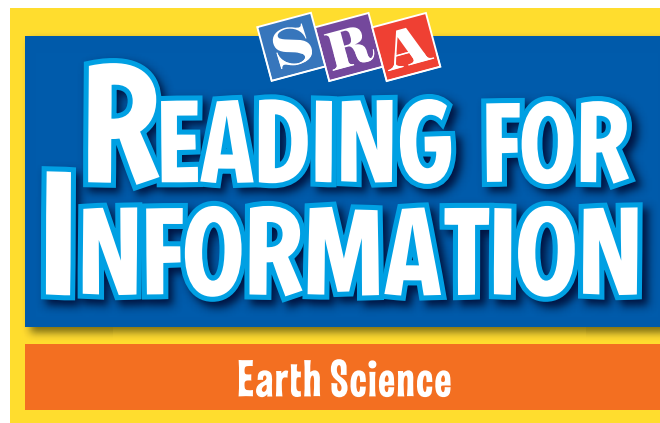


What is Soil?

SAMPLE ONLY

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What Is Soil?

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Before You Read

Do these things to help you learn as you read.

Features Glossary

Look at the vocabulary words in the Glossary on page 16. A glossary tells you about each word.

How to say the word

What kind of word it is

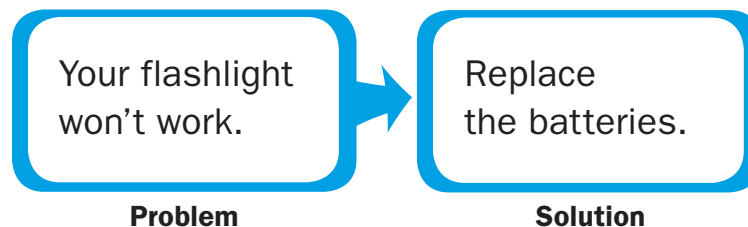
What the word means

How to use the word in a sentence

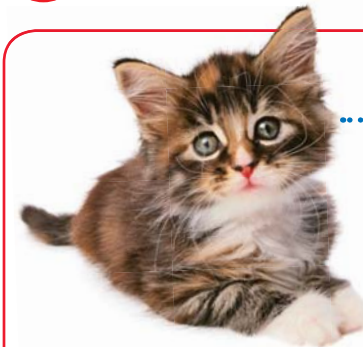
texture (teks' chûr) *n.* how the surface of an object feels to the touch. *Clay soil has a smooth, sticky texture.*

Structures Problem and Solution

As you read, look for a problem. Then look for a solution to the problem.



Vocabulary Words to Know



..... **feature** an important part of something

One feature of a cat is its whiskers.

..... **soil** tiny bits of broken rock and decayed plant and animal matter



What do you think the texture of this sediment is?

..... **sediment** small pieces of rock broken apart over time by rain, ice, and wind

texture how the surface of an object feels to the touch

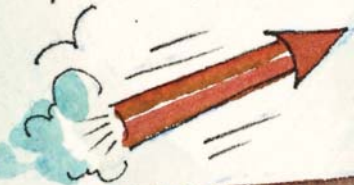
The Science Fair

Spencer can't decide on a project for the science fair. The fair is only four weeks away. What will he do?

SCIENCE FAIR
NEXT MONTH!

2:00 IN THE
CAFETERIA

FRIDAY MAY 23

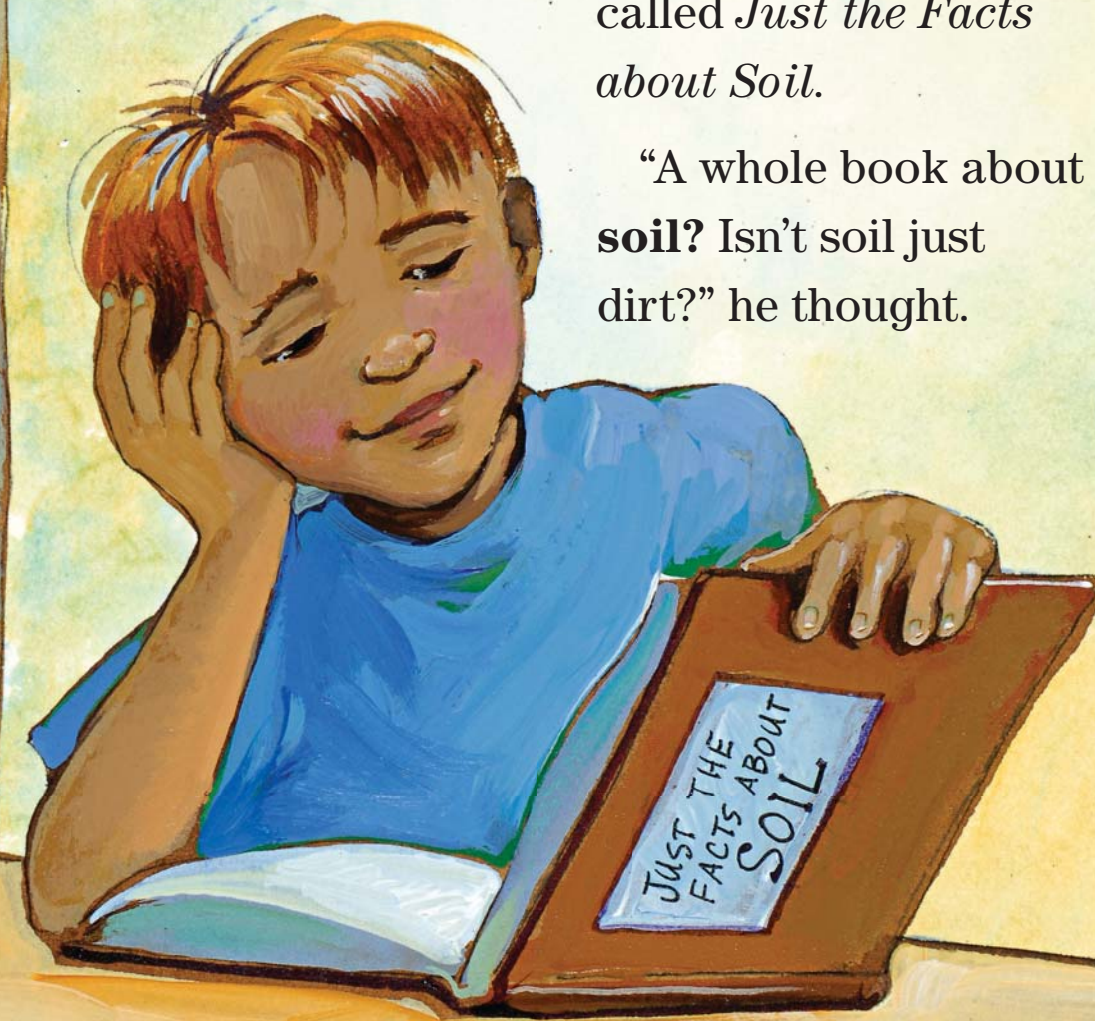


Looking for Ideas

Spencer went to the school library to find an idea for his science fair project. He found books about volcanoes, lightning, and outer space. But those ideas were already taken.

Then he saw a book called *Just the Facts about Soil*.

"A whole book about **soil**? Isn't soil just dirt?" he thought.



Learning Something New

Spencer opened the book and saw a picture of a sandy beach.



“What does that have to do with soil?” he wondered.

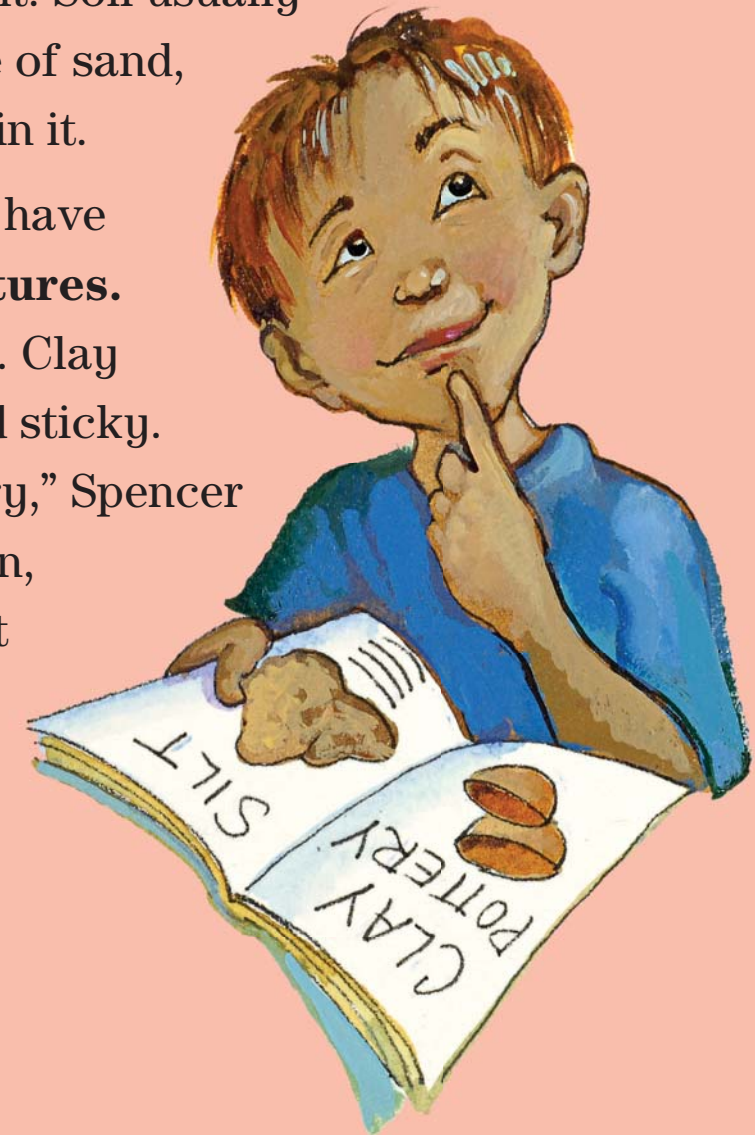
He read that grains of sand are little pieces of rock. They are also called **sediment**. Sediment is one part of soil.

✓ **Comprehension**
Why is there a picture of a sandy beach in the book about soil?

An Idea!

On the next page Spencer saw a picture of pottery made from clay. He read that clay is another kind of sediment. A third kind of sediment is silt. Soil usually has a mixture of sand, clay, and silt in it.

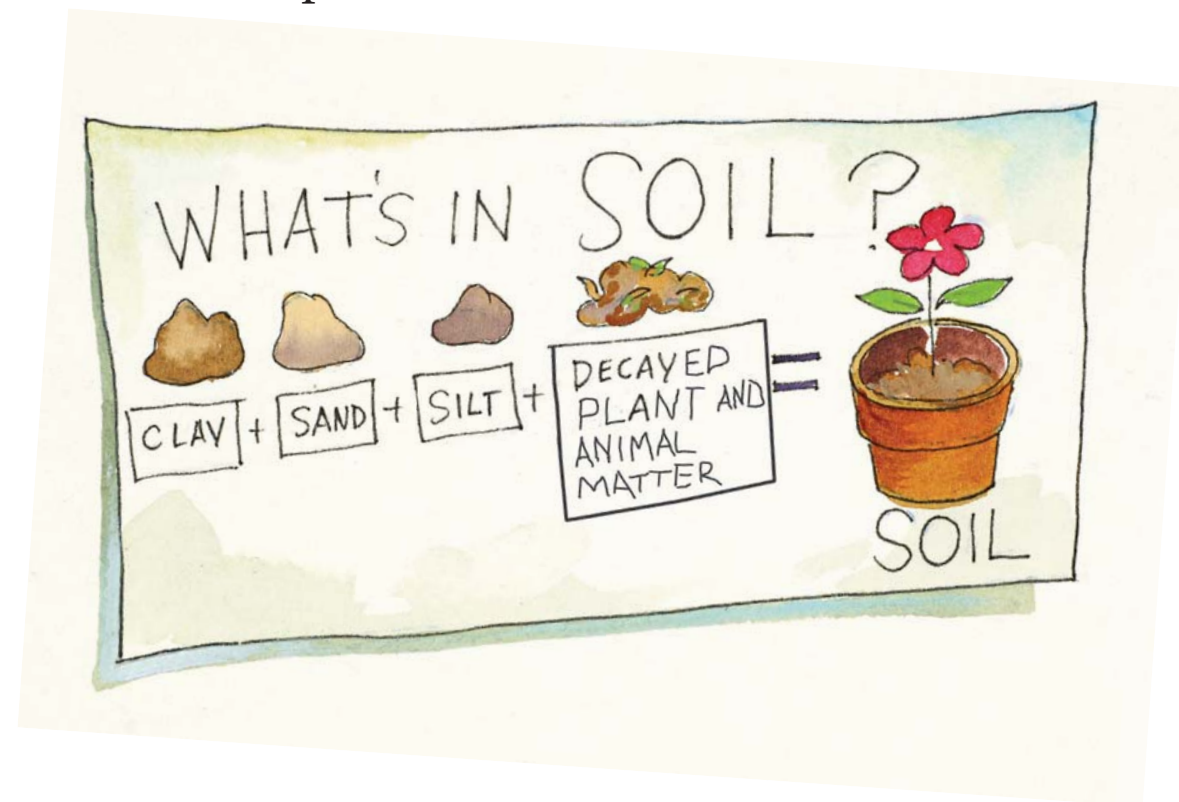
“Sediments have different **textures**. Sand is gritty. Clay is smooth and sticky. Silt is powdery,” Spencer read. Just then, he knew what his project would be!



The Project

Spencer scooped sand from his sandbox. Then he dug up clay in his backyard. His mom helped him find silt by the creek near his house. He put each kind of sediment in a cup. He also put decaying leaves in a pot.

Spencer made a poster to show what the different parts of soil are.



The Day of the Fair

At the science fair, Spencer talked about what soil is made of. Everyone felt the textures of the sediments in the cups. Spencer was very proud of his project!



What Is Soil?

Soil Is Important

Many living things use soil. **Soil** is tiny bits of broken rock and decayed plant and animal matter. Plants grow in soil. You eat some of these plants, such as fruits and vegetables. Some animals even live in soil!

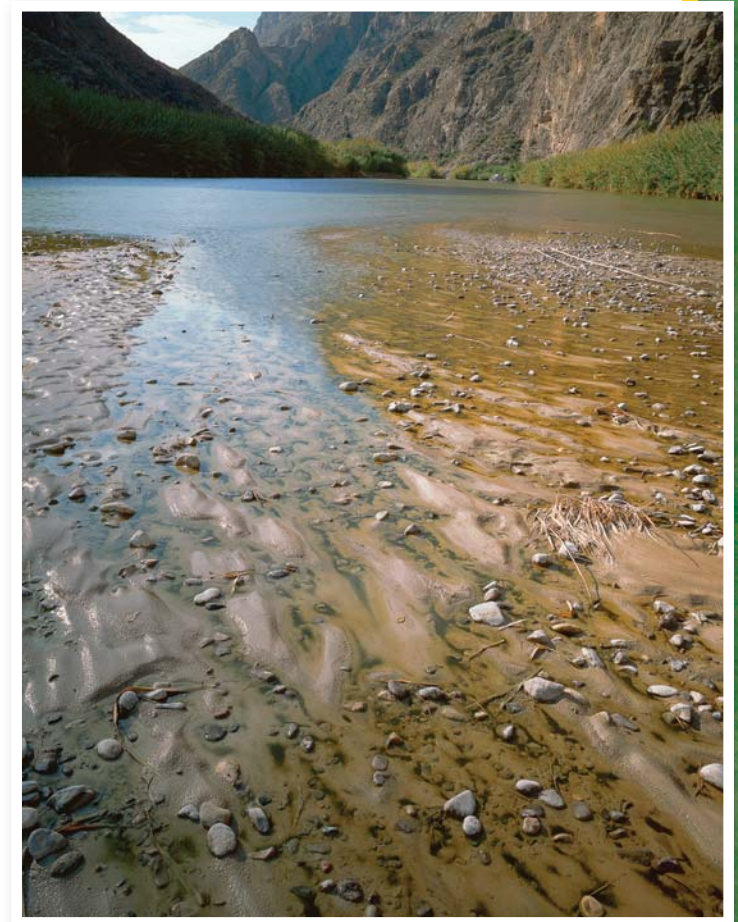


Chipmunks dig holes in the soil and store their food underground.

✓ Comprehension
What do you think the word decayed means?

Sediment Is Part of Soil

The bits of rock in soil are called sediment. **Sediment** is small pieces of rock broken apart over time by rain, ice, and wind. Three kinds of sediment are sand, silt, and clay.



Sediment has collected to form the soft mud under and around the water.

Different Kinds of Soil

Different soils have different colors and textures. **Texture** is how the surface of an object feels to the touch. Clay soil is thick and sticky. Sandy soil is dry and gritty. Silty soil is powdery. Color and texture are **features**, or important parts, of soil.

The sand in sandy soil can give the soil a tan or gray color.



Silty soil can be brown or gray.



Clay soil can be brown, red, gray, or even blue.



✓ **Comprehension**
What are some different textures soil can have?

Earth Science & you

Most plants do not grow well in soil that has too much clay or sand. Sand does not hold water well. Water does not flow easily through clay. To grow healthy plants, use dark, rich garden soil.

Think about It! How do people use soil? What kinds of foods are grown in soil?



Structures Problem and Solution

Why won't most plants grow well in sand or clay?

After You Read

Complete these activities on a separate piece of paper.

Vocabulary Words to Know

Write the vocabulary word that completes each sentence. One word is not used.

feature sediment soil texture

- The little pieces of rock that make up sand are called _____.
- One _____ of rich soil is that it is dark brown in color.
- There is decayed plant and animal matter in _____.

Features Glossary

Write the letter of the correct answer.

- Where can you find a glossary?
 - In the front of a book.
 - In the middle of a book.
 - In the back of a book.

Structures Problem and Solution

Write the letter of the correct answer.

- How can you make soil better for growing plants?
 - Make sure the soil has a lot of clay in it, but no sand.
 - Take out all of the sediments in the soil.
 - Make sure the soil has a mixture of sediments.

Write about It

The soil in Maria's backyard is thick clay soil. Write a sentence to tell what **problem** Maria might have if she tries to grow plants in her backyard. Then write a sentence to tell what the **solution** to the problem is.

Go To



Interactive Skills Handbook

For more practice with

- ➔ **using the glossary**, see pages 18–21.
- ➔ **problem and solution**, see pages 62–69.
- ➔ **monitoring and clarifying**, see pages 86–89.

Glossary

feature (fē' chûr) *n.* an important part of something. *You are describing a **feature** of soil if you say "This soil is dark brown."*

sediment (sed' ə mənt) *n.* small pieces of rock broken apart over time by rain, ice, and wind. *Sand, silt, and clay are types of **sediment**.*

soil (soil) *n.* tiny bits of broken rock and decayed plant and animal matter. *Plants grow in **soil**.*

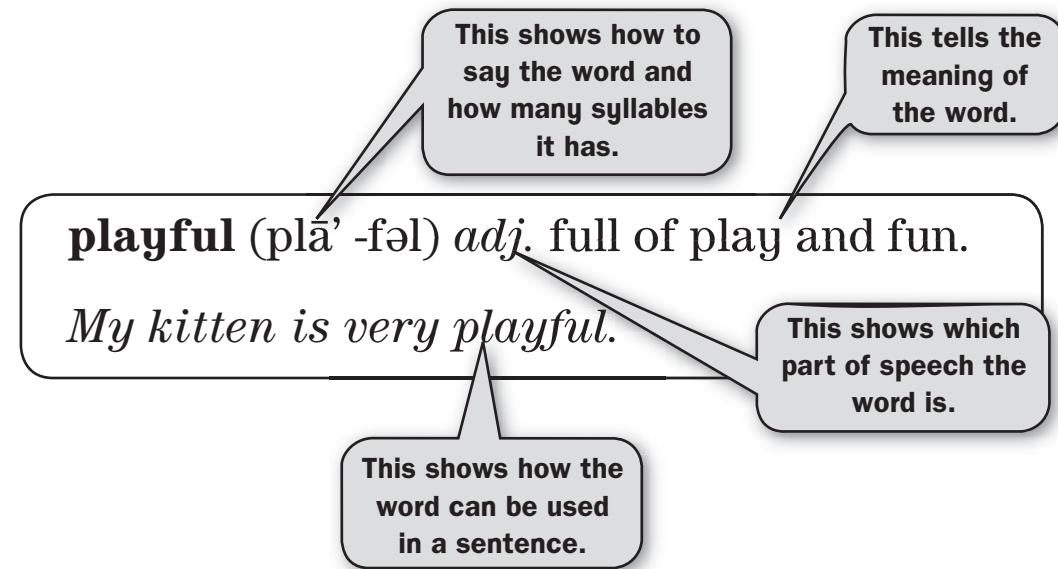
texture (teks' chûr) *n.* how the surface of an object feels to the touch. *Clay soil has a smooth, sticky **texture**.*

Pronunciation Key

a	at	•	ō	rose	•	ə	about, chicken,
ā	late	•	ô	law, bought	•		pencil, cannon,
ä	father, ox,	•	oi	coin	•		circus
	mop	•	ōō	book, pull	•	ch	chair
âr	care	•	ōō	food, rude	•	hw	which
e	set,	•	or	form	•	ng	ring
ē	me	•	ou	out	•	sh	shop
îr	ear, pier	•	u	up	•	th	thin
i	it	•	û	use, mule	•	th	there
ī	kite	•	ûr	turn, learn	•	zh	treasure

Learn It

A glossary is a list of vocabulary words and their meanings.



Use the glossary to find information about vocabulary words.

Try It

Use what you know about glossaries to answer the questions below.

display (di splā') *v.* to show.

She wanted to display the flag.

principal (prin' sə pəl) *n.* the person in charge of a school.

Ms. Lin is the principal of the school.

- What part of speech is the word *display*?
 a. noun **b.** verb c. adjective
- How many syllables does the word *principal* have?
 a. one b. two **c.** three
- What does *display* mean?
 a. the person in charge of a school
b. to show
 c. full of play and fun

Practice It

Write the words from the glossary on the correct lines in the passage below.

settlers (set' lərs) *n.* people who move to a new part of the country.

The settlers faced many hardships.

sod (sod) *n.* the grass-covered surface of the ground.

Sod is often laid around new houses.

Sod Houses

When the settlers moved west, they used grass to build houses. Many settlers moved to the prairie where there were no trees to build houses with. The settlers cut squares of sod from the ground. They used the sod to make the walls and roofs of their houses. The floors in most of the houses were just dirt.

Apply It

Number the glossary entries below to put them in alphabetical order. Then write a sentence for each entry. Underline the glossary word in your sentence.

2 **house** (hous) *n.* a building that a family can live in

Answers will vary but should include the word house.

1 **drowsy** (drau' zē) *adj.* ready to fall asleep

Answers will vary but should include the word drowsy.

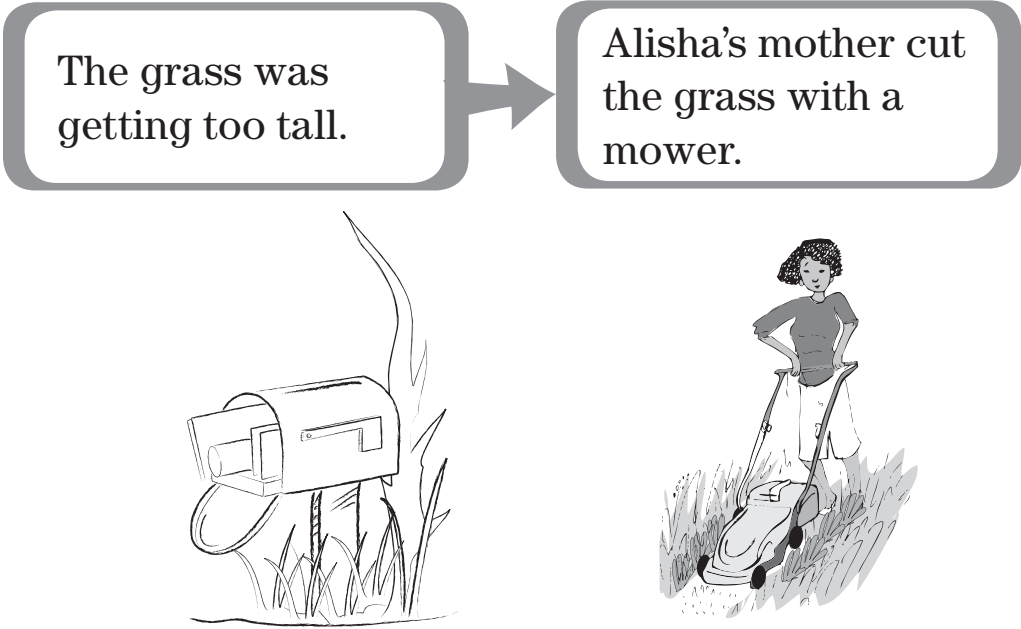
3 **imagine** (i ma' jən) *v.* to make a picture in your mind

Answers will vary but should include the word imagine.

Learn It

As you read, look for problems and their solutions.

- A **problem** is something that is wrong.
- A **solution** is how the problem is fixed.



After you read about a problem, continue to read carefully to understand how it was solved.

Try It

Match each problem with its solution. The first one has been done for you.

Problem	Solution
• My mom says I have to eat my vegetables, but I don't like carrots.	• She decided to go to bed early tonight.
• Kelsey fell asleep in class.	• I will ride my bike to school today.
• If I walk to school, I will be late.	• I will ask my mom if I can eat broccoli instead.

Write about a problem you had and how you solved it.

Problem: Answers will vary but should include a problem.

Solution: Answers will vary but should include a solution.

Practice It

Read the letters. Circle the problems.
Underline the solutions.

Dear Advice Lady,
My friend and I fight sometimes. When
he is mad, I try to ignore him. I don't want to
fight anymore. What should I do?
Joey

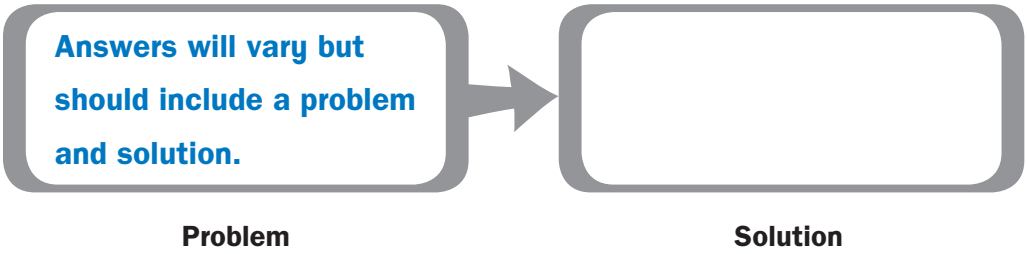
Dear Joey,
Try talking to him about how you feel. You can
take a break when you become angry.
Advice Lady

Answer these questions.

- 1. What is Joey and his friend's problem?
sometimes they fight
- 2. What solution did the Advice Lady give?
take a break

Apply It

Use the graphic organizer to write about
a problem that happens at school. In the
solution box tell how you can solve it.



Use the information from your graphic
organizer to fill in the blanks below.

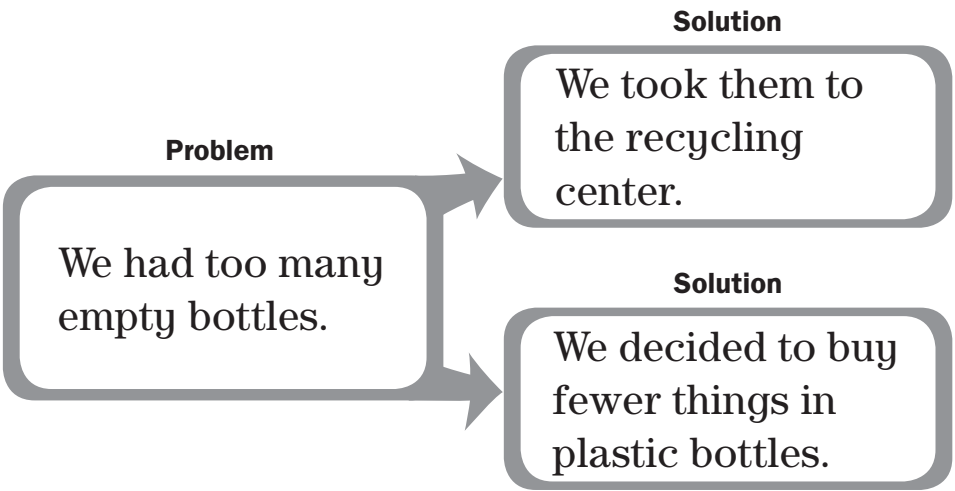
In our school, we have a problem. The
problem is Answers will vary but should use information from the
graphic organizer. We can solve that
problem by

Learn It

Problem and Solution

When you read about a problem, look for its solutions.

- A **problem** is something that needs to be fixed.
- The **solution** is the steps taken to fix the problem. There may be more than one solution to a problem.



A problem may have more than one solution.

Try It

Fill in the solution to each problem. The first one has been done for you.

- I go to the doctor
- ask a police officer for help
- wait for it to cool before you eat it
- I used a patch to fix it
- ~~everyone helped clean up~~

1. The room was messy, so everyone helped clean up.
2. When I get sick, I go to the doctor.
3. When your food is too hot, wait for it to cool before you eat it.
4. If you are lost, ask a police officer for help.
5. The bike tire was flat, so I used a patch to fix it.

Practice It

Read the passage. Underline the problems. Circle the solutions.

Hummingbirds

Getting food can be a problem for birds. Most birds like to eat bugs. But some bugs are hard to catch because they fly very fast. Hummingbirds can fly up, down, sideways, backwards, and upside down to catch bugs. Some birds get food from flowers. This food is hard to reach. Hummingbirds can use their long tongues to get the food.

Answer these questions.

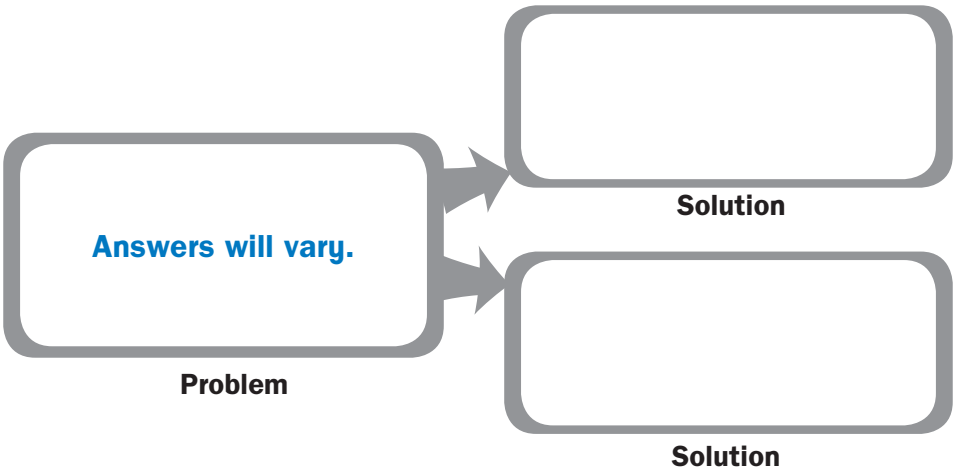
- 1. How is getting bugs a problem for birds?
 - a. Sometimes they are hard to catch.
 - b. Birds don't know where to find bugs.
- 2. How does a hummingbird's body help it catch bugs?
 - a. It can sit on top of the bugs.
 - b. It can fly in many directions.

Apply It

Think of a problem you have had, such as

- an argument with a friend, or
- a time you had to do something difficult.

Write the problem and two solutions in the graphic organizer below.



Write a paragraph about the problem and how you solved it.

Answers will vary but should include a problem faced by the student and two possible solutions, as referenced in the graphic organizer.



Learn It

Monitoring means checking your understanding as you read. Clarifying means making what you read clear.

As you read, ask yourself questions. Then try to answer them to check your understanding.

Koalas may look like little gray bears, but they are not. They are more like possums. Koalas come from Australia. They live in tall trees and eat leaves.

These questions might help you check your understanding:

- Is a koala a kind of bear? no
- Where do koalas come from? Australia



Ask yourself questions to monitor and clarify your understanding as you read.



Try It

Read the passage and complete the chart.

Golden Eagles?
A large bird flies above the playground. It might be a golden eagle. Golden eagles are about 32 inches long. When spread, their wings are about 78 inches across. Their feathers are mostly dark brown. Golden eagles have two lines of light brown feathers on their tails.

Monitoring and Clarifying Questions	Answers From The Text
How big are golden eagles?	They are 32 inches long, and their wings are 78 inches across.
Questions will vary but could include What color are golden eagles?	Golden eagles are mostly brown.



Practice It

Ask yourself monitoring and clarifying questions as you read the passage. Then answer the questions below.

The Bill of Rights

The Bill of Rights is a list of rights that we Americans have. We have freedom of religion or the right to worship as we choose. We have the right to say what we think. We have the right to write what we think. The Bill of Rights lists other rights too.

- 1. Read the passage again. What does freedom of religion mean?
The right to worship as we choose.
- 2. Circle the part of the passage that tells what the Bill of Rights is.
- 3. Underline the rights that Americans have.



Apply It

Read the passage below. Use the table to write questions you may have and the answers you find in the text.

Susan B. Anthony

When Susan B. Anthony was six years old, her teacher said she couldn't learn to do long division because she was a girl. Later, Susan became a teacher. At that time, men made more money than women. Susan worked to change that. She also worked to make sure women could vote.

Monitoring and Clarifying Questions	Answers From The Text
Responses will vary but might include, Why wouldn't Susan's teacher show her how to do long division?	Because she was a girl.
How did Susan B. Anthony make things better for women?	She worked to get them better pay and the right to vote.

Soil

Unit Overview

Unit Objectives

3 Key Elements:

Vocabulary Students will learn key science and academic vocabulary.

Features Students will understand how to use a glossary.

Structures Students will be able to identify problem-and-solution text.

Unit Vocabulary

Science

sediment ◆★▲
soil ◆★▲
humus ▲

Academic

feature ◆★▲
texture ★▲

Ability Level Key

- ◆ = Approaching Level
- ★ = On Level
- ▲ = Above Level

Materials:

Student Readers

- All about Soil ◆
- What Is Soil? ★
- Facts about Soil ▲

Activity Masters #1–4,

pp. 72–75

Interactive Skills

Handbook, pp. 18–21,

pp. 62–69, pp. 86–89

Genre:

Narrative and expository text

Comprehension Skill:

Monitoring and Clarifying

Background Information

The **3 Key Elements** of this unit are **vocabulary**, using a **glossary**, and **problem-and-solution text**. Students will apply these elements as they read about what soil is made of and how to describe the color and texture of different kinds of soil. A knowledge of soil composition will help students understand the role of soil in sustaining life on Earth.

1 Focus

Preparing to Read

In this unit, students will read about what soil is made of and why it's important.

The characters in the narratives learn about soil while planting flowers in a garden, doing a science fair project, and completing a homework assignment.

◆ Approaching Level



★ On Level



▲ Above Level



Getting Started

Connecting Prior Knowledge

- Use the **Fun Facts!** to start a discussion about soil. Where have students seen soil? (garden, soccer field, near a creek) Can they guess what it's made of? What does it feel like to the touch? Is it smooth, sticky, or gritty? What color is it? Why do they think soil is important? Have students name different kinds of plants that grow in soil. List their ideas on the board.
- Show students a pot of rich, dark soil that contains small rocks and twigs. Ask volunteers to touch the soil and describe its texture. Point out that the rocks and twigs in the soil are nonliving things, but the twigs were once living things.

Fun Facts!

- Scientists think Earth is the only planet that has soil.
- Many animals live in soil and help keep it healthy. Earthworms and moles dig tunnels in soil as they move through it. This allows water and nutrients to move through soil more easily, which helps plants grow.

2 Teach

Prereading Activities

Whole Group Use the following activities with all students to introduce the **3 Key Elements** of the unit.



Vocabulary



- **Science** Give each student a copy of **Activity Master #1**. Pronounce **sediment** and **soil**, and read their definitions aloud. Have the class pronounce each word. Ask students if they've noticed the tiny bits of rock in soil. Explain that these bits of rock, called sediment, are one part of soil.
- **Academic** Pronounce **feature** and read its definition. Have the class pronounce the word. Ask students to describe the features of an object in the classroom, such as a desk or a bulletin board. Encourage them to point out the important parts of the object. Say, for example, *One feature of this desk is that it has a hard surface you can write on.* Make sure students understand what makes each feature important. Have students complete Activity Master #1.



Features



- **Glossary** Give each student a copy of **Activity Master #2**. Tell students that a glossary is located in the back of a book and includes important words, such as vocabulary words, found in that book. Ask students to explain how a glossary is similar to a dictionary (words are in alphabetical order; each entry includes a pronunciation, a definition, and an example sentence). Have students complete Activity Master #2.



Structures



- **Problem and Solution** Ask students for an example of a problem they might encounter on a regular day (possible response: I couldn't find my favorite shirt, and I wanted to wear it to school). Then ask them for possible solutions to the problem. Explain that students should look for problems and solutions when they read informational text. Draw a problem-and-solution graphic organizer on the board, and point out that students can use it to help them remember problems and solutions they read about.

Ability Level Key

- ◆ = Approaching Level
- ★ = On Level
- ▲ = Above Level

For more practice with

- **problem and solution**, use Activity Master #3, page 74.

Assign the Reading

- Distribute the Student Readers for this unit based on students' reading levels, and have students begin reading.
- Encourage students to pay attention to **vocabulary**, **problem-and-solution text**, and the **glossary** as they read.

Reinforcing the 3 Key Elements

Small Group Use these lessons for an in-depth treatment of the **3 Key Elements** of reading for information.



Vocabulary Texture



- **Review** Ask students what the definition of *texture* is ("how the surface of an object feels to the touch"). Have students give examples of adjectives that describe texture, such as *rough*, *smooth*, and *soft*.
- **Explain** Tell students that soil can have different textures. Soil can be smooth and sticky or rough and gritty.

Activity Bring items with different textures to class. Have students touch each of the objects. Ask students to think of adjectives that describe each object's texture.



Features Glossary



- **Review** Have students open their Student Readers to the glossary. Choose one glossary entry, and point to each part of the entry, asking students to tell you what information each part provides.
- **Discuss** With students, discuss which kinds of books usually include glossaries (textbooks and other books that provide information). Ask them why it's helpful to have glossaries in these kinds of books (a glossary helps you understand difficult words related to a subject area).

Self Check Have students write their own example sentences for one of the vocabulary words in the glossary.



Structures Problem and Solution



- **Narrative Text** Ask students to explain a problem and solution from the narrative part of the text. Write their responses on a problem-and-solution graphic organizer.
- **Expository Text** Ask students to explain a problem and solution they found in the expository part of their Student Readers. Again, write their responses on a problem-and-solution graphic organizer. Point out that problems and solutions can be found in any kind of text, even text that provides information.

Wrap-up Have students draw their own problem-and-solution graphic organizers on a piece of paper. Ask them to fill in each box with a problem and a solution of their own.

Extending the Lesson

Small Group Use the following lessons to customize your instruction according to your students' needs.

Reader's Workshop: Focus on Genre

- **Narrative Text** Tell students that characters are the people, and sometimes animals, in a narrative. Explain that *narrative* is another word for *story*. Tell students that a narrative always has a plot, which is the series of events that happen.
- **Activity** Have pairs of students silently read the narratives in their Student Readers. As they read, have them make a list of the characters in their particular reader. Then have the students in each pair discuss the

plot. Next, have pairs try to repeat the same activity with the expository, or informational, portion of their readers.

Wrap-up As a class, discuss students' findings. Review the characters and plot for each Student Reader. When students explain that they were unable to find characters or a plot in the informational portion, explain that these elements are not usually present in text that provides facts and information.

Differentiating Instruction: English Language Learners

- **Alphabetical Order** Remind students that the words in a glossary are listed in alphabetical order. Write the words *bell*, *bike*, and *bat* on the board or on a piece of paper. Have students work in pairs to arrange the words in alphabetical order.
- **Glossary** Have students look at the glossaries in their Student Readers. Ask them why *sediment* comes before *soil* on

the list they're alphabetized based on the second letter). Review the parts of a glossary entry. Explain that students should read the example sentence in each glossary entry to understand how to use each vocabulary word in a sentence.



Assign ELL Activity Master #4
Complete with students or assign it as independent work.

Comprehension Skill: Monitoring and Clarifying

- Have students read their Student Readers in small groups. Tell the groups to read one page at a time. At the end of each page, students should pause and discuss with their group what the page was about. Encourage them to bring up questions they have about the text. Remind students as they do this that it is important to understand the material on each page before continuing to the next page.
- Questions that help students monitor and clarify can be found in the Student Readers on the following pages:
 - Approaching Level 7, 11, 12
 - On Level 6, 10, 12
 - Above Level 6, 9, 12

3 Review and Assess Monitor Progress

Ability Level Key
 ◆ = Approaching Level
 ★ = On Level
 ▲ = Above Level

Use the **Activity Masters** and **Interactive Skills Handbook** pages to monitor progress and to review.

Name _____ Date _____

Earth Science

Words to Know

sediment small pieces of rock broken down over time by rain, ice, and wind

soil tiny bits of broken rock and decayed plant and animal matter

feature an important part of something

Write the word that completes each sentence.

1. Plants grow in _____.

2. One _____ of my cat's face is her whiskers.

3. Rain, ice, and wind break down rock to form _____.

72 Reading for Information - Grade 2 Earth Science - Activity Master 1 - Vocabulary

Activity Master 1, page 72

Name _____ Date _____

Earth Science

Glossary

A glossary tells you about the vocabulary words in a book.

GLOSSARY

feature (fē chūr) n. an important part of something. A *feature* of clay soil is that it is sticky.

sediment (sed' a mant) n. small pieces of rock broken down over time by rain, ice, and wind. Sand, clay, and silt are all types of *sediment*.

soil (soil) n. tiny bits of broken rock and decayed plant and animal matter. Plants need *soil* to grow.

Do each activity.

1. Write the vocabulary words that are listed in this glossary.

2. Underline the definition of *soil*.

3. Circle the part of the glossary that tells you how to say the word *feature*.

Earth Science - Activity Master 2 - Text Features Reading for Information - Grade 2 73

Activity Master 2, page 73

Name _____ Date _____

Earth Science

Problem and Solution

A problem is something that needs to be fixed. A solution is a way to fix a problem. Read the sentences below. In the first box, write the problem. In the second box, write the solution.

1. Rick could not find any socks. He looked around his house until he found some socks in the dryer.

2. Tina broke her arm. The doctor put a cast on her arm to help it heal.

Problem Solution

Problem Solution

74 Reading for Information - Grade 2 Earth Science - Activity Master 3 - Text Structures

Activity Master 3, page 74

Name _____ Date _____

Earth Science

Soil

Underline the second letter in each word. Then write the words in alphabetical order.

sticky soil sand sediment silt

1. _____

2. _____

3. _____

4. _____

5. _____

Earth Science - Activity Master 4 - English Language Learners Reading for Information - Grade 2 75

Activity Master 4, page 75

Skills Practice



Go To Interactive Skills Handbook

For more practice with

- **using a glossary**, see pages 18–21.
- **problem and solution**, see pages 62–69.
- **monitoring and clarifying**, see pages 86–89.

Assessment

To assess student learning in this unit, use the following resources.



To assess student progress in the **3 Key Elements**, use the *ExamView® Assessment Suite* CD-ROM to create a custom test or administer the prepared **Leveled Unit Tests**.



Use the **PuzzleMaker** CD-ROM to create fun interactive activities that measure student mastery of the unit vocabulary.

Earth Science



Glossary

A **glossary** tells you about the vocabulary words in a book.

GLOSSARY

feature (fē' chûr) *n.* an important part of something. *A **feature** of clay soil is that it is sticky.*

sediment (sed' ə mənt) *n.* small pieces of rock broken down over time by rain, ice, and wind. *Sand, clay, and silt are all types of **sediment**.*

soil (soil) *n.* tiny bits of broken rock and decayed plant and animal matter. *Plants need **soil** to grow.*

Do each activity.

1. Write the vocabulary words that are listed in this glossary. _____

2. Underline the definition of *soil*.
3. Circle the part of the glossary that tells you how to say the word *feature*.

Earth Science



Words to Know

sediment small pieces of rock broken down over time by rain, ice, and wind

soil tiny bits of broken rock and decayed plant and animal matter

feature an important part of something

Write the word that completes each sentence.

1. Plants grow in _____ .



2. One _____ of my cat's face is her whiskers.



3. Rain, ice, and wind break down rock to form _____ .

