Prereading Preparation

1. What kind of work do archeologists perform?

2. What do archeologists study in order to learn about the past?

3. What can archeological discoveries tell us about the past?

4. Where would you find ancient air?
How can ancient air help us learn about the past? About the future?

Ancient Artifacts and Ancient Air

Archeologists made an exciting discovery in Egypt in 1954. During an excavation near the base of the Great Pyramid, they uncovered an ancient crypt. Although they believed that this discovery would help us understand Egypt’s past, they also hoped that it would give us important information about the future.

This crypt was a tomb, or burial place, for a dead Egyptian pharaoh, or king. Historians believed that the Egyptians buried their pharaohs with two boats: one to carry the body and the other to carry the soul. This was one of their religious customs about death. The archeologists expected to find two boats inside the crypt. As they broke the crypt open, they smelled the scent of wood. The ancient Egyptians had sealed the room so effectively that the aroma of the cedar wood was still preserved. Inside the crypt, archeologists found a 4,600-year-old boat that was in almost perfect condition. In addition, they found another closed room next to the crypt. Archeologists and historians believed that this chamber contained the second boat. If so, archeologists would have better information about the past. They would be sure about the religious custom of burying pharaohs with two boats.

However, this was not the only information they hoped to find. They wondered if the air in the two rooms contained something special that helped to preserve the wood. This information could help in the preservation of ancient artifacts in museums throughout the world. Researchers also hoped to find some answers about the future by carefully examining the air in the second chamber. When the archeologists opened the first chamber, all the old air escaped. Scientists wanted to recover the air in the second chamber, compare it with the air of the present, and then examine the differences, especially differences in the level of carbon dioxide (CO₂). This information might help them predict changes in the air in the future. They also did not want outside air to get inside the chamber. Careful planning would be necessary in order to open the second room and save the air. In fact, it took years to plan the excavation and to design and make the equipment necessary to open the chamber and collect the air inside.
Finally, in October 1986 an international team of scientists, using special equipment, drilled through the roof of the chamber. The hole they made was kept carefully sealed. As they broke into the ancient room, they realized that the chamber was not sealed. They took an air sample. The air inside was the same as the air outside. The scientists were very disappointed. However, they continued working to see what was inside the chamber. The team lowered a light and a camera into the small hole, and looked at the interior of the room on a television monitor. The second boat was really there!

After the scientists took samples of the air inside the chamber and photographed it completely, they sealed up the hole in the roof and left the room as they had found it. Although they did not get samples of 4,600-year-old air, they did confirm the Egyptian custom of burying pharaohs with two boats. More importantly, they practiced a new, non-destructive approach to archeology: investigate an ancient location, photograph it, and leave it untouched. When archeologists opened the first chamber, they removed the boat. The Egyptian government built a museum on the site for the first boat. During the construction of the museum, the vibrations from the heavy machinery disturbed the second room and probably destroyed the seal. Water leaked in, too, so the second boat was not as well preserved as the first boat.

The investigation of the second chamber taught archeologists a valuable lesson. New excavations will not only use modern technology, but they will also follow the idea of preserving the entire location for future studies.
Fact-Finding Exercise

Read the passage again. Read the following statements. Check whether they are True or False. If a statement is false, rewrite the statement so that it is true. Then go back to the passage and find the line that supports your answer.

1. True ______ False  Archeological discoveries give us information about the past.

2. True ______ False  Archeologists recently discovered a body in a crypt in Egypt.

3. True ______ False  Archeologists found a boat in the second crypt near the Great Pyramids.

4. True ______ False  Archeologists have not opened the second room yet.

5. True ______ False  There is no old air left in the second chamber.

6. True ______ False  The investigation team went inside the second chamber.

7. True ______ False  The Egyptian government is going to put the second boat in a museum.
Reading Analysis

Read each question carefully. Circle the letter or the number of the correct answer, or write your answer in the space provided.

1. What is the main idea of the passage?
   a. Analyzing old air is important because it helps us understand the future and preserve ancient artifacts.
   b. A recent archeological discovery helped us understand the future and the past and introduced new technology.
   c. Archeologists recently discovered a crypt near the Great Pyramid in Egypt, and they carefully examined it.

2. In line 3, what is the purpose of although?
   a. It introduces two different ideas.
   b. It introduces two similar ideas.
   c. It introduces two new ideas.

3. In line 5, what is a crypt?

4. In line 5, what is a synonym for pharaoh?

5. Read lines 6 and 7. What is the purpose of the colon (:)?
   a. It shows that the sentence continues for another line.
   b. It connects two sentences and makes them one sentence.
   c. It introduces the purpose of the two boats.

6. In line 9, what does as mean?
   a. Before
   b. Like
   c. When

7. In line 10, what does sealed mean?
   a. Locked with a key
   b. Closed completely
   c. Hidden carefully
Read lines 11–14.

a. What comes after in addition?
   1. More information
   2. The same information
   3. The result of the previous information

b. What does chamber mean?
   1. Crypt
   2. Room
   3. Historian

c. What does if so mean?
   1. If the second chamber really contained a second boat
   2. If archeologists could be sure of the Egyptian custom
   3. If there was really a second chamber next to the crypt

In line 16, why is however used at the beginning of the paragraph?

a. To show that the paragraph gives the same information as the paragraph before it
b. To show that the paragraph gives different information from the paragraph before it

Read lines 22–24.

a. What does CO2 represent?
   1. An abbreviation
   2. An amount
   3. A chemical symbol

b. What is CO2?

   

c. How do you know?

Read lines 26–29. What is the purpose of in fact?

a. To give true information
b. To emphasize the previous information
c. To introduce different information
12 Read lines 40 and 41.
   a. What is the purpose of did in they did confirm the Egyptian custom of burying pharaohs with two boats?
      1. To form a question
      2. To show the past
      3. To give emphasis
   b. What does confirm mean?
      1. See
      2. Prove
      3. Write

13 Read lines 41–43. What is the purpose of the colon (:)?
   a. It shows that the sentence continues for another line.
   b. It connects two sentences and makes them one sentence.
   c. It introduces the new non-destructive approach to archeology.

14 Read lines 50 and 51: “New excavations will not only use modern technology, but they will also follow the idea of preserving the entire location for future studies.” What is a synonym for not only . . . but also?
   a. And
   b. But
   c. So
Information Organization

Read the passage again. Underline what you think are the main ideas. Then scan the reading and complete the following outline, using the sentences that you have underlined to help you. You will use this outline later to answer questions about the reading.

I. Archeological Discovery in Egypt
   A. Date:
   B. Place:
   C. The Discovery:

II. Historians’ Belief about Egyptian Burial Customs
   A. 
   B. The Purpose of the Boats:

III. The Excavation of the Crypt
   A. 
   B. 
   C. 

IV. What the Archeologists and Historians Hoped to Learn
   A. Information about the Past:
   B. Information about Preserving Wood:
   C. Information about the Future:

V. The Excavation of the Second Chamber
   A. Date:
   B. Method of Excavation:
      1. 
      2. 
      3. 
      4. 

VI. The Significance of the Second Excavation
   A. 
   B. They practiced a new, non-destructive approach to archeology:
      1. 
      2. 
      3. 
   C. They found out that when the Egyptian government built a museum for the first boat, vibrations from the machinery disturbed the second room and destroyed the seal.
Information Recall and Summary

Read each question carefully. Use your outline to answer the questions. Do not refer back to the passage. When you are finished, write a brief summary of the reading.

1. Where and when did archeologists discover the crypt?

2. What was the purpose of the crypt?

3. What is an ancient Egyptian religious custom about death?

4. Why was the second chamber so important to historians?

5. How did researchers hope to find answers about the future in the second chamber?

6. a. Why did it take such a long time before the team opened the second chamber?

   b. How was the excavation of the second chamber different from the excavation of the first chamber?

7. How did the air in the second chamber escape?
What did the team do after they opened and photographed the second chamber?

Summary

Work in pairs or alone. Write a brief summary of the reading, and put it on the board. Compare your summary with your classmates’. Which one best describes the main idea of the reading?

Dictionary Skills

Read the following sentences. Use the context to help you understand the boldface words. Read the dictionary entry for that word and circle the appropriate definition. Then rewrite the sentence, using the definition you have chosen. Be sure to make your sentence grammatically correct.

*base*  
1. *n.* 1. the lower part of s.t., foundation: *That vase is on a wooden base.*  
2. the point where a part of s.t. is connected to the whole: *The boxer hit the base of his opponent’s neck.*  
3. s.t. (a fact, an assumption, etc.) from which a start is made: *We will begin with your salary as a base and give you a 5 percent increase.*  
4. the main place where one works or lives, (*syn.*) headquarters: *They use their apartment in New York as a home base from which they travel frequently.*  
5. (in chemistry) a bitter-tasting substance that turns litmus paper blue  
6. a military camp, building, airport, etc.: *The Air Force planes flew back to their base.*  
7. (in baseball) one of four squares touched by runners *

*off base*: a. to start: *He tried to get a new job but did not get to first base.* b. slang to kiss *

*to touch all the bases* (from baseball) to address all major points: *He touched all the bases in his talk about the new product.*

In 1954, archeologists uncovered an ancient crypt near the *base* of the Great Pyramid.
The ancient Egyptians had a religious custom. They buried their pharaohs with two boats: one to carry the body and the other to carry the soul.

The air escaped from the second chamber at the time the museum was built for the first boat.

The scientists lowered a light and a camera into the second chamber.
In English, verbs change to nouns in several ways. Some verbs become nouns by adding the suffix -ion or -ation—for example, preserve (v.) becomes preservation (n.). Complete each sentence with the correct form of the words on the left. Use the correct tense of the verb in either the affirmative or the negative form. Use the singular or plural form of the noun.

1. predict (v.) The weather forecast ________ snow for last night, but it snowed anyway. The ________ about the weather was incorrect.
2. correct (v.) After our teacher assigns an essay, he always ________ the papers. If there are only a few ________, the students get good grades.
3. excavate (v.) The ________ of King Tut’s tomb was an important and famous event. Archeologists ________ this tomb in Egypt in the 1920s.
4. examine (v.) The doctor’s ________ of the sick child will take a long time. The doctor ________ the sick child until tomorrow to find out what is wrong.
5. inform (v.) The teacher ________ us about the TOEFL right now. This ________ will be very helpful to all of us.
In English, verbs change to nouns in several ways. Some verbs become nouns by adding the suffix -y—for example, embroider (v.) becomes embroidery (n.). Complete each sentence with the correct form of the words on the left. Use the correct tense of the verb in either the affirmative or the negative form. Use the singular or plural form of the noun.

1. John’s boat sank in the middle of a deep lake. However, he ________ it with the help of some friends. The difficult ________ took several hours.

2. An important ________ that may take place soon is the cure for cancer. Researchers ________ a cure for cancer in the near future.

3. After studying English for four years, Angela finally ________ the language. Her ________ of English helped her get a higher paying job.

4. When Marla arrived at the airport, she ________ about flights to Paris and to London. Marla made both ________ at the Information Desk.

5. The letter carrier ________ the mail early every morning. She comes in the afternoon. I am excited about the ________ because I am waiting for information about my college application.

**Word Partnership**

Use deliver with:

- deliver a letter
- deliver mail
- deliver a message
- deliver news
- deliver a package
- deliver a lecture
- deliver a speech
- deliver a baby
- deliver a blow
Vocabulary in Context

<table>
<thead>
<tr>
<th>although (conj.)</th>
<th>excavation (n.)</th>
<th>in fact</th>
<th>sealed (adj.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>custom (n.)</td>
<td>if so</td>
<td>predict (v.)</td>
<td></td>
</tr>
<tr>
<td>discovered (v.)</td>
<td>in addition</td>
<td>recover (v.)</td>
<td></td>
</tr>
</tbody>
</table>

Read the following sentences. Complete each blank space with the correct word or phrase from the list above. Use each word or phrase only once.

1. __________ I am sick, I can't stay home. I have to go to work anyway.

2. Debbie is doing very well in college. __________, she got 100% on her last five tests and an A+ on her research paper.

3. In the United States, it is a __________ for people to shake hands when they first meet.

4. Today, bottles and cans in stores are carefully __________ to prevent air and germs from getting inside.

5. The supermarket may be open late tonight. __________, I will go shopping after work instead of early tomorrow morning.

6. During the __________ of an old building, construction workers found some ancient artifacts.

7. English students must study grammar. __________, they must study reading, writing, and listening comprehension.

8. Tommy left his sweater in the cafeteria. Fortunately, he was able to __________ it at the Lost and Found Office.

9. Some people go to fortune tellers, who use cards in order to __________ what the future will be.

10. Christopher Columbus __________ America in 1492. Before Columbus found America, most people did not know about its existence.
Critical Thinking Strategies

Read the following questions and think about the answers. Write your answer below each question. Then compare your answers with those of your classmates.

1. After the archeologists opened the second chamber and took pictures, they sealed it up again. Why did they close it again?

2. What are some other ways that archeologists can preserve important historical sites during and after excavations?

Topics for Discussion and Writing

1. a. How do archeological discoveries help us understand the past?

   b. Why is understanding the past important?

2. How can the analysis of ancient air be important?
3 a. Do you think it is important not to disturb ancient locations? Why or why not?

________________________________________________________________________

________________________________________________________________________

b. Are there times when it is better to remove ancient artifacts and take them to a museum? When?

________________________________________________________________________

________________________________________________________________________

4 Write in your journal. The archeological team left the second boat in the chamber and sealed it again. Do you think it would be better to put the second boat in a museum, too? Why or why not?

Follow-Up Activity

In groups of three or four, form a panel of experts. Someone has discovered the ruins of an ancient city in your country. Your government wants to investigate this site and has asked your panel to plan the excavation. In your group, decide who you will need to help you with this project. Plan the work that your group will do at this location. Decide which artifacts you will take away to a museum and which ones you will leave at the site. When you are finished, compare your plan with your classmates’ plans. As a class, decide which plans the government should use.
Archeologists made an exciting ________ in Egypt in 1954. During an excavation near the base of the Great Pyramid, they uncovered an ancient crypt. Although they believed that this discovery would help us understand Egypt’s past, they also hoped that it would give us important ________ about the future.

This ________ was a tomb, or burial place, for a dead Egyptian pharaoh, or ________. Historians believed that the Egyptians buried their pharaohs with two boats: one to carry the body and another to carry the soul. This was one of their religious customs about death. The archeologists expected to find two boats inside the crypt. As they broke the crypt open, they smelled the scent of wood. The ancient Egyptians had sealed the room so effectively that the aroma of the cedar wood was still preserved. Inside the crypt, archeologists found a 4,600-year-old boat that was in almost perfect condition. In ________, they found another closed room next to the crypt. Archeologists and historians believed that this chamber contained the second boat. If ________, archeologists would have better information about the past. They would be sure about the religious ________ of burying pharaohs with two boats.
this was not the only information they hoped to find. They wondered if the air in the two rooms contained something special that helped to preserve the wood. This information could help in the preservation of artifacts in museums throughout the world. Researchers also hoped to find some answers about the future by carefully the air in the second chamber. When the archeologists opened the first chamber, all the old air escaped. Scientists wanted to the air in the second chamber, it with the air of the present, and then examine the differences, especially differences in the level of carbon dioxide (CO₂). This information might help them changes in the air in the future. They also did not want outside air to get inside the chamber. Careful planning would be necessary in order to open the second room and save the air. In it took years to plan the excavation and to design and make the equipment necessary to open the chamber and collect the air inside.

Finally, in October 1986 an international team of scientists, using special equipment, drilled through the roof of the chamber. The hole they made was kept carefully. As they broke into the ancient room, they realized that the chamber was not sealed. They took an air sample. The inside was the same as the air outside. Then the team lowered a light and a camera into the small hole and looked at the interior of the room on a television monitor. The second boat was really there!

After the scientists took samples of the air inside the and photographed it completely, they sealed up the hole in the roof and left the room as they had found it. they did not get samples of 4,600-year-old air, they did learn that the Egyptian custom of burying pharaohs with two boats is true. They also practiced a new, non-destructive approach to archeology: investigate an ancient location, photograph it,
and leave it untouched. When archeologists opened the first chamber, they removed the boat. The Egyptian government built a [19] on the site for the first boat. During the construction of the museum, the vibrations from the heavy machinery disturbed the second room and probably destroyed the seal. Water leaked in, too, so the second boat was not as well preserved as the first boat.

The investigation of the second chamber taught archeologists a valuable lesson. New [20] will not only use modern technology, but they will also follow the idea of preserving the entire location for future studies.
Prereading Preparation

1 What is surgery? Why is surgery performed? Where is surgery performed?

2 Examine both photographs and look at the title of the chapter. How many people are in the operating room in the first picture? How many are in the second picture? Who are these people?

3 Which picture has fewer people? Why are there fewer people?

4 Look at the two photos again. Which kind of surgery do you think is better? Why?
Medical Technology: Saving Lives with Robotics

In most operating rooms today, there are two or three surgeons, an anesthesiologist, several nurses, and the patient. All of these people are needed for even a simple surgery. In fact, most surgeries require about a dozen people in the room. This, however, might possibly change in the very near future. Surgical robots may replace several surgeons during one operation. In a few hospitals today, an operation needs only one surgeon, a computer and a surgical robot. Looking even further into the future, the surgeon may not have to be there at all!

Robotic surgery has many advantages. It can be less traumatic for the patient. For example, during traditional heart surgery, the surgeon must open the patient’s chest in order to perform the operation. Often, the opening, or incision, is about one foot (30 cm) long. However, with the newest robotic surgery, called the da Vinci system, it’s possible to make only three or four small incisions—about an inch (about two centimeters) each—instead. Because the incisions are so much smaller, the patient experiences much less pain and bleeding. As a result, he can recover much faster. The da Vinci system is also an improvement in another way. Robotic surgery can be performed more quickly than traditional surgery, which means the surgeons are not so exhausted when they’re finished.

During the robotic surgery, the doctor controls the robotic “arms” using a computer. Currently, the doctor must be in the operating room with the patient for the robotic systems to react instantly to the doctor’s hand movements. However, the doctor does not have to be right next to the patient. In fact, he can actually be a few feet away. With further developments in this technology, the doctor will be able to control the robot from another room. When that becomes possible, it’s only a matter of time before the doctor does not have to even be in the same hospital, or even the same state, as the patient. This would allow surgeons to perform operations on patients miles away—even hundreds of miles!

Michael Troy strongly believes that the da Vinci robotic surgery system saved his life. He was a 22-year-old college student when he learned that he had kidney cancer. The news was devastating. “I thought this was the end for me,” Michael said. “Many doctors did not want to perform surgery on me because my cancer was so severe. They would have to make a huge incision in my back in order to remove my kidney.” Then one of Michael’s doctors suggested that Michael might have one other option. He sent Michael to see Dr. Fuentes at Queens Memorial Hospital in Clemens, Missouri. Dr. Fuentes said to Michael, “I think I can save your kidney.” At first, Michael did not believe the doctor.
“Of course I was skeptical,” Michael says. Then Dr. Fuentes told Michael about the da Vinci robot. Dr. Fuentes explained that in order to remove the cancer and save Michael’s kidney, he would need four hands to get into the small area. However, the da Vinci robot, under Dr. Fuentes’ control, could effectively perform the surgery making only small incisions to Michael’s body.

Dr. Fuentes showed Michael a video of the da Vinci system. “After I watched the video, I knew that this was the best—maybe even the only—possible treatment for me.” A week later, Michael had the surgery. As promised, Dr. Fuentes saved a large part of Michael’s kidney, and removed the cancer. “This was all due to the da Vinci system,” adds Michael. Today, Michael is a healthy college graduate. “I’m so grateful to Dr. Fuentes for saving my life and my kidney,” says Michael. “I would recommend the da Vinci system, especially because my tumor was so large. I didn’t want to lose a kidney at such a young age.”

Robotic surgery is still new technology. However, doctors believe there may be even more astonishing technology in the operating rooms of the future: Robot surgeons. At Duke University in North Carolina in the U.S., doctors and scientists are working to develop a robot that can perform surgery by itself. Dr. Steve Smith of Duke University thinks that the technology could reduce the cost and time necessary to complete some surgical procedures. “We keep giving the robot more and more complex tasks,” said Dr. Smith. “So far the robot has been able to accomplish these tasks automatically.” Many doctors, including Dr. Smith, agree that it will take about ten years before robot surgeons become a reality. Like most medical technology, in the beginning it will likely be more expensive than using a human surgeon. Eventually, doctors hope that the life-saving technology will become widely available and more affordable for all.
Fact-Finding Exercise

Read the passage again. Read the following statements. Check whether they are True or False. If a statement is false, rewrite the statement so that it is true. Then go back to the passage and find the line that supports your answer.

1. _____ True _____ False  During traditional surgery, there may be more than 10 people in the operating room.

2. _____ True _____ False  Traditional surgery is faster than robotic surgery.

3. _____ True _____ False  Patients recover much faster after traditional surgery than they do after robotic surgery.

4. _____ True _____ False  During robotic surgery, doctors use their arms to control the robot.

5. _____ True _____ False  It may be possible in the future for doctors to operate on patients who are far away.

6. _____ True _____ False  Dr. Fuentes believes that robotic surgery saved his life.

7. _____ True _____ False  Robot surgeons may perform operations without doctors in the future.
Reading Analysis

Read each question carefully. Circle the letter or the number of the correct answer, or write your answer in the space provided.

1. What is the main idea of the reading?
   a. Traditional surgery takes longer and can be more difficult than robotic surgery.
   b. In the future, robot surgeons might perform operations by themselves.
   c. Robotic surgery can be more helpful and effective for patients and doctors.

2. Read lines 1–8.
   a. What word is a synonym of require?
   b. What might possibly change in the very near future?
      1. The number of surgeons in an operating room
      2. The number of patients in an operating room
      3. The number of days that a patient must stay in the hospital
   c. This might change because
      1. people are healthier today
      2. one surgical robot may replace several surgeons
      3. surgeries today are easier and faster
   d. What does traumatic mean?
      1. Shocking and painful
      2. Frightening and worrying
      3. Long and expensive

3. Read line 10.
   a. What is an opening?
   b. How do you know?

4. Read lines 15–17.
   a. The surgeons are not so exhausted when they’re finished because
      1. robotic surgery requires fewer doctors
      2. robotic surgery is easier than traditional surgery
      3. robotic surgery takes less time than traditional surgery
b. Exhausted means
   1. very tired
   2. very busy
   3. very hungry

5 In line 27, what is the da Vinci system?
   a. A robotic surgery system
   b. A kind of traditional surgery
   c. An illness or disease

6 Read lines 27–29. Who is Michael Troy?
   a. A doctor
   b. A robot surgeon
   c. A patient

7 Read lines 29–31. The news was devastating. “I thought this was the end for me.”
   a. The second sentence means
      1. Michael thought he was going to drop out of college
      2. Michael thought he was going to die
      3. Michael thought he was going to become very sick
   b. Read the first sentence. Devastating means
      1. very upsetting
      2. very confusing
      3. very important

8 Read line 36. “Of course I was skeptical,” means
   a. Michael did not want the surgery
   b. Michael has kidney cancer
   c. Michael did not believe his doctor

9 Read lines 51 and 52. Doctors and scientists are working to develop a robot that can perform surgery by itself. This means that the robot will
   a. do the surgery alone
   b. help the doctors perform the surgery
   c. do operations on the doctors and scientists
Read lines 56–58.

a. Many doctors, including Dr. Smith, agree that it will take about ten years before robot surgeons become a reality. This means
   1. Robot surgeons are used today
   2. Dr. Smith developed robot surgeons about 10 years ago
   3. Robot surgeons will be used in about ten years

b. Like most medical technology, in the beginning it will likely be more expensive than using a human surgeon. What is an antonym for more expensive?
   1. More affordable
   2. More popular
   3. More effective

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Information Organization

Read the passage again. Underline what you think are the main ideas. Then scan the reading and complete the following chart about the differences between traditional surgery and robotic surgery. Use the sentences that you have underlined to help you.

<table>
<thead>
<tr>
<th>Differences Between:</th>
<th>Traditional Surgery</th>
<th>Robotic Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the Operating Room:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Incision:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recovery Time:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the Future:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michael Troy’s Experience:</td>
<td>Why didn’t he have traditional surgery?</td>
<td>What were the results of his robotic surgery?</td>
</tr>
</tbody>
</table>
Information Recall and Summary

Read each question carefully. Use your chart to answer the questions. Do not refer back to the passage. When you are finished, write a brief summary of the reading.

1. What are the main differences between traditional surgery and robotic surgery?
   a. ____________________________________________
   b. ____________________________________________
   c. ____________________________________________

2. What is the future of robotic surgery?
   ____________________________________________
   ____________________________________________

3. Which kind of surgery helped Michael Troy? Why?
   ____________________________________________
   ____________________________________________

Summary

Work in pairs or alone. Write a brief summary of the reading, and put it on the board. Compare your summary with your classmates'. Which one best describes the main idea of the reading?

__________________________________________

__________________________________________

__________________________________________
Dictionary Skills

Read the following sentences. Use the context to help you understand the boldface words. Read the dictionary entry for that word and circle the appropriate definition. Then rewrite the sentence, using the definition you have chosen. Be sure to make your sentence grammatically correct.

1. recover  v.  
   1. [I] to regain one’s health: He recovered from his illness and is well again.
   2. [T] to get s.t. back, to get control again: Workers recovered a sunken boat from the lake.
   3. [T] to make up for losses: The race car driver recovered the time he lost at the start of the race and won.
   4. [T] to put a new cover (new material) on s.t.: to recover a sofa -adj. recoverable.

Because the incisions are so much smaller, the patient experiences much less pain and bleeding. As a result, he can recover much faster.

2. react  v.  
   1. [I] to speak or move when s.t. happens: When he heard the good news, he reacted with a smile.
   2. to act in a different way because of s.o. or s.t.: The teacher reacted to the student’s bad grades by giving him more homework.
   3. (in chemistry) to change because of contact with another chemical: Oxygen and iron react together to form rust.

Currently, the doctor must be in the operating room with the patient for the robotic system to react instantly to the doctor’s hand movements.

3. option  n.  
   1. [C; U] a choice, (syn.) an alternative: She has two options: she can stay here or leave.
   2. [C] a right to buy s.t. at a stated price: He has a 90-day option to buy that house for $170,000.

Michael said, “They would have to make a huge incision in my back in order to remove my kidney.” Then one of Michael’s doctors suggested that Michael might have one other option.
In English, the verb and noun forms of some words are the same—such as *need* (n.) and *need* (v.). Complete each sentence with the correct form of the words on the left. Use the correct tense of the verb in either the affirmative or the negative form. Use the singular or plural form of the noun. In addition, indicate whether you are using the noun (n.) or the verb (v.) form.

**change**  
1. When Michael **changed** (n., v.) his job, he and his family had to **move** (n., v.) to California. It was a big **change** (n., v.) for everyone.

**need**  
2. In many countries there is a great **need** (n., v.) for clean **water**. People **need** (n., v.) it for drinking and for cooking.

**experience**  
3. Barbara went to college in Spain because she wanted to **experience** (n., v.) life in a different country. She had many new and exciting **experiences** there.

**control**  
4. I use a remote **control** (n., v.) to turn my TV on and off. However, it **controls** (n., v.) my radio. I must turn that on by myself.

**end**  
5. The **end** (n., v.) of the semester will be very sad for Kayla because she will miss her classmates when the **class** (n., v.) ends.
PART 2

In English, verbs become nouns in several ways. Some verbs become nouns by adding the suffix –ment, for example, appoint (v.) becomes appointment (n.). Complete each sentence with the correct form of the words on the left. **Use the correct tense of the verb in either the affirmative or the negative form. Use the singular or plural form of the noun.**

**require (v.)**
1. The college ___________ all students to have certain immunizations. You cannot attend college without this ___________.

**move (v.)**
2. When the bus suddenly ___________ yesterday, a passenger fell out of his seat. The unexpected ___________ caused him to fall.

**improve (v.)**
3. Teresa’s piano skills ___________ every day. Her ___________ is a result of her constant practice.

**develop (v.)**
4. The ___________ of a paragraph is not very hard, but first you need a main idea. After you ___________ that, you can write the rest of the paragraph.

**treat (v.)**
5. Some medical ___________ involve surgery because doctors ___________ all illnesses with only medicine.

**Word Partnership**

Use treatment with:

- **v.** get/receive treatment, give treatment, undergo treatment
- **n.** treatment of addiction, AIDS treatment, cancer treatment, treatment center, treatment of an illness, treatment of prisoners
- **adj.** effective treatment, medical treatment, better treatment, equal/unequal treatment, fair treatment, humane treatment, special treatment
Vocabulary in Context

<table>
<thead>
<tr>
<th>affordable (adj.)</th>
<th>option (n.)</th>
<th>require (v.)</th>
<th>surgery (n.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>exhausted (adj.)</td>
<td>patient (n.)</td>
<td>skeptical (adj.)</td>
<td></td>
</tr>
<tr>
<td>incision (n.)</td>
<td>recover (v.)</td>
<td>surgeon (n.)</td>
<td></td>
</tr>
</tbody>
</table>

Read the following sentences. Complete each blank space with the correct word from the list above. Use each word only once.

1. Gloria is ____________. She ran 10 miles this morning, and then worked all day.

2. Dr. Mallory is the ____________, who will perform the operation this afternoon.

3. Thank you for offering to help me, but I do not ____________ any assistance.

4. The nurse took care of the ____________, then recorded his condition in a book.

5. Anna is very ____________ of John’s ability to drive a car. He has had three accidents already this year!

6. That car costs $40,000. It’s too expensive for me. I need a more ____________ one.

7. The surgeon made a two-inch ____________, then continued with the operation.

8. Cynthia has never had ____________. In fact, she has never been in a hospital.

9. I am sorry to hear that you are ill. I hope that you ____________ very quickly.

10. When you take this exam, you have the ____________ of writing it on paper, or on a computer.
Critical Thinking Strategies

Read the following questions and think about the answers. Write your answer below each question. Then compare your answers with those of your classmates.

1. Traditional surgeries require a lot of people in the operating room. Why do you think this is so?

2. Robotic surgery would allow surgeons to perform operations on patients miles away. Do you think a patient would want a surgeon who is so far away? Why or why not?

3. Michael had surgery for his kidney cancer. What other kinds of operations will be possible with robotic surgery?

4. How can modern technology help a surgeon perform an operation that is less dangerous for the patient?

Topics for Discussion and Writing

1. Robotic surgery is new medical technology that can help a lot of people. What is another type of medical technology that helps people? Write about it.
Robotics is used for some surgeries. What other uses might there be for robotics in the field of medicine?

Write in your journal. Describe an experience you, or someone you know, had with a surgical procedure in a hospital. What was the procedure? How was it performed? How quickly did you, or the person you are writing about, recover?

Follow-Up Activities

You are going to interview Michael Troy about his robotic surgery. Make a list of questions for him. Then, exchange your questions with one of your classmates. Pretend that you are Michael Troy, and write answers to your classmates’ questions.
Cloze Quiz

Read the passage below. Fill in the blanks with one word or phrase from the list. Use each word or phrase only once.

| as a result | in fact | operation | surgeons |
| computer    | incision| patient   | surgery  |
| exhausted   | instead | perform   | surgical |
| future      | needed  | robotic   | traditional |
| however     | open    | smaller   | traumatic |

In most operating rooms today, there are two or three _______ (1), an anesthesiologist, several nurses, and the _______ (2). All of these people are _______ (3) for even a simple surgery. _______ (4), most surgeries require about a dozen people in the room. This, _______ (5), might possibly change in the very near future. _______ (6) robots may replace several surgeons during one _______ (7). In a few hospitals today, an operation needs only one
surgon, a ________, and a surgical robot. Looking even further into the ________, the surgeon may not have to be there at all!

Robotic ________, has many advantages. It can be less ________ for the patient. For example, during ________ heart surgery, the surgeon must ________ the patient’s chest in order to ________ the operation. Often, the opening, or ________, is about one foot (30 cm) long. However, with the newest ________ surgery, called the da Vinci system, it’s possible to make only three or four small incisions—about an inch (about two centimeters) each—_______. Because the incisions are so much ________, the patient experiences much less pain and bleeding. ________, he can recover much faster. The da Vinci system is also an improvement in another way. Robotic surgery can be performed more quickly than traditional surgery, which means the surgeons are not so ________ when they’re finished.
Prereading Preparation

1. What do you know about the planet Mars?

2. Do you think life exists on Mars today? Why or why not?

3. How can we find out if there is life on Mars?

4. Why are scientists so interested in exploring Mars?
Mars: Our Neighbor in Space

Ever since people first looked up at the night sky, they have been fascinated by the planet Mars. When scientists started using telescopes to try to see the Red Planet, they wondered if there could be life on Mars. However, for hundreds of years, they could only ask questions. There was no way to actually travel to another planet.

When space exploration began in the 1960s, many countries sent unmanned spacecraft to Mars to find out everything they could about our nearest planetary neighbor in space. Unfortunately, only half were successful. Twelve missions landed on the surface, but only seven sent information back to Earth.

In spite of the numerous failures, astronomers all over the world are hopeful as each Mars mission approaches the Red Planet. For example, Mars Observer, an American spacecraft, was scheduled to move into orbit around Mars and begin sending new information back to Earth. Mars Observer was going to study the Martian atmosphere and surface. Unfortunately, scientists lost contact with Mars Observer, and the mission, which cost $845 million, failed.

In contrast, the United States’ mission to Mars in 1996 was a great success. Mars Pathfinder sent back more images of Mars than all the previous Mars missions combined. More recently, in 2007, the Mars Reconnaissance Orbiter sent back to Earth more information than all other Mars missions put together. The Phoenix Mars Lander, in 2008, returned an enormous amount of data as well.

What kinds of information did the successful Mars missions obtain? In 1976, the Viking spacecraft searched for signs of life, but the tests that they performed had negative results. However, scientists wanted to investigate further into the possibility of life on Mars. This was the purpose of the unsuccessful Mars Observer mission in 1993.

Scientists’ interest in the Red Planet is based on an assumption. They believe that 4.5 billion years ago, Mars and Earth began their existence under similar conditions. During the first billion years, liquid water—in contrast to ice—was abundant on the surface of Mars. This is an indication that Mars was much warmer at that time. Mars also had a thicker atmosphere of carbon dioxide (CO₂). Many scientists think it is possible that life began under these favorable conditions. After all, Earth had the same conditions during its first billion years, when life arose. At some point in time, Earth developed an atmosphere that is rich in oxygen, and an ozone layer. Ozone (O₃) is a form of oxygen. The ozone layer protects Earth from harmful ultraviolet light from the sun. While life not only began on Earth, it also survived and became more complex. In contrast, Mars lost its thick atmosphere of carbon dioxide. Ultraviolet radiation intensified. The planet eventually grew colder, and its water froze.
A biologist at NASA (the National Aeronautics and Space Administration), Chris McKay, has suggested three theories about life on Mars. One possibility is that life never developed. A second possibility is that life arose on Mars just as it did on Earth and survived for at least a billion years. The third is that life arose and simple organisms developed. When environmental conditions on Mars changed, life ended.

Since the early missions, spacecraft have mapped the planet’s surface and have landed in better locations. The spacecraft have searched for simple life forms (microorganisms) as well as for signs of water. To date, none of the Mars missions has discovered any sure signs of past or present life. Nonetheless, scientists worldwide are not discouraged. If life ever existed on Mars, they believe that future missions might find records of it under sand, or in the ice. They are thrilled with the data they have obtained so far, and are planning a number of missions in the future. These missions might include airplanes or balloons, which can explore many different sites on the planet’s surface.

Even if future missions discover no evidence of past or present life on Mars, scientists will look for the answers to other, intriguing questions. How is Earth different from Mars? Why did life develop here on our planet and not on Mars? Are we alone in the universe?
Fact-Finding Exercise

Read the passage again. Read the following statements. Check whether they are True or False. If a statement is false, rewrite the statement so that it is true. Then go back to the passage and find the line that supports your answer.

1. _____ True _____ False  The *Mars Observer* mission was successful.

2. _____ True _____ False  The *Mars Pathfinder* mission was successful.

3. _____ True _____ False  The *Viking* spacecraft found signs of life on Mars.

4. _____ True _____ False  Mars and Earth were very similar 4.5 billion years ago.

5. _____ True _____ False  Scientists believe there is liquid water on Mars now.

6. _____ True _____ False  During their first billion years, Earth and Mars both had a thick atmosphere of carbon dioxide.

7. _____ True _____ False  Chris McKay suggested four theories about life on Mars.

8. _____ True _____ False  Scientists are planning more missions to Mars.
Reading Analysis

Read each question carefully. Circle the letter or the number of the correct answer, or write your answer in the space provided.

1. What is the main idea of the passage?
   a. NASA biologists have three possible theories about life on Mars.
   b. The United States sent two missions to Mars, but one was unsuccessful.
   c. Scientists have always been interested in the possibility of life on Mars.

2. The author of this article is in favor of sending more spacecraft to Mars.
   a. Yes
   b. No
   c. We don’t know

3. In line 2, what does the Red Planet refer to?
   a. The sun
   b. Earth
   c. Mars

   a. When did space exploration begin?
      1. 1950–1959
      2. 1960–1969
   b. What does our nearest planetary neighbor in space mean?
      1. The sun
      2. The spacecraft
      3. Mars

5. Read lines 9 and 10.
   a. In spite of means
      1. because of
      2. despite
      3. as well as
   b. Numerous means
      1. many
      2. a few
      3. some
6. Read lines 12–19. Which missions to Mars were successful?
   a. Mars Observer
   b. Mars Pathfinder
   c. Mars Reconnaissance Orbiter
   d. a, b, and c
   e. only b and c

7. Read lines 13–19.
   a. What does *in contrast* indicate?
      1. Two similar ideas
      2. Two opposite ideas
   b. Which two words show this relationship?

8. Read lines 22–24.
   a. What was the purpose of the Mars Observer?

   b. Was it successful?
      1. Yes
      2. No

9. Read lines 25–27. Which of the following statements is true?
   a. Mars is older than Earth.
   b. Earth is older than Mars.
   c. Mars and Earth are the same age.

10. Read lines 27 and 28. “During the first billion years, liquid water—in contrast to ice—was abundant on the surface of Mars.”
    a. What form does the water on Mars have today?
       1. Liquid
       2. Solid
    b. How do you know?

11. In lines 29–30 and in line 33, what do CO₂ and O₃ represent?
    a. Chemical symbols
    b. Abbreviations
    c. Amounts
12. In line 38, what is in parentheses?
   1. An abbreviation
   2. The purpose of NASA
   3. The words that NASA stands for

b. Why do you think NASA is used in the sentence, and National Aeronautics and Space Administration is in parentheses?

13. In lines 45 and 46, what are microorganisms?

b. Why is microorganisms in parentheses?
   1. It is an example.
   2. It is a special word.
   3. It is a foreign word.

14. Read lines 46–51. What is a synonym for to date?
Information Organization

Read the passage again. Underline what you think are the main ideas. Then scan the reading and complete the following chart, using the sentences that you have underlined to help you. You will use this chart later to answer questions about the reading.

**Missions to Mars**

<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
<th>Success/Failure</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Theories about life on Mars:**
1. 
2. 
3. 

**Similarities between Earth and Mars:**

**Differences between Earth and Mars:**

**Questions that scientists want to answer:**
Information Recall and Summary

Read each question carefully. Use your chart to answer the questions. Do not refer back to the passage. When you are finished, write a brief summary of the reading.

1. What were the names and dates of the missions to Mars? Which ones were successful?
   - 
   - 
   - 

2. Describe the three theories about life on Mars.
   a. 
   b. 
   c. 

3. a. How were Earth and Mars similar in the beginning?
   - 
   - 
   - 
   - 
   - 
   b. How did Earth and Mars become different?
   - 
   - 
   - 

4. What do scientists want to learn in the future?
   - 
   - 

CHP1R12  MARS: OUR NEIGHBOR IN SPACE 221
Summary

Work in pairs or alone. Write a brief summary of the reading, and put it on the board. Compare your summary with your classmates’. Which one best describes the main idea of the reading?

________________________________________

________________________________________

________________________________________

Dictionary Skills

Read the following sentences. Use the context to help you understand the boldface words. Read the dictionary entry for that word and circle the appropriate definition. Then rewrite the sentence, using the definition you have chosen. Be sure to make your sentence grammatically correct.

1. **perform**  
   - v. [T] to do or complete a task: He performed his regular duties quickly and quietly.  
   - [T] to fulfill, satisfy: The builder performed all the conditions of his contract.  
   - [I] to act, operate, or behave: She performs well under pressure.  
   - [I; T] to give, act out, or present a performance (of a play, piece of music, dance, etc.): The actors performed a play for the queen.

In 1976, the Viking spacecraft searched for signs of life, but the tests that [the scientists] performed had negative results.

2. **favorable**  
   - adj. 1 approving, positive: I received a favorable report from the doctor.  
   - pleasing: The first day of class, the instructor made a favorable impression on the students.  
   - advantageous, conducive: We have favorable weather for our sailing trip now.

Mars also had a thicker atmosphere of carbon dioxide (CO₂). Many scientists think it is possible that life began under these favorable conditions.
They believe that 4.5 billion years ago, Mars and Earth began their existence under similar **conditions**.

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### Word Forms

**PART 1**

In English, some verbs change to nouns in several ways. Some verbs become nouns by adding the suffix –ion or –ation—for example, **combine (v.)** becomes **combination (n.)**. Complete each sentence with the correct form of the words on the left. **Use the correct tense of the verb in either the affirmative or the negative form. Use the singular or plural form of the noun.**

<table>
<thead>
<tr>
<th>verb</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>protect (v.)</td>
<td>Bicycle helmets _________ cyclists from getting hurt. This kind of _________ is important for both adults and children.</td>
<td>When the fire started in the house, there was an _________ into how it started. The fire department _________ several different causes.</td>
<td>Very high winds can sometimes _________ a blizzard. There are other _________ as well, such as heavy snow and freezing temperatures.</td>
</tr>
<tr>
<td>protection (n.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>investigate (v.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>investigation (n.)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>indicate (v.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>indication (n.)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**explore** (v.) 4 The Viking spacecraft __________ the moon. Instead, its __________ was done on Mars.

**exploration** (n.)

**combine** (v.) 5 A peanut butter and jelly sandwich is a popular __________ for children. It’s so simple that children can __________ the peanut butter and jelly themselves.

**PART 2**

In English, the verb and noun forms of some words are the same—for example, **travel** (v.) and **travel** (n.). Complete each sentence with the correct form of the words on the left. **Use the correct tense of the verb in either the affirmative or the negative form. Use the singular or plural form of the noun. In addition, indicate whether you are using the noun (n.) or verb (v.) form.**

**schedule** 1 Debbie has a very busy __________ this semester. She __________ all of her classes in only 3 days because she __________ works full time as well.

**approach** 2 Sophia is very cautious around animals. She __________ a strange dog too quickly. She always takes a slower, more careful __________.

**record** 3 Doctors __________ all of their patients’ medications on __________ computers. In this way, they always have a __________ of their patients’ medical histories.
Each year, the Earth **orbit** the sun. This complete **orbit** takes about 12 months.

Carlos needed a **map** to get to a restaurant across town. He couldn't find one, so he used a GPS to **map** the directions instead.

**Word Partnership**

Use **map** with:

- adj. detailed map
- v. draw a map, look at a map, open a map, read a map

**Vocabulary in Context**

Read the following sentences. Complete each blank space with the correct word from the list above. Use each word only once.

1. A human being can _____________ without food or water for several days, but will die within moments without air.
2 The police always ____________ murders and robberies to try to find out who committed the crimes so they can arrest them.

3 Water is ____________ in many places, but it is rare in deserts.

4 Many scientists have a ____________ that some form of life existed on Mars, but to date, there is no proof to support their idea.

5 When Pat opened a letter from the college she had applied to, she began to cry. Susan was watching her and made the ____________ that the news was bad. Her guess was correct: Pat was not accepted by the college.

6 Many students do not ____________ well on examinations because they become very nervous and tense.

7 Fay suggested a two-month camping trip to the Himalayas next summer. Her husband Luis thought the idea was ____________. They had never done anything so exciting before!

8 Venus and Earth are ____________ in size. However, the surface temperature of Venus is 600 degrees Fahrenheit!

9 It is probably impossible for life to ever ____________ on Venus because of its intense surface heat.

10 Maria will attend college next semester, and her parents agreed to ____________ her, so she will not have to get a job.
Critical Thinking Strategies

Read the following questions and think about the answers. Write your answer below each question. Then compare your answers with those of your classmates.

1. “To date, none of the Mars missions has discovered any sure signs of past or present life. Nonetheless, scientists worldwide are not discouraged.” Why do you think scientists still believe there might be life on Mars?

2. Scientists’ interest in the Red Planet is based on an assumption. Why is there only an assumption? Why can’t scientists be sure?

Topics for Discussion and Writing

1. Do you think that life on Earth is simply an accident? Why or why not?

2. Do you think it is important for scientists to study other places in space? Explain your answer.

3. Does your country have a space program? If so, how would you compare it to the space program in the United States?

4. Write in your journal. Do you think there is life on another planet? Why or why not?
## Follow-Up Activity

Choose a planet in our solar system to read about. Prepare a report on the planet. Use the chart below to record your information. In class, work in groups of three. Discuss the planets you have chosen. Decide whether it is possible for life to exist on these planets. List your reasons. Compare your information with your classmates’ information. As a class, decide which planets could possibly support life.

<table>
<thead>
<tr>
<th>Planet</th>
<th>Diameter and Distance from the Sun</th>
<th>Description of the Planet</th>
<th>Reasons Why Life Is Possible</th>
<th>Reasons Why Life Is Not Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venus</td>
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<tr>
<td>Earth</td>
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<tr>
<td>Mars</td>
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<td>Jupiter</td>
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<td>Saturn</td>
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<td>Uranus</td>
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<tr>
<td>Neptune</td>
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</tbody>
</table>
Cloze Quiz

Read the passage below. Fill in the blanks with one word from the list. Use each word only once.

approaches  failed  Martian  spacecraft
combined  failures  missions  success
data  fascinated  neighbor  travel
Earth  information  orbit  unfortunately
exploration  Mars  scientists  unmanned

Ever since people first looked up at the night sky, they have been ________ by the planet _________. When scientists started using telescopes to try to see the Red Planet, they wondered if there could be life on Mars. However, for hundreds of years, they could only ask questions. There was no way to actually ________ to another planet.

When space ________ began in the 1960s, many countries sent ________ spacecraft to Mars to find out everything they could about our nearest planetary ________ in space. ________, only half were successful. Twelve ________ landed on the surface, but only seven sent ________ back to Earth.

In spite of the numerous ________, astronomers all over the world are hopeful as each Mars mission ________ the Red Planet. For example, Mars Observer, an American ________, was scheduled to move into ________ around Mars and begin sending new information back to ________. Mars Observer was going to study the ________ atmosphere and surface. Unfortunately, ________ lost contact with Mars Observer, and the mission, which cost $845 million, ________.
In contrast, the United States’ mission to Mars in 1996 was a great __________. Mars Pathfinder sent back more images of Mars than all the previous Mars missions __________. More recently, in 2007, the Mars Reconnaissance Orbiter sent back to Earth more __________.

UNIT 4 REVIEW

Crossword Puzzle
Crossword Puzzle Clues

ACROSS CLUES
1. The past tense of make
2. Burial place
4. John is sick now, but he will ______________ soon.
5. I am; we ______________, he is
7. A doctor who performs operations
10. I don’t want to study in another country. I need another ______________, or choice.
12. I am ______________ tired. I slept very well last night.
15. The opposite of success
18. The opposite of difficult
19. Doubtful; not believing
20. This, that, ______________, those
21. You will succeed ______________ you work hard.
22. The opposite of yes
23. The opposite of no
25. An ______________ is a person who studies the sun, planets, and stars.
26. Tightly closed
29. Very tired
33. Find
35. To learn very well; to become skilled at something
36. Doctors and nurses care for ______________ in hospitals.

DOWN CLUES
1. A simple life form
2. An unproven idea
3. My, his, ______________, our, their
6. Dig up
8. Unluckily
9. Not complex
11. The doctor made an ______________, or opening, in the patient’s chest.
13. Surgery is one kind of medical ______________.
14. Researchers perform ______________ to test their ideas.
16. An Egyptian king
17. Ask for information
24. Room
UNIT 4 DISCUSSION

1. The three chapters in this unit discuss the uses of technology in solving problems related to the past, the present, and the future. What do you think are the most important problems science and modern technology should try to solve?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

2. What can the past teach us about the present? How can this help us in the future?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

3. How does technology help us today? Give specific examples.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________