




LEARNING OUTCOMES

- > Infer degrees of difficulty
- > Mark a text
- > Scan for details
- > Use infinitives of purpose
- > Use parallel structure
- > Write a pro and con paragraph

 Go to **MyEnglishLab** to check what you know.

Exploring the Red Planet

1

FOCUS ON THE TOPIC

1. Exploring space costs a tremendous amount of money. Do you think what is learned from space exploration is worth the cost?
2. What do you know about Mars? How have scientists learned about Mars in the past? What do scientists hope to learn in the future?

2 FOCUS ON READING

READING ONE | Mars: Our New Home?

VOCABULARY

1 Read the article about a family living on Mars time. Pay attention to the boldfaced words.

ONE FAMILY'S "VACATION" TO MARS

When the Curiosity rover¹ landed on Mars in August of 2012, many of the mission's scientists on Earth decided to live on Mars time for the first 90 days of the mission. They had learned from earlier Mars missions that it is upsetting to their ability to sleep well when they are on Earth time at home and on Mars time at work. And they know that lack of sleep can lead to **depression**. Such stress does not allow them to keep working. In addition, by changing their schedules to Mars time and **simulating** Martian days on Earth, they were able to control the actions of Curiosity when the rover was facing Earth. The Earth takes 24 hours to **spin** around once, but Mars takes 24 hours and 40 minutes. Mars time quickly becomes different from an Earth day. For example, in two-and-a-half weeks, noon on Mars becomes 4:00 A.M. on Earth. The NASA scientists knew it would be a challenge to live and work on Mars time for 90 days. In fact, some of them didn't succeed in making the difficult change in their schedules. They had to go back to a normal Earth schedule due to the difficulties that an additional 40 minutes brought to their daily routine. Those scientists that didn't **survive** the 90 days said they felt **isolated** from their families because they rarely saw them.



Curiosity exploring Mars

David Oh, the Curiosity mission's head scientist, knew being separated from his family would be difficult for him. He knew that he would miss them very much even though they would be living in the same house. He was **counting on** three months of loneliness, but his family surprised him. For a month before school started, his wife and three children lived on Mars time with him. At first, he and his family thought that they would have a month of **boredom** because there would be nothing to do. Their **artificial** 24-hour-and-40-minute day would not offer a lot of activities for a young family of five. But soon they found a lot to do: bowling, eating at all-night diners, walking on the beach in moonlight, and seeing meteors² when the moon was not bright. They also cooked together, ate together, and watched movies together. David and his wife Bryn were most surprised by their children's **reaction**: they loved it and want to have another "vacation" to Mars during their next break from school!

¹ **rover**: a vehicle for exploring the surface of a moon or planet

² **meteor**: a small piece of rock that produces a bright line in the sky when it falls from space

2 Match the words on the left with the definitions on the right.

- | | |
|-------------------|--------------------------------------------------------------------------------------|
| ___ 1. depression | a. feeling alone and unable to meet or speak to other people |
| ___ 2. simulate | b. to make something look, sound, or feel like something else |
| ___ 3. spin | c. to expect something to be true |
| ___ 4. survive | d. to turn around and around |
| ___ 5. isolated | e. tired and impatient because you have nothing to do |
| ___ 6. count on | f. not real or natural, but made by people |
| ___ 7. boredom | g. something that you feel or do because of something that has happened or been said |
| ___ 8. artificial | h. to continue to live normally in spite of dangers and difficulties |
| ___ 9. reaction | i. being so sad and upset that you are unable to do anything |

➡ Go to the **Pearson Practice English App** or **MyEnglishLab** for more vocabulary practice.

PREVIEW

Look at the title of the reading and the photo. Make a list of questions that you think will be answered in this reading.

- _____
- _____
- _____

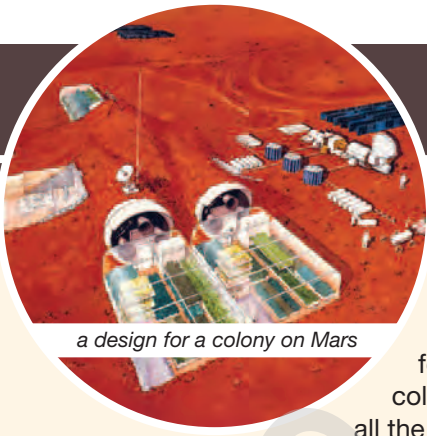
READ

Read the article about Mars on the next page. Create a chart like the one below to take notes. On the left, put the main ideas. On the right, put the details.

| TAKE NOTES | |
|----------------------------------|--------------------------|
| Main Ideas | Details |
| Mars One — looking for colonists | Dutch Co. need skills |

➡ Go to **MyEnglishLab** to view example notes.

MARS: OUR NEW HOME?



a design for a colony on Mars

- 1 If you think you'd like to live on Mars, you may have that possibility by 2031. A Dutch company called Mars One is looking for people interested in colonizing¹ Mars. If you have all the necessary skills— and there are a lot—you could be one of the first colonists to Mars. Are you ready for the challenge?
- 2 Luckily, you won't have to find the money to pay for a mission to Mars because it would cost billions of dollars. Mars One has already received money from companies and some private donors². It is also **counting on** getting money from everyday people who become interested in the Mars One TV show. On this show, colonists will be selected as people around the world watch. The show will follow teams of four applicants as they complete difficult jobs in difficult situations. The audience will vote for the best six teams. The show will be seen worldwide both on television and online. Mars One is hoping that people will become so interested in the mission that they will give large and small amounts of money . . . or at least buy a T-shirt or coffee mug—which are already available on Mars One's website.
- 3 As a future colonist in one of the six teams, you will go through years of training. If your team is the first team to travel to Mars, your main responsibility when you get there will be to build a place where humans can live. The atmosphere on Mars does not have enough oxygen³ for humans, and the land is not good enough to grow food. Colonists will have to create an **artificial** environment on Mars where there is air to breathe and land to farm. Scientists know Earth-like conditions can be **simulated** on Mars because something similar has already been done in Antarctica, where humans cannot **survive** outside the created environment.
- 4 Humans may have another problem in space as well. It takes nearly a year to get to Mars, so travelers would be without the Earth's gravity⁴ for a long time. In addition, Mars One astronauts will not return to Earth. Their mission is to start a colony that can support itself. So, the colonists will live the rest of their lives there. When a human lives in an environment without gravity or with low gravity⁵ for a long time, the systems in the body weaken. For example, muscles and bones lose strength. The heart also gets weaker. The blood in the body gets thicker, and it becomes more difficult for the heart to push blood through the body. In space, **spinning** the spaceship can create artificial gravity which can help these problems. On Mars, colonists would need to exercise and take medications to stay healthy.
- 5 It will also be difficult for Mars colonists to be **isolated**, far from home, living in small spaces, and seeing the same people over and over. It is important to come up with solutions to possible problems before anyone actually goes on a Mars mission. For instance, Mars One could make plans for colonists to communicate with friends and family on Earth. Also, people interested in the mission could be evaluated to make sure they have the emotional strength to survive. Colonists with **depression** could put the mission in danger. Fortunately, a few years ago, a joint Russian and European project called the Mars500 Mission took place. It studied people's **reactions** to long-term space travel by following six astronauts in a Mars-like environment. The astronauts spent 520 days in this environment and only had contact with their bosses and their families. The six astronauts "returned" to Earth in good physical condition—and they were still speaking nicely to each other, which is astonishing when you think about their difficult experience. Scientists viewed the Mars500 Mission as a great success because they were able to see how the astronauts handle emotional and physical stresses. Surprisingly, the greatest emotional problem was **boredom**. The greatest physical problems were not getting enough sleep and gaining too much weight.
- 6 Recent polls show that 7 percent of people would want to go on such an adventure. Mars One has already started accepting applications for colonists. Applicants do not have to have any specific training, but they must be interested in learning new things and capable of solving problems. They also should be able to trust others and complete an assignment without stopping. Interested?
-
- ¹ **colonize:** to control an area and send your own people there to live
- ² **donor:** someone who gives something, especially money, to an organization
- ³ **oxygen:** a gas in the air that has no color, smell, or taste. People, animals, and plants need it to live.
- ⁴ **gravity:** Earth's gravity is what keeps you on the ground and what causes things to fall
- ⁵ **low gravity:** the gravity on Mars is only 38 percent of Earth's gravity

MAIN IDEAS

Read the statements and check (✓) the four main ideas. Use your notes to help you. Compare the main ideas to your notes and put the number of the paragraph next to the letter.

- ☐ ____ a. Colonists could experience feelings of isolation, depression, and boredom.
- ☐ ____ b. Mars One has already started accepting applications for colonists.
- ☐ ____ c. Colonists will have to make Mars a place where they can live.
- ☐ ____ d. A TV show will help raise money for the mission.
- ☐ ____ e. Mars One has a website that sells products.
- ☐ ____ f. The human body needs gravity to stay strong.

DETAILS

1 Choose the correct answer. Use your notes to help you.

1. Which step is NOT part of the application process?
 - a. Choose your team of four.
 - b. Participate in challenging activities.
 - c. Be on worldwide television.
2. How many teams of colonists will be trained to go to Mars?
 - a. four
 - b. five
 - c. six
3. What body parts get weaker in lower gravity?
 - a. brain
 - b. bones
 - c. lungs
4. When the Mars500 astronauts returned to Earth, they were _____.
 - a. angry at each other
 - b. heavier than they were before they left
 - c. bored and tired
5. What can colonists expect when they move to Mars?
 - a. to be without Earth's gravity
 - b. to have an emotional breakdown
 - c. to pay a lot of money for the trip

2 Look at your notes and at your answers in Preview. How did they help you understand the article?

Inferring Degrees of Difficulty

An **inference** is an **educated guess** about something that is **not directly stated** in a text. Writers sometimes **suggest degrees of difficulty** without stating them explicitly. A strong reader can **infer** these **degrees of difficulty** by reading the text closely.

Look at the example and read the explanation.

Considering the cost, how difficult will it be for people to join the mission to Mars?

Choose the best answer. Write an X on the best place on the scale.

Very easy ————— Very difficult
1 2 3 4 5

(The best answer is toward the left side / easy.)

In **paragraph 2**, we learn that colonists will not have to pay for their trip. Companies and private donors will supply the money for this mission. There may be other financial implications, including having to give up your job, for example.

After reading the text closely, we can **infer** that, in terms of cost, joining the mission **won't be so difficult** since people won't have to pay anything.

1 Choose the best answer for each challenge the colonists will face on the Mars mission. Look at the paragraphs in parentheses.

1. How difficult will it be to create an artificial environment? (*paragraph 3*)

Very easy ————— Very difficult
1 2 3 4 5

2. How difficult will it be to live without or with low gravity? (*paragraph 4*)

Very easy ————— Very difficult
1 2 3 4 5

3. How difficult will it be to deal with feelings of isolation? (*paragraph 5*)

Very easy ————— Very difficult
1 2 3 4 5

4. How difficult will it be to prevent boredom? (*paragraph 5*)

Very easy ————— Very difficult
1 2 3 4 5

2 Now discuss your answers with a partner. Point out words, phrases, or statements in the paragraphs that helped you find the answers.

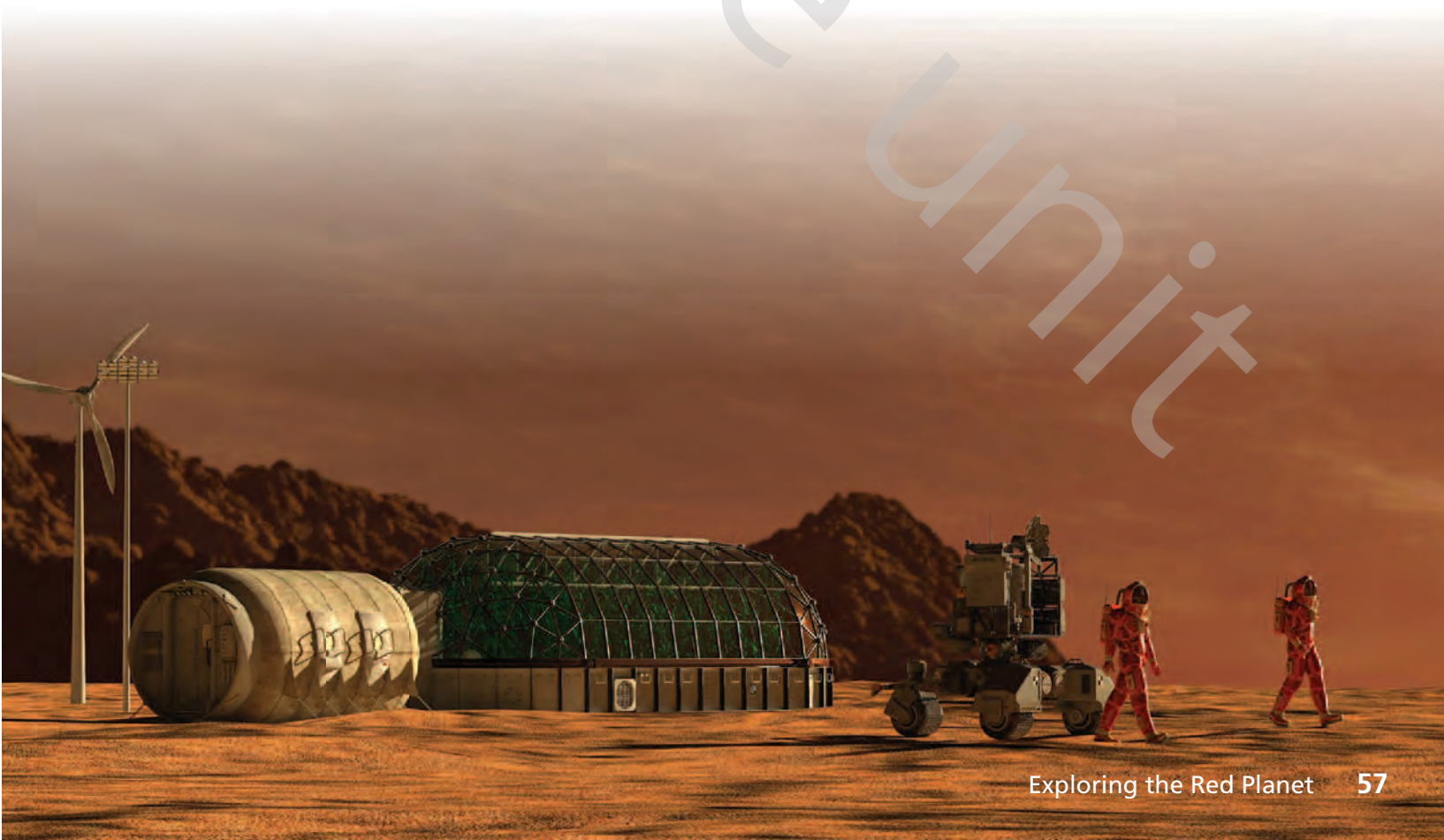
Work in small groups. Choose one of the questions. Discuss your ideas. Then choose one person in your group to report the ideas to the class.

1. Scientists believe that the information they learned from the Mars 500 project was valuable in understanding what colonists to Mars might have to face. Do you agree? Why or why not?
2. Mars One is a very complex project. What kinds of problems will make it difficult? What kinds of people, in terms of professions or areas of expertise, will be critical to the project?
3. What kinds of emotional or physical issues might the colonists have? Will these issues be difficult to deal with? Why or why not?

🖱️ Go to **MyEnglishLab** to give your opinion about another question.

USE YOUR NOTES

Use your notes to support your answers with information from the reading.



READING TWO | Timeline for a Mission to Mars

PREVIEW

- 1 Look at the title and the photo below. Read the first paragraph. Write two questions that you think will be answered in this reading.

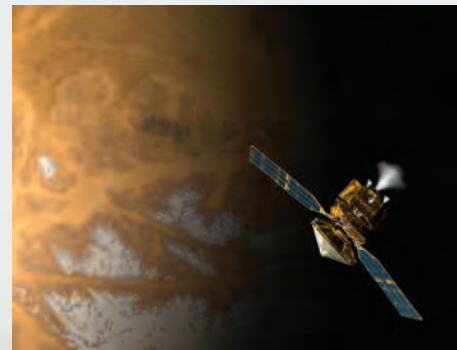
- 2 Look at the boldfaced words in the reading. Which words do you know the meaning of?

READ

- 1 Read the online article about a timeline for going to Mars. As you read, guess the meanings of the words that are new to you. Remember to take notes on main ideas and details.

Timeline for a Mission to Mars

NASA currently has five spaceships orbiting¹ Mars and one rover on the planet, but they don't have plans to send colonists there like Mars One does. Sending anyone to Mars—colonists for the rest of their lives or astronauts for two months—takes a lot of planning. Space researchers have suggested plans for sending people to Mars, and their plans are based on real facts. But since no one has ever gone to Mars, their plans are only **speculations**. For example, the people at Discovery Channel made a movie called *Race to Mars*, which follows a realistic timeline. The magazine *Popular Science* has also written about the steps needed to go to Mars. What kinds of events might scientists agree on? Here is a plan that might be proposed.



An artist's drawing of the Mars Reconnaissance Orbiter, which is studying Mars

Days 1–97 **Launching² Spaceships**

Parts for the three supply ships and one passenger ship are launched and begin to orbit the Earth. Spaceship builders put the ships together. After that, the three supply ships leave for Mars. The passenger ship waits in orbit until the astronauts arrive.

Days 98–112 **Checking the Health of the Astronauts**

The astronauts stay away from other people for two weeks before leaving Earth to avoid getting sick. Doctors make sure they are in good health.

Days 113–115 **Launching the Astronauts**

The astronauts leave Earth in the fifth ship and meet the passenger ship already in orbit. The ship connects to the passenger ship. The astronauts enter the passenger ship and make sure everything is in good working order.

Day 116 **Leaving Earth**

The **engines** fire to help the passenger ship leave the Earth's gravity. When the ship is in space, it begins to spin around. The spinning creates artificial gravity.

¹ **orbit**: to move around a planet such as the Earth while in space

² **launch**: to send a spaceship into the sky or into space

Continued on next page

Days 116–356 Traveling to Mars

The trip to Mars takes 240 days. The schedule for each day is similar to a typical Earth day. (See *Daily Schedule for Trip to Mars*)

Day 342 Reaching Mars: Supply Ships

The supply ships arrive almost two weeks before the passenger ship does. After these ships are in orbit around Mars, two of the ships land on the surface. Because they were programmed on Earth, the ships begin to work **automatically**. One of the supply ships is the artificial habitat, and it needs to be **established** in an appropriate area. The area needs to be large enough for the astronauts to do their **research** and prepare their experiments. The third supply ship waits in orbit for the passenger ship to arrive.

Day 356 Reaching Mars: Passenger Ship

After the passenger ship stops spinning, it enters orbit around Mars. It connects to the third supply ship. Then the astronauts land on Mars. The passenger ship stays in orbit.

Day 357 Beginning Mission

The astronauts move into the artificial habitat, which supplies oxygen but not full gravity. They begin their exploration of Mars, which includes drilling for water, collecting rocks, and doing experiments to determine if there was ever life on Mars.

Day 417 Leaving Mars

The astronauts take off from Mars and connect to the passenger ship. They check the ship, get it ready, and begin their return to Earth.

Day 657 Landing on Earth

The astronauts get into the small ship and land on Earth in the ocean.

Daily Schedule for Trip to Mars

| | |
|-------------|-----------------------------------------------------------------------|
| 07:00 | Artificial light comes on slowly to simulate sunrise |
| 07:30 | Breakfast |
| 08:00–12:00 | Work period (maintaining ship's systems) |
| 12:15 | Lunch |
| 12:45–14:30 | Free time (exercise, read, contact people on Earth, practice hobbies) |
| 14:30–17:30 | Work period |
| 17:30–18:30 | Exercise period |
| 18:45 | Dinner |
| 19:30–22:00 | Free time |
| 22:30 | Artificial light turns off slowly to simulate sunset |
| 23:00 | Lights out |

2 Compare your notes on main ideas and details with a partner's. How can you improve your notes next time?

Go to the **Pearson Practice English App** or **MyEnglishLab** for more vocabulary practice.

Marking a Text

When you mark a text, you identify important information. This helps you read more carefully. You can look back at the information you marked to help you study for tests and complete assignments.

There are several ways to mark a text.

Underline Draw a line under the information.

Circle Circle the information.

Highlight Highlight the information with a colored highlighter pen.

Only mark the important information you want to find later. For example, these marks focus on the types of missions NASA has on Mars:

NASA currently has five spaceships orbiting Mars and one rover on the planet, but they don't have plans to send colonists there like Mars One does.

Don't mark too much information. If you mark too much information, you will not be able to find the important information later.

NASA currently has five spaceships orbiting Mars and one rover on the planet, but they don't have plans to send colonists there like Mars One does.

1 Find the information in the text that helps you answer the questions. Choose a method to mark the text. Share your answers with a partner.

a. Who will pay for the Mars One mission?

Luckily, you won't have to find the money to pay for a mission to Mars because it would cost billions of dollars. Mars One has already received money from companies and some private donors. It is also counting on getting money from everyday people who become interested in the Mars One TV show.

b. What will the first colonists need to do on Mars?

As a future colonist in one of the six teams, you will go through years of training. If your team is the first team to travel to Mars, your main responsibility when you get there will be to build a place where humans can live. The atmosphere on Mars does not have enough oxygen for humans, and the land is not good enough to grow food. Colonists will have to create an artificial environment on Mars where there is air to breathe and land to farm.

2 Look at Reading Two again. Mark the information you think is the most important.

➡ Go to **MyEnglishLab** for more note-taking practice.

COMPREHENSION

1 Answer the questions. Use your notes from Reading Two to help you. Discuss your answers with a partner.

1. According to the proposed timeline, how long would it take to reach Mars, complete the mission, and return to Earth?
2. Five spaceships are used for the mission. What is the purpose of each ship?
3. How do the astronauts survive on Mars with no oxygen?
4. How many work hours are there in the daily schedule during the trip to Mars?

2 Review the boldfaced words from the reading with a partner. Use a dictionary or ask your teacher for any meanings you still do not know.

READING SKILL

1 Look at Reading Two again. When you looked for the boldfaced words in Preview, did you read quickly or carefully? Why did you read the way you did?

Scanning for Details

Scanning allows you to **find information quickly** without having to read the entire text. Before you read Reading Two, you were asked to look at the boldfaced words. That was scanning.

In addition to **boldfaced words**, you can scan for **key words, names, numbers, places, and dates**. Key words are words that are often repeated. Look for capital letters when you want to find a name. Numbers are easy to find.

Scanning is very useful when taking tests with a reading. First read the questions, and then scan the reading for the answers.

When you find specific information by scanning, you can mark it in the text by underlining, circling, or **highlighting** the information so that you can find it again later. You can also add the scanned information as details to your notes.

Examples:

Question: Who made the movie *Race to Mars*?

Answer: The Discovery Channel

(SCAN: Find the title of the movie in italics and read around it. MARK: Underline or circle the title.)

Question: What happens on Day 417?

Answer: The astronauts leave Mars.

(SCAN: Find that number on the list and just read what happens that day. MARK: Underline the key words.)

2 Work with a partner. Scan Reading Two for answers to the questions. When you find an answer, mark it in the text. The information in parentheses tells you where to scan.

1. How many NASA rovers are on Mars? How many ships orbit the planet? (*paragraph 1*)
2. What do astronauts do during their free time? (*daily schedule*)
3. What do the astronauts do between 17:30–18:30? (*daily schedule*)
4. What is created when the spaceship spins around? (*Day 116*)
5. The artificial habitat supplies something important for life. What is it? (*Day 357*)

👉 Go to **MyEnglishLab** for more skill practice.

CONNECT THE READINGS 🔍

ORGANIZE

Reading One (R1) and Reading Two (R2) contain information about Mars missions. Complete the chart with information from the readings.

USE YOUR NOTES

Review your notes from Reading One and Two. Use the information in your notes to complete the chart.

| PROBLEM | SOLUTION |
|-------------------------------------------------|--------------------------------------|
| 1. No oxygen in Mars atmosphere | |
| 2. Low gravity → weak muscles, bones, and heart | |
| 3. Feel isolated → far from home | |
| 4. Boredom | Keep busy → don't get bored |
| 5. | Keep busy → feel tired, sleep better |
| 6. | Required exercise periods |

SYNTHESIZE

Work with a partner. Complete the sentences with information from the chart.

There are several problems we must solve before people can live on Mars. The first problem is that people cannot live in the environment on Mars. For example, _____ . In addition, _____ . The solution to this problem is _____ .

Another problem is psychological. Colonists may feel _____ and experience _____ . To solve these problems, colonists can _____ . They can also _____ .

Finally, the colonists on Mars may have physical problems, such as _____ or _____ . They can avoid these problems if they _____ and _____ . This will help them _____ .

 Go to **MyEnglishLab** to check what you learned.

3 FOCUS ON WRITING

VOCABULARY

REVIEW

Complete the crossword puzzle. Read the clues and choose words from the box.

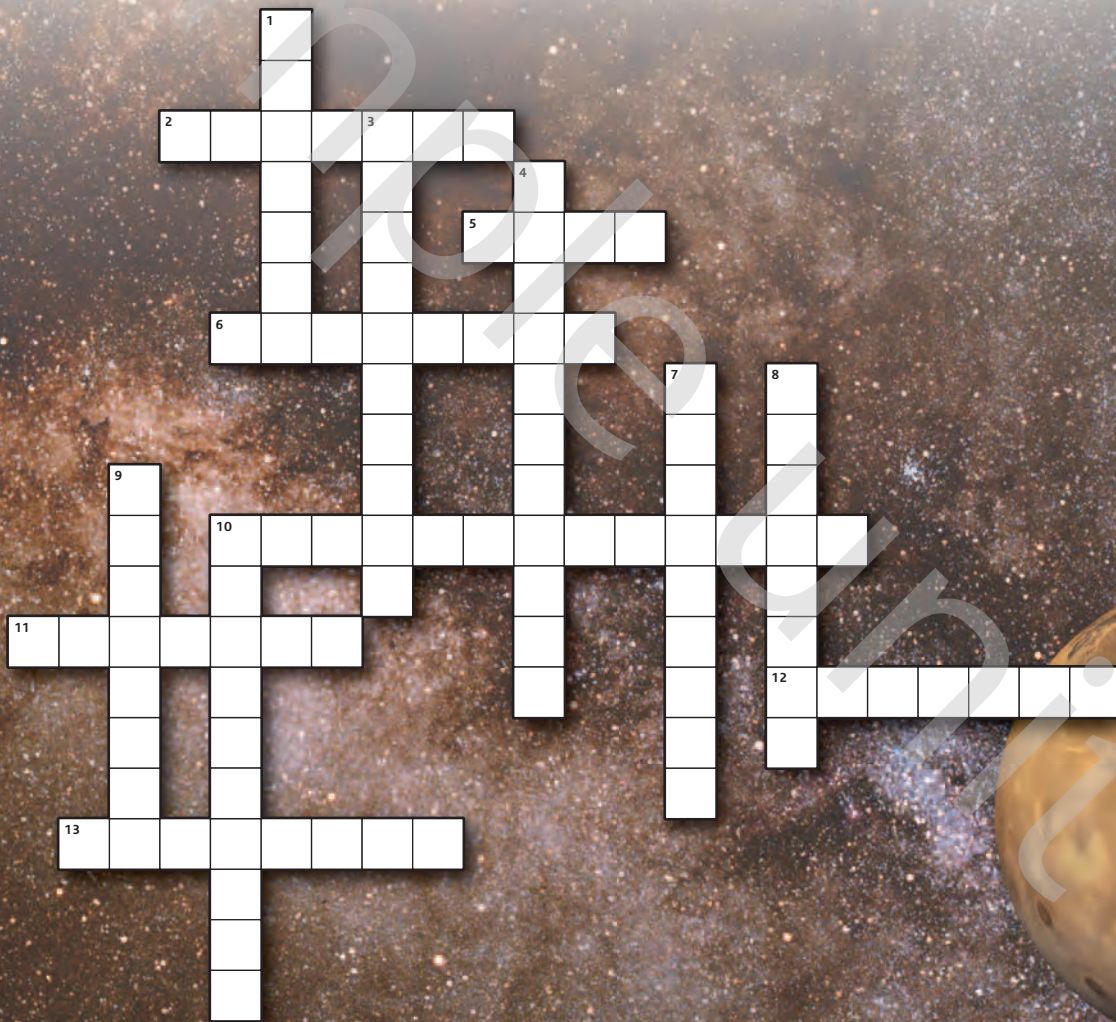
artificial
automatically
boredom

depression
engines
establish

isolated
reaction
research

simulate
speculation

spin
survive



Across

2. Small cells deep in the rock on Mars have been found, but they must be ____ from the rock in order to study them.
5. When there is a problem with Curiosity, a message is ____ sent to Earth.
8. There has been ____ about life on Mars for a long time.
9. For any living thing to ____ on Mars, there needs to be water.
10. Mars One will develop habitats on Mars that ____ the habitats in Antarctica.
13. As in previous Mars missions, scientists ____ the rovers to collect rocks.

Down

1. What would your ____ be if life were discovered on Mars?
3. Without enough sleep, the astronauts may develop ____ .
4. Without ____ , rovers cannot move around on the surface of Mars.
6. ____ suggests that life on Mars may have been possible thousands of years ago.
7. ____ isn't a problem if you are studying the possibility of life on Mars.
10. Planets ____ around much more slowly than spaceships do.
11. ____ habitats must be built on Mars in order for colonists to live there.
12. Scientists hope to ____ a Mars base in the future.

EXPAND

- 1 Complete the sentences with one of the words from the box. The missing word and the boldfaced word make up a common expression.

| | | | | |
|------------|-----------|-----------|----------|-----------|
| artificial | automatic | establish | isolated | simulator |
|------------|-----------|-----------|----------|-----------|

1. _____ **intelligence** is the science that allows computers to think and make decisions.
2. A **flight** _____ is a machine that makes you feel like you are flying, but you're really on the ground. It is used for training.
3. An _____ **incident** is an event that usually does not happen often or that happened only once.
4. An _____ **pilot** system allows airplanes to fly themselves.
5. To _____ **yourself** is to do something that makes people notice you and take your skills seriously.

- 2 Write the five expressions. You will need them for the next activity.

| | |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

CREATE

APPLY Complete the journal entry by one of the future Mars colonists. Use three of the expressions from Expand and at least five new words from this unit.

The image shows a tablet screen with a journal entry template. At the top, the status bar shows a Wi-Fi icon, the time 5:57 PM, and a battery level of 80%. The journal entry is titled 'Year 3, Day 1'. The first paragraph reads: 'I am just starting my third year of training to be a colonist on Mars, and I am really tired. Sometimes, I don't know why I wanted to do this.' Below this paragraph are five horizontal lines for writing. The second paragraph starts with 'But, when I think about everything,' followed by a horizontal line and four more lines for writing. The final line of the journal entry reads 'Lights out! I must go to bed now.'

 Go to the **Pearson Practice English App** or **MyEnglishLab** for more vocabulary practice.

GRAMMAR FOR WRITING

1 Read the sentences. Underline the verbs that have the form *to + verb*. What questions do these verbs answer?

- The engines fire to leave orbit.
- The mission was started to build a colony.
- The ship is spinning to create artificial gravity.

Infinitives of Purpose

| Questions | Answers |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Why do the engines fire? | They fire to leave Earth's orbit. |
| Why was the mission started? | It was started to build a colony on Mars. |
| Why is the ship spinning? | It is spinning to create artificial gravity. |
| 1. Infinitives (to + verb) that are used to explain the purpose of an action are called infinitives of purpose . They answer the question Why ? | The engines fire to leave Earth's orbit. The mission was started to build a colony on Mars. The ship is spinning to create artificial gravity. |
| 2. You can also use the longer form in order to + verb . | The engines fire in order to leave Earth's orbit. The mission was started in order to build a colony on Mars. The ship is spinning in order to create artificial gravity. |
| 3. Use in order not to + verb to express a negative purpose. | The ship is spinning in order not to cause bones and muscles to weaken. |

2 Match the questions on the left with the answers on the right.

| Questions | Answers |
|--------------------------------------------------------------------------|------------------------------------------------|
| ___ 1. Why does Mars One need money? | a. in order not to get sick |
| ___ 2. Why do the colonists use the radio? | b. to go to Mars |
| ___ 3. Why are the astronauts isolated before leaving on a trip to Mars? | c. in order to talk to their families on Earth |
| ___ 4. Why does Mars One have a selection committee? | d. to strengthen muscles and bones |
| ___ 5. Why will colonists exercise a lot? | e. to choose four astronauts |

3 Combine the questions and answers from Exercise Two to make sentences that answer the question "Why?"

- Mars One needs money to go to Mars.
- _____
- _____
- _____
- _____

 Go to the **Pearson Practice English App** or **MyEnglishLab** for more grammar practice. Check what you learned in **MyEnglishLab**.

In this unit, you read about a plan to build a colony on Mars. The job of a colonist is open to anyone. What are the pros and cons of accepting this position? Would you go on a Mars mission? Why or why not?

You are going to *write a paragraph answering this question and giving reasons for your decision*.

What are the pros and cons of deciding one way or the other? Evaluate your own abilities.

For an alternative writing topic, see page 73.

PREPARE TO WRITE: Evaluating Pros and Cons

Complete the chart with the pros and cons of going to Mars. Don't think too much. Quickly list any ideas that come to mind.

| PROS | CONS |
|------|------|
| | |

WRITE

Creating a Paragraph Outline

An **outline** is a plan for how you will write a text. The outline here is an example of a **paragraph outline**. An outline will help you to organize the main idea and details that you want to include, as well as your topic sentence, supporting points, supporting details, and concluding sentence.

- I. Topic Sentence
- II. Supporting Point
 - A. Supporting Detail
 - B. Supporting Detail
- III. Supporting Point
 - A. Supporting Detail
 - B. Supporting Detail
- IV. Supporting Point
 - A. Supporting Detail
 - B. Supporting Detail
- V. Concluding Sentence

1 Read the paragraph about a difficult decision. Then discuss the questions with a partner.

WHY PEOPLE JOIN MARS ONE

After graduating, some very **accomplished** students choose to apply to Mars One instead of working for a company or university. Why would someone make this choice? One reason is the **unthinkable challenge** of going into space without a chance to return. Some people like this kind of **challenge** because they want to avoid the **boredom** of an ordinary life. Secondly, these men and women want to travel in space in order to learn more about our **astounding** universe. Perhaps they would see amazing things like asteroids and stars on the way. The last reason is to enjoy the excitement of going to a completely new place where no humans have ever gone before. This is a very **risky** decision. Although the choice to join Mars One is difficult, many people believe that developing a community on Mars is a critical way for humans to survive, as well as being the adventure of a lifetime.

1. What choice did the writer face?
2. How many reasons did the writer give for the decision?
3. What were the reasons? State each reason using an infinitive of purpose.

2 Complete the outline with information from the paragraph.

- I. Topic Sentence: After graduating, some very accomplished students choose to apply to Mars One instead of working for a company or university.
- II. Supporting Point (Reason #1): the unthinkable challenge of going into space
Supporting Details: to avoid the boredom of an ordinary life
- III. Supporting Point (Reason #2): _____
Supporting Details: _____
- IV. Supporting Point (Reason #3): _____
Supporting Details: _____

3 Look at your chart from Prepare to Write on page 68. Organize your ideas into an outline. Use your outline to write the first draft of your paragraph.

- Make sure you have a strong **topic sentence**.
- Include **two or three supporting points**. Each one should focus on the reasons for your opinion. Use an infinitive of purpose for each reason. Include details to explain each supporting point.
- Write a **concluding sentence** that summarizes your reasons.

REVISE: Using Parallel Structure

1 Read the sentences about jobs at NASA. Label the subjects and the verbs.

- Most people think you have to have an advanced degree to work at NASA, but many jobs do not require engineering or science degrees.
- NASA has locations in California, Texas, Louisiana, Florida, and Maryland.

Parallel Structure

Writers use **parallel structure** when writing sentences with two or three words or phrases of the same part of speech (noun, verb, adjective, adverb), allowing them to express several ideas in one sentence.

- NASA employees **plan space missions, study weather patterns, fix computers, and type letters**.
- NASA is looking for **intelligent and educated** college graduates to work for them.

Two ideas can be expressed in one sentence:

- When I went online, I **found** the NASA job openings.
- When I went online, I **read** about the types of jobs I could do.
- When I went online, I **found** the NASA job openings and **read** about the types of jobs I could do.

A third idea can be added:

- When I went online, I **applied** for a job.
- When I went online, I **found** the NASA job openings, **read** about the types of jobs I could do, and **applied** for a job.
(Notice that **found**, **read**, and **applied** are all in the past form.)

Look at two more examples:

- I **easily** **filled** out the application and **successfully** **submitted** it.
(The phrases are parallel because they both contain an adverb and a verb.)
- I hope the job has a **good** **environment** and **friendly** **colleagues**.
(The phrases are parallel because they both contain an adjective and a noun.)

2 Combine each pair of sentences using parallel structure.

1. NASA treats its employees well.

NASA pays its employees well.

2. NASA carefully reviews each candidate.

NASA fairly reviews each candidate.

3. In college, I studied astronomy.

In college, I studied geology.

4. On my first day at my new job, the boss was very helpful.

On my first day at my new job, my co-workers were very helpful.

5. When the Curiosity rover landed on Mars, I went on Mars time.

When the Curiosity rover landed on Mars, I didn't see my family very much.

6. NASA has safely launched many spaceships.

NASA has proudly launched many spaceships.

7. I learned a lot during my first year at NASA.

I made many friends during my first year at NASA.

- 3 Describe the dream job of people who are interested in space. Complete the paragraph. Use parallel structure.

Jobs in Space

People who are interested in space would like to work there. The jobs they want are

_____, _____, and _____. People

(ADJ)

(ADJ)

(ADJ)

who get these jobs are talented because they can _____ and

(V)

_____. Workers in space are respected because they do their jobs so

(V)

_____ and _____. They love their jobs in space

(ADV)

(ADV)

because of _____ and _____

(ADJ)

(N)

(ADJ)

_____.

(N)

- 4 Now go back to the first draft of your paragraph.

- Rewrite at least three or four sentences using parallel structure.
- Try to use the grammar and some of the vocabulary from the unit.

Go to **MyEnglishLab** for more skill practice.



EDIT: Writing the Final Draft

APPLY Write the final draft of your paragraph and submit it to your teacher. Carefully edit it for grammatical and mechanical errors, such as spelling, capitalization, and punctuation. Consider how to apply the vocabulary, grammar, pronunciation, and writing skills from the unit. Use the checklist to help you.

FINAL DRAFT CHECKLIST

- ☐ Does your paragraph clearly explain the reasons for your decision?
- ☐ Does it contain a topic sentence, two or three supporting points, and a concluding sentence?
- ☐ Does each supporting point focus clearly on one reason?
- ☐ Are there details to explain each supporting point?
- ☐ Does the concluding sentence summarize the supporting points (the reasons)?
- ☐ Are there at least three infinitives of purpose, and are they used correctly?
- ☐ Does your paragraph use parallel structure?
- ☐ Do you use new vocabulary from the unit?

ALTERNATIVE WRITING TOPIC

APPLY Mars One is privately funded, but other space programs, like those in the United States, are funded by taxpayer money. Do you think spending money on space programs is worth the money that is spent? Why or why not?

CHECK WHAT YOU'VE LEARNED

Check (✓) the outcomes you've met and vocabulary you've learned. Put an X next to the skills and vocabulary you still need to practice.

Learning Outcomes

- ☐ Infer degrees of difficulty
- ☐ Mark a text
- ☐ Scan for details
- ☐ Use infinitives of purpose
- ☐ Use parallel structure
- ☐ Write a pro and con paragraph


Vocabulary

- ☐ artificial
- ☐ automatically **AWL**
- ☐ boredom
- ☐ depression **AWL**
- ☐ engine
- ☐ establish **AWL**
- ☐ isolated (*adj.*) **AWL**

Multi-word Units

- ☐ reaction **AWL**
- ☐ research (*n.*) **AWL**
- ☐ simulate **AWL**
- ☐ speculation
- ☐ spin (*v.*)
- ☐ survive **AWL**

- ☐ count on

 Go to **MyEnglishLab** to watch a video about space, access the Unit Project, and take the Unit 3 Achievement Test.