Study the words. Then do the exercises that follow.

Lesson 1

**cylinder**

* n. An object in the shape of a tube or pipe. It may be solid or hollow. In the center of the table was a tall glass vase in the shape of a cylinder, which was filled with yellow tulips.

**examine**

* v. To look at closely. When Cora and Chun examined the desk, they discovered that the letter they were looking for was gone.

**fatal**

* adj. Causing death. Eating this pretty white mushroom can be fatal.

**feature**

* n. 1. An important or special part of something. An unusual feature of this room is a secret stairway hidden behind this wall. 2. Any part of the face. One pleasing feature of Claude's is his warm smile.

Describe the feature of your shoes you like best to your partner.

Lesson 10

**cable**

* n. 1. A thick steel rope made of strands of wire twisted together. A cable with a large hook on the end dangled from the top of the crane. 2. A bundle of wires covered by rubber or plastic along which an electric current can pass. From this station to Quincy they will run an underground cable for extra power when it is needed.

**cathedral**

* n. A large and important church. The National Cathedral in Washington, D.C., is the sixth largest in the world.

**convey**

* v. 1. To carry or move from one place to another. A wagon with high sides conveyed the cut sugarcane to the mill. 2. To make an idea or feeling known. As the curtain closed, the crowd clapped loudly to convey how much they had enjoyed the play.

Convey to your partner your thoughts about some music you like.
Study the words. Then do the exercises that follow.

**cylinder**

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In the center of the table was a tall glass vase in the shape of a **cylinder**, which was filled with yellow tulips.

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*v.* To look at closely.  
When Cora and Chun **examined** the desk, they discovered that the letter they were looking for was gone.

Describe the feature of your shoes you like best to your partner.

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Eating this pretty white mushroom can be **fatal**.

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An unusual **feature** of this room is a secret stairway hidden behind this wall.  
2. Any part of the face.  
One pleasing **feature** of Claude’s is his warm smile.

Describe the feature of your shoes you like best to your partner.
**grasp**

*v. 1. To take hold of something tightly with the hands. Tina **grasped** the bars on the gym set and pulled herself up.  
2. To understand something.  
After we **grasped** the directions, it was easy to do the puzzle."

Tell your partner something you have learned that was easy for you to grasp.

---

**Jet**

*n. 1. A stream of liquid or gas that is forced at high speed through a small opening.  
The firefighters directed **jets** of water from the pump truck to the burning house.  
2. An airplane that is powered by a jet engine.  
The pilot told us what kind of **jet** would be carrying us to the West Coast.

---

**Marine**

*adj. Having to do with the ocean or with ships and boats.  
The largest **marine** creature is the blue whale.

Tell your partner about your favorite marine animal.

---

**Scar**

*n. A mark on the skin that is left after a cut or other wound has healed.  
The **scar** on Helen’s knee is from the cut she got when she fell off her bicycle."
tentacle

n. A long, thin part that grows out from the head of some sea animals. They use it to hold things or to move from place to place.
The cuttlefish wiggled its tentacles to bring the small fish closer.

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The cuttlefish wiggled its tentacles to bring the small fish closer.

vessel

n. 1. A ship or large boat.
All the passengers aboard the vessel hoped to see a whale or dolphin during the trip.
2. Anything hollow that can be used to hold liquids.
A clay vessel filled with lemonade rested on the picnic table in the backyard.

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2. Anything hollow that can be used to hold liquids.
A clay vessel filled with lemonade rested on the picnic table in the backyard.

Discuss with your partner what you could pour from a vessel.

1A

Words and Their Meanings

Look at the group of words next to the number. Then circle the letter next to the word that has the same meaning.

1 a stream of liquid under pressure
(a) tentacle (b) feature (c) jet (d) scar

2 a tube-shaped object
(a) cylinder (b) vessel (c) scar (d) tentacle

3 a mark left after a wound heals
(a) feature (b) scar (c) tentacle (d) grasp
4 a special part that stands out
   (a) tentacle  (b) vessel  (c) feature  (d) marine

5 a large boat or ship
   (a) fatal  (b) marine  (c) tentacle  (d) vessel

Look at the word next to the number. Then circle the letter next to the group of words that has the same meaning.

6 examine
   (a) look at carefully  (b) return to
   (c) stay away from  (d) put away

7 marine
   (a) having to do with sports  (b) having to do with being sick
   (c) having to do with horses  (d) having to do with the ocean

8 tentacle
   (a) a baby octopus  (b) a hairy spider
   (c) a long, thin part growing from some sea animals  (d) a figure with eight sides

9 grasp
   (a) let go of  (b) understand
   (c) move in circles  (d) cry out

10 fatal
   (a) helpless  (b) hard to understand
   (c) causing death  (d) being careful
1B

Just the Right Word
Replace each phrase in bold with a single word (or form of the word) from the word list.

1. He has a mark on the skin left by a fall when he was a child.

2. The machinist looked at each object in the shape of a pipe.

3. Kelly always reads the having to do with the ocean report before she sets sail.

4. New to crutches, Lin took hold tightly of each one firmly.

5. His mistake, not causing death but serious, made him upset.

1C

Applying Meanings
Circle the letter next to the correct answer.

1. Which of the following can be fatal?
   (a) a smile  (b) a car accident  
   (c) a number  (d) an award

2. Where would you not expect to find marine animals?
   (a) in an ocean  (b) in a sea 
   (c) in a forest  (d) in an aquarium

3. Which would be the best way to examine a planet?
   (a) build an arch  (b) climb a tower 
   (c) turn on a channel  (d) look through a telescope
4 Which of the following might leave a scar?
(a) a ghost  
(b) a lesson
(c) a fall  
(d) a song

5 Which of the following can a person grasp?
(a) ideas  
(b) wind
(c) smells  
(d) smoke

Word Study: Nouns and Verbs
A noun names a person, place, or thing. Underline the nouns in the sentences.

1 Squid have eight arms and two tentacles.
2 They can shoot out jets of ink if they are in danger.

A verb tells what action is happening or what someone or something is doing. Underline the verbs in the sentences.

3 We launched our new canoe today.
4 We steered the canoe with paddles.
Monsters of the Deep

The Pacific Ocean is huge. But we see only its surface. Underneath, over half a mile down, is another world. This world is very dark. It is the watery home of the giant squid. These unusual creatures spend their whole lives there. Let us explore deep in the Pacific Ocean. We will go near the northeast coast of New Zealand. There we will learn something of these strange animals.

Many scientists come to this area. They know it is a good spot to find giant squid. They also find sperm whales there. Sperm whales feed on the squid in this area. From one of their vessels, the scientists can see the great whales coming up to breathe. Sperm whales are huge marine creatures. They are eighty feet in length. They weigh up to sixty tons. Sperm whales can go without breathing for up to an hour. This lets them dive deep underwater. There they hunt for giant squid.

The giant squid is an enormous creature. Yet very few have been seen alive. Scientists instead examine dead squid that wash up on shore. The giant squid may grow to be sixty feet long when it is an adult. Its body is shaped like a cylinder. It has two fins at the tail end. It uses them for swimming. When it needs to, the squid can put on an extra burst of speed. First it swallows water. Then it shoots the water out through an opening in its tail. A jet of water rushes out. This pushes the giant squid forward.

The squid has two long, waving tentacles. Both are on its head. Each one has rows of hooks that can dig in deep. The squid uses them to grab food. It catches fish, crabs, and turtles. It also grabs smaller squid. It can capture anything else that swims within its reach. The squid also has eight arms. It uses them to stuff whatever it catches into its mouth. Then its powerful jaws go to work. Their jaws are shaped like a parrot’s beak. Anything a giant squid grasps has little chance of getting away.
The most unusual **feature** of a squid is its eyes. They are the size of dinner plates. The squid lives far down in the ocean. There is only a small amount of light that deep. In the darkness, the squid’s large eyes give it good eyesight. It can probably see a sperm whale before the whale comes close enough to attack. This helps the squid escape. Scientists have looked at **scars** on sperm whales. They believe the beaks of giant squid caused them. This tells them that a sperm whale’s attack may not always be **fatal** for the giant squid.

The scientists use a small submarine to look for the squid. It is called a Deep Rover. This boat can dive to around 3,000 feet. It has powerful lights and four cameras. Scientists aboard a Deep Rover took the first pictures of a living giant squid. Scientists would love to one day film a fight between a whale and a giant squid. This is not very likely, however. Instead, what we may see on our television screens soon is the first close look at a giant squid. Its huge eyes will be staring at us out of the darkness.

**Answer each of the questions with a sentence.**

1. Is it correct to call this a **marine** story? Explain your answer.

2. What do the scientists aboard the submarine want to **examine**?

3. How far down can the scientists’ **vessel** travel?

4. Why is it hard for sea creatures to escape the **grasp** of the giant squid?
5. How does the **cylinder** shape of its body help a squid swim?

_____________________________________________________________________
_____________________________________________________________________

6. Why might a meeting with a sperm whale be **fatal** for a giant squid?

_____________________________________________________________________
_____________________________________________________________________

7. How do its **tentacles** help the giant squid?

_____________________________________________________________________
_____________________________________________________________________

8. Where does the **jet** of water come from that helps the giant squid move forward?

_____________________________________________________________________
_____________________________________________________________________

9. What do the **scars** on sperm whales tell scientists?

_____________________________________________________________________
_____________________________________________________________________

10. Which **feature** of the giant squid seems most unusual to you?

_____________________________________________________________________
_____________________________________________________________________

---

**Fun FACT**

- You know **jet** as a fast stream of water and as an airplane. But there is also **jet** black, meaning a dark black color. That **jet** comes from the name of an ancient Greek town where a black stone, also called **jet**, was found. The two **jets** have no connection and are really two different words!
**Vocabulary Extension**

**examine**

*verb* To study or look at something closely.

**Academic Context**
In a science lesson, you might use a magnifying glass to **examine** an insect.

**Word Family**
- exam (noun)
- examination (noun)

---

**Discussion & Writing Prompt**

You could use a magnifying glass to **examine** a feather. What else could you **examine** using a magnifying glass?

1. Turn and talk to your partner or group.

2. Write 1–3 sentences.

<table>
<thead>
<tr>
<th>Note Space</th>
<th>Writing Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use this space to take notes or draw your ideas.</td>
<td>Be ready to share what you have written.</td>
</tr>
</tbody>
</table>

---

10 Lesson 1
Lesson 10

Word List

Study the words. Then do the exercises that follow.

**cable**

*n.* 1. A thick steel rope made of strands of wire twisted together.

A **cable** with a large hook on the end dangled from the top of the crane.

2. A bundle of wires covered by rubber or plastic along which an electric current can pass.

The electric company will run an underground **cable** from this station to Quincy to provide extra power when it is needed.

**cathedral**

*n.* A large and important church.

The National **Cathedral** in Washington, D.C., is the sixth largest in the world.

**convey**

*v.* 1. To carry or move from one place to another.

A wagon with high sides **conveyed** the cut sugarcane to the mill.

2. To make an idea or feeling known.

As the curtain closed, the crowd clapped loudly to **convey** how much they had enjoyed the play.

Convey to your partner your thoughts about some music you like.
**device**

*n.* Something made or invented for a particular use.

When you need a device for lifting heavy weights without a great deal of effort, a lever will work best.

*Talk with your partner about a helpful device in your home.*

**freight**

*n.* Goods carried from place to place, as by plane, boat, truck, or train.

The trains passing through this station carry freight from the middle of the country to the East Coast.

**landmark**

*n.* 1. A building or natural feature that is easy to see and can be used as a guide.

The Gateway Arch is a well-known landmark in St. Louis.

2. An important event.

The discovery that certain bacteria can cause disease was a landmark in the history of medicine.

*Tell your partner about a famous landmark in your country.*

**method**

*n.* A way of doing something.

Tara’s method for bringing her cat inside is to shake the container with treats.

*Tell your partner about your method for washing your hands.*

**rod**

*n.* A thin, straight piece of wood, metal, or other material.

The shower curtain hung from a metal rod.
Using Words in Context

Read the sentences. If the word in bold is used correctly, write C on the line. If the word is used incorrectly, write I on the line.

1. (a) Each **device** is tested before it leaves the factory. ____
(b) The **device** hatched after ten days. ____
(c) He wrote the **device** beautifully. ____
(d) The **device** is designed to help kids clean their rooms. ____

**shaft**

*n. 1. A long open tunnel that runs straight up and down.*
The coal miners traveled for five minutes to reach the bottom of the mine **shaft**.

2. A bar that connects with other moving parts of a machine.
The drive **shaft** sends power from the car engine to the wheels.

3. The long, narrow part of an arrow or other object.
Felix made sure the **shafts** of his arrows were in a straight line.

**structure**

*n. Something that is built, as a building or bridge.*
From the road, it was easy to see that the largest **structure** in town was the hundred-foot water tower.

Discuss with your partner a **structure** near your school.
2. (a) We rigged the sails on the forty-foot **shaft** and set off for Hawaii. 
(b) The mining crew went down the **shaft** in a metal cage. 
(c) The **shaft** of the arrow was placed in the bow and then aimed. 
(d) Great **shafts** of fish were pushed toward land by the dolphins.

3. (a) Please **convey** the message to your mom that I hope she gets better soon. 
(b) I could **convey** no meaning from the old letter. 
(c) Moving belts **convey** the items to the next stage of the process. 
(d) The Statue of Liberty in New York harbor **conveys** the idea of freedom.

4. (a) The **cable** is best eaten with honey and bread. 
(b) Electric **cables** carry power to every home in the city. 
(c) He arrived in a four-wheel **cable** pulled by two horses. 
(d) The first **cable** to send messages through electricity was laid in 1858.

5. (a) Electing the first woman president was a **landmark** event. 
(b) The Statue of Liberty is a familiar New York **landmark**. 
(c) A **landmark** was sealed inside the bag to be eaten later. 
(d) I told my teacher I’d **landmark** my homework to make it better.

6. (a) Oil is moved by **freight** train or by pipes. 
(b) Boats are sometimes used to carry **freight**. 
(c) I have never felt so much **freight** as when Keith jumped out and scared me. 
(d) Sending **freight** to the space station is very expensive.
(a) Slugger told me to find my own **method** for swinging the bat. _____
(b) Rubbing two sticks together is one **method** of starting a fire. _____
(c) What **method** do you use for watering your plants? _____
(d) The **method** we followed was a twisting path that led to the lighthouse. _____

(a) The sun is a large **structure** made up of mostly gas. _____
(b) The **structure** was only half complete when the hurricane struck. _____
(c) Arlington’s sports dome is the largest **structure** of its kind in the U.S. _____
(d) Milo wrote down the **structure** so that he wouldn’t forget it. _____

**Making Connections**

Circle the letter next to the correct answer.

1. Which word goes with *church*?
   (a) device    (b) vessel    (c) nursery    (d) cathedral

2. Which word goes with *long* and *straight*?
   (a) rod    (b) hinge    (c) container    (d) freight

3. Which word goes with *coal mine*?
   (a) device    (b) luxury    (c) spine    (d) shaft

4. Which word goes with *bridge*?
   (a) device    (b) structure    (c) gift    (d) freight

5. Which word goes with *carry*?
   (a) confess    (b) defend    (c) survey    (d) convey
6 Which word goes with toaster?
(a) cable  (b) device  (c) rod  (d) shaft

7 Which word goes with the White House?
(a) landmark  (b) cathedral  (c) continent  (d) milestone

8 Which word goes with truck?
(a) dome  (b) club  (c) shaft  (d) freight

Using Context Clues
Circle the letter next to the word that correctly completes the sentence.

1 The _____ is made of many strands of steel and can hold two tons.
(a) freight  (b) shaft  (c) cable  (d) cocoon

2 The enormous _____ took two hundred years to build and was finished in 1345.
(a) chasm  (b) atlas  (c) freight  (d) cathedral

3 The invention of the airplane gave people a new _____ of getting around.
(a) device  (b) structure  (c) attitude  (d) method

4 The _____ was six feet long and had a diameter of half an inch.
(a) cathedral  (b) rod  (c) hinge  (d) chimney

5 Marcus came up with a _____ to the puzzle.
(a) structure  (b) device  (c) solution  (d) schedule

6 It took five minutes to reach the bottom of the _____.
(a) shaft  (b) rod  (c) attitude  (d) solution
Lesson 10

1. The wooden **rod**
   (a) can have a flag attached to it.
   (b) forms part of the kite.
   (c) has six square sides with numbers on them.
   (d) can be used as a fishing pole.

2. The **method**
   (a) we were following was based on an old process.
   (b) might have to be changed as we learn more.
   (c) lay without being disturbed for a thousand years.
   (d) can be done in just six easy steps.

3. Freight
   (a) can be carried by plane, train, or ship.
   (b) is usually in the form of air.
   (c) prices can almost double during the summer months.
   (d) is checked for explosives by dogs trained to sniff for them.

4. This **device**
   (a) opens and closes the garage door.
   (b) made it possible to see the craters on the Moon.
   (c) was designed by a person who had trouble sleeping.
   (d) can be grown almost anywhere and needs little watering.

The French castles were _____ built to last a long time.
(a) structures  (b) devices  (c) cathedrals  (d) schedules
The cathedral
(a) holds over five hundred people.
(b) is a special day of the year.
(c) has some wonderful glass windows.
(d) is the tallest building in the town.

I offered to convey
(a) the air if it got too windy.
(b) the children to the circus in my car.
(c) the food to the event for half the price of what the others charge.
(d) the message of hope to the city mayor.

Vocabulary in Context
Read the passage.

Life’s Ups and Downs

Skyscrapers are a common sight in the world’s big cities. They have been with us, though, for only about 125 years. The first one was built in Chicago in 1885. It had ten stories. Let’s discover what led to this new kind of building, which changed the shape of cities.

There used to be only one way to make very tall buildings. Stones were cut to the correct shape. Then the stones were placed one on top of the other. This is the way the great cathedrals of Europe were built hundreds of years ago. The enormous weight of the walls was spread over a large area on the ground. The base of the walls had to be many feet thick. This method of building used a large amount of cut stone. And stone was not cheap. That was one problem with tall buildings. Another was getting people from the ground to the higher levels. Most people were not willing to climb more than five flights of stairs.
The first problem was solved in the late 1880s. That is when steel came into wide use. A set of steel girders fastened together supported the structure. That way, the outside walls no longer carried the weight of the building. The walls could now be made of lighter materials. There was no limit to how tall buildings could be, except for all those stairs! Elisha Otis, a mechanic from Vermont, solved the second problem. In the 1850s, Otis was working in a factory that made beds. Elevators then were run by steam power. They were just coming into use in America. Their main purpose was to move freight from one factory floor to another. The place where Otis worked had one. It was just a cage hanging from a rope. It was raised or lowered inside a framework that kept it from swinging. If the rope broke, there was nothing to stop the cage from crashing to the ground.

Otis thought about this. He came up with a device that would keep such accidents from happening. It was a kind of brake for the cage. As soon as the rope or wire cable broke and the cage began to fall, a spring caused two steel rods to shoot out of the sides of the cage. These fitted into slots running the length of the elevator shaft. That kept the cage from falling any farther. Otis’s invention worked well. So in 1854, he took it to New York to a special business fair for new inventions. He climbed into the elevator cage. Then the cage was raised as high as it would go. After a signal was given, a helper on the ground cut the rope holding up the cage. Instead of falling, the cage remained in place. The crowd gasped. Then they cheered. Otis began taking orders for the elevator company he started. The company still carries his name.

Otis’s invention could be used to convey people safely to the upper floors of very tall buildings. This helped make the skyscraper possible. Elevators improved even more when they began running on electricity instead of steam. Electric elevators were faster, smoother, and quieter. They were also less likely to break down. The ten-story Chicago building, which was demolished in 1931, was followed by Manhattan’s first skyscraper, the twenty-two-story
Flatiron Building. It is still a New York landmark. Then there is the 110-story Willis Tower in Chicago. It has over one hundred elevators. The fastest ones make the quarter-mile ride to the top in one minute with perfect safety.

Answer each of the following questions with a sentence. If a question does not contain a vocabulary word from the lesson’s word list, use one in your answer. Use each word only once.

1. Give the names of some devices that enable people to reach the upper stories of buildings.
   _______________________________________________________________________
   _______________________________________________________________________

2. What kind of tall building was built before skyscrapers were invented?
   _______________________________________________________________________
   _______________________________________________________________________

3. What method was used to support the weight of tall buildings made of stone?
   _______________________________________________________________________
   _______________________________________________________________________

4. Why is 1854 a landmark in the history of tall buildings?
   _______________________________________________________________________
   _______________________________________________________________________

5. Which structure was New York City’s first skyscraper?
   _______________________________________________________________________
   _______________________________________________________________________

6. Why were there no cables for electricity in the early elevators?
   _______________________________________________________________________
   _______________________________________________________________________
7 What keeps an elevator from moving side to side?

_____________________________________________________________________

_____________________________________________________________________

8 Why would the rods that Otis used have to be very strong?

_____________________________________________________________________

_____________________________________________________________________

9 What are some different uses of elevators?

_____________________________________________________________________

_____________________________________________________________________

10 If you were riding an elevator to the top of the Willis Tower in Chicago, how long would it take you?

_____________________________________________________________________

_____________________________________________________________________

**Fun FACT**

- As you learned in Lesson 7, advice is a noun that means “something that is given,” and its verb form is advise. The same type of spelling change takes place in device and devise. Device is a noun that means “something made or invented,” and the verb form, devise, means “to make or invent something.”
method

noun A way of doing something.

Academic Context
In math, one method for measuring length is to use a ruler.

Word Family
methodical (adjective)
methodically (adverb)

Discussion & Writing Prompt
You want to find out who is taller: you or your friend. What method would you use?

1. Turn and talk to your partner or group.
2. Write 1–3 sentences.

Use this space to take notes or draw your ideas.

Be ready to share what you have written.
Review

Hidden Message Write the word that is missing from each sentence in the boxes next to it. All the words are from Lessons 9 and 10. The shaded boxes will answer the following riddle:

A bus driver made her way along a one-way street going toward the oncoming traffic. A police officer saw this, yet did nothing. Why?

1. This half-built _____ will soon be our new school.
2. This recipe gives a new _____ for cooking chicken.
3. My decision to quit the team is a fair one, and I will _____ it.

4. That crane with a long _____ will lift the steel beam.
5. Boil the potatoes in a(n) _____ of salt and water.
6. The opposite of happiness is _____.

7. Each iron _____ was three feet long.
8. This timing _____ will turn on the lamp at night.
9. A smile is a clear way to _____ that you are friendly.
10. The _____ in Washington, D.C., is open to all people.
11. From the _____, we learned that most students like the school lunches.

12. The Space Needle is Seattle’s best known _____.
13. The rescue workers entered the mine _____ carefully.

14. The slope here is so _____ you hardly notice it.
15. Breaking the new bicycle on purpose was an act of _____.
16. A cheerful _____ helps when you have problems.
17. If you can’t guess the answer, I’ll give you a(n) _____.
18. All of the trains on this line carry _____ only.