

# Reading

*and Knowledge* is a three-book series that targets intermediate English learners especially for upper elementary and middle school levels. The series focuses on various but mandatory topics for intermediate learners.

## Key Features

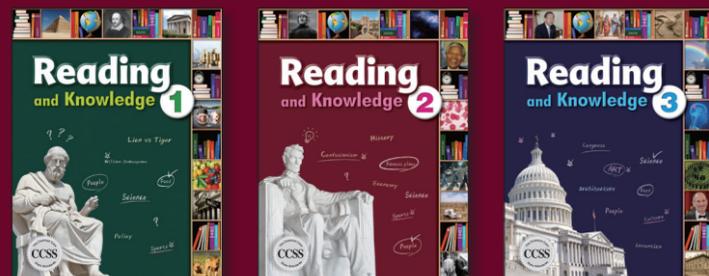
- Each book has 20 units. Each unit focuses on a unique topic. History, science, politics, economy, social studies, and world culture are just a handful of the topics included in each book.
- Before reading the main text, students are introduced to the topic with interesting fun facts and thought-provoking questions to think about in the Before You Study and Did You Know sections.
- Topics that may be unfamiliar to students are explained using level-appropriate vocabulary, and ideas are written in ways that are easy to understand.
- Each book offers opportunities to learn valuable and essential reading skills. Questions and visual aids presented help students improve their reading ability for different purposes.
- Depending on the unit, a Grammar Lesson or Vocabulary Extension section is provided. Students can significantly strengthen their English grammar and vocabulary skills by diligently studying these sections.
- At the end of each unit, students can engage in further study in the theme of the main text with the provided Critical Reading passages and questions. Students can discuss more than one point of view on a certain issue and exercise critical thinking ability.

## Components

- Student Book with CD 1~3

**Online Resources** (<http://www.twoponds.co.kr/company/download/support-list.jsp>)

- Answer Keys / Sample Lesson Plans



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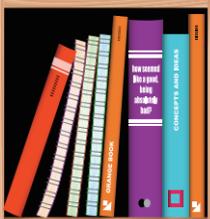
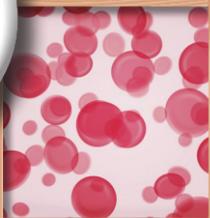
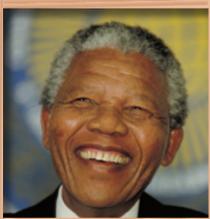
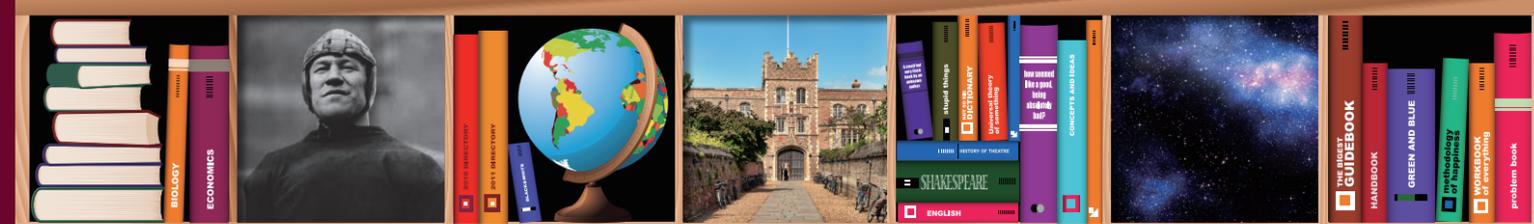
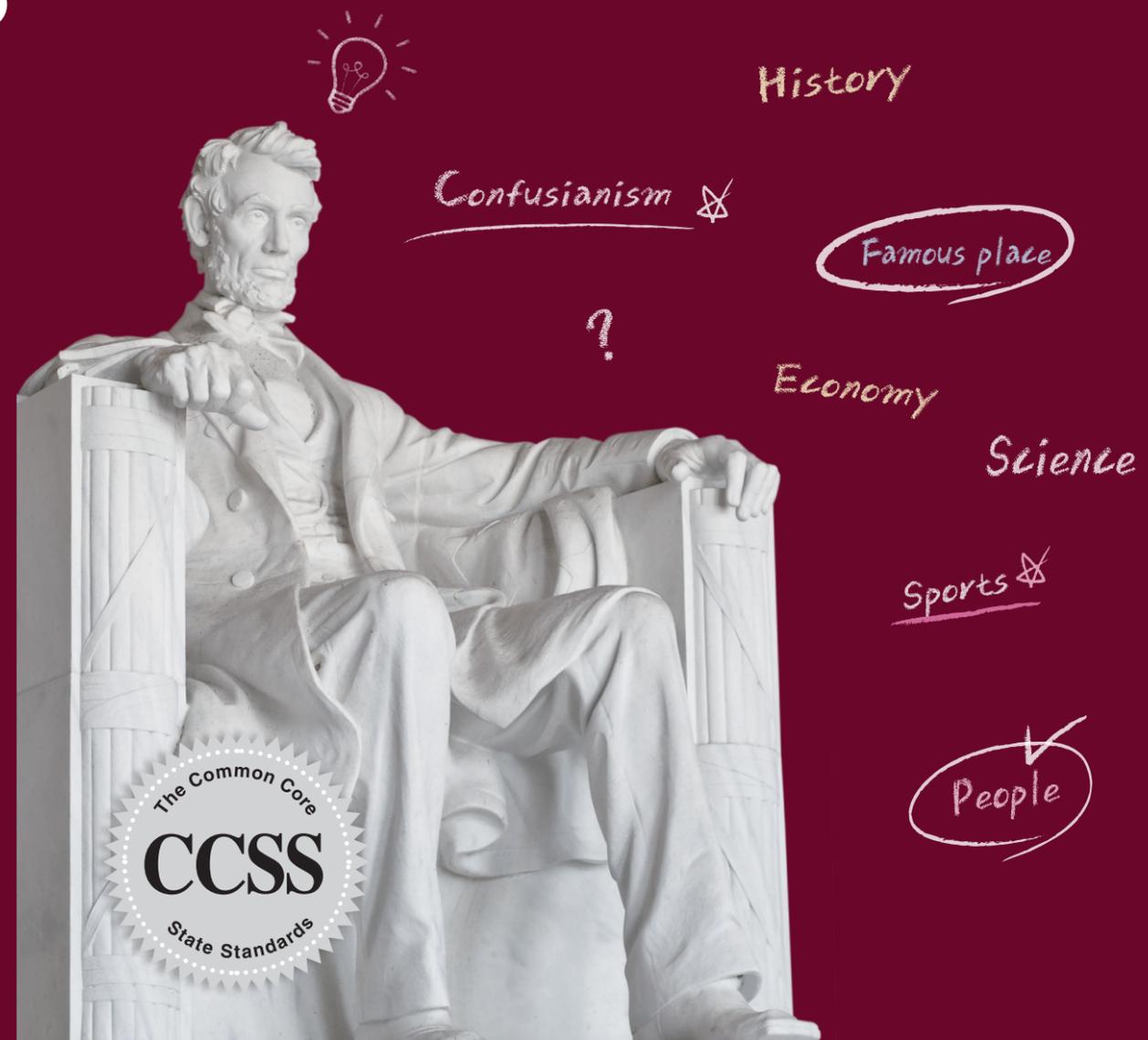
TWO PONDS

Reading and Knowledge

2

TWO PONDS

# Reading and Knowledge 2



# Reading and Knowledge 2

## Reading and Knowledge 2

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# Preview

## Before You Study

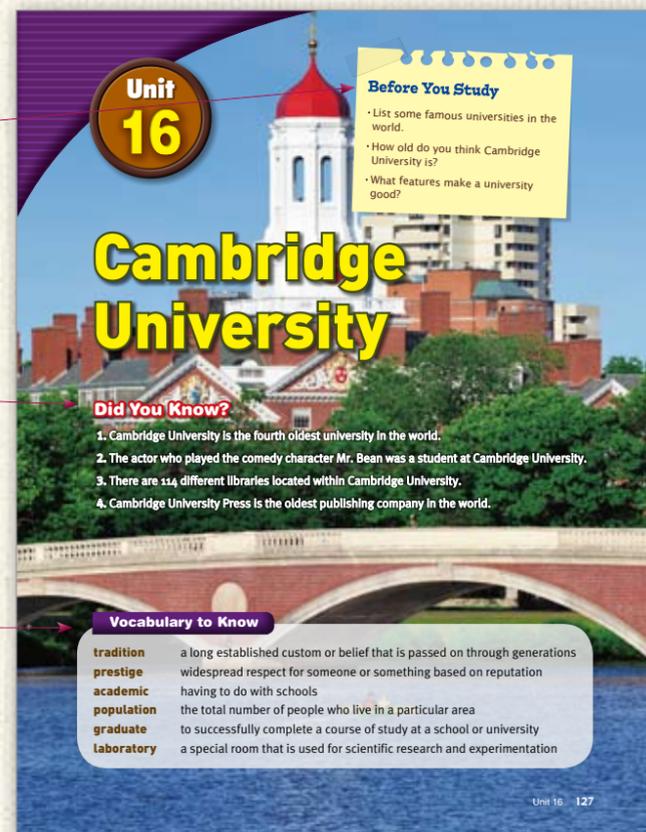
This topic relevant, pre-reading activity introduces the topic, activates prior knowledge, and warms up the mind for efficient reading.

## Did You Know?

By using interesting and thought-provoking information, this section aims to entice and motivate students for maximal learning.

## Vocabulary to Know

Words of highest relevance and/or difficulty are presented here in order to prepare readers for the passage to come and in order to serve as a quick reference for later review.



**Unit 16**

**Before You Study**

- List some famous universities in the world.
- How old do you think Cambridge University is?
- What features make a university good?

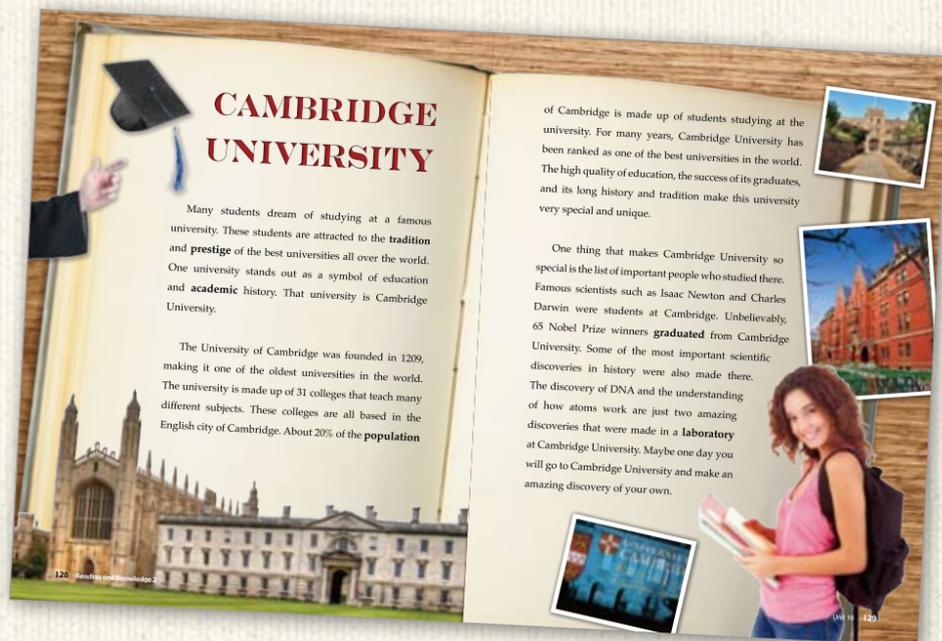
**Cambridge University**

**Did You Know?**

- Cambridge University is the fourth oldest university in the world.
- The actor who played the comedy character Mr. Bean was a student at Cambridge University.
- There are 114 different libraries located within Cambridge University.
- Cambridge University Press is the oldest publishing company in the world.

**Vocabulary to Know**

|                   |   |
|-------------------|---|
| <b>tradition</b>  | a long established custom or belief that is passed on through generations |
| <b>prestige</b>   | widespread respect for someone or something based on reputation           |
| <b>academic</b>   | having to do with schools   |
| <b>population</b> | the total number of people who live in a particular area                  |
| <b>graduate</b>   | to successfully complete a course of study at a school or university      |
| <b>laboratory</b> | a special room that is used for scientific research and experimentation   |



**CAMBRIDGE UNIVERSITY**

Many students dream of studying at a famous university. These students are attracted to the **tradition** and **prestige** of the best universities all over the world. One university stands out as a symbol of education and **academic** history. That university is Cambridge University.

The University of Cambridge was founded in 1209, making it one of the oldest universities in the world. The university is made up of 31 colleges that teach many different subjects. These colleges are all based in the English city of Cambridge. About 20% of the **population** of Cambridge is made up of students studying at the university. For many years, Cambridge University has been ranked as one of the best universities in the world. The high quality of education, the success of its graduates, and its long history and tradition make this university very special and unique.

One thing that makes Cambridge University so special is the list of important people who studied there. Famous scientists such as Isaac Newton and Charles Darwin were students at Cambridge. Unbelievably, 65 Nobel Prize winners **graduated** from Cambridge University. Some of the most important scientific discoveries in history were also made there. The discovery of DNA and the understanding of how atoms work are just two amazing discoveries that were made in a **laboratory** at Cambridge University. Maybe one day you will go to Cambridge University and make an amazing discovery of your own.

## Main Reading

This core section includes a theme-based reading that is level-appropriate but challenging. Inviting imagery accompanies the straightforward text.

## Reading Comprehension

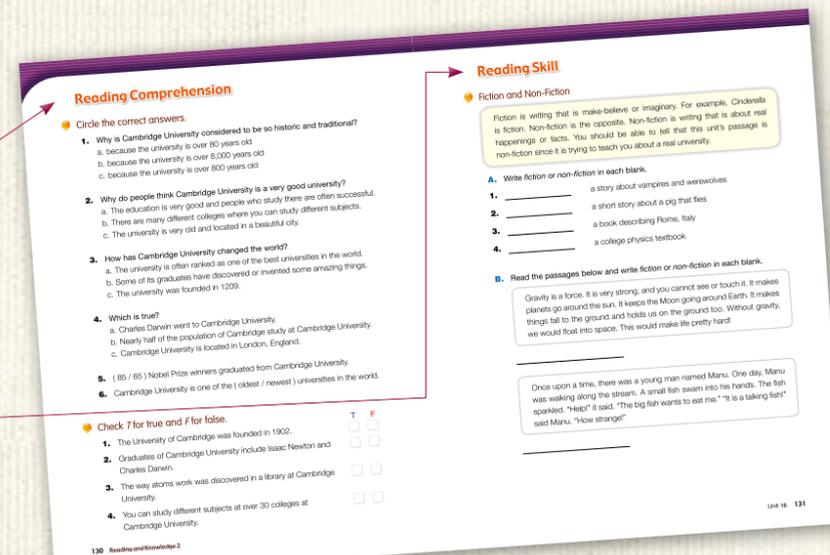
This section makes sure students have fully understood the most important ideas in the main reading.

## Reading Skill

The most important reading skills are covered here. Helpful explanations and practice exercises make sure students grasp the relevant concepts.

## Review

Summary Writing and Vocabulary Review sections give a helpful review of the unit and reinforce comprehension and vocabulary skills.



**Reading Comprehension**

Circle the correct answers.

- Why is Cambridge University considered to be so historic and traditional?
  - because the university is over 800 years old
  - because the university is over 8,000 years old
  - because the university is over 800 years old
- Why do people think Cambridge University is a very good university?
  - the education is very good and people who study there are often successful.
  - There are many different colleges where you can study different subjects.
  - The university is very old and located in a beautiful city.
- How has Cambridge University changed the world?
  - The university is often ranked as one of the best universities in the world.
  - Some of its graduates have discovered or invented some amazing things.
  - The university was founded in 1209.
- Which is true?
  - Charles Darwin went to Cambridge University.
  - Nearly half of the population of Cambridge study at Cambridge University.
  - Cambridge University is located in London, England.
- (85 / 85) Nobel Prize winners graduated from Cambridge University.
- Cambridge University is one of the (oldest / newest) universities in the world.

Check 7 for true and false.

- The University of Cambridge was founded in 1900.  T  F
- Graduates of Cambridge University include Isaac Newton and Charles Darwin.  T  F
- The way atoms work was discovered in a library at Cambridge University.  T  F
- You can study different subjects at over 30 colleges at Cambridge University.  T  F

**Reading Skill**

**Fiction and Non-Fiction**

Fiction is writing that is made-believe or imaginary. For example, Cinderella is fiction. Non-fiction is the opposite. Non-fiction is writing that is about real happenings or facts. You should be able to tell that this unit's passage is non-fiction since it is trying to teach you about a real university.

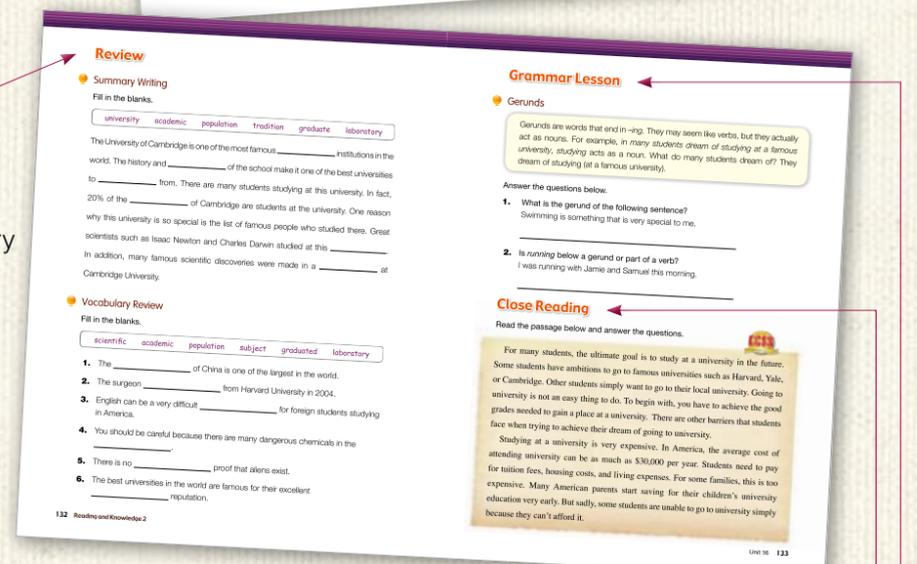
**A. Write fiction or non-fiction in each blank.**

- \_\_\_\_\_ a story about vampires and werewolves
- \_\_\_\_\_ a short story about a pig that flies
- \_\_\_\_\_ a book describing Rome, Italy
- \_\_\_\_\_ a college physics textbook

**B. Read the passages below and write fiction or non-fiction in each blank.**

Gravity is a force. It is very strong, and you cannot see or touch it. It makes planets go around the sun. It keeps the Moon going around Earth. It makes things fall to the ground and holds us on the ground too. Without gravity, we would float into space. This would make life pretty hard!

Once upon a time, there was a young man named Manu. One day, Manu was walking along the stream. A small fish swam into his hands. The fish squeaked, "Help!" it said. "The big fish wants to eat me." "It is a talking fish!" said Manu. "How strange!"



**Review**

**Summary Writing**

Fill in the blanks.

The University of Cambridge is one of the most famous \_\_\_\_\_ institutions in the world. The history and \_\_\_\_\_ of the school make it one of the best universities to \_\_\_\_\_ from. There are many students studying at this university. In fact, 20% of the \_\_\_\_\_ of Cambridge are students at the university. One reason why this university is so special is the list of famous people who studied there. Great scientists such as Isaac Newton and Charles Darwin studied at this \_\_\_\_\_. In addition, many famous scientific discoveries were made in a \_\_\_\_\_ at Cambridge University.

**Vocabulary Review**

Fill in the blanks.

\_\_\_\_\_ scientific \_\_\_\_\_ academic \_\_\_\_\_ population \_\_\_\_\_ subject \_\_\_\_\_ graduated \_\_\_\_\_ laboratory

- The \_\_\_\_\_ of China is one of the largest in the world.
- The surgeon \_\_\_\_\_ from Harvard University in 2004.
- English can be a very difficult \_\_\_\_\_ for foreign students studying in America.
- You should be careful because there are many dangerous chemicals in the \_\_\_\_\_.
- There is no \_\_\_\_\_ proof that aliens exist.
- The best universities in the world are famous for their excellent \_\_\_\_\_ reputation.

**Grammar Lesson**

**Gerunds**

Gerunds are words that end in -ing. They may seem like verbs, but they actually act as nouns. For example, in many students' dreams of studying at a famous university, studying acts as a noun. What do many students dream of? They dream of studying (at a famous university).

Answer the questions below.

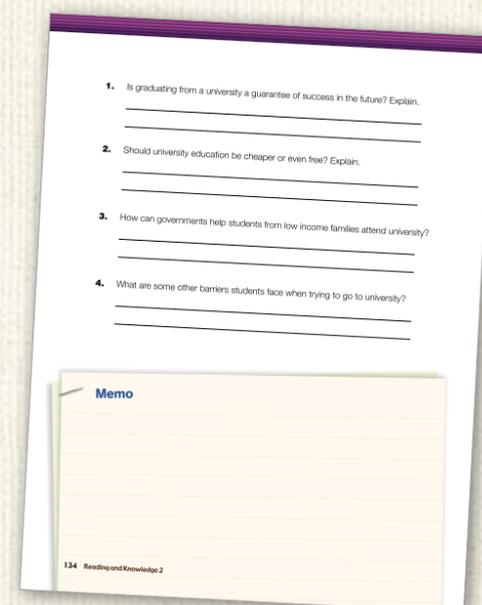
- What is the gerund of the following sentence?  
Swimming is something that is very special to me.
- Is running below a gerund or part of a verb?  
I was running with Jamie and Samuel this morning.

**Close Reading**

Read the passage below and answer the questions.

For many students, the ultimate goal is to study at a university in the future. Some students have ambitions to go to famous universities such as Harvard, Yale, or Cambridge. Other students simply want to go to their local university. Going to university is not an easy thing to do. To begin with, you have to achieve the good grades needed to gain a place at a university. There are other barriers that students face when trying to achieve their dream of going to university.

Studying at a university is very expensive. In America, the average cost of attending university can be as much as \$30,000 per year. Students need to pay for tuition fees, housing costs, and living expenses. For some families, this is too expensive. Many American parents start saving for their children's university education very early. But sadly, some students are unable to go to university simply because they can't afford it.



- Is graduating from a university a guarantee of success in the future? Explain.
- Should university education be cheaper or even free? Explain.
- How can governments help students from low income families attend university?
- What are some other barriers students face when trying to go to university?

**Memo**

## Grammar Lesson/Vocabulary Expansion

Each unit has a Grammar Lesson or Vocabulary Expansion section that offers an additional lesson designed to enrich learning and help students better understand more technical English language skills.

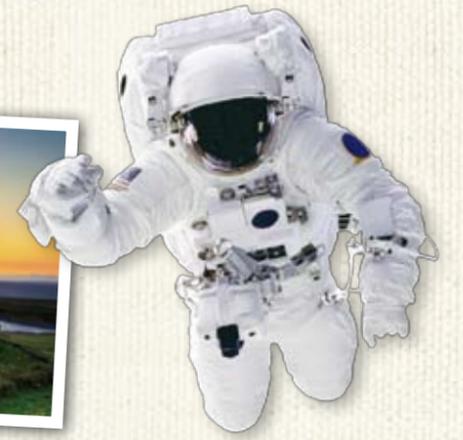
## Close Reading

This section's main purpose is to promote critical thinking and reinforce close reading skills which are emphasized in the Common Core State Standards (CCSS). Students must carefully consider that which is written and answer questions that engage the mind and help improve topic comprehension.

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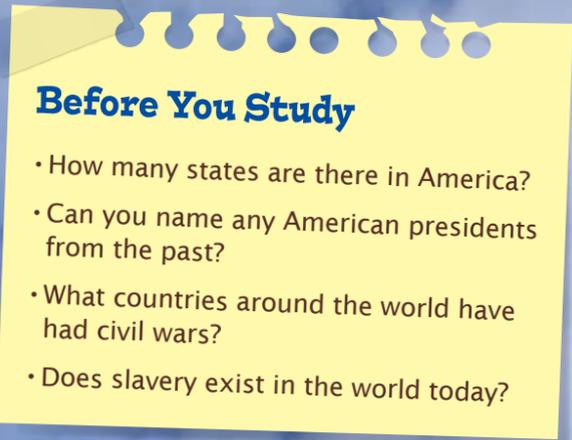


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A circular badge with a brown background and a white border. The word "Unit" is written in white at the top, and the number "1" is written in large yellow font in the center.

# Unit 1

A yellow rectangular box with a blue border and a hole-punch effect at the top. It contains the title "Before You Study" and a list of four questions.

### Before You Study

- How many states are there in America?
- Can you name any American presidents from the past?
- What countries around the world have had civil wars?
- Does slavery exist in the world today?

The title "The American Civil War" is written in large, bold, yellow letters with a red outline. It is positioned over a background image of a statue of Abraham Lincoln on a pedestal, with an American flag and a Confederate battle flag visible in the lower right.

# The American Civil War

### Did You Know?

1. When America became a country, there were only 13 states.
2. Abraham Lincoln was the tallest president in history and the first to have a beard!
3. Over 600,000 soldiers were killed during the American Civil War.
4. Cultural differences between Northern and Southern USA still exist today.

### Vocabulary to Know

|                  |   |
|------------------|---|
| <b>peaceful</b>  | quiet; tranquil   |
| <b>slave</b>     | a person who is owned by another and forced to work without pay |
| <b>freedom</b>   | the state of not being a slave anymore                          |
| <b>last</b>      | to continue for a certain amount of time                        |
| <b>equipment</b> | anything designed for a particular use                          |
| <b>surrender</b> | to give up  |



# THE AMERICAN CIVIL WAR

Today, America is a rich and **peaceful** country. But many years ago, there was a big war. People who lived in the North fought with people who lived in the South. Northern people worked in factories and made things. People who lived in the South worked on farms and grew things. Farmers in the South needed a lot of workers to help them grow things such

as cotton. People were brought from Africa to work on the farms as **slaves**. These slaves were basically paid no money and lived in very bad homes.



In 1861, the President of America, Abraham Lincoln, said that farmers in the South could not use slaves as their workers. He made a famous speech and gave **freedom** to all the slaves in America. This made people in the South very angry and they decided to start their own country. This new country attacked people in the North, and the American Civil War began.

The war **lasted** four years. There were many battles and many people died. Soldiers from the North had very good weapons and **equipment**. Soldiers in the South were very strong and had good leaders. Finally, in 1865, the South could not fight any longer, and they had to **surrender**. The North won the war, and slavery was never seen in America again.



## Reading Comprehension

### Circle the correct answers.

- Why were slaves brought to America from Africa?
  - They were needed in the North to work in factories.
  - They were needed in the South to work on farms.
  - They were needed as soldiers to fight in the war.
- Why was President Abraham Lincoln so important to the history of America?
  - He was the first president of the United States of America.
  - He helped Africa to win a civil war.
  - He helped slaves gain their freedom in America.
- How did people in the South feel about Lincoln's ideas?
  - They were very angry and tried to make their own country.
  - They were very happy and supported the president.
  - They were angry and decided to attack Africa.
- How did the American Civil War end?
  - After 4 years of fighting, the North surrendered, and the South won.
  - After 4 years of fighting, the South surrendered, and the North won.
  - After 2 years of fighting, the South surrendered, and the North won.
- Farmers in the South grew things ( on large farms / in large factories ).
- Soldiers from the North had very good ( slaves / weapons ) and equipment.

### Check *T* for true and *F* for false.

- People in the North worked in factories and made many things.
- Slaves were paid money and lived in nice houses.
- Abraham Lincoln freed the slaves in 1961.
- The American Civil War ended in 1865.

|    | T                        | F                        |
|----|--------------------------|--------------------------|
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| 4. | <input type="checkbox"/> | <input type="checkbox"/> |

## Reading Skill

### Drawing Conclusions

When reading, there are times when you need to think about things that aren't specifically mentioned. For example, after reading *people were brought from Africa to work on the farms as slaves and these slaves were basically paid no money and lived in very bad homes*, you should be able to see that slaves were treated horribly.

For each sentence or group of sentences, choose the correct conclusion.

- In the past, people in the North worked in factories and made many things using machines. However, people in the South worked on farms and grew things.
  - Transportation, education, and communication were more advanced in the North.
  - Modern technology and new ideas were very popular in the South.
- Abraham Lincoln gave freedom to all slaves in America and made it illegal to use slaves.
  - Slaves were very confused about Lincoln's ideas and did not support his new laws.
  - Slaves saw Lincoln as a hero and fully supported his ideas and beliefs.
- The American Civil War lasted four years. Many soldiers died in many battles all over the country.
  - There was an easy solution to the problems and disagreements in America at that time.
  - The problems in America at that time were very complicated and difficult to solve.
- Soldiers from the North had very good weapons and equipment. Soldiers in the South were very strong and had good leaders.
  - The war was long, and the fight wasn't easy for either the North or South.
  - The North quickly defeated the South in a matter of months.

## Review

### Summary

Fill in the blanks.

peaceful   slave   President   freedom   equipment   surrender

The \_\_\_\_\_ of the United States of America during the Civil War was Abraham Lincoln. Lincoln was a very special leader. Lincoln is most famous for giving \_\_\_\_\_ to the slaves in America. A \_\_\_\_\_ was a person who was owned by a rich person and forced to work on a farm. The American Civil War was a very long and difficult war. Both the North and South fought very hard. The soldiers in the North had more advanced \_\_\_\_\_ and were finally able to win the war. After much fighting, the South was forced to \_\_\_\_\_ and America became \_\_\_\_\_ again.

### Vocabulary Review

Fill in the blanks.

decided   slave   president   attacked   equipment   surrender

1. After thinking for twenty minutes, they finally \_\_\_\_\_ to go the movies.
2. People in Korea vote for a new \_\_\_\_\_ every five years.
3. I feel like a \_\_\_\_\_ when my mother tells me to do a lot of housework.
4. The soldiers realized they couldn't win the battle and were forced to \_\_\_\_\_.
5. We will need a lot of \_\_\_\_\_ for our rock climbing trip next week.
6. The old woman was there when the Japanese \_\_\_\_\_ Pearl Harbor.

## Vocabulary Expansion

### The Suffix *-ful*

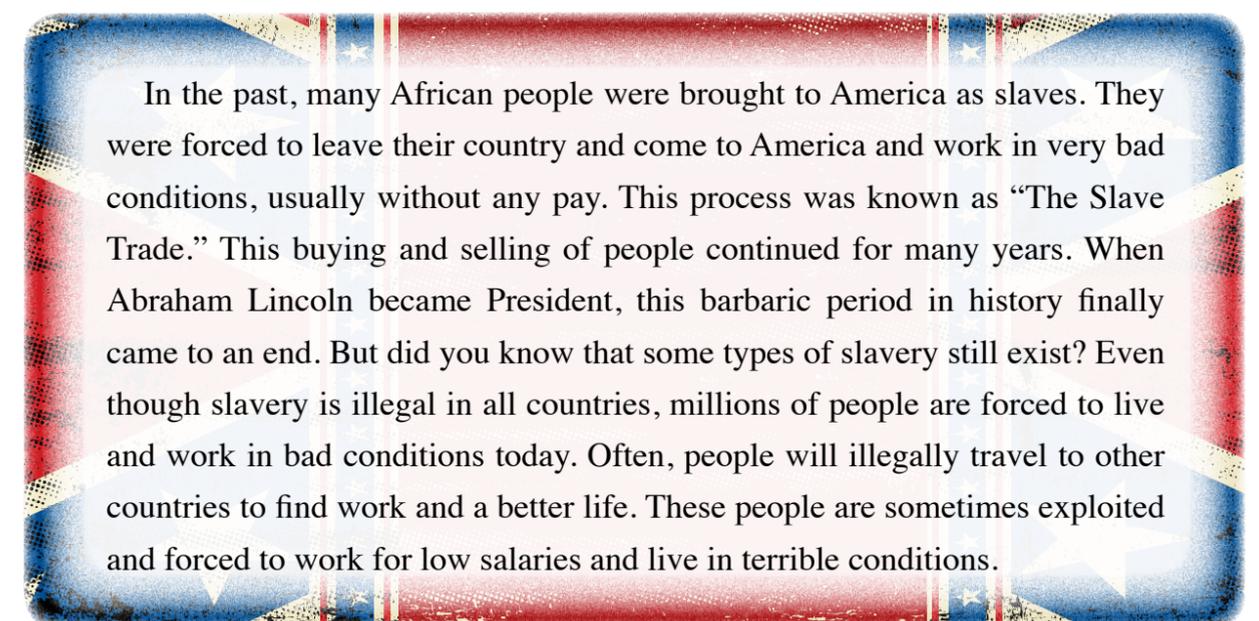
The suffix *-ful* is added to the end of some words to express *full of*. For example, in this unit's passage, *peaceful* means *full of peace*.

Add *-ful* to the words below and write meanings for the new words.

1. doubt \_\_\_\_\_
2. fear \_\_\_\_\_
3. boast \_\_\_\_\_
4. joy \_\_\_\_\_
5. disgrace \_\_\_\_\_
6. beauty \_\_\_\_\_
7. care \_\_\_\_\_
8. harm \_\_\_\_\_

## Critical Thinking

This section's main purpose is to promote critical thinking and reinforce debate skills.



## Unit 2

### Before You Study

- Which gases are found in the air we breathe?
- In what ways does oxygen help our bodies to work?
- When was oxygen first discovered?

# Oxygen

### Did You Know?

1. Most people will usually breathe between 12 and 18 times every minute.
2. We use 10 different muscles every time we breathe.
3. The world record for holding one's breath is over 11 minutes!
4. We breathe through our noses during rest and through our noses and mouths during exercise.

### Vocabulary to Know

|                 |  |
|-----------------|--|
| <b>vital</b>    | very important or necessary                                  |
| <b>survive</b>  | to continue to live  |
| <b>fatal</b>    | causing death  |
| <b>abundant</b> | existing or available in large amounts                       |
| <b>process</b>  | a series of actions that is done in order to complete a task |
| <b>digest</b>   | to break down food for the body to use                       |

1. Do you think the slave owners in America thought they were doing a bad thing? Explain.

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2. Do you think President Lincoln was brave for trying to free slaves in America? Explain.

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3. Think of some examples of slavery in your country. Why do such forms of slavery exist today?

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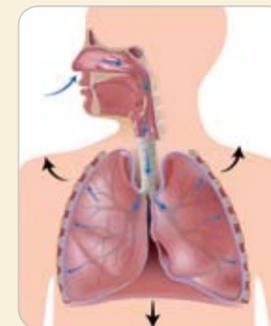
### Memo

# OXYGEN

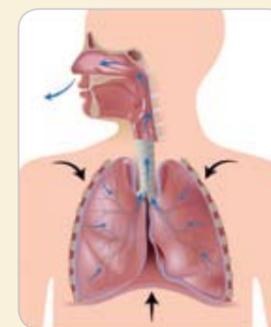
Although we rarely think about it, we are breathing all the time. Air is perhaps the most important thing to all people, animals, and plants. But did you know that air and oxygen are not the same things? Oxygen makes up only about 21% of the air we breathe. The rest of air is made up of different gases, such as nitrogen and carbon dioxide.

Oxygen was first discovered in 1773 and is **vital** to all living things on earth. Without oxygen, people and animals could not live and plants would die. People can **survive** for many days without food. People can go without water for many hours. But a lack of oxygen for only a few minutes can be **fatal**. Luckily for us, oxygen is all around us. In fact, oxygen is the most **abundant** chemical element on earth. Did you know that 88% of the water in the oceans of the world is made of oxygen?

When we breathe, oxygen enters our bodies through our noses and mouths. The oxygen then goes into our lungs, where an amazing **process** occurs. The blood in our bodies then carries the oxygen to all the different parts of our bodies. This oxygen helps our brains to think, it helps our stomachs to **digest** food, it allows our eyes to see, and it helps our muscles to move. As you can see, oxygen is very important in helping us to live happy and healthy lives.



▲ inspiratory



▲ expiratory



## Reading Comprehension

### Circle the correct answers.

1. What would be considered fatal to humans?
  - a. no food for 30 minutes
  - b. no water for 30 minutes
  - c. no oxygen for 30 minutes
2. Why are air and oxygen different things?
  - a. because air is made of many gases and oxygen is a gas
  - b. because oxygen has a smell but air does not
  - c. Air and oxygen are the same things.
3. How does oxygen help our bodies?
  - a. It helps our brains move.
  - b. It helps our stomachs digest food.
  - c. It helps our muscles think.
4. How does oxygen reach all the different parts of our bodies?
  - a. Water carries it around the body.
  - b. Our lungs carry it around the body.
  - c. Our blood carries it around the body.
5. ( 22% / 88% ) of the water on earth is made up of oxygen.
6. Oxygen is the ( least / most ) abundant element on earth.

### Check *T* for true and *F* for false.

1. 12% of the air we breathe is made of oxygen.
2. All people, animals, and plants on earth need oxygen to live.
3. Oxygen helps the muscles in our bodies to move.
4. When we breathe, oxygen goes into our hearts first.

| T                        | F                        |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

## Reading Skill

### Main Idea

The main idea of a passage is the most important point the writer wishes to make. A paragraph can have a main idea too, being the most important or central point of the paragraph.

#### A. Circle the correct answers.

1. Which sentence best describes the main idea of paragraph 1?
  - a. Oxygen was discovered long ago and helps our bodies to live.
  - b. Air is important and is made of different gases.
2. Which sentence best describes the main idea of paragraph 2?
  - a. All living things need oxygen to survive.
  - b. Oxygen can be found in water and was discovered in 1773.
3. Which sentence best describes the main idea of paragraph 3?
  - a. Many different parts of our bodies use oxygen to help us live.
  - b. Our noses and mouths are the most important parts of our bodies.

#### B. Using your own words, write the main idea of the unit's passage.

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#### C. What is the main idea of the paragraph below?

Computers are everywhere. They help run cars. They keep track of records. They fly planes and cook food! Take a look at your smartphone. Even your fancy little gadget is run by a computer.

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## Review

### Summary Writing

Fill in the blanks.

mouths    nitrogen    oxygen    important    function    lungs

Air is very \_\_\_\_\_ to all living things. Air is made up of different gases, including oxygen, \_\_\_\_\_, and carbon dioxide. Of all the gases in air, \_\_\_\_\_ is the most important. A person can survive for days without food and water. However, a person without oxygen could die in a few minutes. When oxygen enters our bodies, it goes through our \_\_\_\_\_ and into our lungs. From the \_\_\_\_\_, our blood carries it to important organs like the brain, stomach, and eyes. Oxygen helps our bodies \_\_\_\_\_ normally and healthily.

### Vocabulary Review

Fill in the blanks.

carries    lack    fatal    abundant    element    process

1. A bite from that poisonous snake would be \_\_\_\_\_.
2. The two travelers died in the desert because of a \_\_\_\_\_ of water.
3. This pipe \_\_\_\_\_ the hot water into the next room.
4. An \_\_\_\_\_ amount of sand can be found at nearly any beach.
5. The \_\_\_\_\_ of evolution is something that will always be debated.
6. Aluminum is an \_\_\_\_\_ that is used in large amounts around the world.

## Vocabulary Expansion

### Confusing Words

Although two words may look or sound similar, be aware that they could have two very different meanings.

Study each word and circle the correct answers.

1. *Breath* is a noun that refers to the air we use in our bodies.  
*Breathe* is a verb that refers to the action of inhaling and exhaling air into and out of our bodies.

When it is very cold, you can sometimes see your ( breathe / breath ) when you ( breathe / breath ).

2. *Bath* is a noun that refers to the large tub we sit in when cleaning ourselves.  
*Bathe* is a verb that refers to the action of cleaning ourselves with water.

When it is time to get into the ( bath / bathe ), I usually ( bath / bathe ) my feet first.

3. *Cloth* is a noun that refers to material used to make clothing.  
*Clothe* is a verb that refers to the action of putting on clothes.

They will ( cloth / clothe ) you with the finest ( cloth / clothe ) available.

## Critical Thinking

This section's main purpose is to promote critical thinking and reinforce debate skills.

One of the biggest problems around the world today is air pollution. In cities around the world, the quality of the air is getting worse. Harmful chemicals from engines and factories are being released into the air, making it unhealthy to breathe. Diseases of the lungs and cancer have been linked to air pollution. Scientists say the problem is getting worse. Many governments have tried to make laws that help stop air pollution. In most big cities around the world, there are rules on how much pollution a factory or car can produce. If people or companies create too much pollution, they can be fined. Although many people and organizations are trying to stop air pollution, it is still a problem for everyone who lives on earth today.

# Unit 3

## Before You Study

- How many planets are in our solar system?
- Can you name any of the planets in our solar system?
- What do you think the planets are made of?

# Our Solar System

## Did You Know?

1. The planet Jupiter is over 1,000 times bigger than Earth.
2. It takes about 88 days for the planet Mercury to orbit the Sun.
3. There is a volcano on Mars that is 3 times bigger than Mount Everest.
4. It takes about 8 minutes for the light of the Sun to reach Earth.



## Vocabulary to Know

- planet** a large object in space that orbits a star
- explode** to violently break into many pieces from high heat or pressure
- energy** usable power
- orbit** to circle around another object
- similar** looking or feeling the same without being exactly the same
- hydrogen** an abundant element commonly known as a very light gas that burns easily

1. Why do certain parts of the world have worse pollution than others?

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2. If you were the leader of a country, what would you do to punish those that pollute the air?

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3. What do you think you could do to help improve the quality of the air in your city?

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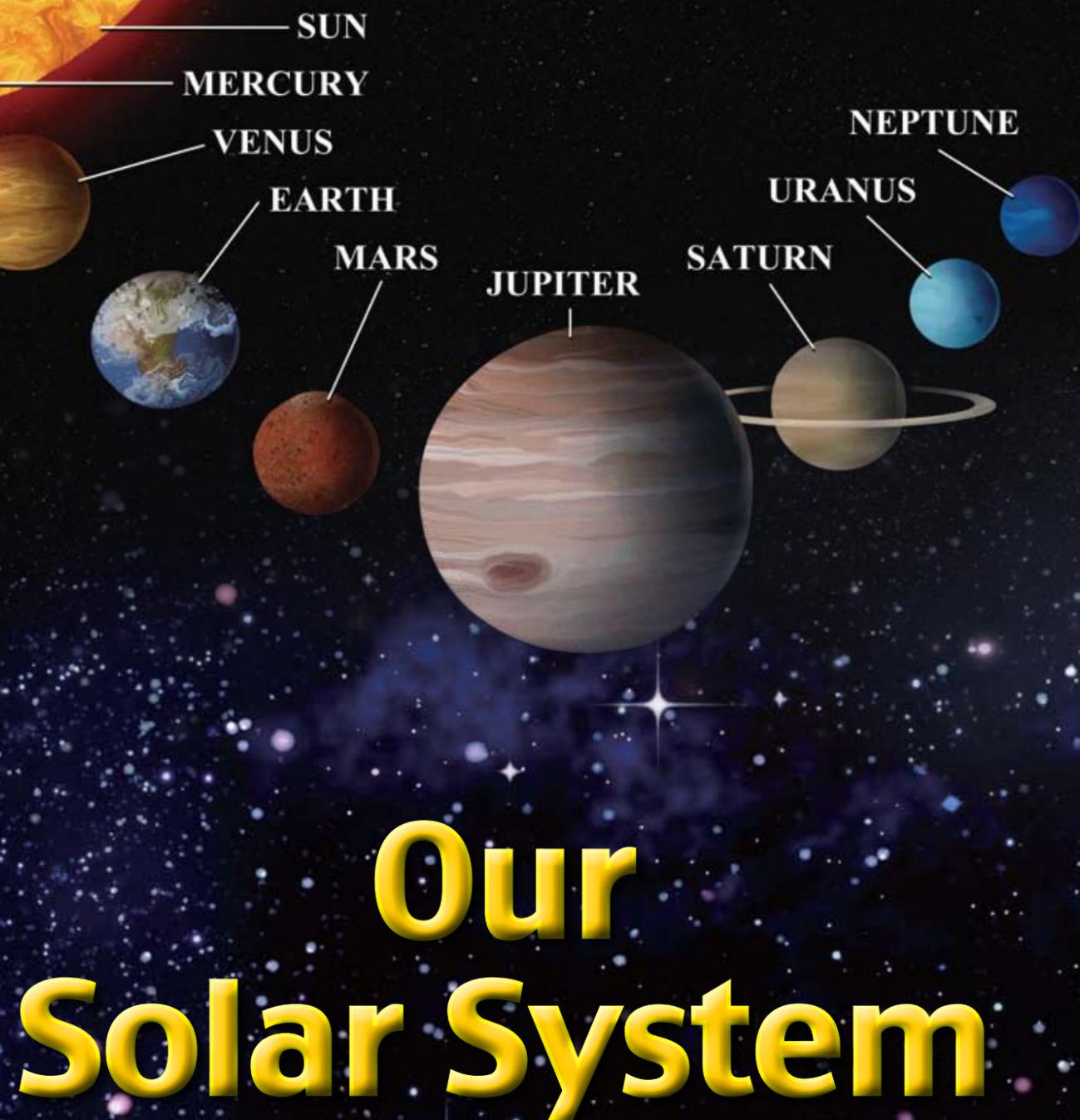
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4. Even though it is harmful, why do you think people continue to pollute our earth?

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## Memo



The **planet** we live on is just one little part of a large group of heavenly objects. We call this group the solar system. The solar system is made up of the sun, eight planets, many small moons, and other small objects. Our solar system was formed around 4.6 million years ago when a massive gas cloud **exploded** and created all the objects we see today.

The largest and most important object in the solar system is the sun. Can you believe that the Sun is 109 times bigger in diameter than the Earth? The sun is the main source of heat and light **energy** for all the objects in the solar system. All the planets in the solar system **orbit** around the sun. Without the Sun, there would be no life on Earth.

The four planets closest to the sun are called the inner planets. These planets are Mercury, Venus, Earth, and Mars. These four planets are very **similar** because they are mostly made of rock and metal. The remaining four planets are very different from the inner planets. Jupiter and Saturn are known as gas giants. They are much bigger than any other planet and are made of gases such as **hydrogen** and helium. The final two planets, Uranus and Neptune, are known as ice giants due to the fact that they are mostly made of ice and water.

## Reading Comprehension

● Circle the correct answers.

1. What are the main objects that make up the solar system?
  - a. a moon, 8 suns, and many planets
  - b. the sun, 8 planets, and many moons
  - c. the sun, 7 planets, and many moons
2. What is the largest object in the solar system?
  - a. the earth
  - b. the moon
  - c. the sun
3. Why are the four inner planets similar to each other?
  - a. because they are made of mostly rock and metal
  - b. because they are made of mostly rock and gas
  - c. because they are made of mostly water and gas
4. Which two planets are the biggest in the solar system?
  - a. Earth and Mars
  - b. Jupiter and Saturn
  - c. Venus and Mercury
5. The ( earth / solar system ) was formed when a massive gas cloud exploded many years ago.
6. All the planets in the solar system orbit around ( the sun / Jupiter ).

● Check *T* for true and *F* for false.

- |   |                          |                          |
|---|--------------------------|--------------------------|
|   | T                        | F                        |
| 1. The planet Venus is mostly made of rock and metal.                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. The moon is the main source of light and heat in the solar system. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Jupiter is known as one of the ice giants.                         | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. The Sun is 109 times bigger in diameter than the Earth.            | <input type="checkbox"/> | <input type="checkbox"/> |

## Reading Skill

● Classifying

When we read a large amount of information, it is useful to classify different things into groups. To do this, we put things with the same characteristics into the same group.

Put each planet into the correct group or category.

|       |         |         |         |
|-------|---------|---------|---------|
| Earth | Jupiter | Neptune | Uranus  |
| Venus | Saturn  | Mars    | Mercury |

Ice Giants

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Gas Giants

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Inner Planets

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## Review

### Summary Writing

Fill in the blanks.

sun possible energy Neptune metal system

Our solar \_\_\_\_\_ is made up of the sun, eight planets, many moons, and other small objects. The largest object is the \_\_\_\_\_. It is the major source of heat and \_\_\_\_\_ for objects in the solar system. All planets in our solar system orbit the sun. If the Sun did not exist, life on Earth would not be \_\_\_\_\_. Mercury, Venus, Mars, and Earth are the planets closest to the Sun. They are mainly made of rock and \_\_\_\_\_. The next two planets are Jupiter and Saturn, which are huge and made of gases. The last two planets are Uranus and \_\_\_\_\_. These two planets are mainly made of water and ice.

### Vocabulary Review

Fill in the blanks.

planet massive energy orbit similar hydrogen

1. It takes the Earth one year to \_\_\_\_\_ the Sun.
2. Water is made up of two elements, \_\_\_\_\_ and oxygen.
3. Mercury is the closest \_\_\_\_\_ to the Sun.
4. Electrical \_\_\_\_\_ is used to power things like the TV.
5. David looked like an ant when he was standing next to the \_\_\_\_\_ pyramid.
6. My sister and I look very \_\_\_\_\_, but our personalities are very different.

## Grammar Lesson

### Would

The word *would* is commonly used when writing about an imaginary idea. For example, in this unit's passage, *would* is used in the sentence *without the Sun, there would be no life on Earth*. *Would* is used because the Sun and life on Earth actually exist. The sentence states an idea that is imaginary.

Complete each sentence using *would* and the given verb.

1. give If Sam could make that pig fly, I \_\_\_\_\_ him a million dollars.
2. do Catherine \_\_\_\_\_ only \_\_\_\_\_ it if she were a real princess.
3. go How many times \_\_\_\_\_ you \_\_\_\_\_ to the moon?

## Critical Thinking

This section's main purpose is to promote critical thinking and reinforce debate skills.

Much of what we know about space today is due to the activities and research of NASA. NASA is a government agency of America. This organization researches space and even sends astronauts into space on shuttles and rockets. NASA was responsible for putting the first man on the moon. Recently, NASA even sent a robot to planet Mars to learn about it.

One of the biggest criticisms of NASA is the amount of money they spend on their work. Sending people and robots into space is very expensive. The equipment and technology that NASA needs to do their research are also very expensive. Due to the fact that NASA is a part of the government, the money they use actually comes from the taxes that American people pay. Many people believe that the American government should spend more money solving problems on earth instead of exploring space and other planets.

# Unit 4

## Before You Study

- How many different types of blood are there?
- What are some words that describe your personality?
- What is your blood type?

# Blood Type and Character

## Did You Know?

1. The most common type of blood in the world is type O.
2. Blood makes up about 7% of your total body weight.
3. The average human adult has about 5 liters of blood in their body.
4. US President Barack Obama has type AB blood.



## Vocabulary to Know

|                      |  |
|----------------------|--|
| <b>European</b>      | coming from or relating to the continent of Europe                 |
| <b>personality</b>   | the group of traits that make up a person's character              |
| <b>creative</b>      | imaginative and having interesting new ideas                       |
| <b>irresponsible</b> | not showing responsibility   |
| <b>forgetful</b>     | likely to not remember things                                      |
| <b>jealousy</b>      | a feeling of envy due to another person's achievement or advantage |

1. Do you think NASA should spend public money to explore space? Explain.

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2. Is it important to research space and other planets? Explain.

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3. Do you think there will ever be a time when people live on other planets? Explain.

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4. If you were in charge of NASA, what would change?

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## Memo