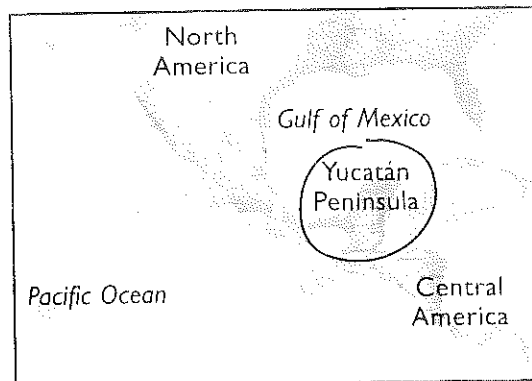


# Context Clues

Yesterday and Today:

## The Yucatan Peninsula

For as long as people have lived, they have wondered about the earth. Today scientists are learning even more about the earth through new exploration. Read this article about underground rivers and caves in Mexico.



Beneath the jungles of Mexico lie underground caves and rivers. The story of how they got there began when dinosaurs roamed the earth.

A **meteorite** fell from space and hit the earth sixty-five million years ago. It struck the part of Mexico that is known today as the Yucatán **peninsula**. The Yucatán is an arm of land that sticks out into the Gulf of Mexico and the Caribbean Sea. The meteorite that hit the Yucatán was huge. It left a bowl-shaped dent, or **crater**, one hundred and ten miles across.

The **disaster** had lasting effects. Many scientists believe that dust rose into the air and blocked the light and heat from the sun. Without the sun, the dinosaurs all died. The land also changed. The **limestone**, the soft rock that forms the jungle floor, began to develop cracks. Those cracks filled

with rainwater. In some places, the cracks grew larger. The water kept wearing away the rock. This eventually created **caverns** deep in the earth. These large hollow caves often join **sinkholes**. The sinkholes are areas that have sunk below the land around them. Some sinkholes have a small opening at the top to the land above. Some have a wider opening, and others have no opening at all.

There are no above-ground rivers in the Yucatán. But underground rivers flow through the caverns. Rainwater and the underground rivers provide the region's only fresh water.

**Archaeologists** are exploring these rivers and **aquatic** caverns. In some of the underground caverns, they have found skulls, bones, and other **fossils** of humans and animals. These objects, or remains, teach us about the history of the earth.


## Context Clues Strategy

### Look for the Location or Setting


**EXAMPLE:** The diver put on his mask and *fins*. Then he dove into the water.

**CLUE:** The words *dove into the water* tell you where the diver went. This phrase tells you that *fins* are something useful that a person can wear in water.


Using the context is a good way to understand the meaning of a new word. Here is another strategy for using context clues to understand the word *caverns* from the essay on page 28.

 **Read** the sentence with the unknown word and some of the sentences around it.

.....  
*This created caverns deep in the earth.*

 **Look** for context clues. What details about The Location or Setting can you find?


.....  
*Caverns are found below the earth's surface.*

 **Think** about the context clues and other information you may already know.

.....  
*Caves can also be found below the earth's surface.*

 **Predict** a meaning for the word.

.....  
*A cavern must be a large cave or hollow area under the earth's surface.*

 **Check** the Word Wisdom Dictionary to be sure of the meaning.

.....  
*The word cavern means "a very large cave."*



# Unlock the Meanings

**Practice the Strategy** Here is one of the boldfaced words from the essay on page 28. Use the context clues strategy on page 29 to figure out the meaning of this word.

**crater**



**Read** the sentence that uses the word *crater* and some of the sentences around it.



**Look** for context clues. What details about **The Location or Setting** can you find?

---

---

---



**Think** about the context clues. What other helpful information do you know?

---

---

---



**Predict** a meaning for the word *crater*.

---

---

---

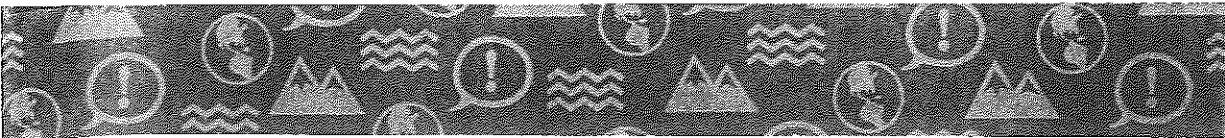


**Check** the Word Wisdom Dictionary to be sure of the meaning of the word *crater*.

---

---

---



WORD LIST
meteorite
peninsula
✓ crater
disaster
limestone
✓ cavern
sinkhole
archaeologist
aquatic
fossil

**Use Context Clues** You have been introduced to two of the words from the essay on page 28. These words have been checked off on the Word List. In the first column, write the other eight words from the Word List. In the second column, predict a meaning for each word using context clues. Then look up the meaning in your Word Wisdom Dictionary. In the third column, write the dictionary meaning that fits the context.

Vocabulary Word	Your Prediction	Dictionary Says
1		
2		
3		
4		
5		
6		
7		
8		

# Process the Meanings

## WORD LIST

meteorite  
peninsula  
crater  
disaster  
limestone  
cavern  
sinkhole  
archaeologist  
aquatic  
fossil

**Use the Words Correctly in Writing** Rewrite each sentence in your own words. Include the word in parentheses in your sentence.

**1** When the middle of my street collapsed, we suddenly had a caved-in place in our neighborhood. (sinkhole)

\_\_\_\_\_

**2** My sister loves to do water ballet in a swimming pool. (aquatic)

\_\_\_\_\_

**3** Florida is a landmass that sticks out into the water. (peninsula)

\_\_\_\_\_

**4** Taking care of a two-year-old can turn into a big mess. (disaster)

\_\_\_\_\_

**Match the Meanings** Write the vocabulary word from the Word List that matches each meaning.

### Meaning

- 5** an ancient trace of a plant or an animal
- 6** a person who studies the past through old objects or remains
- 7** a type of soft rock
- 8** solid matter that falls from space
- 9** a very large cave
- 10** a bowl-shaped dent in the earth's surface

### Vocabulary Word

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## Apply What You've Learned

**Relate the Meanings** Use what you've learned about the boldfaced words to answer the questions.

**1** How could a meteorite create a **disaster**?

---

---

**2** What kind of **fossil** might an archaeologist find?

---

---

**3** What might live in an **aquatic cavern**?

---

---

**4** How is a **crater** like a **sinkhole**?

---

---

**5** How can a **peninsula** be made of **limestone**?

---

---



**Write It!** Write a paragraph about something you once discovered (or would like to discover) in the earth or in a body of water. Use as many vocabulary words from Part 1 as you can.

# Latin and Greek Roots

For  
Word  
Wisdom

A “Rocky” Interview:

## The Surprise From Space

Here is an interview with Penny Baker. She discovered something special in her own backyard.

**I**nterviewer: Hello Ms. Baker. How did you happen to find this **asteroid**?

*Penny Baker:* Well, I didn’t really find it by myself. Some city workers spotted it first. They were digging an **aqueduct** behind my house. It will carry water to the new Bedford Hills development. The aqueduct is near the back edge of our property.

*Interviewer:* Do they always build aqueducts so close to houses?

*Penny Baker:* No, but they had to do it because of the **geography** around here. With all of the hills, most of the ground is rocky. Some of it is solid rock. The ground near our house isn’t very rocky. It was the best place for the aqueduct.

*Interviewer:* That makes sense. How deep was the **cavity** where you found the asteroid?

*Penny Baker:* The crew had just started to **excavate** the ground. The hole was about four feet deep. I was watching them work from my

kitchen window. When I saw the crew pointing into the hole, I went out to look. I could see tiny bits of colors in the rock, including yellow, dark blue, and **aquamarine**.

*Interviewer:* How did you know it was an asteroid? Are you a trained **geologist**?

*Penny Baker:* No, but I am very interested in **astronomy**. I know quite a bit about the stars and the planets. When I was little, I wanted to be an **astronaut**. But later, I decided to be a teacher. My current students are learning a lot about the stars. Some teachers at school choose to have an **aquarium**, but I have stars and planets hanging from our classroom ceiling.


*Interviewer:* So you knew it was an asteroid. What happened next?


*Penny Baker:* The workers dug the asteroid out of the soil. It was as big as a cantaloupe! I called the local college and asked for the astronomy department. A woman there told me she would be right over. She pulled into my driveway about ten minutes later. She was very excited!

*Interviewer:* I can see why! You made quite a discovery. Thanks for talking to us today.

**Practice the Context Clues Strategy** Here is one of the boldfaced words from the interview on page 34. Use the context clues strategy you learned in Part 1 on page 29 to figure out the meaning of this word.

**excavate**


 **Read** the sentence that uses the word *excavate* and some of the sentences around it.

 **Look** for context clues to the word's meaning. What details about **The Location or Setting** can you find?

---

---


---

 **Think** about the context clues. What other helpful information do you know?

---


---

---

 **Predict** a meaning for the word *excavate*.

---

---

 **Check** your Word Wisdom Dictionary to be sure of the meaning of the word *excavate*. Write the definition here.

---

---





# Unlock the Meanings

Many English words come from Latin or Greek roots. If you know the meaning of different roots, you can often unlock the meaning of many new words. The following roots relate to the earth.

Latin Root: **cav**  
meaning: hollow  
English word: *cavern*  
meaning: a very large cave

Greek Root: **astr**  
meaning: star  
English word: *astronomer*  
meaning: one who studies stars and planets

Latin Root: **aqua**  
meaning: water  
English word: *aquatic*  
meaning: relating to water

Greek Root: **geo**  
meaning: earth  
English word: *geology*  
meaning: the study of the earth

**Sort by Roots** Find these roots in the Word List. Write each word on a line under the correct root. Think of other words that come from the same Latin and Greek roots. Write each word in the correct place.

Latin Root:  
**cav**

Greek Root:  
**astr**

## WORD LIST

asteroid

aqueduct

geography

cavity

excavate

aquamarine

geologist

astronomy

astronaut

aquarium

Latin Root:  
**aqua**

Greek Root:  
**geo**

**Prefix**  
ex-

**Meaning**  
out of, from

**Example**

ex- (from) + cav (hollow) + -ate (verb) =  
excavate

**Use Roots and Prefixes** Circle any roots and prefixes you find in the boldfaced words below. Use context clues, roots, and prefixes to write the meaning of the word. Check your definitions in the Word Wisdom Dictionary.

**1** The planetarium is a good place to study **astronomy**.

---

**2** The dentist will fill the small **cavity** in my tooth.

---

**3** Maria has a collection of rocks; she wants to be a **geologist**.

---

**4** The city **aqueduct** carries water to the next county.

---

**5** I am interested in **geography** because I like to study different places.

---

**6** Add water to the **aquarium** or the fish will die.

---

**7** Allie's eyes are **aquamarine**, like water in a pool.

---

**8** My brother wants to **excavate** the yard to look for treasure.

---

**9** Would you like to be an **astronaut** and fly around in space?

---

**10** I saw a movie about an **asteroid** that almost hit the earth.

---



## Process the Meanings

### WORD LIST

asteroid

aqueduct

geography

cavity

excavate

aquamarine

geologist

astronomy

astronaut

aquarium

**Choose the Correct Word** Circle the boldfaced word that completes each sentence correctly.

- 1** My class is learning about the **asteroids**/astronomy that revolve around the sun.
- 2** Lee's bedroom is **aquamarine**/aqueduct, like the sea.
- 3** A mouse lived in the **cavity**/cavern by the door.
- 4** My uncle studies the stars. He enjoys **asteroid**/astronomy.
- 5** The **aquarium**/aqueduct no longer carries water into town.

**Use the Clues** Use the clues to complete each "Help Wanted" sign. Write the missing words.

- 6** A miner is needed to \_\_\_\_\_ dirt and rocks from a cavern.
- 7** A \_\_\_\_\_ is needed to help a museum organize a collection of rocks.
- 8** Someone is needed to take care of an \_\_\_\_\_.  
The person must have knowledge of fish and aquatic plants.
- 9** An \_\_\_\_\_ is needed to fly a spacecraft.  
The person must like small spaces and far-off places.
- 10** An explorer is needed to discover new lands. The person must have a good understanding of \_\_\_\_\_.



## Apply What You've Learned

**Demonstrate Word Knowledge** Answer the questions.

**1** What do you do when you have a cavity?

---

**2** What might you put in an aquarium? Discuss three items.

---

**3** What is the geography of the area in which you live?

---

**4** Why are aqueducts important to modern life?

---

**5** Would you stand out in a pool wearing aquamarine? Explain.

---

**6** In what class are you likely to study asteroids?

---

**7** What would you imagine that an astronaut would need?

---

**8** What tools might a geologist need?

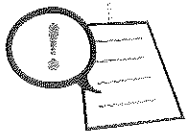
---

**9** Why might someone want to study astronomy?

---

**10** Where would you like to excavate and why?

---



**Speak It!** Create a radio “Help Wanted” ad like those on page 38. Use as many vocabulary words from Part 2 as you can. Perform your radio ad for the class.

# Reference Skills

For  
Word  
Wisdom

Blowing Smoke:

## Volcanoes and Our Health

Volcanoes are powerful forces. They not only change the shape of the land. They also change the air we breathe—and not for the better.

**H**ave you ever seen a volcano erupt? First, **tremors** shake the Earth. Then the volcano explodes. Gases shoot high into the **atmosphere**. A volcano called Kilauea has been erupting since 1983. Kilauea is in Hawaii. Every day, it sends about 2,000 tons of sulfur dioxide gas into the air. The gas comes from magma inside the volcano. During an **eruption**, the gas bubbles out of the magma. It mixes with the air.

Sulfur dioxide is harmful. In the air, it combines with oxygen, dust, and moisture. Sunlight warms it. The result is volcanic smog, or vog. Vog **pollutes** the air. It becomes harder to see and breathe. Vog gives people headaches and sore throats. Their eyes water. Even driving through vog is hard. Drivers have to use their headlights even during the day.

Vog also hurts crops. It causes acid rain. This rain can burn plants growing in fields and **ravines**. Vog even slips into greenhouses through air vents.

Many Hawaiians catch rainwater on their rooftops. Unfortunately, they drink the water from these **reservoirs**. Acid rain from the volcano has polluted this water. It is not safe to drink.


Experts in **meteorology** have studied the winds around Kilauea. The Hawaiian Islands are close together. Only **straits** of water separate them. Thus, winds spread Kilauea's vog to the other islands. In fact, traces of vog have been found 1,000 miles away!


Other volcanoes also pollute the air. Nearly every continent on Earth has volcanoes. There are no **stellar** volcanoes, as stars are made of burning gases. Still, there are volcanoes on other planets. This includes Mars and Venus. Long ago, there were volcanoes on the moon. They erupted billions of years ago. These **lunar** volcanoes produced magma. The magma cooled and became lava. The lava spread over most of the moon's surface.

We still have much to learn about volcanoes. We cannot predict when they will erupt. Yet, we are learning more about them every day. We cannot control volcanoes, so we must learn how to deal with them.

**Practice the Context Clues Strategy** Here is one of the boldfaced words from the selection on page 40. Use the context clues strategy you learned in Part 1 on page 29 to figure out the meaning of this word.

**strait**


 **Read** the sentence that uses the word *strait* and some of the sentences around it.

 **Look** for context clues to the word's meaning. What details about **The Location or Setting** can you find?

---

---


---

 **Think** about the context clues. What other helpful information do you know?

---


---

---

 **Predict** a meaning for the word *strait*.

---

---

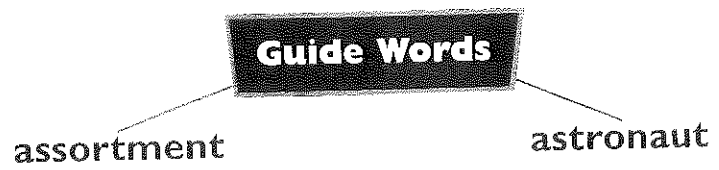
 **Check** your Word Wisdom Dictionary to be sure of the meaning of the word *strait*. Which of the meanings for the word *strait* fits the context?

---

---

# Unlock the Meanings

**Guide words** help you find words in a dictionary. They appear at the top of every dictionary page. The first guide word shows the *first* dictionary entry on the page. The second guide word shows the *last* dictionary entry on the same page. The word you are looking for will appear in alphabetical order between the two guide words.



The word *asteroid* would appear on the same page as these guide words. It comes between them in alphabetical order.

**Use Guide Words** Here are pairs of guide words that appear at the top of a dictionary page. Find the words from the Word List on the next page that would appear on each dictionary page.

matter, mount  
**1** \_\_\_\_\_

rabbit, round  
**2** \_\_\_\_\_

**3** \_\_\_\_\_

stand, street  
**4** \_\_\_\_\_

**5** \_\_\_\_\_

llama, lunch  
**6** \_\_\_\_\_

trek, trench  
**7** \_\_\_\_\_

atlas, atom  
**8** \_\_\_\_\_

poll, polo  
**9** \_\_\_\_\_

error, essay  
**10** \_\_\_\_\_



**Find  
the  
Meaning**

1. Use context clues.
2. Look for a familiar root, prefix, or suffix.
3. If the context or a word part doesn't help, check the dictionary.

**Define the Words** Follow the steps above to write the meaning of each boldfaced word. Write 1, 2, or 3 to show which steps you used.

**1** The lead actor gave a **stellar** performance.

\_\_\_\_\_

**2** I would be afraid during the **eruption** of a volcano.

\_\_\_\_\_

**3** The sailors could see land on both sides of the narrow **strait**.

\_\_\_\_\_

**4** The water in the **reservoir** was high after the heavy rains.

\_\_\_\_\_

**5** Study **meteorology** if you want to forecast the weather.

\_\_\_\_\_

**6** Months on a **lunar** calendar are based on the moon.

\_\_\_\_\_

**7** The earth's **atmosphere** has oxygen and other gases.

\_\_\_\_\_

**8** If we **pollute** our air and water, we will not be healthy.

\_\_\_\_\_

**9** I felt the earthquake when a **tremor** woke me up.

\_\_\_\_\_

**10** The stream rushed down the **ravine** between the two hillsides.

\_\_\_\_\_

**WORD LIST**

tremor

atmosphere

eruption

pollute

ravine

reservoir

meteorology

strait

stellar

lunar





# Process the Meanings

## WORD LIST

tremor

atmosphere

eruption

pollute

ravine

reservoir

meteorology

strait

stellar

lunar

**Choose the Correct Word** Write the word from the Word List that best matches each definition.

**1** a place where water is stored: \_\_\_\_\_

**2** to dirty the air, land, or water: \_\_\_\_\_

**3** a sudden explosion: \_\_\_\_\_

**4** the air surrounding something: \_\_\_\_\_

**5** a narrow valley: \_\_\_\_\_

**Complete the Analogies** Complete each analogy with a word from the Word List.

**6** A hallway is to a gym as a \_\_\_\_\_ is to an ocean.

**7** Chills are to a cold as a \_\_\_\_\_ is to an earthquake.

**8** Aquatic is to water as \_\_\_\_\_ is to stars.

**9** Astronomy is to space as \_\_\_\_\_ is to weather.

**10** Martian is to Mars as \_\_\_\_\_ is to moon.

**11** Money is to wallet as water is to \_\_\_\_\_.

**12** Narrow is to \_\_\_\_\_ as tall is to mountain.

**13** \_\_\_\_\_ is to volcano as blast is to dynamite.

**14** Clean is to \_\_\_\_\_ as sleep is to work.

**15** Space is to Earth as \_\_\_\_\_ is to ground.



## Apply What You've Learned

**Relate the Meanings** Answer each question or respond to each statement.

**1** What might cause an **eruption** of happiness from someone?

\_\_\_\_\_

**2** Describe the **atmosphere** at a party you once attended.

\_\_\_\_\_

**3** When might a baby sitter need a **reservoir** of patience?

\_\_\_\_\_

**4** How would you feel about a **polluted** stream nearby?

\_\_\_\_\_

**5** When might you feel a **tremor**?

\_\_\_\_\_

**6** What should a person do if he or she gets lost in a **ravine**?

\_\_\_\_\_

**Complete the Sentences** Complete each sentence.

**7** People who study **meteorology** \_\_\_\_\_

**8** A stellar night sky \_\_\_\_\_

**9** You could cross a **strait** more quickly than an ocean because \_\_\_\_\_

\_\_\_\_\_

**10** Upon a **lunar** landing, astronauts might see \_\_\_\_\_

\_\_\_\_\_



**Write It!** What interests you most about the earth? Tell why in a paragraph. Use as many words from Part 3 as you can.

# Review

for  
Word  
Wisdom

**Sort by Meanings** Decide whether each word is most closely related to land, sky, or water. Write the word in the column with the related meaning. A few words do not belong in any of the groups.

## WORD LIST

meteorite  
 peninsula  
 crater  
 disaster  
 limestone  
 cavern  
 sinkhole  
 archaeologist  
 aquatic  
 fossil  
 asteroid  
 aqueduct  
 geography  
 cavity  
 excavate  
 aquamarine  
 geologist  
 astronomy  
 astronaut  
 aquarium  
 tremor  
 atmosphere  
 eruption  
 pollute  
 ravine  
 reservoir  
 meteorology  
 strait  
 stellar  
 lunar

### Land Words

### Sky Words

### Water Words

**Find Related Words** Read the sentences. Look at the underlined word part. Write the word from the Word List that contains the underlined word part *and* fits the context.

- 1 The boy was ravenous after being lost in a \_\_\_\_\_ for two days.
- 2 We felt a tremendous \_\_\_\_\_ during the earthquake.
- 3 The water in the aquarium was \_\_\_\_\_.
- 4 Miners excavated coal from the \_\_\_\_\_.
- 5 The astronaut took a course in \_\_\_\_\_.

**Check the Meanings** If the boldfaced word is used correctly, write **C**. If the word is used incorrectly, write **~**. Tell a partner how you would fix the incorrect items.

- \_\_\_ **6** My sister has curly hair, but my hair is **strait**.
- \_\_\_ **7** Because Omar is a good runner, he has won awards for his **aquatic** ability.
- \_\_\_ **8** **Meteorology** is the study of weather.
- \_\_\_ **9** Alex is learning how to paint in his **geography** class.
- \_\_\_ **10** Our supermarket gets juice through an **aqueduct**.
- \_\_\_ **11** **Lunar** rocks are on the moon.
- \_\_\_ **12** Don't **pollute** the ground with trash.
- \_\_\_ **13** The **cavity** rose up out of the earth.
- \_\_\_ **14** The **geologist** found a layer of buried rock.
- \_\_\_ **15** **Archaeologists** design buildings.

## TEST-TAKING STRATEGY

If you have trouble answering a multiple-choice question, first eliminate any answers that you know are wrong.

Then decide among the remaining answer choices.

This improves your chance of choosing the correct one.

### Sample:

a calm strait

- (A) water channel
- (B) mountain view
- (C) cloudy sky
- (D) star constellation

## Taking Vocabulary Tests

**Practice Test** Fill in the letter of the answer choice that shows the correct meaning for the underlined word.

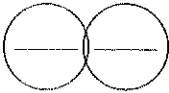
- 1** a small eruption
  - (A) mix-up
  - (B) delay
  - (C) volcano
  - (D) explosion
- 2** an experienced astronaut
  - (A) person who explores space
  - (B) person who rides horses
  - (C) person who tells fortunes
  - (D) person who dives
- 3** an empty reservoir
  - (A) nest
  - (B) promise
  - (C) place to sit
  - (D) place for storage
- 4** a famous geologist
  - (A) person who studies the stars
  - (B) person who studies the earth
  - (C) person who is good at math
  - (D) person who makes maps
- 5** a small cavity
  - (A) tooth
  - (B) pain
  - (C) hole
  - (D) hill
- 6** to pollute the ocean
  - (A) dirty
  - (B) clean
  - (C) live in
  - (D) drive around
- 7** a stellar performance
  - (A) stage
  - (B) star
  - (C) poor
  - (D) repeat
- 8** a lunar vehicle
  - (A) space
  - (B) sun
  - (C) moon
  - (D) broken
- 9** an aquatic plant
  - (A) green
  - (B) found in air
  - (C) found in water
  - (D) house
- 10** a sudden disaster
  - (A) phone call
  - (B) tragedy
  - (C) idea
  - (D) movement


## Play with Language

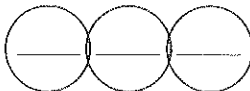
crater	peninsula	meteorite	sinkhole	fossil
disaster	limestone	aquarium	excavate	geologist
aquamarine	asteroid	aqueduct	atmosphere	eruption
pollute	tremor	stellar	lunar	reservoir

**Solve the Word Puzzle** Look at the vocabulary words in the box. Choose a word to fit each meaning below. Write one letter on each line. Then complete the sentence in the bottom box by copying the circled letters onto the lines in the box.

**1** a layer of air surrounding the earth:

\_\_\_\_\_  \_\_\_\_\_

**2** to dig out:  \_\_\_\_\_

**3** related to the moon:  \_\_\_\_\_

**4** a collapsed place: \_\_\_\_\_  \_\_\_\_\_

**5** a dent made by a meteorite: \_\_\_\_\_  \_\_\_\_\_

A person who likes to explore caves is a  
\_\_\_\_\_



**Speak It!** Imagine that you could take the adventure trip of a lifetime. Would you choose to go into space, somewhere on or inside the earth, or somewhere on or in water? Describe your dream trip to your class. Use as many of the words on page 46 as you can.