from human power to mechanical power.
 - Vehicles changed from wood to metal.

- What is true of all motion?
 - It involves force.
 - It requires air.
 - Moving objects need brakes to stop.
 - Moving objects will eventually stop moving.

- Look at the picture. These blocks are made of different materials. They stay in place until one edge of the cookie sheet is raised 15 cm off the ground. The blocks slide down the tray. Which block would experience the least amount of friction as it moved down the tray?



- the wood block
- the plastic block
- the Styrofoam block
- the ice block

- Which of the following are accepted measures of speed?

a. miles per hour	c. kilometers per hour
b. knots	d. all of the above

- Roger and Phil flew a paper airplane that fell straight to the floor. When they redesign their plane, they will want to consider:

a. lift	c. drag
b. thrust	d. all of these

Directions: On the back of this sheet, write two to three sentences to answer the question below. Use information and examples from the book to explain your answer.

- How do seatbelts keep car passengers safe? Explain how one or more of Newton's laws can be used to answer this question.

The Quest for Speed: Vehicles Answer Key

How Fast Is Fast?

- .15 miles per minute; 9 miles per hour; 14.49 kilometers per hour
- 20 nautical miles; 23 miles; 37 kilometers
- shorter
- 60 nautical miles; 69 miles; 111 kilometers
- He will have traveled the same distance.
- Answers will vary. Example: As objects move, their speed changes. They may start out slowly and then accelerate, or start off quickly and decelerate. The average speed is the average rate of speed for the entire trip.

The Force Against Us

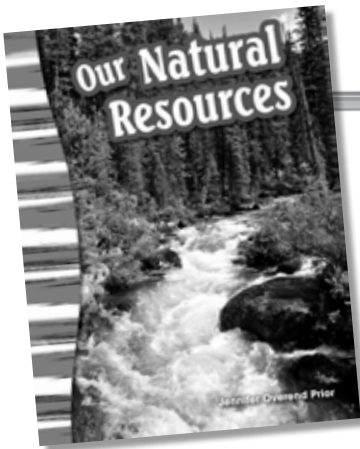
- | | |
|----------------------|---|
| 1. accelerated | 7. velocity |
| 2. gravity | 8. mass |
| 3. momentum | 9. Answers will vary. Example: Mrs. Fielding's class learned that a bumpier surface creates greater friction, which does not allow a marble to accelerate as quickly as a marble on a smoother surface. |
| 4. friction | |
| 5. decelerate | |
| 6. friction; gravity | |

Riding on Air

- | | |
|--|---|
| 1. friction | 8. Answers will vary. Examples: A hovercraft will slow if the lift is reduced, causing more friction between the craft and the ground. A hovercraft will slow if the propulsion is reduced, causing the craft to slow. A hovercraft will slow if the operator creates friction with the brakes. |
| 2. friction between craft and ground | |
| 3. gravity | |
| 4. The craft exerts a force downward. | 9. Answers will vary. |
| 5. the third law | 10. Like: The balloon uses air as a pushing force; Different: The straw holds the balloon up. |
| 6. No, it needs another force to make it move forward. | 11. The two things are a greater force of air behind it and less friction between string and straw. |
| 7. For the hovercraft to slow or stop, another force must slow it down (friction). | 12. The balloon will decelerate when the force pushing it is less than the force of friction slowing it down. |

Reader Quiz

- b 2. a 3. d 4. d 5. a
- Answers will vary. Example: When people ride in a car, they are traveling the same speed as the car. When the car stops suddenly, a person will keep moving forward. This is because Newton's first law states that an object will keep moving in the same direction at the same speed unless acted on by another force. This other force is the seatbelt. It holds the person to the seat of the car so his or her speed will slow along with the car's speed.



Our Natural Resources



Learning Objectives

Students will:

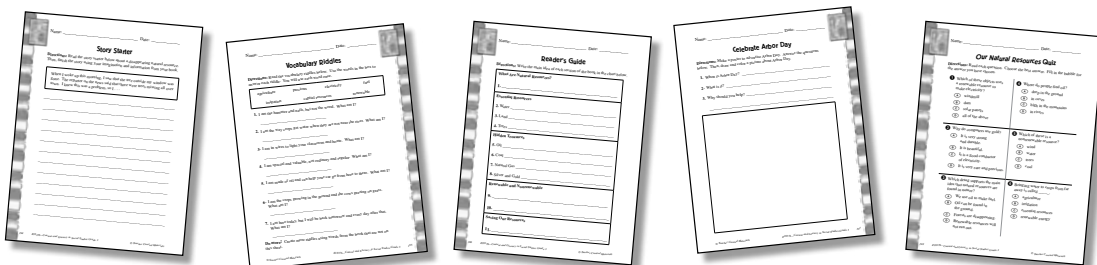
- ▶ find the main idea of a text in a variety of ways.
- ▶ write a narrative about a disappearing natural resource.
- ▶ understand that nature provides resources that we must use wisely.

Standards

- ▶ **Reading:** Determine the main idea, recount key details, and explain how they support the main idea.
- ▶ **Writing:** Write narratives using effective technique, descriptive details, and clear event sequences.
- ▶ **Content:** Understand that scarcity of productive resources requires choices that generate opportunity costs.
- ▶ **Language:** Communicate information, ideas, and concepts necessary for academic success in the content area of Social Studies.

Materials

- ▶ *Our Natural Resources* books
- ▶ copies of student reproducibles (pages 194–198)
- ▶ *Plant a Tree* primary source (tree.jpg)
- ▶ familiar text
- ▶ paper
- ▶ coloring supplies



Timeline for the Lesson

	Task	Summary of Student Learning Activities
Day 1	Before Reading (page 190)	Determine the main idea of a familiar text.
Day 2	During Reading (page 191)	Sketch pictures to show main ideas and write a story about disappearing trees.
Day 3	After Reading (page 192)	Use a reader's guide to write the main ideas of the sections of the book.
Day 4	Primary Source Activity (page 193)	Design a poster for an Arbor Day celebration.
Day 5	Activities from the Book (pages 28 and 32 in the books)	Create a plan for community conservation and brainstorm ways to conserve during the school day.



Our Natural Resources (cont.)

Vocabulary Word Bank

- ▶ agriculture
- ▶ capital resources
- ▶ electricity
- ▶ fuel
- ▶ irrigation
- ▶ precious
- ▶ renewable
- ▶ scarce

Before Reading

1. Introductory Activity—As a class, brainstorm things found in nature. Write ideas on chart paper. Ask students how each item is used by people. For example, water is used for drinking, trees are used for paper, and sand is used for concrete. Tell students they will be reading a book about natural resources and how they are used by people.

2. Vocabulary Activity—Introduce the vocabulary words by having students respond to a vocabulary knowledge scale.

- ▶ List the words on the board or on chart paper.
- ▶ Ask students to rate each word with a 1 (have never heard it), 2 (have heard it, but do not really know what it means), 3 (have some understanding of the word), or 4 (know it well, and can use it correctly in a sentence). Have students show the numbers with their fingers or on personal dry erase boards, if available.

▶ Distribute *Our Natural Resources* books to students. Select three to five students' lowest rated words. Read a word in context to students. Discuss as a class any context clues that might help them determine its meaning. Have students read the definition from the glossary to confirm their guess. Then create a student-friendly definition as a class. Repeat this process for each of the selected words.

3. Prereading Activity—Before the lesson, locate a nonfiction text that is familiar to students, such as another book from this series, a science book, or a book you have read aloud.

- ▶ Ask students the following discussion questions as a review for main idea:
 - What does *main idea* mean?
 - How can you find the main idea?
 - Why is the main idea important?
- ▶ Read a short section of text aloud to students and have them determine the main idea.



During Reading

1. Reading Activity—Distribute the *Our Natural Resources* books and sheets of paper to students. Read the book aloud as students follow along for the first reading.

- ▶ Read the first chapter. Discuss the main idea of that chapter and brainstorm a picture that could explain it. Have students draw a simple sketch on their papers, such as an outdoor scene with the sun shining, trees, and a pond.
- ▶ Continue to read each section and have students draw pictures of the main ideas. Remind them not to use words on the paper.
- ▶ Explain to students that for sections such as “Water” in the “Essential Resources” chapter, they should not just draw the simple object such as water. Instead, they could draw a person drinking water.
- ▶ You may choose to conduct this first reading of the book using the Interactiv-eBook (optional). It contains activities, videos, audio, and tools to add an interactive approach to teaching social studies.
- ▶ Have students read the book in small groups for the second reading. When they finish a section, have group members compare their main idea sketches.
- ▶ **Note:** Have students keep their sketches in a safe place.

▶ For **below-level learners** and **English language learners**, you may choose to play the audio recording, as students follow along, to serve as a model of fluent reading. This may be done in small groups or at a listening station. The recording will help struggling readers practice fluency and aid in comprehension.

2. Writing Activity—Have students turn to pages 12–13 in the *Our Natural Resources* book and review the importance of trees. Discuss what might happen if there were no more trees.

- ▶ Distribute copies of the *Story Starter* activity sheet (page 194) to students. Read the directions and narrative prompt together. Be sure to emphasize that students should use their imagination to make an interesting story, but should also include information from the book.
- ▶ You may wish to have students draw an illustration to accompany their stories. The final products may be displayed on a bulletin board or made into a class book.
- ▶ Help **below-level learners** and **English language learners** organize their ideas in an outline before having them write.



Our Natural Resources (cont.)

After Reading

1. Vocabulary Activity—Distribute copies of the *Vocabulary Riddles* activity sheet (page 195) to students. Allow students time to complete the sheet. If time allows, have students share their own riddles from the Do more! activity at the bottom of the sheet.

2. Reading Activity—Distribute the *Our Natural Resources* books and copies of the *Reader's Guide* activity sheet (page 196) to students.

- ▶ Have them use their sketches from the During Reading activity and the book to complete the activity sheet.
- ▶ Have **above-level learners** include at least one detail that supports each of the main ideas.

3. Assessment—A short posttest, *Our Natural Resources Quiz* (page 198), is provided to assess student learning from the book. A document-based assessment is also provided on page 214. Additionally, the Interactiv-eBook activities may be used as a form of assessment (optional).

Activities from the Book

- ▶ **Conserve It! Activity**—Read the Conserve It! prompt aloud from page 28 of the *Our Natural Resources* book. Have students write ways to conserve resources in their community. Write common ideas on chart paper. Then, display the chart paper in the hallway to share their conservation plan with others.
- ▶ **Your Turn! Activity**—Read the Your Turn! activity aloud from page 32 of the *Our Natural Resources* book. Display a copy of your classroom daily schedule. Brainstorm ways to conserve during different activities throughout the day. Display the list of activities in the classroom and make conserving resources a new habit.



Primary Source Activity

Historical Background

When J. Sterling Morton and his wife moved to the prairies of the Nebraska Territory in the 1850s, they missed trees. They needed them for fuel, furniture, for shade in the hot Nebraska summers, and to help prevent soil erosion. In April 1872, Morton organized the first Arbor Day, complete with a parade, and speeches. Children planted trees with signs proclaiming the date and their current grade level. Arbor Day grew in popularity and was made a legal holiday in Nebraska in 1885. The observance eventually spread to all 50 states and even internationally. Today, Arbor Day is typically celebrated on the last Friday in April.

About the Primary Source

The boys in this photograph are planting a tree with their grandfather. This tree will feed local wildlife with its fruit. It will also provide oxygen for people and animals and help prevent soil erosion.



Teaching Suggestions

1. Display the electronic file *Plant a Tree*. A copy of the primary source is provided in the Digital Resources (tree.jpg).
2. Ask students the discussion questions below.
 - ▶ What are these people doing?
 - ▶ Where do you think they are? How can you tell?
 - ▶ Why would people want to plant trees?
3. Share the historical background information with students.
4. Determine when Arbor Day is in your state. Distribute copies of the *Celebrate Arbor Day* activity sheet (page 197) to students. Explain that they will make posters that advertise Arbor Day. If possible, keep these posters until Arbor Day arrives and display them. If possible, plan a school-wide or grade level Arbor Day event.

Name: _____ Date: _____



Vocabulary Riddles

Directions: Read the vocabulary riddles below. Use the words in the box to answer each riddle. You will use each word once.

agriculture	precious	electricity	fuel
irrigation	capital resources	renewable	

1. I am the hammer and nails, but not the wood. What am I?

2. I am the way crops get water when they are not near the river. What am I?

3. I am in wires to light your classroom and home. What am I?

4. I am special and valuable, not ordinary and regular. What am I?

5. I am made of oil and can help your car go from here to there. What am I?

6. I am the crops growing in the ground and the cows grazing on grass.
What am I?

7. I am here today, but I will be back tomorrow and every day after that.
What am I?

Do more! Create more riddles using words from the book that are not on this sheet.



Name: _____ Date: _____

Reader's Guide

Directions: Write the main idea of each section of the book in the chart below.

<p>What Are Natural Resources?</p> <p>1. _____</p>
<p>Essential Resources</p> <p>2. Water _____</p> <p>3. Land _____</p> <p>4. Trees _____</p>
<p>Hidden Treasures</p> <p>5. Oil _____</p> <p>6. Coal _____</p> <p>7. Natural Gas _____</p> <p>8. Silver and Gold _____</p>
<p>Renewable and Nonrenewable</p> <p>9. _____</p> <p>10. _____</p>
<p>Saving Our Resources</p> <p>11. _____</p>



Name: _____ Date: _____

Celebrate Arbor Day

Directions: Make a poster to advertise Arbor Day. Answer the questions below. Then, draw and color a picture about Arbor Day.

1. When is Arbor Day? _____
2. What is it? _____
3. Why should you help? _____



Name: _____ Date: _____

Our Natural Resources Quiz

Directions: Read each question. Choose the best answer. Fill in the bubble for the answer you have chosen.

1 Which of these objects uses a renewable resource to make electricity?

- (A) windmill
- (B) dam
- (C) solar panels
- (D) all of the above

4 Where do people find oil?

- (A) deep in the ground
- (B) in caves
- (C) high in the mountains
- (D) in rivers

2 Why do computers use gold?

- (A) It is very strong and durable.
- (B) It is beautiful.
- (C) It is a good conductor of electricity.
- (D) It is very rare and precious.

5 Which of these is a nonrenewable resource?

- (A) wind
- (B) water
- (C) trees
- (D) coal

3 Which detail supports the main idea that natural resources are found in nature?

- (A) We use oil to make fuel.
- (B) Oil can be found in the ground.
- (C) Forests are disappearing.
- (D) Renewable resources will not run out.

6 Bringing water to crops from far away is called _____.

- (A) agriculture
- (B) irrigation
- (C) essential resources
- (D) renewable energy