Reading Horizons
ELEVATE®

Reading Library

Book 4

Levels E and F

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Introduction

This is the *Reading Horizons Elevate® Reading Library*. These reading passages are also found on the *Reading Horizons Elevate®* software. You can use the *Reading Library* to practice applying Reading Horizons skills and to improve your reading fluency.

Fluency is the ability to read accurately at a good reading rate (or speed) while understanding most or all of what you read. You should try to read as quickly as you can, but you need to read as carefully as you can, too. After reading a passage, check your comprehension by answering the comprehension quiz questions. The page number for the comprehension questions is listed at the end of each passage. You can also check your answers using the answer key in the back of this book. You will be asked comprehension questions about the main idea, details, vocabulary, and organization of the passage. You will also be asked to *infer*. To infer means to *guess* or *assume*. Try to answer the questions without going back to look at the passage. If you need to refer back to the passage, paragraph references are provided in some quiz questions to help you quickly locate specific words or ideas.

The passages cover a wide variety of topics. Each passage is tagged with one or more topic categories. The categories for a passage are listed below the passage's pictures.

You can read passages that are interesting to you. You should also read passages that are at your appropriate reading level, or Lexile®. The Lexile® is found below the topic categories. The passages in this book are organized by reading level, from lower- to higher-level passages. You may choose to read passages that are easy for you, but you should also try to read passages that challenge you (up to 50L above your personal Lexile® score). Reading passages that challenge you will help you improve your reading ability.

You can use the *Reading Library* to help you practice the reading skills you learn in the *Reading Horizons Elevate®* software. You can also read the passages to help you improve your reading fluency and to practice reading faster. If you choose to use the *Reading Library* to improve your reading fluency, it is important to track your progress. As you track your progress, you will see your strengths and your areas of weakness.

The *Reading Horizons Elevate®* software tracks your progress in the *Reading Library* section of the software. If you are not using the software, you can track your progress using the Reading Rate Table and Reading Fluency Progress Chart on pages 220–226 in the back of this book.

Follow the instructions below to track your reading fluency:

1. Choose a reading passage that is at your level. If you do not know your level, read a few passages to get a feel for which level is about right for you—not too easy, but not too difficult. Then choose a passage that you have not read before that is at the same or similar level. A passage is too difficult if you struggle with more than 3-5 words per paragraph.
2. Write your time on the bottom of the page in the space provided, or write it on another piece of paper.
3. Answer the comprehension questions for the passage you read. Then check your answers.
4. Look at the level of the passage at the bottom of the page you read. Then turn to pages 220–224 in the back of this book. Look for the level of the passage. Titles appear in order by level. Then find the time it took you to read the passage on the left of the table and move your finger across the row to find the number of words per minute you read the passage.

Example:

Passage Title	Crying	Bones	Yuri Gagarin	Badminton	Clouds	Trees	Guitars	Hollywood	Lions	Pigs	Wilma Rudolph	Teeth	Chocolate	Robots	Tokyo Tower
Level Group	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**
Lexile®	**200L**	**230L**	**260L**	**270L**	**270L**	**270L**	**280L**	**290L**	**310L**	**310L**	**310L**	**320L**	**330L**	**330L**	**330L**
WPM	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**
Word Count	**175**	**156**	**154**	**142**	**169**	**191**	**142**	**155**	**130**	**175**	**170**	**160**	**184**	**152**	**206**
Minutes:Seconds															
:30	350	312	308	284	338	382	284	310	260	350	340	320	368	304	412
:35	300	267	264	243	290	327	243	266	223	300	291	274	315	261	353
:40	263	234	231	213	254	287	213	233	195	263	255	240	276	228	309
:45	233	208	205	189	225	255	189	207	173	233	227	213	245	203	275
:50	210	187	185	170	203	229	170	186	156	210	204	192	221	182	247
:55	191	170	168	155	184	208	155	169	142	191	185	175	201	166	225

5. Turn to the Reading Fluency Progress Chart on pages 225–226. Write the title of the passage you read across the top under the corresponding level. Write the number of comprehension questions you answered correctly in the space provided under the title. Look at the words per minute listed down the left side of the table. Find your words per minute within the range listed. Mark the box with an *X*. Write the date you read the passage at the bottom of the page.

Example:

Passage Title	Crying	Bones	Yuri Gagarin												
Comprehension Questions Correct	5	5	4												
301-350															
251-300															
201-250		X	X												
176-200	X														
151-175															
126-150															

6. After reading five or six passages and tracking your progress on the Reading Fluency Progress Chart, look at your progress. If your reading rate is the same, you should try to read a little faster. If you answer three or more comprehension questions incorrectly, you should slow down so you can comprehend what you are reading better.

Conclusion

You will learn a lot of new things when you read these passages. Talk about what you read with a classmate, friend, or teacher. It will help you remember the information you learned. Enjoy your reading!

Kangaroos

Kangaroos are large animals that are native to Australia. They are very important to the people of Australia for many reasons. These animals are so important to the history and culture of the continent that you can even find pictures of kangaroos on Australian money!

Kangaroos are curious creatures both in their appearance and their movement. Their legs and feet are long and strong. In fact, kangaroos' legs are similar to rabbits' legs. Because of their body shape, kangaroos have difficulty walking. Instead of walking, they prefer to jump from place to place, and kangaroos are the only large animal on Earth that uses jumping, or hopping, as a normal way to move around. Their thick tails help them stay balanced when moving. When they hop quickly, kangaroos can go as fast as 44 miles (70 kilometers) per hour! This hopping is not something that they do simply because it is fun, but rather, they hop because it does not require much energy, and they can do it very quickly. Because of their ability to hop, kangaroos can quickly travel far distances when searching for food and water without putting themselves in danger of becoming hungry or thirsty.

Kangaroos can also use their strong tails to help support the weight of their bodies. Adult kangaroos have tails that are almost as long as the rest of their bodies. To move slowly, kangaroos lean forward and place their arms on the ground. Then they push the ends of their tails onto the ground to lift their legs into the air. This action helps kangaroos swing their legs forward. Male kangaroos sometimes fight by leaning back on their tails and kicking each other with their legs. They also use their arms to punch or grab at their opponents. Some people say that this style of fighting looks like kickboxing. Adult kangaroos are so strong that other animals rarely attack them.

Adult kangaroos can weigh up to 200 pounds (90 kg), which means that they need to eat lots of food. Kangaroos are herbivores, which means that they only eat plants. Kangaroos spend most of the day sleeping, and they typically only eat in the morning and evening when it is not as hot. Their diet tends to consist of grass and leaves that they pull from short trees.

Kangaroos belong to a group of animals called *marsupials*. Female marsupials have pouches, or pockets made of skin and flesh, for holding their babies. Unlike most warm-blooded animals, kangaroo mothers are pregnant for only about a month. After this month, their babies (called joeys) are born, but the babies cannot leave their mothers' pouches for nine months after birth. The joeys are too small and weak, so they grow for several months in the safety of their mothers' pouches. Even after they are strong enough to leave the pouches to eat and jump around, joeys typically return to their mothers' pouches periodically during their first year of life.

Continued on the next page.

animals, Oceania

Lexile®: 1010L
Word Count: 729

Time: _____

Kangaroos (continued)

When explorers arrived in Australia, they were surprised to find such creatures. Nothing like kangaroos could be found anywhere else in the world. When the explorers came home, they described an animal that had a head like a deer but stood up and hopped like a frog. No one believed them! In fact, most people who heard stories of the unfamiliar creature from Australia thought that the explorers were just telling a joke. The people of Europe finally believed in kangaroos when Captain James Cook brought one home to England after a long trip.

For many years, some people believed a funny myth about Captain Cook and kangaroos. According to the myth, when Captain Cook first visited Australia, he was very interested in kangaroos. He asked a native Australian man, called an *aboriginal*, "What is the name of these creatures?" The man said, "Kangaroo," which, according to the myth, meant "I do not understand you." And so Captain Cook used kangaroo or "I don't understand you" as the name for these creatures! However, **linguists** have studied the native languages of Australia and have found that this myth is not true. The aboriginal word for kangaroo is very similar to the English word that we use today.

Those who visit Australia rarely miss the chance to see kangaroos in their native environment. They are remarkable animals and one of the most recognized symbols of Australia.

Answer comprehension questions on page 147.

Neil Armstrong

As a boy, Neil Armstrong was fascinated with space. He loved looking at the moon and stars through a neighbor's telescope. When he was six years old, he rode in an airplane for the first time, and it was at this young age that he knew that he wanted to fly when he grew up. At the time, he could not have known the heights to which he would rise—literally.

Armstrong was born into a family of farmers in Ohio in 1930. As a young man, he loved learning about science. At the age of 14, Armstrong took his first flying lesson, and by age 16, he had earned his pilot's license. After high school, he studied for two years at Purdue University before interrupting his studies to serve in the United States Navy. Upon completing his piloting training with the military, he was sent to Korea, where he flew close to 80 combat missions in the Korean War. For his service, he was awarded three medals. He was known as a dependable, honest, respectful, and curious young man.

After the war, Armstrong returned to his university studies, and in 1955, he earned a degree in aeronautical engineering. Following graduation, Armstrong took a job with the US Air Force and helped test about 50 aircraft. Many of the other pilots reported that Armstrong's university education in aerospace engineering helped him become a great pilot because he understood the science of flying.

In 1962, Armstrong began to train as an astronaut for the National Aeronautics and Space Administration (NASA). He was very excited at the possibility of traveling to space. His first assignment was to train as a backup pilot for the *Gemini 5* mission. In 1966, he was chosen as command pilot of the *Gemini 8*, which left Earth's atmosphere and orbited the planet. After docking with another spacecraft, the *Gemini 8* spun out of control. Fortunately, Armstrong was able to correct the problem and brought the shuttle and crew safely back to Earth.

Because of his ability to remain calm during stressful situations, Armstrong was picked to lead the *Apollo 11* mission in 1969. This new mission was NASA's first trip to the moon. On July 16, the space shuttle *Columbia* launched from the Kennedy Space Center in Florida. Armstrong and two other astronauts, Edwin "Buzz" Aldrin and Michael Collins, were the crew. By July 18, they had reached the moon and orbited it twice.

On July 20, Armstrong and Aldrin took a smaller spacecraft, the Eagle, down to the moon's surface. Armstrong was the first person to set foot on the moon's surface. As the world listened in, he said the now-famous words: "That's one small step for a man, one giant leap for mankind." Aldrin followed Armstrong onto the moon's surface, and their moonwalk was broadcast on TV screens back on Earth. It is interesting that the footprints that Armstrong and Aldrin left in the dust on the moon's surface could be there for millions of years. There is no wind on the moon, so there is nothing to blow the footprints away.

Continued on the next page.

history, space, USA, biography, scientists

Lexile®: 1010L
Word Count: 782

Time: _____

Neil Armstrong (continued)

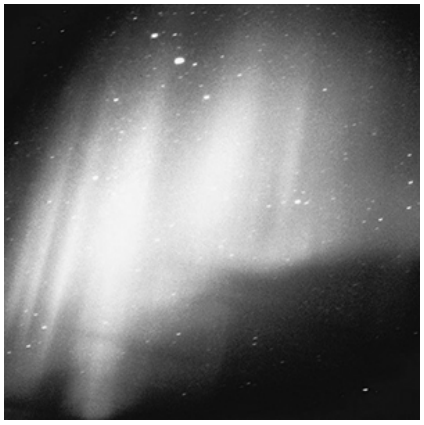
For more than two hours, Armstrong and Aldrin walked on the moon. They placed an American flag on the surface. They placed a number of instruments to record scientific data. They also left a plaque that reads, "Here men from the planet Earth first set foot upon the Moon. We came in peace for all mankind." After *Eagle* had reunited with *Columbia*, the three astronauts returned to Earth on July 24. Armstrong and his team became national heroes and internationally recognized faces. Despite all this attention, Armstrong was known to be **humble**, meaning that he did not like to talk about his own success or how talented he was. Instead, Armstrong used his fame to encourage others to become curious about science.

Following the *Apollo 11* mission, Armstrong worked for NASA, and during this time, he also earned a master's degree in aerospace engineering. In 1971, Armstrong left NASA and began a teaching position with the aerospace engineering program at the University of Cincinnati, which he held for eight years. He became a businessman and advised several companies in the aerospace engineering industry. He also continued to help the government by serving on space committees and advising NASA scientists.

In the years after the *Apollo 11* mission, Armstrong sometimes talked of returning to space. In fact, during an interview in 2010, he expressed interest in leading a mission to the planet Mars. Unfortunately, Armstrong died in 2012 at age 82, before such a mission was possible, but his life still inspires young people who hope to continue his work by traveling to Mars some day.

Answer comprehension questions on page 148.

The Polar Lights



In Alaska and parts of northern Canada, people can look to the sky and see a natural light show. The lights look like lines of paint in the sky. Sometimes they appear to dance by moving in slow patterns across the night sky. These lights are red and green much of the time, but they can be many other colors too. Some people say that these lights look similar to the sunrise except that the light comes from the north instead of the east. These lights have been called many things over the years, but today there are two main names for them. The scientific name is *aurora borealis*. *Aurora* means dawn, or morning, and borealis means north, or northern, wind. Thus, the other common name for these lights is the northern lights.

The northern lights are usually seen in the early autumn and late winter months. To someone standing near the North Pole, these lights appear directly overhead. However, a person can regularly see these lights from as far south as Canada and Sweden, and, from there, the lights can be seen over the northern horizon.

This phenomenon exists in the Southern Hemisphere as well. There, it is called *aurora australis*, or the *southern lights*. It can be seen from the southern regions of Chile and Argentina in South America. It can also be seen from New Zealand and Australia in Oceania. And of course, it is visible from the southern continent of Antarctica. Because these lights can be seen both in the northern and southern polar regions, the term *polar lights*, or simply *aurora*, can be used to refer to the phenomenon in both locations.

Because sightings of the polar lights are uncommon, there is a belief that the aurora is rare. However, this is not true. The closer a person is to the North Pole or the South Pole, the more often that person will see the lights. There are many reasons that people do not often see these interesting lights. One of these reasons is simply that the North Pole and the South Pole have such extreme weather that few people live there. Thus, most people live a long distance away from the places in which they can see the northern and southern lights more easily. Additionally, the weather affects how well a person will see the lights. People have learned that the northern lights are best seen when skies are clear. If the sky is cloudy, it will be harder to see the lights. In general, if a person can see the stars, the aurora will be visible.

Continued on the next page.

nature, weather

Lexile®: 1010L
Word Count: 773

Time: _____

The Polar Lights (continued)

Throughout history, cultures have attempted to explain the aurora. In the northern hemisphere, several indigenous tribes believed the lights came from the spirits of their **deceased** (or dead) friends, and people in these tribes interpreted the movement of the lights as the dancing of their friends' spirits, and the brighter the lights, the happier they believed their friends to be. The Aboriginal peoples of Australia also believed the aurora to come from the spirits of the deceased. They believed that observing the polar lights would allow tribal elders to interpret messages from the tribe's ancestors. In medieval Europe, several cultures associated the northern lights with acts of heavenly beings. Other northern cultures thought that the aurora was a distant fire. In fact, one account tells of an army during Roman imperial times that looked north one night and saw the red glow of the polar lights in the sky around a nearby city. They mistakenly thought the city was on fire and quickly marched northward in order to stop the fire.

Within the last two hundred years, scientists have uncovered data that helps explain the scientific causes of the aurora. Scientists have learned that the sun plays an important role in the creation of this beautiful phenomenon. The sun's heat shoots particles into space, and this is called a *solar wind*. This wind, which has a great deal of energy from the sun, is magnetically pulled toward the planet's poles. When these particles come in contact with Earth's atmosphere, they react with the particles in the air, resulting in a variety of different colors and patterns.

Usually, the aurora appears as just a glow above the horizon. Sometimes, the glow becomes stronger and more solid, and the lights can then look like wide curtains of dancing light. At other times, the lights might even change colors and patterns. Those who are interested in viewing this amazing sight should plan a trip to the polar regions of the planet. On a clear autumn night, they just might see the polar lights!

Answer comprehension questions on page 149.

Ernest Shackleton

Sir Ernest Henry Shackleton dreamed of fame and fortune for himself and for the crew he would lead deep into Antarctica. But when the ship they sailed on sank, their goal of crossing the continent quickly changed. Their new quest became one of staying alive. Their incredible tale has become one of the greatest stories of survival.

Shackleton was born in 1874 in Ireland. His family soon moved to London, England, where Shackleton grew up. He loved to read books, but he found himself bored at school. Though his father, a doctor, wanted him to follow in his footsteps and go to medical school, Shackleton instead joined the merchant navy at age 16. By age 18, he had attained the rank of first mate. He continued to get promotions based on his hard work. With the merchant navy, he traveled to many places and learned important survival skills.

In 1901, Shackleton traveled to Antarctica as part of the crew on the *Discovery* ship. The purpose of this voyage was to conduct scientific research and to determine how a trip to the South Pole, which mankind had not previously reached, might be possible. Shackleton was an important and popular member of the team. Unfortunately, he became sick and was forced to return home to recover, yet he learned much from the experience.

Back in England, Shackleton was a popular public speaker. In 1906, he ran an unsuccessful campaign for a seat in the British Parliament. However, he was elected as secretary to the Scottish Geographical Society. Shackleton was also still determined to reach the South Pole one day. He organized a new expedition, and raised a great deal of money, but then lost much of it through unwise business investments.

Despite these troubles, Shackleton led an expedition to Antarctica in 1907. He and his team were the first to successfully climb Mount Erebus, one of the highest volcanoes on the continent, at an elevation of 12,448 feet (3,794 meters). They also came within a mere 112.2 miles (180.6 kilometers) of the South Pole. Harsh weather conditions forced them to turn back, and their journey home was a difficult one. Team members were forced to survive on half rations. Shackleton chose to give part of his own food supply to his friend Frank Wild, who was very ill. Upon the group's return to England, Shackleton's fame grew even more. He received a gold medal from the Royal Geographical Society, and King Edward VII named him a Knight of the British Empire.

By 1911, other explorers had already reached the South Pole. Though disappointed by this news, Shackleton set a new goal to become the first person to cross the Antarctic continent by passing through the South Pole. In 1914, he and his crew sailed from England on the *Endurance* for his third expedition. However, in January 1915, the *Endurance* became trapped in ice, forcing the crew to abandon the ship and wait for the ice to break up. Unfortunately, in November, the ship sank. The men had few supplies to keep themselves alive.

Continued on the next page.

nature, geography, biography

Lexile®: 1020L
Word Count: 807

Time: _____

Ernest Shackleton (continued)

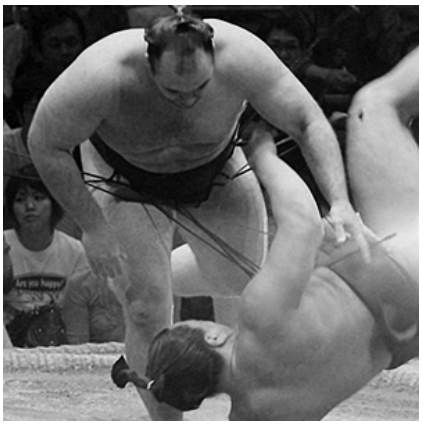
In April 1916, Shackleton and his crew climbed into three small boats and sailed north. Their destination was Elephant Island, which they reached within a week. Still, the deserted island was far from shipping routes and from any vessel that could rescue them. Taking only five of his men with him in one small boat, and leaving the rest behind, Shackleton sailed on the icy water. Fifteen days later, they reached South Georgia Island, a British territory. Crossing difficult mountainous ground on foot, they eventually found a whaling station on the island's north shore. On August 30, 1916, Shackleton and a rescue team returned to Elephant Island to pick up the remainder of the crew. Though they had endured bitterly cold temperatures and other dangers for almost two years, not a single man of the 28-person crew died.

Returning to England in 1917, Shackleton hoped to fight for the British Army in World War I. Instead, the government sent him on a diplomatic mission to South America. After the war ended, he wrote the book South, which told of his disastrous Antarctic voyage and rescue. Though Shackleton had barely escaped with his life on his last trip, he returned to Antarctica for a fourth expedition in 1921. His mission this time was to **circumnavigate**, or sail all of the way around, the continent. Sadly, though, he died of a heart attack in 1922 at age 47 and was buried on South Georgia Island.

In a sense, Shackleton could be considered a failure because he never achieved his goals for Antarctica. Nevertheless, in the century since his death, he has become known across the world as a great hero for his courageous leadership through some very difficult situations, and, to this day, he remains a respected explorer.

Answer comprehension questions on page 150.

Sumo Wrestling



Two very big men, weighing an average of 330 pounds (150 kilograms) each, prepare to fight. However, they are not mad at each other. Fighting is their job. They do this for fun! During a match, they wear nothing but a loincloth, a type of traditional underwear. They wrestle in a circle-shaped ring, which is made out of clay and is covered in sand. The ring is about 15 feet (4.55 meters) in diameter. Both wrestling competitors have the same goal: to knock, push, or throw the other man out of the ring or down to the ground. The one who can do this first is then declared the winner.

This is the sport of sumo wrestling. If you blink or briefly look away, you might miss it; a match typically lasts for just a few seconds. In rare cases, matches can last up to a minute in length. People all across the Earth, including those who live in parts of Europe and North America, enjoy the sport, but sumo wrestling is especially beloved, or highly valued, by the people of Japan. Sumo wrestling is the national sport of Japan. It is also one the world's oldest sports that is still played in modern times. Additionally, sumo wrestling represents an important part of Japanese culture and customs.

The history of sumo wrestling in Japan dates as far back as the third century AD. Whenever rice was planted, sumo matches were traditionally held as a type of prayer or blessing on the farmers' crops. At other times, sumo matches were performed for the emperor's entertainment. The sport's current rules and customs were heavily influenced and shaped by the Edo period of Japanese history, which covered the 17th through 19th centuries. In honor of this era, the wrestlers wear their hair in a style that was popular during that time. The wrestlers grow their hair long and then tie it up on the top of their heads in a knot, or *topknot* as it is called. The referees wear clothing that was often worn by Japanese medieval warriors. Depending on the referee's level of experience, he may wear a white cotton or a colorful silk uniform. A few other traditions have been passed down through time. One is the concept of throwing salt into the ring before each sumo match. This is a practice passed down from a traditional Japanese custom, and it is believed that it is done to purify the ring. Throwing salt is a symbol that shows the ring has been made clean and is prepared for a match.

While in the ring, there are up to 82 approved moves, or actions, that wrestlers may use when fighting. For example, they may physically lift their opponents out of the ring. They may also use their weight to push their opponents backward or to the ground. Normally, there are eight actions that are **prohibited**, or not allowed. For example, wrestlers may not punch with a clenched fist, as in boxing, or poke an opponent's eyes with a finger. Wrestlers are also prohibited from kicking a person in the chest or stomach. A wrestler who tries any of the prohibited moves automatically loses the match.

Continued on the next page.

Asia, sports, history, culture

Lexile®: 1020L
Word Count: 806

Time: _____

Sumo Wrestling (continued)

The majority of wrestlers are somewhere between the ages of 20 and 35. Typically, groups of wrestlers live together in a training complex. While they live at the complex, they must follow a strict daily schedule of eating, sleeping, and physical training. They often must wake up at 4 a.m. to begin the day's activities. A large part of a wrestler's diet is a stew that is made from fish, meat, and vegetables. Each group of wrestlers is guided and watched over by a coach who is commonly a retired wrestler.

Sumo wrestlers compete in six tournaments every year. Each of these tournaments is held over the course of 15 days. The ultimate goal of each sumo wrestler is to become the *yokozuna*, or grand champion. When a wrestler obtains the rank of *yokozuna*, he cannot lose this title. However, should his performance begin to decline at any point, he will be expected to retire from competition.

Sumo wrestling is a sport that is full of tradition. However, to remain popular among today's audiences, the sport is changing. For example, of the hundreds of sumo wrestlers who compete professionally in Japan, most of them are, as you might expect, Japanese, but about 60 of them come from foreign countries such as China, Mongolia, and Russia. And although sumo wrestling has long been a sport for men, an increasing number of wrestlers compete in women's sumo tournaments. As a result of these changes, wrestlers, both men and women, Japanese and foreigners, hope to continue entertaining and inspiring the people of Japan—and the rest of the world—for a long, long time.

Answer comprehension questions on page 151.

Dreams

Our bodies need to rest at night, and we get that rest through sleep. While we sleep, our brains do not shut down in the same way that we would turn off a computer or a light. In fact, our brains are actually much more active when we are asleep than when we are awake, and one of the reasons for this is dreams.

A dream is a series of thoughts, ideas, images, or feelings that occur in the mind during sleep. When we dream, our brains randomly put together thoughts or images from electrical pulses sent from the brain stem. Then, part of our brains tries to make sense of these images, much in the same way we would attempt to analyze an optical illusion or an abstract painting.

Every day, the average adult needs about eight hours of sleep, while the average child needs nine or more hours. While asleep, a person experiences a stage of sleep called rapid eye movement (REM). During REM, a person can experience many dreams. Most adults spend about two hours a day in REM sleep, so the average 70-year-old person has spent a total of approximately six years of life dreaming!

So, why do we dream, and what do dreams mean? The answers to these questions have been debated for many years, and they remain among the great mysteries of life. Dreams mean different things to different people. Some people view dreams as complete nonsense, or without any purpose at all. Other people view dreams as the product of a brain that "twitches" during sleep, their dreams being a mixture of fears, hopes, and memories. Still other people view dreams as either important warnings about the future or as answers to problems that have been troubling them for a while.

Not everyone can remember what they dream about at night. Some people forget what their dreams were within minutes of waking up. In fact, people forget about 90 percent of their dreams in the first minute alone. However, other people can remember specific details from dreams for many days after their dreams. Some people like to keep a dream journal, in which they record both good and bad dreams. This helps them to understand the ways in which their minds work at night.

Recurring dreams are dreams that appear again and again. For example, some actors may dream repeatedly of being on a stage and forgetting their lines. Others may have recurring dreams about flying, falling, being unable to speak, losing their teeth, or being **pursued** (chased). Another recurring theme in some people's dreams is arriving late for an important life event, such as a test at school.

Continued on the next page.

health

Lexile®: 1030L
Word Count: 756

Time: _____

Dreams (continued)

A very scary dream, or one that causes an anxious or nervous feeling, is called a *nightmare*. Stressful things that happen during the day can cause nightmares, as can watching a frightening movie. Some types of medicines may even have the side effect of causing nightmares in some people. However, nightmares are normal for children and adults alike. People who experience nightmares are not weak or childish because most everyone has a nightmare occasionally. When people have nightmares, they may find it helpful to talk to a family member or trusted friend about those bad dreams. Some people may display a Native American symbol called a *dreamcatcher* near their beds. They believe that a dreamcatcher can protect them against nightmares. Other people might take a sleeping pill prescribed by a doctor to prevent them from waking up during nightmares.

The term *dream* can have many meanings beyond the action we experience when sleeping. As we have seen, *dream* can be both a noun and a verb: we can dream, and we can have dreams. But another meaning for dream is "hope" or "wish." So, in this sense, people can also dream when they are awake, an action that we often refer to as *daydreaming*. Though not the same as dreams during sleep, daydreams also keep the brain very active. When daydreaming, people often focus on something different from what they are currently doing, such as imagining about a vacation or hobby while they are at school or work. Daydreaming might also occur while people are relaxing. Possibly, they are staring up at the ceiling or looking out of the window and thinking about what they would do if they had more free time.

What will you dream about next? Only your brain knows the answer. As you contemplate your dreams, you see how creative and powerful your mind really is.

Answer comprehension questions on page 152.

Llamas

Llamas are mammals from South America that have been used by both ancient and modern peoples as pack animals. Pack animals help carry things. There are over seven million llamas in South America, and many of them live in the region of the Andean Mountains. Early scientists thought that llamas were related to sheep, due to their tame behavior and noises that they make. However, it has become apparent that llamas are more closely related to camels.

Adult llamas stand up to 6 feet (1.8 meters) tall from the bottom of the foot to the top of the head. Adult llamas weigh 280 to 450 pounds (127 to 204 kilograms). They are usually covered in long, soft hair that is white, brown, gray, black, or reddish-brown. They have long ears that curve slightly inward. Llamas and camels share similar physical features, including long necks, soft noses, huge eyes, and large, flat teeth. Their feet are also very similar in that they have two toes on each foot. However, unlike camels, llamas do not have large humps on their backs. Camels store fat in their humps that can be used to help them survive in desert climates.

Like camels, llamas are herbivores. In the wild, they typically eat grass and tree leaves. On those rare occasions when they are able to find wild fruits or vegetables, they will happily eat those as well. Llamas have been domesticated for quite a long time. The diet of domesticated llamas is much more **diverse** than wild llamas. Domesticated llamas are consistently fed a wide variety of grasses, grains, and other plants, such as sweet vegetables.

Experts suggest that ancient peoples were able to domesticate llamas because these animals are naturally very calm, friendly, and pleasant to be around. Llamas are usually very curious and are not afraid to approach people. Like sheep, llamas are usually very gentle with humans.

However, llamas occasionally exhibit aggressive behavior in their herd. This aggression can be observed when llamas are competing for higher social rank. Social rank within a herd is always dynamic, or changing. Llamas' positions within the herd can change as they challenge other llamas to fights that involve spitting, kicking, and wrestling each other with their necks. This behavior is especially common among males who will ram one another in an attempt to cause opponents to stumble, or trip.

animals, Americas

Lexile®: 1030L
Word Count: 797

Time: _____

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Llamas (continued)

When llamas are in a herd, they are very social creatures. They interact throughout the day in many ways, including through play or through minor competitions to demonstrate which llama is strongest. Members of a llama herd treat each other like family. They care for and protect each other. There is also evidence that llamas appear to have some form of spoken communication. Scientists have observed llamas making soft, musical noises to each other. Scientists suggest that these musical noises can communicate a feeling of peace to other llamas. These noises may also alert other llamas to the need to flee from approaching predators.

The social behavior can also be observed during the birth of a baby llama. Llamas' gestational period (the time that a mother llama carries a baby before it is born) is a little less than a year. When a mother llama is ready to give birth to her baby, called a *cria*, other female llamas support the new mother. First, they make sure that all of the males have vacated, or left, the area. Then, the females form a circle around the mother. Scientists suggest that the female llamas do this to protect the mother and baby from attackers. Within an hour of being born, a baby llama can stand and begin to drink milk from its mother. Maternal behavior in llamas is said to closely resemble that of a human mother to her child.

Llamas have made vital contributions to culture and business in South America for many centuries. For many generations, the people of South America, including the Incas, have used llamas as pack animals to carry textiles, food, and other items for trade. Llamas have also been used as food. Additionally, llama wool can be used as a source of fiber for clothing. The hair of llamas has long been a valuable commodity to the people of South America. The llama's long, soft hair is used to make clothing that is durable and attractive. The people of South America frequently export these goods. Many people in the Andean region have successful businesses selling handmade clothes to tourists.

Just as llamas had an important role in supporting villages in ancient times, many people today still use llamas as a source of work, wool, and meat. Llamas continue to fulfill an important role in the lives of many people who live in the Andean Mountains of South America.

Answer comprehension questions on page 153.

Wind Power

What would you do if nothing happened the next time you turned on a light switch? What if our phones could no longer charge because our local power plants ran out of fuel? Most of the electricity in the world is created using fossil fuels such as coal, oil, and gas. These sources of energy are limited and will be gone sometime in the future. How will we get electricity when all of this fuel is gone?

People have been concerned about this issue for a long time. Scientists are looking for new ways to make power. One possible solution is renewable energy, which means energy that comes from sources that do not run out and which will continue to be available over and over. There are various sources of renewable energy including the sun, water, and the wind.

Wind energy has been used for thousands of years. Sailors have used the wind to make their ships move across the water. This is done by using large pieces of cloth to catch the movement of the wind and using that force to push the ship. In recent decades, scientists have learned to use the wind to create electricity. And unlike gas, oil, or coal, wind power is renewable since wind is always moving around the planet. Wind energy is also clean, meaning that it does not pollute the air, so wind power has fewer harmful effects.

One of the most useful forms of energy is electricity, but wind power is not electricity. However, wind power can be transformed, or changed, into electricity using a windmill, also called a wind turbine. Kinetic energy, which is energy that comes from the movement of the wind, moves the blades of a wind turbine. As the blades move, they start producing mechanical energy. This moves, or transfers, the energy to a generator, which turns mechanical energy into electricity. This electricity is then sent to homes and businesses when it can be used to power electronic devices.

The use of wind energy as a source of electricity became more realistic beginning in 1979. That year, a company in Denmark began building wind turbines that could make large amounts of electricity. Since that time, the use of wind turbines has expanded all over the world.

The spread of wind energy was slow at first, but it has become increasingly popular. In 2015, the global production of electricity from wind power was about 3.5 percent. Although this seems small, it represents a big change in the way countries create electricity since previous sources of electricity were almost exclusively powered by fossil fuels.

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technology, weather, business

Lexile®: 1030L
Word Count: 697

Time: _____

Wind Power (continued)

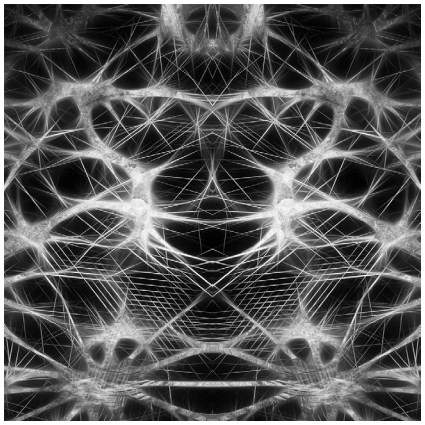
Today, the majority of the total wind energy production around the world comes from large countries like the United States and China. But even though Denmark produces much less total electricity from wind, compared to these large countries, nearly 50 percent of all electricity in Denmark comes from wind turbines. In the United States, only about 5 percent of all electricity comes from wind turbines. Many governments around the world have a goal to increase the number of wind turbines in their country.

Wind power, of course, has both advantages and disadvantages. Along with being better for the environment, wind power can be easy to harvest, or collect. Wind farms, which are places with many wind turbines, can generate a great deal of electricity. Depending on how strong the wind is, and how often it is windy, each windmill can produce 50 to 300 kilowatts of electricity. The biggest problem is that these turbines need wind to work. Since wind is not constant, wind power is not very dependable. Sometimes there is a lot of wind, and other times there is none. Moreover, windy locations that are good for wind farms may be far from cities where electricity is needed. So long transmission lines may be need to carry that electricity to cities.

Scientists are looking for better ways to carry and store electricity from wind power, so it can be used at times and places where it is needed. Many people think that wind power technologies will help protect our environment and provide a reliable source of electricity in the future.

Answer comprehension questions on page 154.

Déjà Vu



Pretend for a moment that you walk into a room that you have never been inside before. Everything around you suddenly seems to be very familiar. Or perhaps, while talking with family members or friends, you feel that you have already had this conversation, but you cannot remember when. Have you ever felt this way? If so, you may have experienced what is known as *déjà vu*.

The phenomenon of déjà vu has both fascinated and puzzled people for many years. The term *déjà vu* comes from the French language and translates into English as "already seen." This term was first used by Emile Boirac in 1876. Boirac was a French thinker and writer. Among his many interests was the field of parapsychology, which is the study of things that cannot easily be explained by science. Boirac was interested in explaining the mysterious phenomenon of déjà vu. He thought that it might be connected to psychic ability, which is the ability to connect to supernatural powers, such as seeing into the future or being able to communicate with one's mind.

Some people share Boirac's view of déjà vu. They consider a déjà vu experience to be a supernatural experience. They think that déjà vu may be a sign to pay close attention to the current situation. Perhaps there is a significant life lesson that needs to be learned at that moment. To these people, déjà vu functions as a mysterious, guiding force.

Modern science offers a different perspective on déjà vu. Scientists report that up to 70 percent of people report experiencing déjà vu at least once in their lives, so the phenomenon is not especially uncommon. It is interesting to note that more reports come from those between 15 and 25 years of age than from any other age group. Scientists have proposed a variety of theories to explain déjà vu. Most scientific theories of déjà vu are related to the brain's memory functions.

One explanation of déjà vu can be described as a glitch, or short malfunction, in the brain. According to this explanation, déjà vu occurs when a person remembers an experience at the same time that the experience is happening. In other words, a person might arrive at a party, and the brain will start recording the event as a memory. But at the same time, the person's brain mistakes that new memory for an existing memory. This tricks the person into thinking that they have arrived at the party before, even though this is the first time that it has happened. Scientists state that these glitches are harmless and are not evidence that someone's brain is sick or damaged.

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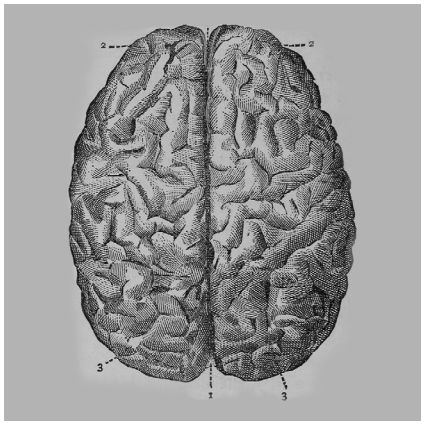


health

Lexile®: 1040L
Word Count: 754

Time: _____

Déjà Vu (continued)

Another explanation for déjà vu comes from psychological studies of recognition memories. Recognition is the ability to know when something has been seen or experienced before. Most psychologists make a **distinction** between two types of recognition memories: recollection memories and familiarity memories. Recollection memories occur when a person can specifically identify when something has been seen or experienced before. For example, a person might see a schoolmate wearing a jacket at school and remember having seen a different person wear the same style of jacket at a concert the previous month. In contrast, familiarity memories are less specific. For example, a person might see the schoolmate wearing the jacket and sense that something about the situation is familiar but cannot specifically identify the source of that familiar feeling.

Some psychologists, then, suggest that what some people report as déjà vu might simply be a case of familiarity memories. These people sense that something about the current situation relates to a previous memory, but because they cannot identify the source of that memory, they are left with a mysterious feeling. The mysterious feeling can cause them to feel unsettled, or uncertain and uncomfortable, and so they are more likely to think that they are experiencing something strange. In truth, nothing strange is happening. They are simply unable to remember the specific details of a memory.

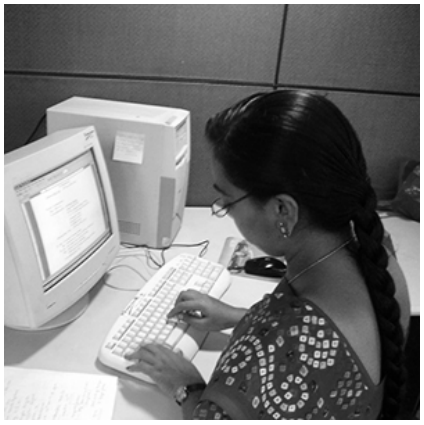
Research into déjà vu suggests that there is no single explanation for this phenomenon. One reason for this is that people may use the same term to describe different types of experiences, even though the details and sources of those experiences can be quite different. In any case, most experts agree that déjà vu is nothing to worry about. It is not a symptom, or sign, of a health problem. Those who experience déjà vu are advised to simply enjoy the event.

Answer comprehension questions on page 155.

Genealogy

Who are you? Many will answer this question with their names, their occupations, or a list of personal traits. Others will answer with their educational degrees or religious beliefs. One factor that contributes to each person's identity is sometimes overlooked: one's ancestors.

Every person is born with physical traits passed on genetically from his or her ancestors, which includes parents and grandparents. The choices of our ancestors, such as decisions about immigration, occupation, culture, and education, may also affect us. Family traditions are also passed down through generations. Even though many ancestors lived a long time ago, their lives affect ours today. Thus, we can find out more about who we are by studying the lives of our ancestors.



Perhaps the best way to find out about one's ancestors is to get involved in genealogy. Genealogy is the act of discovering one's family tree, which often includes creating a chart that has information about one's ancestors. Usually, to create one's family tree, a person starts with oneself and then makes a branch for each parent. Those branches then split to include grandparents, great-grandparents, and more. The children of each generation are also recorded so that, ideally, every family member is included. Each person is identified not only by a name but also by the dates and places of important events, such as birth, marriage, and death. Many people know or can easily find out this information for themselves, their parents, their grandparents, and sometimes even their great-grandparents. However, at some point they will need to start a serious search to continue completing their family tree.

There are many resources to help genealogists in their search for the records of ancestors. Birth records, certificates of marriage, and death certificates usually connect children with parents and give dates as well as places. Census records are often helpful. They are often collected about once every ten years in many countries. The census is an official government record that attempts to include the name, age, and address of all residents in a country. Census records can help genealogists learn where a family lived, which can help in locating additional records. Census records also list the names and birthdates of all members of a household, which can give information about previously overlooked family members. Census records are now often available online, which makes genealogy research more convenient. Many websites dedicated to genealogical research have archives of important documents from all over the world.

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history, biography, culture, technology

Lexile®: 1040L
Word Count: 754

Time: _____

Genealogy (continued)

Technically, genealogy and family history are not the same thing. However, they are closely related, and the terms are often used interchangeably. Genealogy focuses on finding the information required to build a family tree. In contrast, family history involves learning more detailed information about ancestors. Family historians are often excited to share stories and sometimes photos about ancestors. For example, family historians might enjoy learning about a great-uncle who served in a war. Or maybe they would enjoy collecting stories about a great-great-grandmother who escaped to a country with greater religious freedom. Family historians say that this type of research helps them feel a stronger personal connection to their ancestors. Learning about ancestors can also help family historians develop a stronger connection with their living relatives. Many family historians find strength and courage from learning about the challenges their ancestors faced. While many people may find family history to be rewarding, it is not possible without first conducting genealogical research.

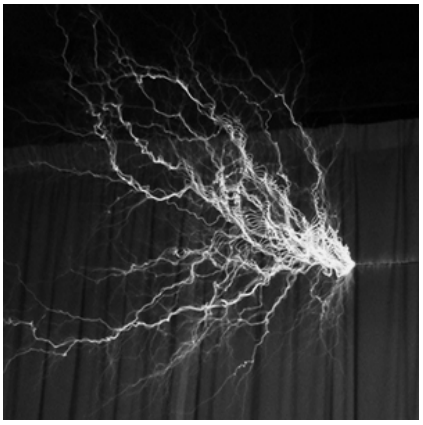
Many people work on family history because they enjoy it. Discovering missing information or a new relative can feel like treasure hunting. Those who know little about their **ancestry** are often surprised by how much information they can find in only a few hours. In fact, because many genealogical records are now available online, even those whose genealogy is already fairly complete can often find relatives who have not previously been identified in their personal records.

Genealogy is a hobby for beginners and experts. Anyone can start collecting and recording information about their ancestors by interviewing grandparents, parents, or other living relatives. While most people consider genealogy a hobby, it is also possible to make it a career. Professional genealogists collect records and help others to find the best resources to complete their personal family trees.

So, who are you? Although you already know many things in answer to this question, genealogy can help you learn more. Get started by asking your family questions or visiting a genealogy website. You will find out things that you never knew about your ancestors, your living relatives, and yourself.

Answer comprehension questions on page 156.

Static Electricity



Most people have had the experience of touching a friend's arm and feeling a shock. What some people may not know is that this shock happens because of static electricity. Static electricity is not the same kind of electricity that is used to illuminate a home or to power household appliances; instead, static electricity is an electrical charge that collects, or builds up, on the surface of objects. Static electricity stays still, or static, until it is released by contact with another object. Hence, when a person feels a shock upon touching someone else, that person is helping the other person release the static electrical charge that has built up.

Static electricity is **generated** when two materials with certain characteristics come into contact. One of the materials usually has to be soft, such as clothing, blankets, hair, or carpeting, and the other has to be able to conduct electricity. When these two materials rub together, static electricity is generated.

The generation of static electricity involves atoms. Everything is made up, or composed, of tiny particles called *atoms*. The nucleus (or center) of an atom has a positive charge due to protons (extremely tiny particles with a positive charge) that are inside the nucleus. The outside of an atom has a negative charge, due to the presence of extremely tiny particles called *electrons*, which have a negative charge. In its normal state, an atom has a neutral (not positive or negative) charge because it contains the same number of protons and electrons. However, sometimes electrons are pulled from an atom, thus removing some of the atom's negative charge. When this happens, the atom's overall charge becomes positive while, at the same time, the object that pulled the electrons gains a negative charge. The negatively charged object has static electricity because the electrons have a negative electrical charge, but they are still (not moving). However, when these electrons move back to an atom, they release some of their energy. This is the shock that we sometimes feel from static electricity.

Static electricity can collect when a person walks on soft carpet while wearing shoes. The person's shoes pull electrons from the atoms in the soft carpet, which builds the negative charge on the bottoms of the shoes. The charge does not remain on the shoes, however. The human body is a good conductor of electricity, too, which means that electricity can move through it. Because of this, the negative charge in the shoes moves into the person's body, and the body holds the negative charge until it is released. The only way for the negative charge to be released is for the electrons the person picked up to move to other atoms that have a positive charge.

Continued on the next page.

nature

Lexile®: 1040L
Word Count: 713

Time: _____

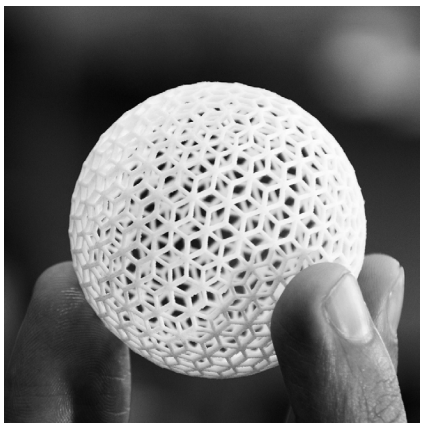
Static Electricity (continued)

Sometimes, the energy that is released in a shock of static electricity is very strong. If there are a lot of electrons moving between the two objects, the energy can be seen. It looks like a very small lightning bolt. These lightning bolts can often be seen when using a wool blanket on a dry, cold day. Sometimes, when people pull blankets over their heads, a large amount of static electricity is released, and they can see several little lightning bolts. These lightning bolts are not dangerous.

Static electricity can provide some interesting opportunities for learning and entertainment. For example, the effect of static electricity can be seen by using a balloon. Students may find it interesting to rub a balloon on their hair for about 30 seconds and then hold the balloon against a wall. If the weather is dry enough, the balloon will have collected enough static electricity to stick to the wall. The positive and negative charges are strong enough to hold the balloon in place for a time. Another experiment involves using a balloon and a kitchen sink. First, the balloon can be rubbed on a person's hair. Next, a water faucet should be turned on slightly, allowing a small stream of water to flow. Finally, the balloon can slowly be moved toward, but prevented from actually touching, the water. When the balloon is close enough to the water, the water will actually bend toward the balloon. This might appear to be a magic trick, but it is simply science. It is static electricity.

Answer comprehension questions on page 157.

3D Printing



In the 15th century, Johannes Gutenberg created the printing press. Previous to this time, books had to be copied by hand, and it took many years to do so. Books were also usually only read by members of the clergy and by the very rich. With the introduction of the printing press, everything changed. Thousands of pages could be created each day, and new books could be produced within just a few hours' time. In addition, the masses could afford to buy and read them. As a result, the printing press helped to spread culture and knowledge across the world. It was an invention that changed society.

Now in the 21st century, printing is changing the world once again. This time, the invention is a process called 3D printing. Whereas the printing press was effective at distributing ideas through the written word, 3D printing has the ability to send instruction to build solid, physical objects. A 3D printer is a type of industrial robot, which means that it is a machine designed to build things for people.

In 3D printing, also called additive manufacturing, the process of creation begins with a set of instructions in the form of a digital file. Before an object can be printed, it must first be designed in a digital file, using a computer. Using this set of instructions, a 3D printer creates the object one layer at a time. Each layer is very thin, and instead of ink and paper like a paper printer, 3D printing uses tiny materials called droplets or filaments. These filaments may be metal, plastic, or one of several other substances—even chocolate or sugar! As each additional layer is added, the final product begins to form. This is what is meant by the term *additive manufacturing*.

By contrast, *subtractive manufacturing* means that objects are created by cutting or drilling. In other words, parts of the whole must be **subtracted**, or taken away. An example of this might be a sculptor chipping away at marble to make a statue. This process of producing things can be difficult, as well as time consuming. It also tends to be more expensive than mass production because the material that is cut away is often wasted. Manufacturers have to produce and sell a large number of items in order to cover their basic costs. Fortunately, 3D printing may help to solve many of these problems with subtractive manufacturing.

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technology, business, health

Lexile®: 1050L
Word Count: 698

Time: _____

3D Printing (Continued)

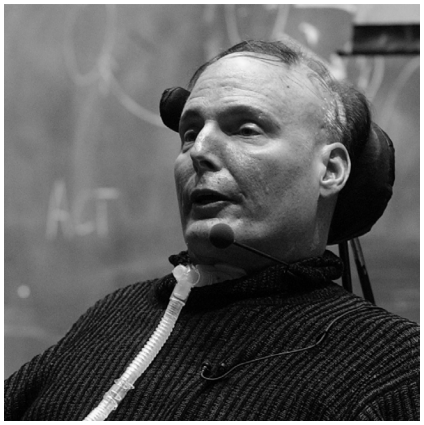
What types of items can be created through 3D printing? The answer is just about anything that you can imagine. Batteries, car parts, cell phones, clothes, jewelry, and toys have been successfully printed. Some of the most exciting and innovative items to be printed in 3D have been in the medical field. Prosthetic parts have been generated, as well as hearing aids and items for dental use. In 2012, a man was seriously injured in a motorcycle crash, and a couple of years later, doctors in Wales rebuilt his face using parts that were printed in 3D. Scientists have even been working on a way to replace human tissue lost because of illness and disease. In 2013, Chinese scientists began to print other body parts with tissue, which is a field of research known as *bioprinting*.

Engineers and scientists have been using 3D printing since the 1980s. Today the process is available to the public, and a user does not have to be an expert in order to design and print objects. The first 3D printer costing less than $10,000 was not available until 2007. And although many 3D printers still cost hundreds or thousands of dollars, the price of these machines continues to drop which will make this technology more accessible and popular in the future.

3D printing may sound like something out of a science fiction movie. But 3D printing is as real as a book that you can read. What new object will become available through 3D printing? Some people have even wondered if the day will come when we will all be eating food that has been created by a 3D printer. When that time comes, a snack or your next meal may come at the click of a button.

Answer comprehension questions on page 158.

Christopher Reeve



To film fans in the 1970s and 1980s, Christopher Reeve was Superman. A successful actor, he landed the title role in the successful 1978 movie *Superman*, which brought him worldwide fame. Over the next decade, he again played the well-loved superhero in three more Hollywood films. However, upon suffering a fall in a 1995 horse riding accident, his spinal cord was damaged beyond repair, leaving him paralyzed from the neck down. During the remaining years of his life, his actions redefined what it means to be a hero.

A native of New York City, Reeve was born in 1952. Growing up in Princeton, New Jersey, he developed a love for the theater early in his life. At age nine, he appeared in his first theatrical production, *The Yeoman of the Guard*. After that production, Reeve decided that he wanted to work in the field of acting for the rest of his life. By the time of his high school graduation in 1970, he had already joined the Actors' Equity Association, a professional organization for actors.

Upon graduating from Cornell University in 1974, Reeve pursued an acting career. For a brief time, he appeared in the TV daytime drama *Love of Life*. Then, in 1975, he made his Broadway debut in the play *A Matter of Gravity*, which also starred the legendary actress Katharine Hepburn. Reeve was still relatively unknown when he tried out (auditioned) for and won the coveted role of Superman. In addition to his performances in the four Superman movies, Reeve's memorable performances include roles in *Noises Off*, *The Remains of the Day*, and *Somewhere in Time*.

Reeve's life forever changed in 1995, when a tragic accident occurred. While horse riding, two of Reeve's upper vertebrae in his back were shattered. Over the next five weeks, Reeve fought to stay alive through various illnesses and surgeries. He also needed assistance from a ventilator—a machine to help him breathe. Doctors were unsure whether he would live. Amazingly, he survived. Although he was mostly paralyzed, meaning he could not move, he recovered some control over his physical movements through therapy and exercises. He learned how to talk between breaths. He also learned to control a wheelchair by operating a device with his mouth.

In 1997, Reeve returned to the film industry with *In the Gloaming*. This time, however, he worked as a director, instead of an actor. Praised by critics, this film won six Cable Ace Awards and was nominated, meaning the film was selected as a possible winner, for five Emmy Awards. In 1998, Reeve returned to acting in a remake of Alfred Hitchcock's *Rear Window*. This film marked Reeve's first major starring role since his accident. Reeve's performance in this film earned him a Screen Actors Guild Award for Outstanding Performance by a Male Actor in a Miniseries or Television Movie. He was also nominated for a Golden Globe Award.

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biography, arts, health, USA

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Word Count: 824

Time: _____

Christopher Reeve (continued)

Also in 1998, Reeve wrote his life story, *Still Me*. The book spent 11 weeks on the New York Times Best Sellers List. In 1999, he won a Grammy Award for Best Spoken Word Album for his audio recording of that book. His second book, *Nothing Is Impossible: Reflections on a New Life*, was published in 2002. His audio recording for this second book also received a Grammy nomination. About the same time, a TV documentary titled *Christopher Reeve: Courageous Steps* aired on ABC TV in the United States. The program was directed by Reeve's son Matthew Reeve.

During this same time, Reeve was doing important work raising awareness of spinal cord injuries and research. In 1999, he became chairman of the board of the Christopher and Dana Reeve Foundation. A charity organization created by Reeve and his wife, the foundation has a mission to support research into finding a cure for **paralysis** of the spinal cord and other illnesses and injuries of the central nervous system. The foundation also donates a portion of its funds to improve the quality of life for people with disabilities.

Reeve supported other important causes. He directed and appeared in various public service announcements, including an ad in which he encouraged people to donate both their blood and their time to the Red Cross organization. In September 2003, Reeve was given the Mary Woodard Lasker Award for Public Service in Support of Medical Research and the Health Sciences.

Reeve's final creative project was directing *The Brooke Ellison Story* in the summer of 2004. The film tells the story of Brooke, who was paralyzed at age 11. Like Reeve, she achieved great things in spite of physical challenges. She accomplished one of her most important goals when she graduated from Harvard University.

Reeve passed away (died) from heart failure October 10, 2004, at age 52. *The Brooke Ellison Story* first aired on TV just two weeks after his death. It was a final tribute to the remarkable life and work of a real-life Man of Steel.

Answer comprehension questions on page 159.

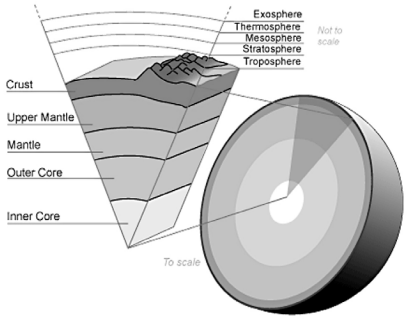
Earth's Crust

Have you ever wondered what lies beneath Earth's surface? There are several layers of dirt, rock, and other materials under the ground.

The layer that we walk on is the surface of our planet, which is also called the *crust*. Just as a loaf of bread has a crust on the outside, so too does our planet. Earth's crust contains many interesting features.

The planet's crust is made of a large variety of materials, including three types of rock. These types are called *igneous*, *metamorphic*, and *sedimentary*. Igneous rock is formed from extremely high heat, usually from a volcanic eruption. Metamorphic rock forms when there is a lot of heat and a lot of force on an area of the crust for a long time. Sedimentary rock is formed when sand and other particles are pressed together tightly.

There are two major types of crust on Earth: continental and oceanic. Continental crust is the crust on dry land. Oceanic crust is the crust under the ocean. Continental crust is composed mostly of igneous and metamorphic rock and can be from 18 to 31 miles (30 to 50 kilometers) thick. Oceanic crust, which tends to be much thinner than continental crust, is only 6 miles (5 to 10 kilometers) thick. Most of the oceanic crust is made of sedimentary rock.



Scientists have learned that the temperature of Earth's crust increases the deeper one travels into the crust. How hot does it get? You may find it surprising to learn that temperature can reach as high as 392 to 752 degrees Fahrenheit (200 to 400 degrees Celsius)! The reason for the increase in temperature is due to Earth's next layer, called the *upper mantle*. The deeper one travels into the crust, the closer one gets to the upper mantle, and the upper mantle is very hot! Together, the upper mantle and the crust are called the *lithosphere*.

The lithosphere is composed of huge, overlapping sections of land called *tectonic plates*, which actually float on another layer called the *lower mantle*. The lower mantle is not solid rock; it consists of incredibly hot liquid rock. As liquid rock in the lower mantle moves upward, it changes the force on the tectonic plates, causing the tectonic plates to move. In fact, tectonic plates are always moving. They move slowly, sometimes only 1 inch (2.5 centimeters) each year, so we do not notice this movement. However, you are probably familiar with what happens when these plates move against each other: earthquakes!

Continued on the next page.

nature, geography

Lexile®: 1050L
Word Count: 700

Time: _____

Earth's Crust (continued)

In addition to creating earthquakes, the movement of tectonic plates also results in the creation of mountains. When two tectonic plates move together with enough force, part of one or both tectonic plates will be pushed up to form mountains. Mountains can also be formed through volcanoes, which can occur when liquid rock is forced to Earth's surface in a thin spot in the crust.

Scientists suggest that Earth's crust has changed over the many years that the planet has existed. Evidence suggests that Earth's first crust was very thin and often moved around, due to the movement of tectonic plates. This movement helped create many interesting features on our planet's surface, including mountains, rivers, and lakes.

Scientific research also suggests that today's oceanic crust is younger than the continental crust. A simple theory explains the difference in age between the continental crust and the oceanic crust by claiming that the ocean floor is covered with active volcanoes, which are constantly erupting and forming a new, young ocean floor.

It is important to note that much of what we have learned about the crust has come from educated guesses. No one has ever traveled below Earth's crust to verify this information. In fact, humans have **drilled** only about 7.5 miles (12 kilometers) into the continental crust and nearly 1 mile (2 kilometers) into the oceanic crust. However, this is not to say that the theories that scientists have suggested are wrong or are not based on evidence. Due to advanced technology, current scientific conclusions are probably very close to what is really below Earth's crust. Perhaps someday humans will travel to the center of the planet and find out how accurate these theories are!

Answer comprehension questions on page 160.

Penguins

When people think about penguins, they often imagine birds moving slowly over ice. Like other birds, penguins have wings, but penguins cannot use their wings to fly. Instead, they walk on land and swim in the ocean. In fact, they spend about half of their lives in the ocean! They depend on the ocean for food, and they move with much greater speed and grace in the water than they do on the land.

Except for the Galapagos penguins that live in the Galapagos Islands along the equator, all penguins are native to regions south of the equator. And although some penguins, like the Galapagos penguins, live in tropical climates, most penguins prefer the cold, so many of them live in Antarctica or the southern regions of South America. Usually, penguins that live in warmer, northern climates are smaller than penguins that live in colder, more southern climates. For example, the largest living penguins, called *emperor penguins*, live in Antarctica. Their larger size helps these penguins survive in freezing cold climates.

There are about 18 different species of penguins that vary in size. Adult penguins range from 16 inches (40 centimeters) tall and 2.2 pounds (1 kilogram) to about 42 inches (101 centimeters) tall and 75 pounds (35 kilograms). Scientists suggest that some prehistoric penguins were as large as humans are today! These giant penguins lived in South America and Antarctica.

Most penguin species live in large groups, or colonies. These colonies can be as few as 100 pairs of penguins to hundreds of thousands of pairs. Because penguins live in such large colonies, they demonstrate interesting group behaviors. Sometimes, a large group of penguins might appear to be dancing together as they move. Other times, amazing performances can be heard as the members of a **colony** make sounds.

A male and female pair of penguins will usually remain partners for several years and share the responsibilities of caring for their young. After the mother lays an egg, the father will usually keep the egg safe and warm. While the male cares for the egg, the female usually goes out to the ocean to hunt for food. Then they change responsibilities; the female protects the egg or newborn chick, or baby penguin, while the male hunts.

Because most penguins live in such cold environments, it can be very difficult for penguin parents to protect their eggs from the bitter cold. It is common for the father penguins to hold the eggs between their legs and stand together in a tight group to keep the eggs warm. After the chick hatches, the mother and father raise it together. They teach the chick to stay near the colony, to swim, and to hunt.

Continued on the next page.

animals, oceeans

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Word Count: 693

Time: _____

Penguins (continued)

Penguins love the water, but they live on the land or on the ice. Unfortunately, they cannot move very quickly on their feet. The way that penguins move on their feet is called *waddling*. This kind of movement involves leaning the body from one side to the other in order to lift the feet and move forward. If penguins are not waddling, they may be seen sliding on their bellies across the snow, which allows them to move quickly while conserving energy. Penguins move much faster in the water than they move on land.

Penguins are well adapted to swimming. Their wings, which are not used for flying, help propel, or push, them through the water. Some people have observed that a swimming penguin appears more like a fish than a bird! When penguins dive into the ocean, they typically move as fast as 7.5 miles (12 kilometers) per hour. However, when they are scared, they can swim even faster—as fast as 17 miles (27 kilometers) per hour—to escape predators. While small penguins usually dive only a few feet deep, larger penguins, like emperor penguins, can dive up to 1,870 feet (565 meters) underwater.

Penguins are very popular birds with a very unusual appearance and movement. People love to look at penguins in zoos, and some people enjoy penguins so much that they even make the long trip to Antarctica just to see penguins in their natural environment.

Answer comprehension questions on page 161.

Rockets

For thousands of years, people have wondered about outer space. Ancient civilizations documented their astronomical research, meaning their study of the stars and planets. However, much of what modern society has learned about space was unknown until only decades ago. This is because the technology to observe objects outside of this world was unavailable until relatively recently. Rockets are an important technology that has made this possible in the modern age.

Today, most rockets are aircraft, or vehicles that travel through the air. Rockets are powered by the force of exploding fuel being pushed out of the back of the rocket. This backward force gives rockets forward **thrust**. While many rockets are now used to reach space, early rockets were used for other purposes. Rockets have been used for a wide variety of purposes for hundreds of years. In fact, rockets have been used since as early as the 13th century.

Hundreds of years before the 13th century, Chinese scientists discovered black powder, which explodes easily and can make fire. These scientists learned that they could use black powder to launch objects into motion very quickly. Although black powder was commonly used to create dazzling fireworks for celebration purposes, the Chinese also performed experiments using black powder for military purposes. For example, black powder was used in bombs, fire arrows, and cannons. Some stories say that by 1232, Chinese military units used black powder to power simple rockets. These rockets were used during battles to destroy large areas of land and drive back enemies.

Historians think that the knowledge of rockets spread from the Chinese military to the Mongolian military. Genghis Khan, a famous Mongolian leader, introduced rockets to Europe. Within 200 years, the use of rockets, both as fireworks and as weapons, had spread across Asia, Europe, and the Middle East. However, it was not until the early 1900s, that a new use for rockets was invented: space travel.

In the early 1900s, several different scientists around the world experimented with rocket technology as a means to launch objects into space. Later, Robert Goddard, an American engineer, invented a new type of fuel for rockets—a mixture of liquid oxygen and gasoline. This new, lighter fuel, allowed rockets to travel faster and higher than rockets that were powered by black powder. After Goddard successfully launched a rocket with liquid fuel in 1926, many more people around the world became interested in making rockets that could travel into space.

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space, history, war technology, scientists

Lexile®: 1050L
Word Count: 776

Time: _____

Rockets (continued)

However, numerous wars diverted rocket technology away from space travel and back to military applications. Governments around the world asked scientists to focus their efforts on creating power rockets that would be used as weapons in these wars. In particular, rockets had a significant role in combat during World War II. Following the end of this war, scientific efforts were able to return to building rockets that could travel into space.

Sending rockets into space requires a great deal of energy and power. Rockets need enough upward force to overcome the downward force of gravity. Rockets also need enough force to push through the atmosphere. The atmosphere is made up of thick layers of air that surround our planet. Earth's atmosphere is about 48 miles (about 80 kilometers) high. Because rockets need to have extreme force but also must be lightweight, rocket engineers must find the right balance of power and weight. For this reason, rockets are built with different sizes and fuels, depending on what they need to do.

American and Soviet scientists competed to be the first group to successfully launch a rocket into space. In 1957, Soviet scientists announced the successful launch of the *Sputnik* satellite, using rocket technology. Four years later, the Soviet government sent Yuri Gagarin, the first man to travel into space, aboard a rocket that orbited Earth once before returning to the ground. The trip took Gagarin only a few hours to complete. In 1969, American astronauts used a rocket to travel to the moon.

For several decades, rockets have been used to take both people and machines into space. Rockets have also been used to help scientists understand more about the weather, the atmosphere, and our planet. In addition to these scientific uses, rockets are most commonly used for military purposes. Many types of rockets can be used in battle. Some rockets are launched from the ground, others can be launched from a ship, and others can be launched from airplanes in the sky.

Rockets are built in many shapes and sizes, and they have many different uses. The next time that you see a rocket, remember that this amazing technology was invented nearly 800 years ago in China.

Answer comprehension questions on page 162.

Yawning

As with many mysterious things, unscientific reasons have been created to explain the act of yawning. Some ancient civilizations believed that yawning meant that the yawning person's soul was trying to leave the body and fly to the sky. According to some historians, the **custom** of covering one's mouth while yawning was, in the beginning, not just to show good manners, but to trap one's soul in one's body and to keep it from escaping. But why do people really yawn?

We often yawn when we are tired or bored. Although this is certainly true, the question remains why being tired or bored results in a yawn. When we yawn, our mouths open wide. Our faces stretch as we take in as much air as possible, filling up our lungs as far as they will go. It has been a commonly accepted theory that we must, therefore, yawn to draw more oxygen into our bodies. Scientists have guessed that being tired or bored causes our bodies to slow down, including our breathing. As our brains realize that we are not taking in as much air, they signal our bodies to yawn. Yawning forces us to take in more oxygen. This theory is so prevalent, or common, that it has even been taught in medical school; however, it has not been proved. In fact, studies show that people frequently yawn when they watch something boring, but they do not necessarily yawn when they breathe air with less oxygen. So yawning is probably not a response to our bodies' need for more oxygen.

Some scientists think that yawning may be a form of communication between people. Most people will yawn when they see someone else yawn or even when they read about yawning. Blind people also yawn more when they hear yawns. So, some scientists think that yawning may have served as a way for humans to signal information to others in their group or simply to signal their membership in the group to each other. In other words, yawning may be a social action.

For unknown reasons, yawning is also associated with empathy. Empathy is the ability to sense and understand the feelings of other people. One study found that children with autism, a condition which often makes it difficult for a person to understand other people's feelings, did not yawn when they saw other people yawning as much as children without autism did. This study supports the idea that yawning may be a type of social communication.

Continued on the next page.

health

Lexile®: 1050L
Word Count: 724

Time: _____

Yawning (continued)

A recent study presents a new theory about the cause of yawning. In the study, scientists tested the idea that yawning might be used to cool the brain. The researchers studied parakeets because parakeets, unlike most mammals and some other birds, do not yawn simply from seeing one another yawn. The scientists observed the parakeets' yawning in different situations involving temperature. Yawning increased as the temperature of the bird's environment was increased. In a related study, people who had a cool cloth pressed on their foreheads yawned fewer times than people who had a warm cloth pressed to their foreheads. As a result of these studied, some scientists propose that yawning may serve to cool down our brains, which function best within a certain temperature range. Cooling our brains down may help us stay alert and function at our best. Just like a computer needs a fan inside of it to keep it from becoming too hot, yawning may be a cooling system for our brains.

If this new theory that yawning cools the brain is correct, it may also help explain social yawning, when people or animals yawn when they see someone else yawn. Yawning may serve to ensure that an entire social group is alert and thinking clearly. Yawning may be a subconscious signal that says, "Pay attention. We need to be alert now." Yawning when we are bored may actually be our bodies way to try wake up our brains and help us pay attention. This theory about yawning may also explain why people usually yawn in the morning after they wake up. Yawning when we wake up may help our brains become more alert so that we are more prepared for the day.

Despite all of the theories and studies, however, we do not know exactly why we yawn. Yawning remains a mystery!

Answer comprehension questions on page 163.

The Corps of Discovery

In 1803, Thomas Jefferson, president of the United States, bought a very large piece of land from France. "Very large" might be a bit of an understatement, since 827,000 square miles (529 million acres) of territory were added to the United States. This acquisition is now referred to as the *Louisiana Purchase*.

At the time, this large area that lay to the west of the Mississippi River had not been explored very much by European settlers. There was additional territory, extending as far as the Pacific Coast, which was also uncharted (not mapped). As a result, Jefferson formed the Corps of Discovery to explore the country's new land. The team was led by Jefferson's secretary, Meriwether Lewis, and William Clark of the US Army.

Jefferson hoped the team would find a Northwest Passage, which would be a water route connecting the northern Atlantic Ocean with the Pacific Ocean by way of the Arctic Ocean. Jefferson believed that a Northwest Passage would offer better shipping and transportation opportunities for the United States. Though they were all soldiers, the team members of the Corps of Discovery had a peaceful mission. The team was sent to map the territory, observe its natural resources, and, if possible, bring a message of goodwill to the Native American peoples who lived there. On May 14, 1804, the explorers began their journey, departing from St. Louis, Missouri, and entering the unknown.

More than 30 people participated in the Corps of Discovery. But perhaps the most important member of the team was also the only woman. Her name was Sacagawea, and she was a Shoshone woman who had been separated from her people many years before. During the team's first winter in the territory, Sacagawea joined Lewis and Clark as an interpreter between the team and the Shoshone people. By her presence in the team, Sacagawea helped to keep the explorers safe from hostile encounters with Native American groups. She could also tell the explorers which plants in the area were good to eat.

Eventually, the Corps of Discovery reached the source of the Missouri River. At the first village they came to, they discovered that Sacagawea's brother Cameahwait was the chief there. With Sacagawea's assistance, Cameahwait **provisioned** the team with the horses and supplies that they would need to pass through the mountains that lay ahead of them. In late 1805, the team reached the Pacific Ocean near what is present-day Astoria, Oregon.

The journey of the Corps of Discovery was a difficult one. They often slept outdoors and endured harsh weather conditions. They suffered from illness and injuries including boils, frostbite, and mosquito bites. They had to hunt for their food, and their path along the Missouri River was upstream all of the way. On a good day, they traveled a distance of only about 14 miles (22.5 kilometers).

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USA, history, geography

Lexile®: 1060L
Word Count: 819

Time: _____

The Corps of Discovery (continued)

However, their mission was also a largely successful one. Lewis recorded scientific observations about the animals that they found, including bighorn sheep, buffalo, and wolves. He also discovered animals previously unknown to Americans who lived in the eastern states, such as grizzly bears and prairie dogs. The team found such natural wonders as the Rocky Mountains and the area that would later become Yellowstone National Park in present-day Idaho, Montana, and Wyoming. The team also contacted and made friends with many Native American peoples, including the Sioux and the Chinooks.

The entire journey from St. Louis to the West Coast and back again took more than two years. Upon their return to St. Louis in September 1806, the Corps of Discovery were cheered as national heroes. They had been gone so long that many Americans feared the team had died. Amazingly, only one member of the team had died, from a burst appendix, during the journey. Sadly, six years after the return of the team, Sacagawea died while giving birth. Clark adopted two of her children to raise as his own.

Now, in the 21st century, a person can travel the same distance taken by the Corps of Discovery in just a few hours by plane. Even the return trip, by car, would take less than a week. The Corps of Discovery, however, had to travel by boat, by horse, or on foot. They had no map or GPS device to guide them on their way. During the two years that they traveled, they covered more than 8,000 miles (12,875 kilometers).

The Corps of Discovery never found the Northwest Passage that Jefferson hoped they would find, but what they did discover was very important indeed! Their maps aided future travelers who settled the American West over the decades that followed, and the team's leaders are still respected by the US Government. In the year 2000, Sacagawea was honored when an image of her face was placed on a US dollar coin. In 2001, President Bill Clinton also named her an honorary sergeant in the US Army.

Answer comprehension questions on page 164.

Bobsledding

Bobsledding, also referred to as *bobsleighing*, is one of the fastest winter sports in the world. It involves a team of men or women pushing a sled and then riding it down a very slippery, icy track that twists and turns. Today, it is an exciting winter sport with teams from many countries competing in tournaments.

For hundreds of years, people have used sleds to move things across ice. A sled, also called a *toboggan*, is simply a platform or a board with some kind of ski underneath it to help it move across ice or snow. Native peoples in the Arctic regions use sleds to carry objects across the snow. In Alaska, there is an annual competition called the Iditarod in which teams of dogs pull a driver and sled across 1000 miles (about 1600 kilometers) of frozen wilderness.

The first bobsled, built by a group of British men who were vacationing in St. Moritz, Switzerland, was built from two smaller sleds. The two sleds were attached with a wooden board. A handle that could be used to steer was installed, as well. The men rode their sled down the hills of St. Moritz at high speeds, much to the surprise of the locals.

Soon, bobsledding became so popular with visitors to St. Moritz that a special track was built. This track looked like a large pipe, laying down on the hill, with the top half cut off. Water was poured down the track and allowed to freeze. Bobsleds moved much faster on this track than they did on the snowy hills. Soon after, bobsledders began to compete for the fastest time down the track.

Originally, bobsled tracks were straight. Over several years, the tracks were changed to include some curves. The original bobsleds were wooden, but these were heavy and not very **durable**. In other words, they would break easily. Today, bobsleds are built with metal and fiberglass, and they are smooth and colorful, with a shape similar to a rocket ship.

Competitive bobsleds must be no longer than 3.8 meters (12.4 feet) long for four-person teams and 2.7 meters (8.85 feet) long for two-person teams. There is also a maximum weight allowed for both four-person and two-person teams. This is because bobsleds depend on gravity to make them move quickly, so if one bobsled is heavier than another, it will probably go faster.

Bobsled teams must always have a pilot and a brakeman. In teams of two, both the pilot and the brakeman push the bobsled to get it started. In teams of four, the pilot and the brakeman do not push, but the other two team members do. In order to be a bobsledding athlete, a person must be strong and fast. The pilot and the brakeman have to work very well together to guide the bobsled down the track at the fastest possible speed. This coordination requires a lot of practice and skill.

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sports, Olympics, Europe

Lexile®: 1070L
Word Count: 719

Time: _____

Bobsledding (continued)

Competitive bobsled tracks have some strict rules. They must be about 1,200 meters (.75 miles) long, and they are expected to have at least 15 curves. Tracks are made of concrete and covered with smooth ice. Bobsleds usually go about 130 km per hour (81 mph), meaning that on some curves, the teams feel like they have five times the regular force of gravity pushing on them! The current world record for bobsled speed is about 200 km per hour (125 mph). If you consider that bobsleds move at this kind of speed and that teams do not wear very much protection during the competitions, you can see that bobsledding could be one of the most dangerous sports in the world. Because accidents are possible, sledders wear helmets to protect their heads.

Bobsledding first became a Winter Olympic Sport in 1924. For many years, bobsledding was only a men's Olympic sport, but, in the 1990s, women's bobsledding was added to the Winter Olympics. Throughout the years that bobsledding competitions have been held, Switzerland and Germany have had the most success. They have won the most world and Olympic championships of all of the nations that have participated.

Several winter resorts offer tourists the opportunity to try bobsledding. After some training by a professional coach, groups of friends can climb into a bobsled together and experience the excitement of this winter sport.

Answer comprehension questions on page 165.

Geocaching

In real life, there may be few opportunities to hunt for buried treasure. But a new hobby offers a chance at a form of treasure hunting. This hobby is called *geocaching*.

To understand geocaching, it is important to first understand the basics of GPS (Global Positioning System) technology. GPS technology is a system of satellites that can be used to help a person navigate (find one's way to a destination). A GPS receiver is a device that uses information from the satellite system to identify the GPS receiver's location on Earth. As the person using a GPS receiver moves, the device receives updated information from the satellite system.

GPS technology was developed by the United States government for military purposes. The technology was created to help people in military vehicles track their location anywhere on Earth. Eventually, the technology was made available to the public. When this happened, some people began to explore new ways that GPS technology could be used.

One of these people was Dave Ulmer, a computer consultant. He wanted to see if people could use the technology to find a hidden location. On May 3, 2000, he placed a black bucket in the woods of Beavercreek, Oregon, USA. He left a pencil and a logbook in the bucket so that those who found it could record that they had been there. Ulmer also left a few different prizes, including some books and videos. He called his game the Great American GPS Stash Hunt. ***Stash*** is another word for hiding place. He posted GPS coordinates (a set of numbers) for the bucket on the internet and invited other people to play his game. With a GPS receiver, people could use the GPS coordinates to find the hidden bucket.

The game worked! Within a few days, two different people had found Ulmer's bucket and shared their experiences online. Soon, others began to hide their own containers and hosted their own treasure hunts. A challenging and exciting new hobby was born. Eventually, the game was renamed *geocaching*. The prefix *geo* refers to the planet Earth and the global nature of the game. The word *cache*, a synonym for stash, refers to a hiding place.

Before the end of 2000, newspapers, magazines, and TV stations had shared news stories about geocaching. The game has now spread across the globe, and there are now millions of geocachers worldwide, and that number continues to grow. Currently, geocaches, or hidden containers like Ulmer's bucket, can be found in over 180 countries and on all seven continents on Earth, including Antarctica. The geocaching hobby has become an international, technologically advanced version of Hide-and-Seek, given that someone hides a geocache and then invites others to look for, or seek, it.

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hobbies, nature, technology

Lexile®: 1070L
Word Count: 825

Time: _____

Geocaching (continued)

Although the first geocache container was a black bucket, geocache containers now come in many shapes, sizes, and colors. Some are as small as a pill bottle, and some are larger than a bathtub. Many geocaches are hidden in locations close to hiking trails, but geocaches can also be found on city streets or in buildings. Some geocaches have even been hidden underwater! In fact, one of the only rules is that a geocache should never be buried in the ground.

The rules for basic geocaching are simple. First, new geocachers (people who look for geocaches) should visit and join a geocaching website. On the website, geocachers should enter their locations (usually by entering their zip codes), and the website will list nearby geocaches. Geocachers can select a geocache that they would like to find, and enter its coordinates into their GPS receivers. Many geocachers enjoy bringing along family members or friends to share in the experience and help locate the geocache. When they find the geocache, they can sign the logbook to record their success, and trade an item for another item inside the cache. When they are done, geocachers can report back to the website about their find. Many geocachers like to post photographs of their finds on social media or geocaching websites.

Many other games can be played using the basic geocaching rules. One variation is called a *Multi-cache* in which players use a geocaching website to find the coordinates to a clue instead of a normal geocache. This clue provides the coordinates to another clue until the players eventually find the geocache. Another game involves hiding a geocache at a location that is of particular scientific interest. Players can enjoy discovering and learning about the location just as much as they enjoy finding the geocache.

Those who geocache should follow a set of ethical guidelines. First, all geocachers should play safely, respect private property, and protect the environment. In addition, if geocachers take a prize from a geocache, they should be sure to leave something else of equal or greater value for the next person to find. By following these simple rules, everyone can have an enjoyable and safe adventure participating in this global treasure-hunting game.

Answer comprehension questions on page 166.

Pawnbrokers

A person's car breaks, and this person takes it to an auto shop to be fixed. The bill comes, and the repairs are $500 more than expected. This person does not have enough money to pay for the repairs but needs the car to travel to work each day. Then, this person remembers the box of valuable coins that came as a gift several years ago. This person takes the box to the pawn shop, trades the box for a pawn loan of $500, and has the money needed to fix the car. The pawn shop helped solve the problem.

A pawn shop is a business that buys and sells a variety of things. At a pawn shop, customers can trade their valuables for pawn loans, or money. Once pawn loans are made, customers have a certain amount of time to return and repay the loan if they want to get their valuables back. Often, customers are able to repay the loan, and the valuables returned. However, when customers cannot repay the loan or wait too long to repay, pawnbrokers (people who own and operate pawn shops) can keep or sell the valuables.

People who come into a pawn shop are usually there for one of three reasons. One, they may wish to obtain a pawn loan. Two, they may want to quickly sell a piece of property that they no longer need and hope to get a fair price for it. Three, they may hope to purchase items that pawnbrokers offer for sale.

To be successful, pawnbrokers must possess a range of skills and knowledge. They must have an extensive knowledge of a wide variety of items and the potential value of those items. Pawnbrokers need to quickly give a fair assessment of the value of these items. Pawnbrokers typically pay customers from one-third to one-half of the estimated value of the items. If pawnbrokers have to sell the items later, the items must be priced high enough so that pawnbrokers earn money on the sale. Most pawn loans average between $70 and $100; however, depending on the value of the items, pawn loans can also be worth thousands of dollars. The length of the loan period may vary from state to state, though 90 days is common.

Pawnbroking is a profession that dates back more than 3,000 years as shown in records from ancient China. There were also pawnbrokers in ancient Greece and throughout the Roman empire. In 1415, British King Henry V pawned his jewels to raise money for a war with France. In the same century, Queen Isabella of Spain pawned her jewels to help send Christopher Columbus on his trip across the Atlantic. During the Great Depression in the United States, pawn shops were among the few places that paid cash, as many banks had failed. Today, there are more than 12,000 pawn shops in the United States alone.

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jobs, business

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Word Count: 713

Time: _____

Pawnbrokers (continued)

Many pawnbrokers have a good education that includes a college degree. However, much of what successful pawnbrokers need to know is acquired through regular interactions with customers. Pawnbrokers learn valuable social skills as they interact with a range of people. They also learn how to read body language, which can often reveal, or show, more about people than their words do. As pawnbrokers assess the value of items, they learn to distinguish between items that are **authentic** (real) and items that are counterfeit (fake). Pawnbrokers must be kind and courteous to customers, but they must also be firm and confident when negotiating a price or refusing a loan.

By working with people who may be in desperate need of cash, pawnbrokers learn how to budget their own money. They see firsthand the importance of spending less than they earn and managing their money. As a result, many pawnbrokers have a reputation for paying their bills on time and staying out of debt.

Pawnbroking is an interesting job. Each day at work, pawnbrokers come across a wide variety of items that customers want or need to sell. These items may be gold, jewels, antiques, musical instruments, and even automobiles. The variety of items is also a big reason that people come to pawn shops looking for a bargain. You never know what you will find in a pawn shop.

Answer comprehension questions on page 167.

Piranhas

The piranha is a species of fish that swims in the many freshwater rivers of South America. The piranha is usually small and very colorful, but this fish is not famous only because of its looks. Like most fish, piranhas are omnivores, which means that they eat both plants and meat; however, most fish of comparable size do not have the sharp teeth that piranhas have. Piranhas are mostly famous for their sharp teeth and strong bite.

Many piranhas primarily eat seeds and plants, but most people think that piranhas only eat meat and fish. Perhaps this misconception comes from the fact that their teeth are extraordinarily sharp. Additionally, their bite is unusually strong due to their large jaw. Some people have suggested that piranhas swim in groups to help them hunt and kill more effectively, but recent research suggests this is not true. Like many other types of small fish, piranhas travel in groups as a form of protection from predators.

Although piranhas need to protect themselves from predators, most people have a strong fear of piranha attacks. This fear is based on stories and scary films rather than scientific fact. Several popular movies suggest that piranhas will attack and kill a human in a few minutes. These fictional stories are perhaps based on an account by a former US president, Theodore Roosevelt. During a trip to South America, Roosevelt observed a pack of piranhas eat a whole cow. Roosevelt described this event in one of his books, and this increased people's fear of piranhas.

However, historians and scientists have several concerns with Roosevelt's account. First, it is now believed that the locals who showed Roosevelt the piranhas had previously captured the fish and kept them in water for days, starving them so that they would display unusually hungry behavior. Also, the cow in the story was dead, not alive. Numerous reliable reports have shown that piranhas will bite large mammals, but only if the animals are already dead. Reliable reports of piranhas attacking humans are rare. These reports are believed to only happen during periods of low water levels when a piranha's normal food sources are scarce. And even in those situations, reports of attacks on a living person are often doubtful. In fact, some people swim daily in water where piranhas live without ever being bitten.

Many people who live near the Amazon and other rivers in South America depend on piranhas to provide food, money, and tools. For example, some groups use piranha teeth as tools and weapons. Because piranha teeth are very strong and hard, they are useful in making tools like saws and knives. People also fish for piranhas as a source of food. Usually, fishers catch piranhas in nets, but they also use fishing poles and hooks. The reason why nets work better is that if a hook catches a single fish, other nearby piranhas might quickly arrive and eat the hooked fish! It is not unusual for piranhas to eat other fish that have been injured or killed. With nets, the fishermen can catch multiple piranhas at one time without worrying whether piranhas will attack the captured fish.

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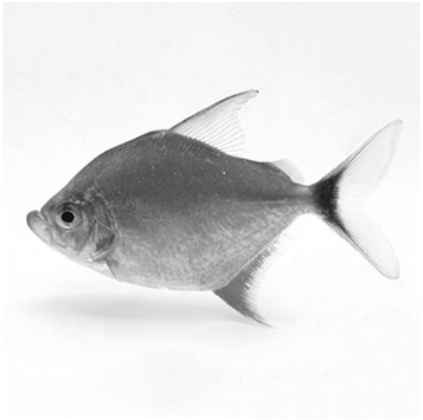

animals, nature, Americas

Lexile®: 1070L
Word Count: 778

Time: _____

Piranhas (continued)

Instead of being labeled as fierce and **aggressive**, piranhas would be better categorized as a vital part of South American cultures and lifestyles. These fish make important contributions to the ecosystem in South American rivers. When they find dead fish or other animals, they eat them. In this way, they keep the rivers clean and free of dead creatures. This type of relationship is common and important in nature.

Because they prefer warm climates, piranhas are native only to the freshwater rivers of South America. There are some reports of piranhas being caught in rivers and lakes in other parts of the world. Most of these reports are misidentifications; those who think they have caught a piranha have actually caught a fish that only looks similar to a piranha. In other situations, scientists have concluded that piranhas found in other waters were placed there by humans. Scientists have suggested that people purchased the piranhas as pets, and when the people could no longer take care of their pet piranhas, the people dumped the fish in nearby rivers. This is a dangerous thing to do because introducing a foreign species into a new environment can damage local plants and animals by upsetting the natural food chain.

Those who wish to see piranhas may find that this is difficult. Many countries, including most parts of the United States, have prohibited importing piranhas and selling them. A curious person may need to travel to South America to get a look at this remarkable freshwater fish.

Answer comprehension questions on page 168.

Princess Grace

During the 1950s, an American film star named Grace Kelly rose to fame. She was one of the most famous actors in Hollywood. Starring in 11 motion pictures in just a five-year span, she was admired by moviegoers both in the United States and around the world. Upon her marriage to Prince Rainier III in 1956, she took on her greatest role of all: Princess Consort of Monaco.

Grace Kelly became interested in acting from a young age. She was born in 1929, in Philadelphia, Pennsylvania, USA. As a girl, she displayed talent in the performing arts, which was common in the extended Kelly family. After all, Grace's uncle Walter was a stage performer, and George, another uncle, was an award-winning playwright. In her youth, Grace often appeared in school and community plays. After high school, she enrolled in the American Academy of Dramatic Arts in New York City, and while she was a student at the school, she found part-time work as a model to pay her tuition.

At age 19, Grace graduated from the academy and began her acting career. In 1949, she appeared in her first Broadway play, *The Father*, which tells the story of a young girl who wishes to pursue a career in art against her father's wishes. Shortly after, Grace moved to Hollywood to work in the film industry. At first, she acted in TV productions. Then, on the set of her first movie, *Fourteen Hours*, in which Grace had a minor role, she was noticed by actor Gary Cooper. Cooper arranged for Grace to play his wife in what would become the classic 1952 western *High Noon*. The film made her an instant star.

In a few short years, her fame spread around the globe. She appeared in the 1953 film *Mogambo* in which she portrayed a woman on a safari in Kenya. That role earned her an Academy Award nomination for Best Supporting Actress. She also starred in three films directed by the famous Alfred Hitchcock: *Dial M for Murder*, *Rear Window*, and *To Catch a Thief*. In 1955, at age 25, Grace won an Academy Award for *The Country Girl*, a film about a troubled actor and his devoted wife.

In 1955, a trip to Europe changed her life. Grace was invited to attend the Cannes Film Festival in France, where she met Prince Rainier III of Monaco, a small country bordering southern France. Grace and Rainier wrote letters, and he visited her in the USA later that year under the pretense of an official state visit to the USA. At this time, Prince Rainier, as monarch of Monaco, faced a dilemma. Because of a 1918 treaty with France, Monaco would become part of France and lose its independence if a direct heir to the throne were not produced, so the prince was under considerable pressure to get married and have a child.

Continued on the next page.

biography, arts, USA, Europe, leaders, government

Lexile®: 1070L
Word Count: 810

Time: _____

Princess Grace (continued)

The courtship between Grace and Rainier was described by the press as a fairytale romance. The couple was married on April 19, 1956. To become Princess Consort of Monaco, Grace had to renounce her American citizenship. In addition, she also chose to give up her acting career. During their marriage, Princess Grace and Prince Rainier had three children: Princess Caroline, Prince Albert, and Princess Stephanie.

Over the years that followed, Grace was frequently approached by filmmakers with offers to return to acting. She refused, instead focusing her time on her family and her new role as ceremonial leader of Monaco. Just as filmgoers in the United States had adored Grace during her acting career, the people of Monaco grew to love her, too. She worked to bring about positive changes to the social climate of the country, and in the process, she also helped to **boost** the tourism industry as worldwide interest in the country grew.

During her reign as Princess Consort of Monaco, Grace was not content only to raise her three children or to run the affairs of the royal palace. She became involved in several charitable and public service organizations. She established the Princess Grace Foundation, which promoted participation in the creative arts and provided scholarships to deserving students. She also served as president of both the Red Cross of Monaco as well as the Garden Club of Monaco.

In the autumn of 1982, a terrible accident happened. Princess Grace was driving her car in southern France when she suffered a stroke. As a result, she lost control of the vehicle, which fell 150 feet (45.7 meters) to the ground below. Due to her injuries, Princess Grace passed away at the age of 52 on September 14, 1982. Prince Rainier never remarried and was buried by her side upon his death in 2005. Their son, Prince Albert, rules Monaco in his father's place as Albert II, keeping the country free and independent to this day.

Answer comprehension questions on page 169.

Solar Panels

Solar energy is energy from the sun. And a solar panel is a tool that converts, or changes, sunlight into another form of energy. Solar panels can be found on a variety of devices, including some calculators. Calculators with solar panels do not require batteries to function. Instead, they convert light into electricity, so these calculators will work in any place that has enough light. Solar panels can also be found on road signs or on billboards. These solar panels collect sunlight during the day and store that energy as electricity that is then used to light up these signs at night. Solar panels are becoming increasingly popular as a source of clean electricity.

Solar panels come in two main types. One type uses the sun's energy to heat water. These solar panels transform the energy from the sun directly into heat. This hot water is often used for bathing or washing and eliminates the need to heat water using electricity or gas. The other type of solar panels transform the sun's energy into electricity, which can be used for a variety of purposes. These solar panels use a technology called *photovoltaic cells* or *PVCs*. A cell, in this case, is one small unit that transforms sunlight into electricity. Solar panels usually have several hundred photovoltaic cells on them.

The word *photovoltaic* can be understood by examining its word parts. *Photo* means light, and *voltaic* refers to a unit of electricity. So, a PVC solar panel changes light from the sun into electricity. Photovoltaic cells are made of a special material, usually silicon, which reacts when exposed to the sun. The sun's light enters the silicon, where the energy of the sun changes the way the particles in the silicon behave. Electrons begin to move freely, and as they move, they create an electrical current. This electrical current can be transferred in order to provide electricity for a variety of purposes. In this way, a solar panel can change the light from the sun into electricity that can power lights, computers, and other devices in a home or business.

Solar panels can be helpful in reducing the amount of energy that is used from other sources such as coal or oil. Because energy from coal and oil generates pollution, solar panels are considered to be better for the environment. However, one barrier to the widespread use of solar panels is the cost. In the past, solar panels used to be very expensive. As the technology improves, not only have solar panels become more affordable, but they have also become more efficient. Experts indicate that the money invested in solar panels will result in savings to customers in fewer than ten years.

Continued on the next page.

technology, weather, environment

Lexile®: 1070L
Word Count: 801

Time: _____

Solar Panels (continued)

People who are considering an investment in solar panels for their home should be aware of some important considerations. First, the home must be located in a region that receives plenty of natural sunshine. Solar energy does not work as well in cloudy climates. Second, the panels must be installed in a direction that will maximize their exposure to sunlight. For example, a home in the Northern Hemisphere usually has solar panels pointing south towards the sun's path across the sky. The solar panels can be **tilted**, or placed at an angle, so that they receive as much sunlight as possible. The installer should place the panels where sunlight will be blocked by shadows from trees or other buildings.

Solar panels have their limitations. Because these devices require sunlight, they cannot generate energy at night or on cloudy days. As such, customers will need to have a backup source of energy. Batteries, which can be charged by excess solar power during the day, can serve as a reserve source of energy. However, even the energy in batteries will deplete if sunlight is scarce for multiple days. Experts recommend that solar power play a role as one of multiple sources of energy for a home, business, or community. Solar panels can be used in conjunction with other energy sources, such as wind power, hydroelectric power, and energy from fossil fuels. Using multiple sources of energy can help ensure that customers have access to energy whenever they need it, regardless of the weather or time of day.

Solar energy is a clean source of electricity. It does not create pollution, nor will it run out anytime soon, since the sun will keep burning for millions of years. Because the process of converting solar energy to electricity does not pollute the air, using solar panels is better for the environment than the burning of fossil fuel. Solar power technology continues to become cheaper and easier to develop and use. In the coming years, it is expected that more individuals and organizations will invest in solar panels as an additional source of energy.

Answer comprehension questions on page 170.

Antarctica

When people think of a desert, they often picture sand dunes, lizards, and hot temperatures. However, the world's largest desert has none of those. Antarctica, the continent at the South Pole, is Earth's largest desert and one of the locations on the planet with very little annual precipitation (rain or snow). It is also the coldest and windiest place on Earth. These conditions earn Antarctica the nickname of "the silent continent," given how difficult it is for life to survive in such an extreme climate.

Antarctica is the fifth largest continent in the world. At nearly 5.4 million square miles (about 14 million square kilometers), Antarctica is about 1.5 times larger than the United States. But only about ten percent of the continent, along the coast, is free of snow and ice. This is where the temperatures are warmer and where most wildlife lives. The coldest temperature on the planet was recorded in Antarctica in 2010. It was -135 degrees Fahrenheit (-89 degrees Celsius)! In the summer, things do not get much warmer. Even along the coast, the summer temperature rarely rises above freezing (32 degrees Fahrenheit or 0 degrees Celsius). The sun shines on Antarctica, but most of the rays are reflected off of the snow and ice, so the heat is not absorbed, and most of the ice never melts. In fact, the majority of Earth's freshwater supply is located in Antarctica in the form of frozen glaciers.

Despite this harsh environment, natural wildlife exists in Antarctica. The coasts are home to a variety of seals, penguins, ducks, and many other birds. Fish and whales also inhabit the cold local waters. Few plants grow, and most are mosses and fungi that can withstand the cold temperatures.

People also live in Antarctica. The first humans to visit the South Pole were explorers in the early 20th century. By the 1950s, several nations had entered a **treaty**, or international agreement, stating that no military could land in Antarctica and that the continent could only be used for scientific research purposes. In time, additional treaties were made, and today this system of treaties includes nearly 50 participating countries. Antarctica has been protected as the world's largest conservation area. No one is allowed to mine or drill the land in search of coal, oil, or any other kind of resource.

Several research stations have been built in Antarctica. One station, located in the middle of the continent, is home to a large telescope. Astronomers who use this telescope indicate that its position at the South Pole allows them to study unique phenomena (natural events) that are not easily observed anywhere else on the planet. Geologists are another group that visit Antarctica. They are interested in studying the history of the continent and what it can reveal about the rest of the planet. Meteorologists, scientists who study the atmosphere and the weather, find Antarctica to be one of the best places to study air, given that there is almost no pollution in this region that is so far from human civilization. Scientists who study volcanoes and earthquakes find that conducting research in Antarctica provides information that can be used to help other regions of the world. And, of course, many biologists visit the continent to study the wildlife.

Continued on the next page.

nature, geography, weather

Lexile®: 1080L
Word Count: 763

Time: _____

Antarctica (continued)

Even though it rarely snows in Antarctica, windstorms can be very strong. They pick up the snow that is already on the ground and create terrible blizzards. These weather conditions make traveling, whether by plane or by boat, to Antarctica dangerous. A plane ride to Antarctica from New Zealand takes eight hours, and sometimes flights are forced to return to New Zealand due to windstorms. Many planes have crashed in their attempts to fly through such difficult conditions. Likewise, boats have been crushed by the icy waters surrounding the continent. Travelers must sometimes wait for months until conditions are safe to leave or arrive.

Although there are no permanent communities in Antarctica aside from research stations, the wonder of the continent has drawn interest among people beyond scientific researchers. Tourism is now a popular activity in Antarctica. In a recent year, more than 40,000 tourists visited the continent either by boat (many of them on sea cruises) or by plane (many of them interested in photographing the scenery and wildlife). Concerns have been raised regarding the potentially negative impact that such a large number of visitors may have on the continent's natural environment and scientific research. Countries are working together to find solutions that will ensure that Antarctica can be enjoyed, studied, and protected for years to come.

Answer comprehension questions on page 171.

King Christian X

Christian X (the tenth) was the king of Denmark from 1912 to 1947. Christian X ruled in Denmark during two world wars and eventually became a symbol of freedom and hope for his people.

King Christian X was born Christian Carl Frederik Albert Alexander Vilhelm on September 26, 1870. He was the oldest son of King Frederick VIII of Denmark and Princess Louise, who was the only daughter of King Charles XV of Sweden. Christian married Princess Alexandrine, a woman of royal ancestry from Germany and Russia, on April 26, 1898. Christian and Alexandrine had two sons. Their oldest son was named Frederick, and he became the king of Denmark after his father.

Not much is written about Christian's youth, but it is likely that he was expected to learn many skills, including languages, diplomacy, and the law. He would have been trained from a very young age to set a good example for the people of Denmark and protect their way of life.

Not long after becoming king of Denmark, Christian made a political decision that caused many people to criticize his leadership. When World War I ended, Denmark had the opportunity to regain some of the land that Germany had taken control of many years earlier. The people who lived in this region were asked to vote on whether they wanted to rejoin Denmark or remain part of Germany. Two regions were involved in the vote: a northern region and a central region. Nearly 75 percent of the people in the northern region voted to return to Denmark, and over 80 percent of the people in the central region voted to stay with Germany.

It was up to Denmark's prime minister, the leader of the elected government officials in Denmark, to take legal actions based on the vote. The prime minister decided that the northern region would rejoin Denmark and the central region would stay with Germany. Not everyone in Denmark agreed with this decision, including Christian. He ordered the prime minister to return the central region to Danish control. However, the prime minister felt that such an action would go against the free will of the people, so he refused to follow the king's order.

After many arguments, the prime minister resigned, meaning that he chose to leave his position with the government. Christian then replaced the government officials with people who agreed with his decision. This made many of the Danish people upset. They were worried that the king would continue to use this power to ignore the will of the people in other matters. There were many protests, and some people suggested that Danish citizens remove the king from power. Faced with this possibility, Christian admitted that he had been wrong, and he let the people elect a government of their choosing. As a result of this event, the people demanded that the king have less power in the Danish government.

Continued on the next page.

history, Europe, war, biography, leaders, government

Lexile®: 1080L
Word Count: 753

Time: _____

King Christian X (continued)

Although Christian had lost the support of many Danish people as a result of this disagreement, he was able to regain, or win back, their support during World War II. During this war, Nazi Germany invaded Norway, the Netherlands, and Denmark. Because they feared that the Germans might harm them, the kings of Norway and the Netherlands left their countries while Germany occupied their lands. Christian, on the other hand, decided to stay in Denmark.

Because their king stayed in the country while German forces were there, the Danish people began to respect Christian for his courage. When he gave speeches, he told the people not to fight with the German Army. Many Danish people felt that their king was calmly telling them to be strong and patient. Every day during the occupation, despite his age and the threat of the German soldiers, Christian would ride his horse through the capital city. He would make these rides by himself, without guards. During his rides, Christian always greeted the Danish people, smiling at them and offering encouragement. However, when German soldiers tried to talk to him, Christian ignored them.

The German Army was especially cruel and violent towards Jewish people. Many Jewish people lived in Denmark and were worried that the Nazis would attack, imprison, and kill them. Christian protected the Jewish people in Denmark, and, when it became unsafe for them, he helped many of them escape to safety in Sweden.

Because of his courageous rides through the city and his openly defiant attitude toward Nazi Germany, Christian became a symbol of Danish independence and spirit. Despite his earlier political mistake, King Christian X became a respected and popular leader.

Answer comprehension questions on page 172.

Mount Fuji

One of the most prominent symbols of Japan is Mount Fuji. The image is unmistakable: a tall volcano with almost symmetrical, sloping sides that form a wide base. This mountain has held an important place in the culture, art, and history of Japan.

Mount Fuji, at 12,388 feet (3,776 meters) in height, is the tallest mountain in Japan. It is just west of the capital city of Tokyo and is near other important regions of Japan. The mountain can be seen from many parts of Japan, including the large cities of Tokyo and Yokohama. Because of the height of the mountain, the top is covered in snow for a large portion of the year. Five lakes circle Mount Fuji. These lakes, along with the famous mountain and some other nearby land, **comprise** (or make up) a national park.

Mount Fuji has held a prominent place in Japan's culture and history for centuries. In fact, the very top (or summit) of Fuji has been considered a sacred site since ancient times. According to records, in 663 AD a Japanese monk was the first person to climb to the mountain's summit. Women were not allowed to climb to the summit until the late 19th century.

The first recorded climb to the summit of Mount Fuji by a non-Japanese person was completed by Sir Rutherford Alcock of Great Britain. He climbed the mountain in 1860 while serving as a British ambassador to Japan. He later wrote about his experience on the mountain in his book titled *The Capital of the Tycoon*. This book was the first time that much of the world outside Japan learned about Mount Fuji. Seven years later, Lady Fanny Parkes was the first non-Japanese woman to climb to the top of Mount Fuji. She was the wife of another British ambassador to Japan.

Nowadays, Mount Fuji is an internationally popular destination, to which thousands of tourists travel every year. Many people go to the mountain to climb it. Others visit to simply enjoy the unique Japanese culture in the small cities that surround the mountain. A large percentage of the visitors to Mount Fuji are able to climb the mountain using trails that are well established.

The Japanese government, recognizing the potential of Mount Fuji as a tourist destination, completed several projects to make climbing the mountain easier. They created switchbacks all the way to the top so that climbers do not have to try to go straight up the mountain. A switchback is a trail that moves back and forth up the side of a mountain, slowly rising higher with each movement. The government also constructed several roads so that cars and tourist buses can carry visitors to the fifth station, a trailhead or starting place. From the fifth station to the summit, there are four hiking paths.

Continued on the next page.

nature, Asia, landmarks

Lexile®: 1080L
Word Count: 753

Time: _____

Mount Fuji

One of the most popular areas for tourists has small hotels where people can spend the night, as well as a large parking lot and easy access to trails to the summit. Along the trails, both from the base of the mountain to the stations and from the stations to the mountain's summit, there are many historical sites. Shrines, temples, and teahouses are located along the slopes of Mount Fuji so that tourists can stop and experience the unique culture surrounding the mountain. Given the beauty of the mountain, combined with the many local facilities, it is no wonder that Mount Fuji continues to be so popular.

Mount Fuji is, in fact, considered an active volcano. However, scientists state that the current risk of eruption is low. The last recorded eruption was in 1707. Scientists continue to monitor, or watch, the volcano, and a warning system is in place to ensure that people are evacuated from the area in the event of an eruption. The mountain's volcanic nature is actually a benefit to locals and tourists. The area has numerous hot springs, pools of water that are naturally warmed by heat from the volcano. People enjoy relaxing in these hot springs.

Numerous Japanese poems and paintings celebrate the beauty of the mountain. The famous Japanese artist Hokusai created 36 illustrations that show Mount Fuji from different positions and at different times of the year. These works of art were created in the early 1800s and proved so popular that Hokusai created additional illustrations of the mountain. It is through Hokusai's art, and the work of other talented artists, that much of the world remembers the remarkable beauty of one of Japan's natural wonders.

Answer comprehension questions on page 173.

Parkour

In order to get from one place to another, a person has plenty of options. A person can drive a car or ride a bicycle. Perhaps a person might take a bus or a train. If the distance is very far, a person might fly in a plane or sail by boat. Many people can travel using their legs—walking, jogging, or running. Other people move using wheelchairs or motorized devices. However, for those who practice parkour, the method of transportation can be a form of art.

Parkour, sometimes called *PK*, may be best defined as the art of moving through—sometimes above, under, or around—the obstacles in one's path. It involves acrobatic and creative running, jumping, climbing, rolling, and bouncing off of objects. Often, a combination of these actions can be used. Parkour enthusiasts might, for example, jump up against one wall, then push themselves upward to the opposite wall, and subsequently vault a ledge above the first wall. Finally, they might pull themselves to the top of an adjacent roof. All of these moves would be accomplished in the blink of an eye, or very quickly. Normally, most people would reach the same destination simply by climbing up a flight of stairs, but parkour is about finding a more interesting way to arrive at a destination.

Because there is no competition in parkour, most participants consider parkour to be an activity or discipline rather than a sport. Instead of focusing on competition, parkour participants have other reasons for practicing this activity. The motivation behind doing parkour is self-improvement, the development of critical-thinking skills, and the enjoyment that comes through participation. In fact, parkour participants believe that an important part of the discipline is to help each other improve. They will sometimes gather together to practice their skills and share new techniques. For example, parkour participants may play a game called Follow the Leader, in which people will copy the action that the person in the lead performs.

The origin of parkour can be traced, or followed, back to the use of obstacle courses by French military trainers during the early 20th century. Soldiers were required to pass through a course of challenges as part of their physical training. These challenges, which were later used in military schools, included climbing walls, stepping across small platforms, and surmounting other barriers. In French, these obstacle courses were referred to as *parcours*.

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hobbies, sports

Lexile®: 1080L
Word Count: 707

Time: _____

Parkour (continued)

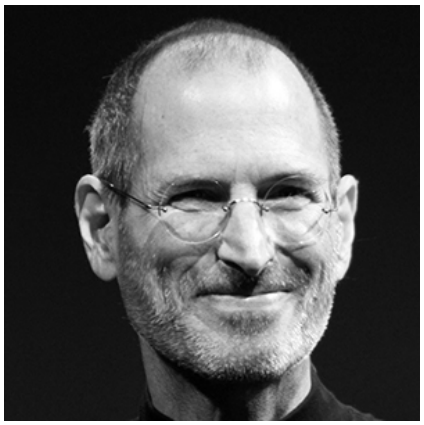
It was stories of these obstacle courses that inspired modern parkour. In the 1980s, a French teenager learned about parcours from his father who was educated at a military school and also served in the French military. This teenager liked the physical challenge of parcours, and he later invited a group of friends to practice this style of movement with him. Whereas the military performed parcours on specially designed courses, these young friends used obstacles they found in their neighborhood. They climbed over walls and railings. The jumped from steps and rooftops. As they practiced, they wanted to improve not only their athletic skills but also their artistic style. They later used the name *parkour* to describe this activity. Parkour gained international popularity as these young people shared videos on the internet of their performances.

Parkour experts offer advice to those who may be interested in this activity. Almost anywhere is a suitable location for practicing parkour: gyms, parks, city sidewalks, and office buildings. Participants should be careful not to jump from roofs or buildings that are too high, or they will risk harming themselves and damaging property. Participants should also be careful not to **trespass**, which means to enter privately owned buildings or other property without permission. Little, if any, equipment is required to participate in parkour, but many athletes use gloves and good running shoes. Some people even choose to participate in their bare feet.

Those who enjoy parkour claim that it provides more benefits than just exercise. It helps people think quickly and become more aware of their surroundings. Participants develop a more graceful ability to move in ways that are not possible when traveling in machines such as cars, elevators, and planes. Some participants even claim that parkour helps people better understand the potential and limits of the human body!

Answer comprehension questions on page 174.

Steve Jobs



In the 1970s, most computers were mainframes. They were so big that they could fill a whole room. Most people could not afford to buy one. As technology improved, a man named Steve Jobs was a pioneer in making computers that most people could afford. While still in his 20s, Jobs helped create one of the most successful computer businesses in the United States, and he is often credited with revolutionizing the computer and technology industry.

As a baby, Steve Jobs was adopted by Paul and Clara Jobs in 1955. In 1961, the Jobs family moved from San Francisco to the nearby town of Mountain View, California. At the time, people began to call the area "Silicon Valley" because of the many silicon chip innovators and manufacturers in the region. Silicon was an important substance in the manufacturing of new electronic items, including computers, TV sets, and radios.

Paul Jobs was very skilled at working with machines, and Steve Jobs shared this interest. In his free time, he worked in the garage workshop of a neighbor who was employed at Hewlett-Packard, an electronics manufacturer. About the same time, Jobs joined the Hewlett-Packard Explorer Club, which showed him his first computer at age 12. At that moment, Jobs knew that he wanted a career in computers. He became friends with the president of the Hewlett-Packard computer company, William Hewlett, who offered him a summer internship to work for the company.

After high school, Jobs attended college in Oregon for two years, but eventually returned to California to live with his parents. In 1975, he joined a computer club, where he met a computer genius named Steve Wozniak. Before long, the two young men formed the Apple Computer Company. To get the money to start their company, they had to sell Wozniak's calculator and a few other personal possessions. Together, they developed a new kind of computer.

Jobs and Wozniak finished their project and introduced the Apple II computer in 1977. Their intention was to sell this personal computer to individual users and families rather than to businesses. Within its first year in stores, the Apple II had achieved $2.7 million in sales. Within three years, it had generated an amazing $200 million. The era of PCs, or personal computers, had started, and they immediately began to change the way the world processed and stored information.

In 1984, Apple unveiled its revolutionary new Macintosh computer. To navigate from program to program, the user clicked on icons by using a new device called a mouse. This made it very easy to use. As Apple grew, new leaders joined the company, and some of them disagreed with Jobs, so in 1985, Jobs resigned from, or left, Apple.

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biography, technology, USA, business

Lexile®: 1080L
Word Count: 804

Time: _____

Steve Jobs (continued)

Over the next few years, Jobs was determined to advance the computer industry. He started a new computer company called NeXT. The first NeXT computer was easy to use and had good graphics, but it did not sell well. In 1986, he purchased a small company called Pixar, which specialized in computer animation, from filmmaker George Lucas. In 1995, Pixar released the movie Toy Story, which was an enormous success. Jobs owned 80 percent of Pixar, and, as a result of Pixar's success, his personal fortune rose to over $1 billion. Pixar continued to produce extremely successful films, and Jobs eventually sold Pixar to the Walt Disney Company in 2006 for $7.4 billion.

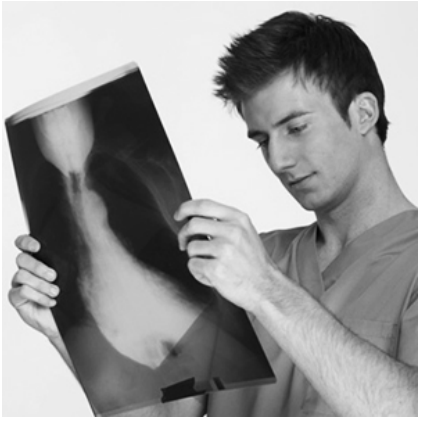
Jobs returned to the company he created when Apple purchased NeXT in 1996. In the decade since his departure, Apple had experienced large financial losses. However, just six months after his return to the company, Jobs helped Apple become **profitable** once again. Jobs brought a fresh perspective and an incredibly committed work ethic to the company. In the years that followed Jobs's return, Apple released a new PC, the incredibly popular iMac computer, along with easy to use applications such as iTunes and iPhoto. In 2000, Jobs became Apple's full-time CEO, and the income from his shares of stock in Apple and Pixar was so high that he lowered his salary of just $1 per year.

Under Jobs, Apple once again became a leader of innovation. Apple's next success was the iPod, a portable music player, first released in 2001. The iPod quickly became a top seller, and many different models, which were equally successful, were created in the following years. Jobs brought Apple to an even higher level of success with the introduction of the iPhone, a powerful smartphone in 2007, and the iPad, the first major tablet computer in 2010.

In 2003, Jobs was diagnosed with a rare form of cancer. He fought the disease for a number of years before he died in 2011, at the age of 56. Nevertheless, his impact on the world of computing and technology continues to be felt around the world. To this day, people in nations around the globe continue to enjoy Pixar films and use Apple devices.

Answer comprehension questions on page 175.

X-Rays



In 1895, a German scientist named Wilhelm Roentgen was conducting an experiment in one area of his lab. When he got the experiment working, he noticed that a screen he had set up on the other side of his lab started glowing—even though his experiment and the screen were separated by thick, black cardboard! He was very surprised and started trying to put different things in front of the screen, but it would not stop glowing. Then, he tried putting his hand in front of the screen. He was even more surprised to see shadows of the bones in his hand on the glowing screen!

Through this experience, Roentgen accidentally discovered X-radiation, which is made from X-rays. He gave it the name "X" radiation because it was an unknown type of radiation, and "X" is often used in mathematics and science to represent something that is unknown. However, Roentgen was not the only scientist to discover X-rays. Around the same time, other scientists discovered this form of radiation.

Roentgen and other scientists created devices to control X-radiation. An X-ray machine, for example, produces X-rays using an X-ray tube, which uses electricity to release electrons. As these electrons are released, they hit a special piece of metal, called an anode. When the electrons bounce off of the anode, they become X-rays. X-rays can move through many different kinds of materials, such as skin and flesh. However, these electrons cannot easily travel through harder substances, such as metal and bone.

Roentgen and other scientists discovered many applications of X-ray machines. In the medical field, X-rays are used today to see through the human body. Doctors use X-rays to examine broken bones. Doctors can also use them to see items that have been swallowed. Dentists use X-rays to determine if teeth are healthy.

When a doctor requests an X-ray image, pictures are taken of the inside of a patient's body. These pictures are created when the electrons bounce off of the anode, pass through the body, and come in contact with material that creates an image. The picture displays the objects that X-rays could not pass through. This is how an X-ray image can show pictures of bones.

When the doctors look at X-ray images, they compare what is in the pictures to what a normal body should look like. If a bone is broken, it is usually easy to see in the X-ray image. Also, if a person has swallowed something that is made of a hard substance, the X-ray can easily show its location in the body.

Continued on the next page.

technology, health, scientists

Lexile®: 1080L
Word Count: 728

Time: _____

X-Rays (continued)

X-rays are also used in non-hospital settings. In airports, train stations, and bus stations, X-rays may be used to scan, or quickly view, the inside of luggage. These scans help ensure that dangerous objects are not taken onto airplanes, trains, or buses. X-rays are used in astronomy to learn about objects in space. When an X-ray device is sent into space, it can detect X-radiation coming from objects that are not easily observed with other tools. For example, scientists have located objects that are believed to be black holes, based on the high levels of X-rays radiating from such objects. Additionally, X-ray devices are used in engineering. X-ray machines can be used to inspect materials for **flaws** or weaknesses that are not visible to the eye. This detection can help manufacturers replace or fix products before they are sold and used.

Even though X-rays can be very helpful, too much exposure to X-rays can be harmful. In the early days of X-rays, some doctors and patients became sick because they were exposed to X-rays for extended periods of time. Eventually, scientists learned that X-rays could harm living tissue, such as the human body. New practices were suggested to ensure that X-rays were used safely. For example, the person operating an X-ray machine usually operates the machine from a separate room. Also, patients often wear a heavy piece of clothing, called a *lead apron*, over the parts of the body that are not being X-rayed. These precautions keep people safe by reducing their contact with X-rays.

Today, X-rays are used more carefully and only in small amounts. X-rays can help doctors and patients as an alternative to surgery. They are also useful in other areas beyond medicine, such as with security and manufacturing. When used properly, X-rays can help keep people safe.

Answer comprehension questions on page 176.

American Bison

Years ago in the United States, back in the days of cowboys and cowgirls, there was a legendary man called Buffalo Bill. He was known for his skill with hunting and horses. His nickname was given to him because of his great ability to hunt wild buffalo. The only problem is that there were no wild buffalo in North America. Buffalo Bill should have been named Bison Bill because the large animal that he was so good at hunting was a really a bison and not a buffalo!

A buffalo is different from a bison. There are two main types of buffalo: the water buffalo in Asia and the Cape buffalo in Africa. Buffalo and bison are both related to cattle (or cows as they are commonly called), but there are some key differences between buffalo and bison. First, buffalo have much longer and more curved horns, whereas bison have shorter horns. Buffalo have a body shape and hair length similar to farming cattle, but bison tend to have longer hair and larger heads and shoulders. When early settlers from Europe first saw American bison, they used the term *buffalo* even though American bison have much more in common with the European bison than with either type of buffalo. Today, *bison* is viewed as the more appropriate name for this animal.

The American bison is one of the largest species of cattle on the planet. While they are not farming cows, their flesh is very similar to beef, and their diet is identical to a cow's. Their appearance, however, is much different. An adult bison can weigh as much as 2,200 pounds (1,000 kilograms) and stand as tall as 6.6 feet (2 meters). An adult bison is usually over 10 feet (3 meters) long.

The fur on bison changes depending on the season. In the winter, they have a long, dark brown coat with hair that gets dirtier throughout the season. In the summer, bison **shed** their winter coats and grow a lighter-weight coat that is shorter and has a light-brown color. Both males and females have horns.

Bison used to roam over North America from northern Canada to parts of Mexico, and from the Rocky Mountains to the East Coast of the United States. It is estimated that, prior to the year 1800, over 60 million bison covered North America. Bison traveled in large groups, or herds, and they were an important part of the cultures of numerous indigenous tribes of America, which hunted bison for various purposes, including food, clothing, shelter, utensils, and art.

When the settlers from Europe arrived in North America, they began to hunt bison for food, for skins, and for sport. Because of too much hunting, the number of bison was estimated to have been reduced to fewer than 300 in the United States by the year 1900.

Continued on the next page.

animals, USA, history

Lexile®: 1090L
Word Count: 739

Time: _____

American Bison (continued)

Some people took action to save the bison, including ranchers who collected small herds and protected them on private land. Thanks to their efforts and government action, the population of bison rose to over 20,000 by 1950. Today, scientists estimate that there are at least 500,000 bison on the North American continent.

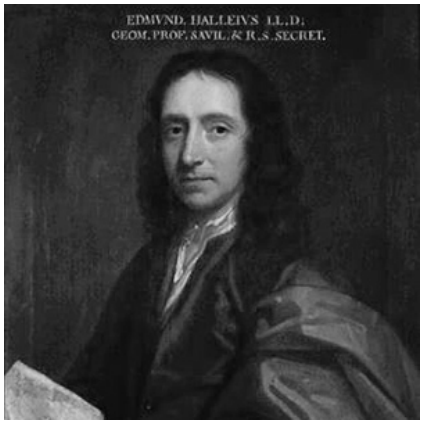
When bison are born, they are reddish-brown, and they depend on their mothers for a year. After that first year, they learn to find food and stay in the protective herd until they reach full maturity at age three. By this time, they are adults and can take care of themselves, although it is very unusual to see a bison wandering around alone.

Living in herds helps bison protect against wolves, which will try to catch and kill a young bison or a smaller female. When a herd of bison notice that wolves are nearby, they behave in a surprising and very practical way. The females with young bison are allowed to run to the front of the herd that is running away from the wolves. Then, the large males move toward the rear of the herd in order to guard the females and young bison.

The bison is an impressive creature in both size and behavior. It is also an animal that has been of great importance to the indigenous tribes in North America. As people realized that the bison were almost extinct, they had the opportunity to correct the situation and help the bison survive. In this way, the bison has helped people better understand their power and responsibility towards wildlife.

Answer comprehension questions on page 177.

Halley's Comet



Halley's Comet may be the most famous comet in the universe. A comet is a type of space object that moves around the sun. Many comets travel near Earth, but Halley's Comet is famous for two reasons. It can be seen without a telescope, and it will return during the average human lifetime. Halley's Comet can be seen from Earth every 75 or 76 years.

In comparison to Earth, or even the moon, Halley's Comet is quite small. Scientists predict that it is about 9 miles (14.5 kilometers) long, 5 miles (8 kilometers) wide, and 5 miles (8 kilometers) high. Scientists used to think that the nucleus, or center, of Halley's Comet was a "dirty snowball," meaning that the comet was primarily ice with some space dust (or "dirt"). However, recent observations suggest that the nucleus might be a "snowy dirtball," because data suggests that the comet is primarily dust with some ice.

The ice in Halley's Comet makes the comet easily visible from Earth. The comet orbits the sun, and when its orbit brings it closer to the sun, the sun's heat evaporates the comet's ice. The ice turns to vapor and moves away from the comet's center. Some of the dust is carried along with the vapor, and together the dust and vapor form a cloud around the comet. This cloud is called a *coma*, and it forms a tail when pressure, coming from the sun's heat and solar winds, forces part of the coma to move away from the nucleus. The tail always points away from the sun. As the sun shines through the coma and tail, the comet can be observed from Earth without the use of a telescope.

Halley's Comet is named for Edmond Halley. He noticed that a comet seen in 1682 seemed to match descriptions of comets seen in 1531 and 1607. Halley realized that all three comets were actually the same comet, which returned every 75 or 76 years. Halley predicted that the comet would come back in 1758. He was correct, although the attraction between Jupiter and Saturn in that year slowed the comet's return somewhat. However, Halley died in 1742 before he could see his prediction come true.

Evidence of Halley's Comet can be found by searching historical records. The first record of the comet's sighting comes from China in 240 BC. An ancient Babylonian tablet, on display at the British Museum, includes a record of the appearance of Halley's Comet in 164 BC. That record says that the comet was visible for a month. There is also another Chinese record of the comet appearing in 12 BC.

Continued on the next page.

space, history

Lexile®: 1090L
Word Count: 824

Time: _____

Halley's Comet (continued)

At certain times in history, people viewed the comet as a symbol of good or bad events. One example of this was the viewing of the comet in 1066 by people living in England. Later that same year, Harold II, king of England, was defeated by William the Conqueror in the Battle of Hastings. Many English people were unhappy with the defeat of Harold II and claimed that the comet predicted this unfortunate event. In contrast, William's supporters may have viewed the comet as a sign of good luck. In any case, the Battle of Hastings changed English history. A picture from that time, highlighting William's victory, shows the comet as a bright star in the background, suggesting that people felt its appearance that year affected the outcome of the battle.

Another interesting appearance of Halley's Comet was in 1835 because that was the year that the famous American author Mark Twain was born. Mark Twain predicted in his biography that he would die when Halley's Comet came again, just as he had been born when it appeared. Indeed, Mark Twain did die after Halley's Comet was seen again in 1910. It is also interesting to note that the 1910 appearance was the first time that the comet was captured in a photograph. In fact, the comet came so close to Earth in 1910 that the planet's orbit passed through the tail of the comet. Some people believed that Earth's close encounter with the comet would cause natural disasters, but this did not happen. The comet's 1910 passing presented a beautiful sight in the night sky and no danger to Earth and its inhabitants.

The most recent approach of Halley's Comet, in 1986, was perhaps the least interesting for the casual observer on Earth. The comet was not very bright, and Earth's position made it difficult for people to see the comet from the Northern Hemisphere. Because of this, as well as the increased brightness during the night from city lights, many people never saw Halley's Comet at all in 1986. However, it was the first approach of the comet since the invention of space travel, and space probes were sent out to take pictures of the comet.

Halley's Comet will next be **visible** from Earth in 2061. Perhaps you will be able to see it.

Answer comprehension questions on page 178.

Ultimate

Ultimate is a sport that combines throwing ability, speed, and strategy into a unique, energetic game. The game used to be called Ultimate Frisbee because the object that was thrown was called a Frisbee. However, the name Frisbee was trademarked by a company called Wham-O. Wham-O objected to the use of its product's name in the name of the sport, so now the sport is simply called Ultimate.

The object that is used in Ultimate is a very lightweight, flat, and thin disc. These discs are often called Frisbees, although the Wham-O company prefers that the name only be used for discs made by their company. Whether it is called a Frisbee or a disc, it usually weighs about 175 grams (6 ounces). The disc can be thrown long distances without much effort, but the game requires that players throw the disc very accurately and quickly. Ultimate players divide into two teams, with the objective of scoring points by throwing the disc to a teammate who is in the opposing team's end zone. The end zone is an area at each end of the playing field.

Many people who are unfamiliar with the sport make the mistake of thinking that they can run while holding the disc. This is against the rules. Players can run as much as they like in order to get in a good position for a catch as long as they do not have the disc in their hands. As soon as players catch the disc, they must stop and must keep at least one of their feet on the ground, without moving it. After catching the disc, a player has ten seconds to pass the disc to another player.

Most games of Ultimate have a pre-determined amount of points that a team must score in order to win the game. Because of this, Ultimate games can vary quite a bit in their length. Games begin with players from each team moving to their own end zone. A player from one team then throws the disc to the other team. As soon as a player from the other team catches the disc, the members of that team start moving the disc toward the opposing team's end zone.

Ultimate is a fast-paced game that requires a lot of running, and the strategy becomes more complicated as the players' skills improve. In general, there are no referees, or people who make sure the game is played fairly. Instead, players watch each other to ensure that they follow the rules, do not use excessive force, and treat each other with respect.

In the late 1960s, a group of high school students in New Jersey met together during the summer and invented Ultimate. In the beginning, the students who played this game were those who did not already participate in another sport. Because the new sport was typically played by non-athletes, it was classified as an alternative sport, or one that was uncommon. In time, the game quickly spread among young people, both traditional athletes and non-athletes.

Continued on the next page.

sports, hobbies, USA

Lexile®: 1090L
Word Count: 732

Time: _____

Ultimate (continued)

Within four years, the first Ultimate competition was held between colleges. This competition took place between Rutgers and Princeton universities. By 1975, many colleges had Ultimate teams, and in April of that year, players organized the very first **tournament** for the sport of Ultimate. Eight teams were invited to participate in the "Intercollegiate Ultimate Frisbee Championships," which were held at Yale. Rutgers was the champion.

The sport continued to grow over the following years, with colleges across the nation sponsoring teams and participating in tournaments. Next came city-sponsored teams, starting with teams in states such as Pennsylvania and New Jersey. Finally, in 1979, Ultimate players formed the Ultimate Players Association (UPA), which has held tournaments to find a national champion every year since 1979.

Currently, there are leagues and Ultimate organizations in 50 countries. The appeal of the sport to people of all athletic abilities is wide and probably has contributed to its quick growth. With players of all skill levels able to participate in Ultimate games, it is very common to see casual games in parks or on college campuses. Another appeal of this sport is the expectation that players will play with a strong spirit of friendliness and fairness. So, the next time you are looking for something to do with your friends, you might want to consider playing a game of Ultimate.

Answer comprehension questions on page 179.

Duct Tape Art

An old saying states that "beauty is in the eye of the beholder," which means that each person has a different opinion of beauty. This phrase certainly can be applied to works of art. What is considered lovely and pleasing to one person may be ugly or boring to another.

This saying may be true for a new form of art that uses an unexpected material. This new art form does not involve the use of the traditional tools of clay, pencils, paint, or brushes. In fact, it is made from a common household item: duct tape.

Duct tape was first developed in the 1940s when it was used as an easy, and sticky, way to keep supply boxes closed during World War II. Because it performed this task well, it was also used to help soldiers quickly repair their weapons, jeeps, and other materials. In the years since, duct tape has been used for many other purposes. Builders use it in the repair of heating and cooling ducts (airways), racecar drivers have been known to use it to fix their cars, and astronauts have used it when working on the space shuttle.

The true origin of the term *duct tape*, also called *duck tape*, is unclear. One theory is that the soldiers who used it during World War II saw that its waterproof quality was much like a duck's water-resistant feathers.

Duct tape is close to 2 inches (48 millimeters) thick and is often colored gray. However, a wide variety of duct tape colors and patterns have recently become available. This is a result of its newly discovered use as an art supply.

In recent years, duct tape has been employed to create works of art as well as neckties, hats, shoes, bracelets, purses, cell phone covers, and more. Books and websites demonstrate the amazing creations of duct tape artists. They also offer helpful hints on how to make your own duct tape creations. Is anyone interested in learning how to make a backpack out of duct tape? These books and websites provide detailed instructions to do just that, and such a backpack can actually be worn to school and carry books. This creation will only require one roll of duct tape and a few magnetic buttons.

Some duct tape artists create sculptures and even life-size statues. These artists inspire others who want to make artwork of their own. To start, these artists take some newspaper and crumple it up into the shape they want. Next, they cover the newspaper with aluminum foil. Finally, they cover the foil with duct tape to decorate it.

Continued on the next page.

hobbies, art, culture, business

Lexile®: 1100L
Word Count: 721

Time: _____

Duct Tape Art (continued)

Duct tape art can be used to draw people's attention to an important issue. In 2007, a group of neighbors in Newburyport, Massachusetts, made an eight-foot-tall statue. Its design was based on the statue of famous American abolitionist and town resident William Lloyd Garrison, nicknamed *The Liberator*. To build their statue, the group used two rolls of duct tape and some chicken wire. They called their statue *The Desecrator*. They made their duct tape statue to raise awareness about a proposed development on historic land. Within a few days, the statue became a popular news story, and it raised awareness of this local issue.

ShurTech Brands, LLC, which manufactures Duck® brand duct tape, is the sponsor of an annual Stuck at Prom® contest for high school students. Prom is a formal dance for high school students that is common in the United States. Traditionally, teenagers spend a lot of money buying a dress or renting a tuxedo to wear to this dance. The Stuck at Prom® contest encourages students to make their own dress or tuxedo from duct tape! The high school students who create the most original prom formal wear using duct tape are each awarded a college scholarship. A **donation** is also made to the winning students' schools. ShurTech Brands, LLC also sponsors a Stick or Treat® contest in which participants are encouraged to decorate jack-o-lantern pumpkins with duct tape during the fall season.

Artists who are looking for a new way to express themselves may want to try duct tape. Even those who do not consider themselves to be artists can find enjoyment and satisfaction through this art form. They may even find they have a talent for creating useful and wearable art!

Answer comprehension questions on page 180.

Tsunamis

On December 26, 2004, a massive 9.0 magnitude earthquake occurred under the Indian Ocean, not far from the west coast of the island of Sumatra in Indonesia. It was the largest recorded earthquake on the planet Earth in 40 years. This quake displaced a large amount of water, which sent shock waves in every direction. This destructive force, which became one of the most catastrophic natural disasters of the 21st century, was a tsunami. It was perhaps the most destructive tsunami in recorded history.

Within a few hours of the quake, the tsunami's gigantic waves crashed into the beaches of 18 countries bordering the Indian Ocean. The force of the tsunami even affected nations in Africa and mainland China. In some areas, the tsunami landed with the same energy as 23,000 atomic bombs. The noise of the approaching waves sounded like the roar of a jet engine. Entire islands were submerged under water. In total, 230,000 people were killed, thousands were missing, and millions more were left injured and homeless.

The term *tsunami* comes from the Japanese language and means "harbor wave." Sometimes, tsunamis are incorrectly called "tidal waves," but this classification is not true; they are not caused by tides. Tsunamis usually result from earthquakes that occur under the ocean. They may also be caused by a volcanic eruption, an explosion, or a landslide. Additionally, they can also be caused by an asteroid or a meteorite crashing into the ocean from the sky.

Rather than one strong wave, a tsunami is a series of giant waves, called a *wave train*, that sends large amounts of water onto land. Sometimes, a tsunami can reach a height of 100 feet (30.5 meters). The waves can be very long, with up to 100 miles (161 kilometers) from crest, or top, to crest. They may reach speeds of more than 600 miles (970 kilometers) per hour, which is about as fast as a jet airplane can fly. By contrast, a regular ocean wave moves at a rate of about 55 miles (60 kilometers) per hour.

Because tsunamis have very long waves, they lose very little energy as they travel. When they first form, tsunamis may be only a few feet tall. The tops move faster than the bottoms, which causes them to expand. As they approach the shore, however, they grow in energy and height. By landfall, they can grow to be several hundred feet (or meters) tall.

When the waves of a tsunami crash onto the shore, they send a large amount of water, called *runup*, onto the land. The low point, or trough, of the tsunami reaches first, creating a vacuum effect, called *drawback*. The drawback sucks water out to the sea and uncovers part of the ocean floor. This effect is a warning sign of an oncoming tsunami and often indicates that one is approximately five minutes away from striking. Runup and debris carried by the tsunami can cause a great deal of damage, destruction, and even death. Drowning is the most common cause of death resulting from a tsunami. A tsunami may also pollute the drinking water and could cause fires due to ruptured or severed gas lines or tanks.

Continued on the next page.

nature, oceans, geography

Lexile®: 1100L
Word Count: 815

Time: _____

Tsunamis (continued)

When drawback takes place, it can help warn people on the shore to quickly find higher ground or shelter and may help save lives. The Pacific Tsunami Warning System, located in Hawaii, also helps to warn people about tsunamis throughout the Pacific Ocean. Maintained by 26 countries, the system uses seismic equipment and water level gauges to identify a tsunami when it forms. If a tsunami is a threat, sirens will sound in coastal areas to warn people of impending danger. The areas of greatest risk for a tsunami are sites 25 feet or fewer above sea level and within a mile (1.6 kilometers) of the coast.

Generally, an earthquake must **register** 6.75 or higher on the Richter scale in order to cause a tsunami. About 90 percent of tsunamis take place in the Pacific Ocean. Approximately 80 percent of them occur within the "Ring of Fire," an area in the Pacific Ocean where both earthquakes and volcanoes frequently happen. Tsunamis are somewhat rare when compared to other natural disasters such as earthquakes and fires. Each century, about six major tsunamis are recorded.

If you live in an area where a tsunami may occur, there are many steps you can take to protect yourself and your family. You can prepare an emergency kit and review an escape route in case a tsunami should strike. You can learn how high above sea level you live or how far from the coast your home may be. If an earthquake occurs, look for any signal of a tsunami warning near you. Even if you plan only to visit a tropical land on a vacation, it is a good idea to become familiar with the tsunami emergency plans.

Answer comprehension questions on page 181.

Jackie Robinson

Jackie Robinson was the first African American player in Major League Baseball (MLB). Previous to Robinson, MLB only allowed white players. When Robinson joined the Brooklyn Dodgers in 1947, he ended 60 years of racial separation in professional baseball. Robinson's role made it possible for other African American athletes to eventually join MLB.

Robinson broke the color barrier in professional baseball, which means that, before Robinson, white and black athletes played in separate leagues. However, it would be a mistake to believe that this single event solved all of the problems with racism in the United States. Indeed, many Americans did not believe that it was appropriate for Robinson to play for the Dodgers, even though his athletic skill was superior to the skills of many of his teammates. During this period of history in the USA, white people and black people were still kept separate in much of their day-to-day lives. Even though Robinson faced racism, he had a successful baseball career.

Robinson was born in 1919, in Georgia, USA, but he grew up in Pasadena, California. While still young, Robinson joined a local gang that caused trouble in the neighborhood. Thankfully, a couple of adult mentors convinced Robinson and his gang members to stop, or give up, their mischief and dedicate their time to school and community service.

In 1935, Robinson enrolled in high school, where he participated in several sports, including football, baseball, basketball, and track. He **excelled** in all four of these sports and helped lead his teams to win championships in some of them. After high school, Robinson attended Pasadena Junior College, where his sports career continued. He then transferred to the University of California, Los Angeles (UCLA). At UCLA, he was the first athlete to win honors in all four sports in which he participated.

After college, Robinson began a career in the sports field. This career was interrupted by World War II. Robinson joined the U.S. Army, and graduated from officer candidate school. However, during his army training, Robinson defended himself against a bus driver who insisted that Robinson, an African American, ride at the back of the bus. Some people in the USA at this time, thought that African Americans should ride at the back of buses in order to be seated separately from white people. When Robinson refused to move to the back of the bus, the military police were called. Robinson faced a trial in which he was found to be innocent of any crime, but the entire process prevented him from serving outside of the USA during the war.

After the war ended, Robinson joined a professional baseball league for African-Americans. Soon, the Brooklyn Dodgers invited him to play with their team. They had watched Robinson play and found that he was a great baseball player and a man who could remain calm when he was treated unfairly by those who expressed racial hatred. Robinson played for the Dodgers' training teams for a period of time before he was finally called up, or recruited, to play his first professional game on April 15, 1947. It was a momentous occasion, especially for the African Americans in attendance.

Continued on the next page.

sports, USA, biography

Lexile®: 1110L
Word Count: 789

Time: _____

Jackie Robinson (continued)

Following that game, many people in the USA debated the issue of a black man playing professional baseball in the MLB, and Robinson faced significant opposition. Many white players refused to play against the Dodgers if Robinson remained on their team. Even some of Robinson's own teammates expressed an unwillingness to play alongside him. These protests eventually stopped when coaches threatened to suspend players who refused to play, and reporters promised to publicly expose the racism of teams that boycotted games against the Dodgers.

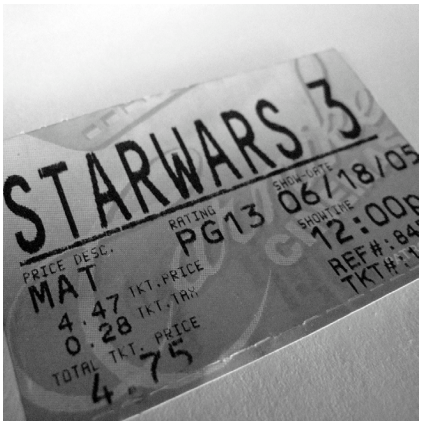
With the Dodgers, Robinson began playing like a superstar. He set several records and won the first-ever Rookie of the Year Award in 1947. Around the same time, a few other African Americans joined MLB teams, including Larry Doby with the Cleveland Indians and Hank Thompson with the St. Louis Browns.

The year 1949 was a remarkable year for Robinson. He won the Most Valuable Player Award, he was the leader of the league in batting average, and he stole 37 bases. A song was written about him. He even starred in a movie about himself! The following years continued to be successful for Robinson, as he soon started earning more money than any other player on the Dodgers. In 1955, he helped the Dodgers win the World Series championship.

In 1962, Jackie Robinson was honored by being the first African American voted into the Baseball Hall of Fame. After retiring from the Dodgers, Robinson remained active in sports, business, and politics. His efforts to combat racism and establish racial equality have inspired people all over the world.

Answer comprehension questions on page 182.

Star Wars



Although it may seem "a long time ago, in a galaxy far, far away," the idea for the Star Wars films began in the early 1970s with an ambitious young filmmaker named George Lucas. Previously, Lucas had already had some success with two films: one was a science fiction story, and the other was a comedy. Following the success of those films, the head of the 20th Century Fox movie studio gave Lucas a contract to make a new film. Lucas referred to this new movie as a *space opera*, which means that it would have romance, adventure, and war in outer space. Lucas believed that his project, The Star Wars, was going to be something completely different from anything previously created.

Over the next three years, Lucas struggled to finalize the story that he wished to tell and wrote multiple drafts of the script. In March 1976, finally satisfied with his plan, he began production on the film. From the start, unfortunately, he and his staff faced a number of difficulties. Early filming was scheduled in the desert of Tunisia, but a rare rainstorm delayed filming during the first week. Soon after, several of the movie's props **malfunctioned**, including one robot that kept falling over. Many of the crew considered the film to be amateurish, or unprofessional. They felt that the film was something only children would enjoy, and as a result, they often failed to take their work seriously. One of the supporting actors also expressed the opinion that the movie was destined to be a failure.

Nevertheless, Lucas persevered and completed his film, which was retitled *Star Wars*. Arriving at movie theaters in the summer of 1977, *Star Wars* immediately began to break several box office (movie theater) records. Numerous filmgoers, especially young adults and children, saw the film a dozen or more times. Just three weeks after the film's release, 20th Century Fox's stock price doubled and reached a record-high number. *Star Wars* eventually became the highest-earning movie of all time. At the 1978 Academy Awards, *Star Wars* won six Oscars including awards for its music and special effects.

This was only the beginning of the Star Wars phenomenon, as plans for a sequel were soon made. Moreover, Lucas stated that his first *Star Wars* film was part of a larger saga and that Star Wars was the fourth chapter in a long series of stories. In fact, the film was later rereleased in theaters with a new title, *Star Wars: Episode IV – A New Hope*. The much-anticipated sequel, *Star Wars: Episode V – The Empire Strikes Back*, followed in 1980, and a third film, *Star Wars: Episode VI – Return of the Jedi*, was released in 1983. Both sequels were welcome additions to the Star Wars franchise and were likewise extremely successful and popular among audiences.

Continued on the next page.

culture, arts, business

Lexile®: 1110L
Word Count: 767

Time: _____

Star Wars (continued)

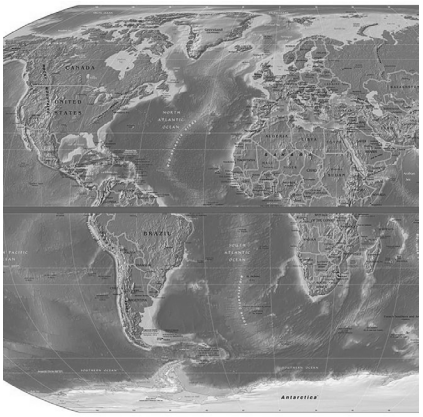
A decade passed, and the Star Wars trilogy remained as popular as ever with repeated viewings on home video and on TV. Then in 1993, Lucas announced his plans to begin working on a new trilogy of *Star Wars* films that would tell the story of the first three episodes of the saga. These newer movies, often referred to as *the prequels*, also became box office successes in 1999, 2002, and 2005, respectively. The films added new characters to the Star Wars universe and also provided audiences with the background stories of some of the existing characters from the earlier films.

In the fall of 2012, the Walt Disney Company purchased Lucas's movie studio for $4 billion and acquired the rights to the Star Wars franchise. Disney announced plans to continue the saga with new movies in the same Star Wars universe. In 2015, *Star Wars: Episode VII – The Force Awakens*, was well received by audiences. It became the highest earning Star Wars film to date. More Star Wars films continue to be released, and tell additional stories about the characters, battles, and worlds in the Star Wars universe.

Why have the Star Wars films had such an enduring appeal over the years? Some people say that these films are nothing more than a simple story of good versus evil that is set in a science fiction world. Is the success due to the action scenes that include amazing stunts, space battles, and daring duels? Or is the success the result of the powerful music and beautiful landscapes? Some people suggest that the wide appeal of Star Wars is the universal themes represented in the stories. The saga contains lessons on courage, ethics, friendship, honesty, and teamwork. In other words, these films share ideas that appeal to everyone.

Answer comprehension questions on page 183.

The Equator



The equator is an imaginary line that runs around the middle of the planet. It is located at 0 degrees latitude, exactly halfway between the North Pole and the South Pole. The South American country of Ecuador was named after the equator, and its name means "equator" in Spanish. Ecuador's capital city, Quito, lies just 16 miles (25.8 kilometers) from the equator. A monument in the town marks where the equator passes through. About 79 percent of the equator passes through water, including the Atlantic, Indian, and Pacific oceans. The other 21 percent passes through 13 other countries, including Brazil, Colombia, Gabon, Indonesia, Kenya, and Uganda. In these places, the day is always 12 hours long, while the night lasts 12 hours.

Rather than a circle, the planet Earth is actually in the shape of a globe, or sphere. At the equator, it is at its widest. This portion of the planet measures 24,901 miles (40,075 kilometers) in length. Its diameter is also at its widest, covering a distance of 7,926 miles (12,756 kilometers) from one side to the other. This is about 27 miles (43 kilometers) wider than the planet's bulge at the Poles, where the diameter is 7,900 miles (12,714 kilometers). Sea levels are also higher at the equator. In addition, Earth spins more quickly at the equator than anywhere else on the planet. Because there are 24 hours in a day and the equator is the longest line of latitude, that means that the Earth turns at a rate of 1,038 miles (1,670 kilometers) per hour.

Due to the equatorial bulge, gravity is weaker at the equator than it is at the poles. Because it takes a large amount of energy to launch rockets or satellites out of Earth's atmosphere, sites near the equator are excellent places for this activity. The United States, for example, sends most of its vessels into space from the Kennedy Space Center in Florida, which is one of the southernmost points in the continental US. The Democratic Republic of the Congo launches spacecraft from its Shaba North facility. Maldives uses its Gan Island station. Launch platforms have also been used from different places in the Pacific Ocean.

The equator divides Earth into two halves of equal area. Thus, everything north of the equator lies in the Northern **Hemisphere**, while the Southern Hemisphere includes all mass to the south. On two occasions each year, the sun passes directly over the equator approximately at noon. These dates are on or about March 21 and September 21, and they are called, respectively, the *spring equinox* and *autumn equinox*.

Many climates near the equator have both wet and dry seasons rather than clear separations between the seasons of winter, spring, summer, and autumn. Wet seasons can last most of the year. These rainy seasons have created tropical rain forests across the globe. Some of the world's largest rain forests are found near the equator, including the Congo in central Africa, a series of rain forests in Southeast Asia, and the Amazon in South America. Even though the equatorial region is closer to the sun than any other place on Earth, the humidity from constant rain helps to keep these areas a little bit cooler than one might expect.

Continued on the next page.

nature, geography, space

Lexile®: 1120L
Word Count: 809

Time: _____

The Equator (continued)

However, this does not mean that all equatorial regions are humid and warm. The Andes Mountains of South America cross the equator, yet the elevation of these peaks, some of Earth's highest, helps keep much of the area relatively cool. Mount Kilimanjaro in Tanzania is just 205 miles (330 kilometers) from the equator, but its elevation of 19,341 feet (5,895 meters) keeps this site cool, as well. There is even ice at the summit.

Because of the tropical climates often found in equatorial regions, the area is one of the most biodiverse on the planet. In addition to the rain forests found in these areas, there is also a large variety of animals and plants. The Atlantic Forest of Brazil, for example, is home to more than a thousand types of animals, 20,000 species of plants, and millions of insects. About half of these life forms are not found anywhere else on Earth. Biodiversity decreases as latitude increases, or as one moves closer to either of the poles. Given the diversity and abundance of animal and plant life, rain forests are an important part of the struggle against climate change across the globe.

Rain forests once covered 14 percent of the planet. Now, they make up 7 percent of its total surface and 2 percent of its dry land surface. Every day, we lose more rain forest land. Each year, about 37 million acres (150,000 square kilometers) of rain forests are destroyed, much of them in the equatorial region. Accordingly, the destruction of Earth's rain forests is a problem that should concern every person on the planet.

Answer comprehension questions on page 184.

United States Coast Guard

For almost as long as the United States has been a nation, there has been a United States Coast Guard. The organization that began the Coast Guard was created on August 4, 1790, by Alexander Hamilton, the first secretary of the US Treasury. Hamilton **authorized** the construction of ten ships to enforce federal trade laws and to stop piracy and illegal smuggling, which were serious problems at the time. In the 18th century, these ships mainly patrolled along the Atlantic Coast where the majority of Americans lived. This organization was the only branch of the armed forces that operated at sea until the United States Navy was formed in 1798. Over the years, as the nation grew in size and population, and its borders and coastlines expanded, so too did the size and responsibilities of this organization.

In 1915, this organization was merged, or combined, with the Life-Saving Service and officially named the Coast Guard. Coast Guard officers have served in every armed conflict involving the United States from the War of 1812 through conflicts in our time. Today, the Coast Guard's mission is much the same as it was upon its creation more than 200 years ago. These men and women protect the lakes, rivers, and coastlines of United States territory. The Coast Guard's motto is *Semper Paratus*, which is Latin for "Always Prepared."

Most branches of the armed forces are trained to serve during times of war. But the mission of the Coast Guard is continuous in times of war and peace. Coast Guardsmen are always out on the seas fulfilling their mission. Currently, there are close to 40,000 men and women serving on active duty in the Coast Guard. In addition, more than 8,000 reserve members, 30,000 civilian volunteers, and about 8,000 civilian employees give their time in the service of their country. Collectively, these various groups are referred to as Team Coast Guard.

The mission of the Coast Guard can be expressed in three parts: maritime safety, maritime security, and maritime stewardship. *Maritime* is a phrase that refers to the sea. In terms of maritime safety, the Coast Guard responds to water-based emergencies. Coast Guard officers save lives, rescue troubled ships, and search for missing people or vessels. As part of its maritime security mission, the Coast Guard inspects ports and seizes illegal imports. It also protects against coastline attacks. Under the maritime stewardship mission, the Coast Guard protects the natural resources in United States waters. It also assists with chemical and other pollution spills.

Continued on the next page.

jobs, USA, government

Lexile®: 1120L
Word Count: 693

Time: _____

United States Coast Guard (continued)

Those who may want to serve as officers and would like a military career with the Coast Guard may plan on attending the Coast Guard Academy in New London, Connecticut. The academy prepares the leaders of the future, but competition is strong; only about 300 high school graduates may enroll each year. Those who already have a degree can attend the academy's Officer Candidate School (OCS) which teaches leadership, law enforcement, and seamanship. Graduates from the Coast Guard Academy must commit to a minimum of five years of active duty in the Coast Guard, while graduates of the OCS must commit to at least three years. Graduates of both may be awarded the rank of ensign upon beginning their service in the Coast Guard.

The competition is somewhat less intense for enlisted personnel, who are sent to the Coast Guard Training Center in Cape May, New Jersey for eight weeks of training. Here, new recruits are taught a variety of skills including teamwork, marksmanship, swimming, and self-discipline. They also adopt the Coast Guard's core values: honor, respect, and devotion to duty. Civilians are employed with the Coast Guard in over 200 different types of jobs, including as engineers, technicians, and lawyers, in more than 100 locations across the USA. About 8,000 Coast Guard reserve members are on duty for one weekend a month and two weeks each year.

Those who have an interest in the ocean and its coastlines may be good candidates for the Coast Guard. It is also a good environment for those who want to live a life of discipline and service. This important organization helps keep people, vessels, and coastlines safe.

Answer comprehension questions on page 185.

Ferdinand Magellan

Ferdinand Magellan was a sea explorer from Portugal. Magellan is famous for becoming the first person to sail a ship across the Pacific Ocean. In fact, his expedition, which was funded by the Spanish royal family, was the first in history to sail around, or circumnavigate, the globe. However, Magellan did not complete the journey, having died in a battle in the Philippines. Despite his untimely death, Magellan is remembered as the man who led the first circumnavigation of the globe.

Magellan was the son of a prominent Portuguese family and, at age 25, traveled to India with Portuguese diplomats. This was Magellan's first sea journey, and it influenced the remainder of his life. Shortly after, Magellan, inspired by Christopher Columbus's plan to find a new route to East Asia, asked the king of Portugal to let him lead such a mission. The king of Portugal rejected Magellan's plan, but the king of Spain agreed to pay for Magellan's expedition.

In August of 1519, Magellan and his crew left Spain. Magellan had five ships under his command: *Trinidad*, *San Antonio*, *Concepcion*, *Victoria*, and *Santiago*. He also had a total crew of 237 men across the five ships. Magellan's journey almost ended right away when the king of Portugal sent ships to stop him, but Magellan was able to avoid the king's ships. Magellan's crew sailed south, along the coast of Africa, before sailing across the Atlantic Ocean. On November 27 of that year, they crossed the equator and arrived in South America two weeks later.

The expedition stopped at a place near today's Rio de Janeiro to prepare more supplies and load them onto their ships. After weather caused a short delay, the ships sailed south along South America's east coast. They were looking for a narrow body of water that Magellan believed would allow his ships to cross from the Atlantic to the ocean on the west side of South America. After a couple of months of searching, Magellan and his crew established a small town, which they called Puerto San Julian, on the southeastern coast of Argentina. On April 2, 1520, three days after Magellan and his crew settled the area, two of the ships' captains decided to mutiny. They no longer wanted to follow orders from Magellan. They wished to return to their homes, so they recruited some of the crew members and fought Magellan for control of the expedition.

The two captains lost, primarily because the majority of the men were still loyal to Magellan. The captains and their supporters were either killed or left behind when Magellan abandoned the settlement to continue the mission. Soon after, *Santiago* was destroyed by a sudden storm, although the men on the ship survived and quickly rejoined the remaining four ships.

Continued on the next page.

history, biography, geography

Lexile®: 1140L
Word Count: 738

Time: _____

Ferdinand Magellan (continued)

On October 21, 1520, just north of the southern tip of South America, the expedition found the narrow body of water Magellan had been seeking. However, before the four ships reached the other side of South America, the captain of *San Antonio* gave up and turned his ship back toward Spain. Despite this loss, on November 28, 1520, Magellan and the crew of the three remaining ships were the first Europeans to sail to the west coast of South America.

Within a few months, Magellan and his crew became the first Europeans to sail across the Pacific Ocean to the Philippines. While in the Philippines, the expedition became involved in violent battles between different native, or indigenous, groups. During one of these battles, Magellan was killed.

Those remaining members of the expedition left the Philippines as quickly as they could. There were so few crew members that they did not have enough people to sail all three ships, so they burned *Concepcion* and sailed *Trinidad* and *Victoria* west, toward home. During the journey home, *Trinidad* developed a hole, so some of the men stayed behind to repair it while *Victoria* continued. *Trinidad* was later destroyed. *Victoria* arrived in Spain on September 6, 1522, almost three years exactly after leaving. Of the 240 men who had **commenced** the journey, only 18 had completed the circumnavigation and returned home aboard *Victoria*.

Although Magellan had only planned to find a faster route to East Asia, his expedition was the first group to sail all the way around the world. Even though Magellan did not survive the trip back to Europe, his name is forever associated with this remarkable journey.

Answer comprehension questions on page 186.

Caving

Many people would be too scared to go into a dark and unknown cave, but not spelunkers, another name for cave explorers. Caving, which is sometimes called *spelunking* in the United States and *potholing* in Great Britain, is the activity of exploring some of Earth's darkest places: caves.

For thousands of years, people have used caves for many reasons, including shelter. But it was not until the last century or so that caving became a widespread hobby, as protective gear and equipment became more easily obtained by the public. As more people have enjoyed spelunking, human knowledge of caves has increased.

There are a number of reasons why people like to explore caves. For many people, the primary reason is the natural wonders found inside caves. Some of these unusual rock formations include stalagmites and stalactites, which form as mineral-rich water drips from cave ceilings. Other cave explorers are interested in studying some of the many types of animals that live in caves, such as bats, newts, salamanders, fish, and shrimp. And some spelunkers enjoying caving because the climbing and walking provide good exercise for the body.

One variation on spelunking is urban caving, or the exploration of manmade caves. Some examples of manmade caves include large sewer pipes, old train tunnels, and the basements or underground passages below abandoned buildings.

Some cavers even like to go cave diving, in which they explore caves that are partly or completely under water. Due to the risks involved in cave diving, only people who are experienced in both caving and scuba diving should participate. If cave divers need to come up for air, for example, they must first swim all of the way out of the cave and then, at last, they can go up to the surface for air.

Expert spelunkers offer advice and a few important safety rules to those who wish to begin this hobby. Perhaps the most important guideline involves the buddy system. The buddy system means that a person should never explore a cave alone due to the possibility of injury or accident. In fact, most spelunkers recommend traveling in teams of at least four people. This way, if one team member gets hurt, one person can stay with the injured person while the other two leave to find help.

Continued on the next page.

hobbies, nature

Lexile®: 1150L
Word Count: 762

Time: _____

Caving (continued)

Cave explorers should also bring proper equipment. This includes helmets with attached lamps to light the way. These helmets should be strong enough to protect a person's head from falling rocks or from injuries that could result if a person falls down. Helmets should be tightly strapped to cave explorers' heads. Securing their helmets allows cave explorers to keep their hands free to balance themselves when they walk over rocks and to grab objects when they climb walls. Depending on the environment of the cave, gloves, elbow and knee pads, and strong boots may be needed to help with climbing or walking through streams. Because most caves stay the same temperature throughout the year, they can be explored during almost any season. That said, caves tend to have cool temperatures, so long-sleeved shirts and long pants should always be worn when spelunking. In addition to the head lamp, each explorer should have at least two other sources of light, such as flashlights and lanterns. This is important in case one source should break, become lost, or run out of power.

There are other safety tips. Because some caves can flood, spelunkers should check for possible signs of flooding before they enter. Cave explorers can see signs of potential flooding by looking for high water levels in nearby rivers or for fresh mud on the cave's walls or ceiling. If these signs exist, it may be best to postpone the exploration until conditions are dry. Also, due to the lack of natural light in caves, it is possible to lose one's sense of direction and even get lost if the proper care is not taken. That is why many cavers use **cairns**, or short stacks of rocks, to serve as landmarks to help them find their way back to the cave's entrance. Spelunkers also ask that cave explorers leave caves just as they find them. This means that nothing should be removed from or damaged inside a cave. And spelunkers should never leave anything, such as trash, behind in the cave.

If these simple guidelines are followed, new spelunkers are sure to have both a safe and a most enjoyable experience caving. They can enjoy the natural beauty of caves and overcome any fear of these dark and mysterious places.

Answer comprehension questions on page 187.

Ghost Hunting

In the 1984 science fiction movie *Ghostbusters*, as well as in its 2016 remake, New York City is overrun, or occupied, by troublesome ghosts. A group of scientists and their friends develop a way to catch these ghosts. They band together to save the city and, as a result, the rest of the world.

A ghost is defined as the soul or spirit of a person who once lived on Earth but has died. After dying, that person may then appear as a ghost. According to some people, ghosts may return to visit, or haunt, the people, objects, or places that they were associated with in life. A few famous places are rumored to be haunted. Gettysburg, a battlefield of the US Civil War, and the Tower of London in Great Britain are two examples.

The events in the *Ghostbusters* movies are fictional, but do some people believe that ghosts are real? People's religious and cultural backgrounds can have a big influence on whether they choose to believe in ghosts. In a 2008 survey, 34 percent of Americans answered that they do believe in ghosts.

Ghost hunters are most definitely among the believers. Ghost hunters devote a great deal of time and effort to finding proof of ghosts. Also known as *paranormal investigators*, ghost hunters seek out spirits in places such as graveyards, churches, houses, schools, and hospitals. Whereas the ghostbusters in the film capture ghosts with the use of special tools, ghost hunters try to collect evidence of ghosts on camera. Using photo, video, and audio equipment, they try to document the existence of spirits by recording images or sounds. Sometimes, they claim to perceive the presence of ghosts by certain smells. Or they may use their sense of touch, such as when they sense unusually cold air. They may also use night vision goggles, EMF (electromagnetic field) meters, digital thermometers, and motion sensors to perceive what the body's senses cannot.

Some ghost hunters not only attempt to prove the existence of ghosts but also try to communicate and interact with these ghosts. The majority of the time, ghost hunters report that their experiences are positive events rather than scary ones. For example, the ghosts that they encounter might have tasks that they want to complete. They may feel guilty about something. Sometimes, they may not even realize that they are dead. Some ghost hunters claim that their interactions with these ghosts can help these lost spirits find peace.

Continued on the next page.

hobbies, culture

Lexile®: 1150L
Word Count: 719

Time: _____

Ghost Hunting (continued)

Ghost hunters offer advice to those who want to start a ghost hunt of their own. First, they warn that it is best to learn as much as possible about the location that they wish to investigate, including its history. When possible, they should interview people or read about any alleged hauntings or sightings. Before leading their own investigation, new ghost hunters may benefit from accompanying and observing an investigation by an experienced ghost hunter. Those who are prepared to start a ghost hunt should make sure to go along with at least one other person—someone who can act as a witness to the experience and who can be there to assist in case there is an injury. After all, most investigations happen at night or in old buildings where ghost hunters could fall and get hurt. Furthermore, most ghost hunters enjoy the company of one or more friends who can share ideas, stories, and observations. Ghost hunters should always carry two flashlights and two recording devices in case one of these flashlights or devices runs out of battery power, becomes lost, or gets damaged.

Though ghost hunters use scientific devices in their efforts, the scientific community as a whole does not confirm the existence of ghosts. For that reason, ghost hunting is often referred to as a *pseudoscience*, meaning that this activity cannot be tested or proven with evidence and is generally not respected by the scientific community. **Skeptics**, or unbelievers, of the practice of ghost hunting often doubt photographs of a ghost sighting. They claim that these images are really photos of mirrors, water drops, bugs, or dust particles that reflect light. Skeptics explain audio recordings of ghosts as radio signals or other phenomena. But to those who appreciate the excitement of ghost hunting, these criticisms do not keep them from enjoying their hobby.

Answer comprehension questions on page 188.

Global Warming

In today's world, many people are concerned about keeping our planet healthy. They are worried that certain activities from human beings are harming Earth's environment. One concern that affects many aspects of life on Earth is global warming, sometimes called *global climate change*.

So, what is global warming? Scientists say that the temperature all around the world is increasing more than it normally should. In the past 100 years, the average temperature on Earth increased about 1.5 degrees Fahrenheit (about 1 degree Celsius), and scientists predict that over the next 100 years, the world's average temperature is likely to rise at least 3 more degrees Fahrenheit (about 2 degrees Celsius). Although these changes may seem small, the impact that global warming can have on the planet is significant. To prevent some of the negative effects of global warming, scientists are working to better understand its causes.

Historical evidence suggests that Earth has experienced global temperature changes before. In the past, these changes were largely caused by natural events including volcanic eruptions, sea level changes, and other non-human activities. Additionally, small variations in Earth's orbit have also affected the warming or cooling of certain regions over centuries.

However, scientists suggest that the temperature increase over the past 100 years is much higher than what can normally be associated with natural causes. Experts across scientific fields have acknowledged that human technologies are contributing to this increase in temperature. They agree that Earth's temperature goes through hotter and colder cycles all the time. But they also agree that humans are increasing the rate at which the planet is warming. They explain that the primary reason for this is the industrial era.

Industrialization is a change in society that includes more mass production in factories through the use of machines. This change has brought many positive improvements to human society including better homes, increased health, and easier work for many people. However, industrialization relies primarily on fossil fuel energy that comes from oil, coal, and other carbon-based substances. When these fuels are burned to make energy, they release gases into the air. These gases trap heat from the sun in our atmosphere which results in global warming. Over the last 100 years, human activities have generated high levels of these carbon-based gases, which is why the global temperature has increased so quickly in recent decades.

Continued on the next page.

technology, weather, nature, health

Lexile®: 1150L
Word Count: 748

Time: _____

Global Warming (continued)

Another human cause of global warming is the destruction of forests. Trees are capable of consuming these carbon-based gases and changing them into oxygen that humans need. However, as human populations increase, forests are cut down to make room for cities and farms. In fact, many of these farms are used to raise cattle, or cows, and these animals produce dangerous levels of carbon-based gas as they digest food.

Global warming affects Earth in many ways. Already, polar glaciers have rapidly begun to melt which causes ocean levels to rise and could lead to flooding in coastal cities. Additionally, as the planet warms, snow, ice, and rain evaporate more quickly rather than replenishing water sources, and this causes drought. Global warming also affects weather patterns and contributes to more extreme storms around the world. All of these changes can threaten our food supply.

Steps can be taken to delay and reduce some of these negative effects. First, scientists suggest that humans use more renewable energy sources such as solar and wind power instead of oil and coal. They recommend we travel less frequently using fossil fuel vehicles such as cars and airplanes. We can live closer to our school or workplace, so that we can walk or bike instead of driving, or we can use public transportation, which uses less energy per person than personal vehicles. We can switch from a diet that includes a lot of meat to a more vegetable diet. Changing diets can help reduce demand for food sources that create carbon-based gases. We can also be more aware of our energy use and be less wasteful of electricity. For example, we can turn off lights or electrical devices when they are not in use. We can dress appropriately when indoors instead of setting our home's heating and cooling systems to **extreme** temperatures.

As we learn more about global warming and its impact on our planet, we can change our behavior to reduce the negative effects our actions have on the planet. Becoming more informed and acting in an environmentally-friendly manner helps ensure that Earth remains a safe place to live for future generations.

Answer comprehension questions on page 189.

Sudoku Puzzles

If you like to solve puzzles, you can choose from a wide variety that come in many shapes and designs. With a jigsaw puzzle, you build an image from differently shaped pieces, putting each piece in its correct place. In a crossword puzzle, you must form words and phrases in a grid, both horizontally and vertically, using the letters of the alphabet. Other types of puzzles require players to solve riddles or find hidden words or images. One of the newest and most popular types of puzzles is sudoku, and it is fast becoming a favorite pastime of many people all over the world.

Sudoku is a simple game with rules that are easy to learn. Each puzzle consists of a **grid** of nine columns by nine rows, for a total of 81 boxes. Within the grid, individual boxes are also grouped into bigger boxes of three columns by three rows. The objective of the puzzle is to fill the grid with numbers so that each three by three box, each column, and each row contains the numbers one through nine only once. The numbers are not placed in their normal numerical sequence. Sudoku puzzles begin with some numbers already included in the grids before players begin. Because the correct number for a box cannot always be guessed on the first attempt, most players write their guesses using pencils with erasers in case they need to erase and fix any mistakes. Very confident players might use a pen. As more boxes are correctly filled with numbers, the remaining boxes are filled more easily.

Sudoku puzzles are based on magic square puzzles from China, which are more than thousand years old. Later, magic square puzzles appealed to mathematicians in Europe and the Middle East, and by the late 19th and early 20th century, they experienced some brief popularity in French newspapers. It was not until 1979 that Howard Garns, a 74-year-old retired architect in the United States, designed the first modern sudoku puzzles. They were given the name of Number Place, and they were published in a puzzle magazine. In the mid-1980s, Number Place became very popular in Japan, where the puzzles were renamed sudoku, meaning "single number." In 2004, sudoku puzzles began appearing in Western newspapers alongside crossword puzzles, which were already very popular with Western readers. Today, many publications around the world publish sudoku puzzles.

In 2006, the first World Sudoku Championship was held, or happened, in Italy. The event is held each year, and the location varies. Recent events have taken place in India, China, the United Kingdom, and the United States, among several other countries. At these events, there are both team and individual competitions. Players solve puzzles in front of live audiences who can see the competitors' puzzles thanks to projections on large screens. Competitors are judged on the speed and accuracy of their sudoku puzzle completion.

Continued on the next page.

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7	6			9			4	3
	8		1		2		3	
	3						9	
	7		9		4		1	
8	2			4			5	9
		7				3		
4	1		3	8	9		6	2

hobbies

Lexile®: 1160L
Word Count: 760

Time: _____

Sudoku Puzzles (continued)

Estimates suggest that more than 100 million people now try to solve a sudoku puzzle each day. Why is the game so popular? Perhaps it is because sudoku puzzles were developed over time by people on several continents, which contributes to the appeal of the puzzles in so many cultures. Additionally, because sudoku puzzles use numbers, and not words, these puzzles can be enjoyed by people from many nations without the need for language translation, provided that players can distinguish each number from all others that are used in the puzzle. Though sudoku puzzles are popular among mathematicians, a person does not need to be a mathematical genius to solve these puzzles. Numbers are involved, of course, but sudoku puzzles use logic skills more than counting skills. Both children and adults can play, and puzzles range in difficulty from easy to very hard. In addition, sudoku puzzles can be played at almost any time and in almost any place. These puzzles can be found in books, newspapers, video games, websites, and smartphone apps.

While nine by nine grids are the standard size of sudoku puzzles, some grids may be as small as four by four, five by five, or six by six. Other sudoku puzzles may be as large as 16 by 16 or even 25 by 25. One enormous sudoku puzzle from Japan was named Sudoku-zilla and had a grid of 100 by 100! A variation of the game is Photo Sudoku, in which the boxes are filled with pictures. Another variation is Wordoku, in which letters must be placed in the empty boxes.

Have you got your pencil ready? Then find a sudoku puzzle, and enjoy!

Answer comprehension questions on page 190.

Franklin D. Roosevelt

At age 39, Franklin Delano Roosevelt, often called by his three initials, FDR, fell ill with polio. Many years later, a polio vaccine was developed, but in FDR's time, this was a difficult and deadly disease. The disease left FDR partially paralyzed, and he would never again be able to walk without help. However, FDR's greatest moments were still to come. He rose above this and other challenges to become one of the most respected presidents in United States history.

FDR was born January 30, 1882, in Hyde Park, New York. He was the only child of James and Sara Ann Delano Roosevelt. As a boy, FDR enjoyed a happy childhood and received a good education. At age 18, he started his college studies at Harvard University in Massachusetts, graduating in 1903. About this same time, FDR's fifth cousin, Theodore Roosevelt, became the country's 26th president.

In 1905, FDR married Theodore Roosevelt's niece Eleanor. After completing law school, FDR worked as a lawyer in New York City. However, like his famous cousin Theodore Roosevelt, FDR soon ventured into politics. At age 28, he was elected to the New York State Senate. He concentrated his efforts on farm and labor bills, as well as social reform issues. After FDR had served two terms, United States President Woodrow Wilson appointed FDR assistant secretary of the United States Navy.

During his time in this position, FDR founded the United States Naval Reserve. In 1914, he ran for a seat in the United States Senate but lost. It would not be the last election he would lose in his career. In 1920, Democratic nominee James Cox asked FDR to serve as his vice president in the national election. They lost to Republican Warren G. Harding, and FDR returned to his private life.

Things went from bad to worse for FDR the next year with his polio diagnosis in 1921. Suffering in both body and mind, he believed that both his political career and life as he knew it were over. Still, FDR would not accept the fact that he would be paralyzed for the remainder of his life. He worked hard to improve his physical health, teaching himself to walk short distances with the aid of leg braces.

At age 46, FDR returned to politics, winning election as the governor of the state of New York in 1928. When the Great Depression struck the nation the following year, he implemented a number of programs to help the people of his state. His success as governor earned him the Democratic nomination for president in 1932. FDR then defeated then-president Herbert Hoover, becoming the nation's second President Roosevelt and 32nd president overall.

Continued on the next page.

biography, history, USA, leaders, government, war

Lexile®: 1170L
Word Count: 808

Time: _____

Franklin D. Roosevelt (continued)

When FDR took office in 1933, tens of millions of Americans were out of work, and the Great Depression had become one of the country's toughest challenges since the Civil War. FDR got to work, developing economic programs to help all Americans in what he called a "New Deal." Over time, these economic programs helped to boost gross national product and brought down unemployment. In 1935, FDR signed the Social Security Act into law to help provide for the country's senior citizens and others in need. He was elected to a second **term** in 1936. In fact, he won a third term in 1940 and also a fourth term in 1944, a feat no president had done before or would ever do again since legislation now limits a president to a maximum of two terms in office.

On December 7, 1941, Japanese forces bombed the United States naval base at Pearl Harbor in Hawaii, bringing the United States into World War II. FDR called it "a day which will live in infamy," and the US joined the fight against Japan on the western front and also against Adolf Hitler and Germany in Europe and Africa. For more than three grilling years, FDR helped to create a plan to defeat America's foes as the United States fought along with the Allied powers, including Great Britain. At the same time, FDR championed the idea of a United Nations, in which countries across the globe could work together to resolve their disputes.

Over time, the effects of polio, stress, and a failing heart took their toll on FDR's tired body. He did not live to see the end of the war and passed away unexpectedly from a stroke April 12, 1945, at age 63. In the months that followed, the USA and its allies defeated all of their foes and ended World War II. As the longest-serving president of the United States, FDR was an example of strength, though his physical illness meant that he could not always stand. His wife Eleanor, likewise, remains one of the most respected first ladies of all time for her efforts towards racial equality, civil rights, and women's rights.

Answer comprehension questions on page 191.

Bar Mitzvahs

One of the most recognizable traditions of Jewish culture is what is widely known as the bar mitzvah. This phrase can be translated from the Middle Eastern languages of Hebrew and Aramaic as "son of the commandment." Thus, the *bar mitzvah* is a ceremony for Jewish boys. The ceremony for girls is called a *bat mitzvah*, meaning "daughter of the commandment."

While it is common today to refer to the ceremony as a bar mitzvah or bat mitzvah, the phrase, interpreted literally, refers to a person rather than an event. Essentially, the phrase *bar mitzvah* or *bat mitzvah* actually refers to a child who is coming of age. More correctly, the event should be called a bar mitzvah ceremony or a bat mitzvah ceremony. This being the case, when someone says that a Jewish youth is "having a bar mitzvah," or when a person plans to "attend a friend's bat mitzvah," these speakers are referring to a bar mitzvah celebration or a bat mitzvah celebration.

In Jewish culture, when youth reach the age at which they can become a bar mitzvah or bat mitzvah, this does not signify that they have reached adulthood. Instead, a bar mitzvah or bat mitzvah ceremony is one step towards adulthood. When young people become bar mitzvahs or bat mitzvahs, they are literally becoming sons or daughters of the commandment. They are willing to follow God's commandments. This ceremony has become important in Jewish culture because Jewish culture does not require children to obey the commandments. Of course, children are taught and encouraged to do so, but they do not get punished severely for infractions, or mistakes.

When a Jewish boy turns 13, or a Jewish girl turns 12, the requirement to obey the commandments begins. The bar mitzvah ceremony is the occasion that formalizes the commencement of that requirement. However, not only do Jewish youth assume the obligation to obey commandments, but they also gain the right to participate in certain Jewish religious ceremonies. Additionally, according to Jewish culture, these young people are now old enough to testify in religious courts as well as to form binding contracts and to get married.

While these rights are conferred upon, or given to, Jewish youth at the age of 13 or 12, it is also important to note that Jewish culture also recognizes and obeys the laws of the local government. Thus, while youth might be allowed under Jewish law to enter into marriage contracts at age 13, they probably will not be married until after they are 18, depending on the laws of the country where they reside.

Bar mitzvah ceremonies are usually joyful occasions that include some rituals; however, the truth is that these ceremonies are not technically necessary. In fact, boys and girls automatically become a bar mitzvah or bat mitzvah when they turn 13 and 12, respectively. Another common misconception is that youth are not actually considered Jewish until they have celebrated a bar mitzvah. This is not true. Jewish children are accepted fully into their faith from the moment of birth.

Continued on the next page.

culture, celebrations

Lexile®: 1210L
Word Count: 876

Time: _____

Bar Mitzvahs (continued)

The modern bar mitzvah ceremony is a combination of old and new customs. This ceremony is not mentioned in the Talmud, the Jewish book of teachings. However, aspects of the modern bar mitzvah began as early as the 6th century and developed through the Middle Ages. In these early ceremonies, the bar mitzvah or bat mitzvah celebration was primarily a religious event. The young person would be asked to take a very small part in the Jewish shabbat, or sabbath-day, services. This participation would happen soon after the youth turned either 12 or 13. During the services, the youth would go to the front of the synagogue and **recite** a prayer and read from the Torah, a holy text. Sometimes, the youth would be expected to learn the entire conclusion to the sabbath-day reading of the Torah, including a traditional chant. Some other traditions required the youth to lead the service or to guide the attendees in specific ritualistic prayers.

Today, one of the most common traditions is for the youth to give a speech at the end of the ceremony. This speech traditionally begins with the phrase, "Today I am a man," or "Today I am a woman." At the conclusion of the bar mitzvah or bat mitzvah ceremony, the child's father recites a blessing that shows gratitude that the youth can now take responsibility for his or her own choices.

In modern times, the celebration that follows the religious service is often elaborate, resembling a wedding reception. Usually there is a fancy meal, along with party games and dancing, and gifts are given to the host child. In some families, attendees can expect to essentially spend the entire day at an exciting party. Thus, the bar mitzvah celebration can also be an important social event in a young person's life.

In conclusion, it is important to understand that the bar mitzvah or bat mitzvah ceremony does not signal an end to a Jewish young person's religious education, nor is it supposed to be the only goal for Jewish youth. Instead, the bar mitzvah or bat mitzvah ceremony is intended to be only one objective of many important religious goals for Jewish youth.

Answer comprehension questions on page 192.

Dolly the Sheep

In 1996, news about a sheep had a significant impact on the scientific world. That year, Dolly the sheep was born, and despite looking like a normal sheep, she was a very unusual animal. Dolly was the first mammal ever to be cloned from an adult animal cell.

In nature, cloning occurs without human interference in the reproduction of certain plants, including bananas and blackberries. These plants create identical copies of themselves that then grow into independent plants that share the same characteristics. A similar process is also present in certain animals, including some insects, fish, and lizards. These animals are able to create children without the need of a mate.

However, Dolly was created using artificial cloning, which means that human scientists were involved in creating a copy of an existing life form using a process that does not happen naturally. Artificial cloning happens when scientists take a cell from a living organism and try to **replicate**, or copy, that cell. In order to cause a cell to replicate itself, scientists have to first identify the cell's DNA (deoxyribonucleic acid), which determines the traits, or characteristics, of the living organism. Using that knowledge, scientists add specific chemicals that then act as a catalyst to make the cell produce another identical cell.

Prior to Dolly's birth, scientists had spent several years experimenting with a wide variety of cloning methods, often with the goal of studying diseases and producing medicines to treat those diseases. For many years, scientists had been able to clone single cells, but the challenge had been how to clone an entire living organism, which is much more difficult than cloning a single cell because living things have an enormous variety of cells.

This process is still very challenging, but with the successful cloning of Dolly, scientists' understanding of cloning improved greatly. Today, scientists are hopeful that they can use what they have learned from Dolly to better understand diseases in humans and to create methods for fighting those diseases, including a cure for cancer.

Dolly's birth happened after many failed attempts. Scientists at the Roslin Institute in Edinburgh, Scotland tried 277 times to create a living sheep from a cell through cloning, but they finally succeeded on July 5, 1996, by cloning Dolly from a cell taken from another adult sheep. Dolly spent her entire life at the Roslin Institute, where she was born. Despite being the most famous sheep in the world, she had a relatively normal life. She lived for six years, and during her life, she gave birth to six young lambs. Her first baby was born in 1998 and was called Bonnie. The next year, Dolly delivered two more lambs, Sally and Rosie. She gave birth to three more lambs, Lucy, Darcy, and Cotton, in 2000. All of her lambs lived normal, healthy lives.

Continued on the next page.

technology, health, animals

Lexile®: 1210L
Word Count: 991

Time: _____

Dolly the Sheep (continued)

Many people questioned whether Dolly would be able to live a normal life, given that she was born through an unusual scientific process and was an exact genetic copy of her mother. When she was five years old, she developed arthritis in her knees and began having trouble walking. Scientists conducted tests to see whether the condition was connected to her cloning, but they could find no evidence that supported that idea. They decided to give Dolly medicine for her pain, which helped her to move around more easily. Most sheep of Dolly's species live to about age 11 if they live in the wild. However, Dolly developed lung cancer when she was nearly six, and she died. Many critics of cloning claimed that she must have died at such a young age because of her unusual birth. However, no connection was found between Dolly's cloning and her lung cancer. Later studies with other cloned animals suggested that cloned animals can live normal lifespans, so why did Dolly die so young?

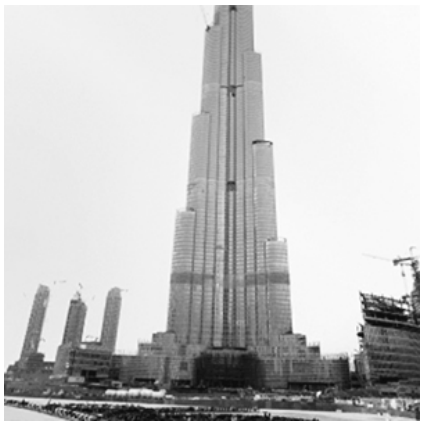
Through further study, scientists were able to explain the cause of Dolly's illness and death. They discovered that several other sheep from the same herd as Dolly's mother had had the same disease as Dolly. The scientists also learned that sheep that are kept inside have a higher chance of suffering from this disease than those who live in the wild. Dolly had spent almost all of her life inside because of the potential danger from people who might want to hurt or steal her. Thus, despite dying at a young age, Dolly lived a relatively normal life and died a natural death.

Since the successful cloning of Dolly, many other mammals have been cloned. These include domesticated animals, such as horses, bulls, dogs, and other sheep. However, scientists are particularly excited about the potential for saving wild species that might be in danger of going extinct. In fact, in January of 2009, a research center in Spain announced that it had successfully cloned a Pyrenean ibex, which is a type of wild goat that lives in the mountains. This was important because the Pyrenean ibex had been declared officially extinct in 2000. Scientists used DNA from skin cells of the Pyrenean ibex and combined this DNA with the egg cells from regular goats. Unfortunately, the young, cloned ibex died soon after it was born. Despite the young ibex's dying, the successful cloning of an extinct species brought hope to many. In fact, some scientists have suggested the possibility of cloning long-dead species like the woolly mammoth, a relative of the elephant, and even dinosaurs.

Although the idea of saving endangered species or reviving extinct ones is exciting, cloning is also useful for other reasons. Scientists and medical researchers believe that they can better understand why some animals and people are able to withstand terrible diseases and then use cloned cells from those organisms to cure the worst diseases in the world today. Cloning can also help solve food supply issues and improve scientists' understanding of the aging process in humans. However, there is still much to be learned.

Answer comprehension questions on page 193.

Burj Khalifa



The Burj Khalifa, or Dubai Tower, is an extraordinarily tall skyscraper in the heart of the downtown district of Dubai in the United Arab Emirates. Construction on the tower began in 2004, and the building opened to the public in 2010. The Burj Khalifa was built for a wide variety of purposes, but the most famous objective was to construct the tallest manmade structure on Earth.

The Burj Khalifa was built as part of an enormous project undertaken in the downtown area of Dubai. During this project, the downtown area was improved and renovated; however, the crowning achievement of the massive renovation was always meant to be the completion of this magnificent tower at the very heart of the downtown. In fact, the Burj Khalifa may very well be the most expensive building ever built, costing over $4 billion from start to finish. Renting office space in the Burj Khalifa is also incredibly expensive, with the cost reaching as high as $4,000 per square foot per month.

In February 2007, the building, which was still under construction, set a record for having the most floors of any building on Earth. The previous record had been held by the Sears Tower (now called the *Willis Tower*) in the USA, which has 110 floors. The completed Burj Khalifa has 160 floors.

In July 2007, during a later period of the construction process, the Burj Khalifa set a record as the tallest building in the world, passing Taipei 101, a skyscraper in Taiwan, which is 1,670 feet (about 509 meters) tall. Structures in the category of tallest building (or skyscraper) must contain continuously occupiable floors. This is a major difference between skyscrapers and towers. Many tall towers have limited occupiable space, such as a few floors near the base and then a few more floors near the top. Skyscrapers are filled with occupiable space from the base to the top.

Records continued to be broken as the Burj Khalifa progressed toward completion. Before the Burj Khalifa passed it, the world's tallest freestanding structure was the CN Tower in Toronto, Canada, which stands 1,815 feet (about 553 meters) tall. Unlike many tall TV antennae, a freestanding structure does not have support wires. The next record to be broken was that of the world's single tallest structure. The Burj Khalifa became the world's single tallest structure, passing a TV antenna used by KVLY-TV in the USA, which measured 2,063 feet (about 629 meters) tall. Not only did the Burj Khalifa break all of these records, it far exceeded them. The Burj Khalifa, at its highest point, is 2,722 feet (about 830 meters) tall.

Many believe that developers originally proposed a tower that was much shorter than the Burj Khalifa. Some people suspect that the building started out as a copy of the Grollo Tower, a building in Melbourne, Australia that is only 1,837 feet (about 560 meters) tall. However, the plan that was ultimately accepted is an original design by an international team of architects. One of the architects from that team has stated that the Burj Khalifa was originally supposed to be only 2,651 feet (about 808 meters) tall, but it is clear that this plan was changed as construction progressed to add additional height.

Continued on the next page.

landmarks, Asia, technology

Lexile®: 1220L
Word Count: 960

Time: _____

Burj Khalifa (continued)

According to several sources, one of them being an architect from the firm that designed the building, the Burj Khalifa was originally intended to be used entirely as luxury homes. While many of the elegant suites and spaces in the tower are indeed being used as very high-class homes for the world's wealthy people, there are now also spaces for corporations to use. One of these corporations is owned by Giorgio Armani, the successful fashion designer. Armani is using the lower 37 floors of the Burj Khalifa as a luxury hotel.

The many other floors of the Burj Khalifa serve a variety of other functions. Floors 45 through 108 host 700 private apartments. The developer of the Burj Khalifa reported that within eight hours of listing these apartments for sale, they were all sold out. There is a lobby on the 123rd floor and an expansive observation deck on the 124th. The remaining floors serve as corporate offices. At the top of the tower, the spire, which holds communication equipment, measures 656 feet (about 200 meters) in height.

Because of the extreme heat and sun of the Dubai desert, where the Burj is located, the tower has a particular design. The outside of the building is covered with special glass and with panels made of aluminum and stainless steel. These materials were created specifically to withstand the extreme natural forces of the desert. The strong winds in Dubai, combined with flying sand and high temperatures, can wear down the **facade**, or exterior, of a normal building in a few short years; however, the Burj Khalifa is expected to be able to tolerate these extremes for many years.

Some final interesting facts about the Burj Khalifa include the surprising temperature change from its base to its top. Experts say that the top of the building is as many as 6 degrees Celsius (11 degrees Fahrenheit) cooler than the bottom of the building. Furthermore, the elevators in the tower break records as the world's fastest. For some time, Taipei 101's elevators were the fastest, rising and descending at a rate of 55 feet (about 17 meters) per second. The Burj Khalifa's elevators move at 59 feet (about 18 meters) per second. Finally, the fountain at the base of the tower is 902 feet (about 275 meters) long, shoots water 492 feet (about 150 meters) high, and has over 6,600 lights to illuminate it.

The Burj Khalifa stands as a symbol of humankind's ability to push the boundaries of imagination and innovation.

Answer comprehension questions on page 194.

Giraffes

Perhaps no other feature of any other animal fascinates people as much as the long necks of giraffes. Male giraffes, called *bulls*, are the tallest land animals on Earth, reaching heights as tall as 19 feet (5.8 meters) while weighing up to 4,200 pounds (1,905 kilograms)—or about the weight of a pickup truck. Their necks alone can reach six feet (1.8 meters) in length and may weigh up to 600 pounds (272.2 kilograms)! Female giraffes, called *cows*, are slightly smaller than males—about 16 feet (4.9 meters) tall—but they also have very long necks. In comparison to the rest of the animal kingdom, giraffes are extremely tall, and they are remarkable creatures!

Both male and female giraffe necks are each made up, or consist, of seven vertebrae, which is the same as in other mammals. However, a single vertebra in a giraffe can be up to 10 inches (25 centimeters) high, and it is these tall vertebrae that give giraffes the ability to reach food that hangs high up in some trees. Giraffes are herbivores, primarily eating leaves and flowers. Even though they are able to reach high into trees for food, their favorite food is acacia, which is a small tree or shrub that has yellow flowers. Giraffes can also drink and store large amounts of water, which permits them to spend a great deal of time in regions that do not have any source of water or that experience periods of drought. They are ruminants, which means that they have more than one stomach, and in fact, giraffes have four stomachs, all of which aid in the digestion of their food.

Giraffes use their necks for a variety of social and survival purposes. A practice that is common among giraffes is called *necking*, in which males use their necks to fight with one another. To assist and protect them during fights, giraffes have horns, called *ossicones*, that sit atop their heads and can grow to be five inches (12.7 centimeters) long. Even though giraffes sometimes use their necks to fight, they also use their necks to show affection to one another. Additionally, their long necks also give them a commanding view of the surrounding area and help them to see predators approaching from a long distance.

Of course, giraffes can be found in zoos and other forms of captivity, but their natural environment is central, eastern, and southern Africa. They can be found roaming free on the continent's grassy savannas or woodlands.

In the grasslands of Africa, lions are the most common predator of giraffes. Lions will attempt to knock giraffes off of their feet into a vulnerable position which weakens a giraffe's ability to protect itself and escape an attack. Despite this threat, giraffes are known to fight back and will use their very strong legs to kick at the lions. Kicks from giraffes, in fact, have been known to be strong enough to shatter a lion's skull or break its back! These strong legs help them to run very fast—up to 30 miles (48.3 kilometers) per hour—for short distances and brief periods of time.

Continued on the next page.

animals, Africa

Lexile®: 1220L
Word Count: 948

Time: _____

Giraffes (continued)

Lions are not the only danger that giraffes face. A surprising—but relatively small—threat to giraffes is lightning. Believe it or not, because of their extreme height, giraffes are more likely to be struck by lightning than most other animals. A much more serious threat to giraffes is, unfortunately, humankind. Some people hunt giraffes for their skin, meat, and tails. Additionally, growing human populations and expanding developments, which contribute to the shrinking African grasslands, threaten the giraffe's habitat. As a result, the giraffe population is rapidly declining. In only 15 years, the giraffe population has dropped from 140,000 to only 80,000, and, as a result, giraffes are considered a protected species.

For the most part, giraffes are quiet and peaceful animals. Whereas dogs bark and ducks quack, giraffes do not make one particular sound when they speak, though there are times when they will cough, grunt, hiss, moo, and snort. In addition to their long necks, giraffes also have long, hairy, bluish-purple tongues that are classified as *prehensile*, which means that giraffes are able to curl their tongues around branches to reach and pull leaves and flowers that are high up in some trees.

A baby giraffe is called a calf, and female giraffes carry one calf at a time, during a gestational period that is somewhere between 14 to 15 months. At birth, the calf will already be six feet (1.8 meters) tall. It will usually spend the first couple of months of its life on the ground, making it vulnerable to predators. Many calves do not survive their first week of life. As a result, mothers have to be **vigilant**, on the lookout for signs of trouble at all times. Fortunately, the other females in the herd will offer their assistance if it is needed. A healthy giraffe can live up to 28 years.

Like leopards, giraffes are covered in spots, but a giraffe's pattern is typically much larger and more brown and orange in color. The spots serve as a type of camouflage to protect them from predators. Each spot on a giraffe's body is distinct and unique in its size and pattern, much like the fingerprints of human beings.

Another interesting fact about giraffes is that they require the least amount of sleep of any animal—usually less than two hours, and sometimes as little as 10 minutes, during each 24-hour period.

Giraffes are truly some of the most fascinating animals on our planet. There is much that humans can do to help protect giraffes and to preserve their natural environment.

Answer comprehension questions on page 195.

Hiccups

Hiccups are unexpected and uncontrollable movements of the diaphragm, a muscle above a person's stomach. The majority of the world's population have experienced a hiccupping attack, so the sounds and sensations associated with this condition are widely recognizable. Although hiccups are a common phenomenon and most people would agree that they are a particularly irritating experience, hiccups still remain somewhat of a mystery to medical professionals.

Scientists have been debating the mystery of hiccups for decades, and although specific theories that explain the cause of hiccups are still debated, scientists have observed some interesting patterns related to hiccups. For example, although hiccups can occur at any time, they are most likely to occur in the evening. In addition, although hiccups can affect anyone, scientists have discovered that, for reasons that remain unclear, males are more often affected than females. Additionally, women who are pregnant hiccup less often than women who are not. A final observation suggests that as people age, instances of hiccupping occur less frequently.

The physiological process of hiccups begins with the diaphragm, the large muscle between the lungs and the stomach. When the nerve that controls the movement of the diaphragm is irritated, the diaphragm rapidly tightens, and air is quickly pulled into the lungs. This happens so quickly that the epiglottis, the tissue that covers the airway during swallowing, flaps shut and causes the vocal cords to compress together. Then, the air that entered the body is suddenly stopped when it strikes against the closed vocal cords. It is the air hitting the vocal cords that causes the "hiccup" sound that is so widely recognized. Usually this action repeats itself several times per minute.

There are numerous theories about the causes of hiccups. One common idea is that hiccups can be triggered by having a very full stomach, which can result from eating too much too quickly or drinking too much liquid. Some scientists suggest that hiccups might also be caused by quickly swallowing a large amount of air. It is also thought that hiccups may also be caused by a sudden change in the temperature of the stomach, which can result from consuming a cold drink while eating a hot meal. Smoking, stress, and excitement have also been blamed for hiccups. In addition, some individuals will hiccup after having a carbonated beverage, such as soda pop. However, most experts claim that the true cause of hiccups is still a mystery.

A normal case of the hiccups persists anywhere from a few minutes to several hours. Although medical treatment is sometimes necessary when hiccups are chronic, the body resolves most hiccup attacks without any outside interference.

There are many popular home remedies that are widely believed to cure a case of the hiccups. Some of the best-known treatments include holding one's breath, eating a teaspoon of sugar, or being **startled** or frightened. Other remedies include breathing into a paper bag, pulling on the tongue, biting into a lemon, or drinking water from the far side of the glass.

Continued on the next page.

health

Lexile®: 1220L
Word Count: 919

Time: _____

Hiccups (continued)

Some of the home remedies for hiccups can be complicated or highly unusual. For example, one home remedy suggests that an individual put the round end of a spoon between the points of a fork, placing the handle of the fork in a glass of water, and resting the handle of the spoon against the hiccupping person's forehead. Then, the person must drink from the glass of water. Although there are probably as many ideas for cures as there are people who have suffered from the hiccups, the effectiveness of specific remedies has not been scientifically confirmed.

If hiccups last longer than two days, they are called *persistent hiccups*. If they last longer than a month, they are called *intractable hiccups*. Individuals with persistent or intractable hiccups should seek intervention and treatment from a medical professional, as these types of hiccups are unlikely to stop and may be a sign of a more severe condition. For example, persistent or intractable hiccups may be a sign of complications in the nervous system caused by serious injuries, infections, or problematic breathing habits.

The most famous case of prolonged hiccups may be that of Charles Osborne, a man from Iowa who hiccupped without ceasing for 68 years, from 1922 to 1990. His unusual case was recorded in *The Guinness Book of World Records* when he was documented as the "Man with the Longest Attack of Hiccups." In the early years of his hiccups, Charles Osborne hiccupped up to 40 times every minute. In later years, the rate of hiccupping slowed to around 20 times a minute. Despite his uncontrollable hiccupping, Charles Osborne was married twice and fathered eight children. He died one year after his hiccups stopped.

A less extreme case of chronic hiccupping comes from teenager Jennifer Mee of Florida. Mee achieved a small degree of fame in 2007 when she suffered from hiccups for five straight weeks. Her hiccups disappeared as suddenly as they came but reappeared some weeks later. This reappearance caused some experts to suspect that she actually suffers from Tourette syndrome, which causes individuals to perform repeated, involuntary actions. Other, less sympathetic observers suggested that Mee's hiccups were an attention-seeking prank, or trick. Regardless of the cause of Mee's hiccups, her case demonstrated the popularity and variety of home remedies for hiccups. When Mee was interviewed on a national TV show, the audience was asked to send in their suggestions for hiccup cures, and remarkably, the TV show received over 10,000 emails filled with ideas.

Answer comprehension questions on page 196.

Hypnotists

When people think of hypnotism, the following scenario may come to mind: A mysterious performer calls a volunteer up onto the stage. The volunteer sits down in a chair and looks straight ahead at a coin dangling from a string. The performer, called a *hypnotist*, swings the coin back and forth, repeating the words, "You are getting sleepy, very sleepy." The eyes of the volunteer follow the coin, and soon the volunteer appears to enter a state that is similar to sleeping, or perhaps daydreaming. At this point, the hypnotist says, "When I count to three and snap my fingers, you will be under my power." The performer's fingers snap, and the hypnotist commands the volunteer to get up from the seat and act like a chicken. The volunteer obeys willingly, flapping arms and clucking, much to the audience's delight and laughter.

This type of scenario is called *stage hypnotism*, and while stage hypnotism is possible, this scenario is not entirely accurate. For one thing, people who are hypnotized are not forced to obey every command that they are given. They still maintain their personalities and free will, or the ability to choose what they will do, and they will not do anything that goes against their own moral codes, so they cannot be forced to do something that they think is wrong. Those who are hypnotized are relaxed but not sleepy; they are, in fact, in a trance, which might be compared to daydreaming.

Along with having a feeling of relaxation, people who are hypnotized are uninhibited, or less embarrassed and shy about doing certain things. They are more likely to respond to a suggestion to, for example, get up in front of a crowd and dance or flex their muscles. Normally, the conscious, rational mind would stop most people from acting in such a way. However, the sub-conscious mind is the source of our imagination and impulsive behavior, and during hypnosis, it is in control. The possibility that people will ignore their inhibitions is what makes stage hypnotism so fun to watch. Those who agree to be hypnotized are more likely to do activities that they otherwise would feel too embarrassed to do in front of an audience.

Beyond its use in entertainment, hypnotism has value in mental health treatment. The subconscious mind stores all of our memories, and some psychiatrists use hypnosis to help people recall memories that they have forgotten. Through hypnotism, a mental health professional can help a person relax and access thoughts or memories that are normally blocked from the conscious mind. In this way, psychiatrists can help their patients to resolve situations from the past that may be hurting them emotionally at the present time. Many people view this as a positive use of hypnotism.

Continued on the next page.

jobs, health

Lexile®: 1220L
Word Count: 993

Time: _____

Hypnotists (continued)

In order to hypnotize someone, that person must want to be hypnotized, must believe that he or she can be hypnotized, and must feel relaxed and safe. Several methods may be used to send the person into a hypnotic trance, including the fixed gaze example with a coin or pocket watch. A hypnotist might also speak with a soft, relaxing voice to help bring the person into a state of hypnosis. Some people can even put themselves into a state of hypnosis by meditating or by listening to music of a relaxing audio program. In a sense, we also enter ourselves into a sort of hypnotic state when, for example, we read a book. After we have finished a few pages and start to get involved in the plot, we begin to ignore the sounds of people and things around us, and we get "lost" in the story.

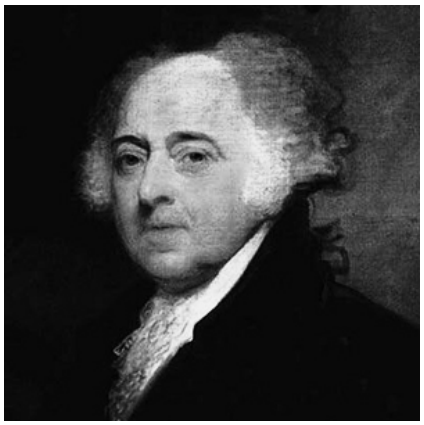
In addition to the uses already discussed, there are a number of other uses for hypnotism, some of which are controversial. One popular application of hypnotism is to help control behaviors that patients may view as bad habits, such as smoking, gambling, or overeating. For example, the hypnotist may suggest to the person's subconscious mind that the thought of eating too much will cause harm or sickness, and, as a result, it is believed that this suggestion will help the person better control his or her eating. In a similar way, a hypnotist may help to build up a person's willpower, convincing the person that he or she is strong enough to quit a dangerous addiction, such as the suggestion that a person can avoid cigarettes and can beat an addiction to smoking. Hypnotism might also be used to help reduce stress or to help people overcome their fears, such as patients who seek out hypnosis as a way to resolve nightmares.

There are other uses for hypnotism in the law enforcement and medical fields. Police psychologists may use forensic hypnotism to access a witness's subconscious memories. It is hoped that clues from these memories might lead to a crime being solved or to the arrest of a suspect. Also, some doctors believe that medical **hypnotherapy** can help those suffering from illnesses such as cancer and depression to either feel less pain or to be cured completely. Again, hypnotism is a controversial topic and not all medical and mental health professionals agree on its use and effectiveness. In all cases, hypnotism should only be attempted by someone who has been trained professionally because it is unwise to play with a person's subconscious mind.

For generations, people have hypnotized others and have been hypnotized themselves. Though we can observe that people really do go under hypnosis, we still do not fully understand why the subconscious mind can be so willing to obey suggestions. Skeptics of hypnosis argue that it is a placebo effect, meaning that people cannot really be hypnotized and that they only think that they are. Although opinions about hypnotism vary, there is no denying that the subconscious mind is a powerful tool. Those for whom hypnosis has been beneficial suggest that hypnotism demonstrates the mind's power over the body.

Answer comprehension questions on page 197.

John Adams



John Adams was the first vice president and the second president of the United States and writer of the Massachusetts Constitution, one of the primary source documents for the United States Constitution. Known for his great ability with words, he was a powerful writer and a forceful speaker. He was a descendant of some of the first settlers of New England, an area of North America that later formed part of the United States. Adams faced many challenges throughout this life, but he overcame both personal and professional difficulties and is remembered as a leader who defended freedom and justice.

Adams, who was born in 1735, came from a family of hard workers and leaders. His father served as a selectman for the area, which at the time was comparable to being a member of the town council. From a young age, Adams felt a responsibility to work hard and to help others. Adams's father was a farmer of humble means, so young Adams was required to spend much of his childhood laboring on the farm. The hard work of the farm culture, along with Adams's strong sense of responsibility to represent his family name well, compelled him to live his life in a way that would be a virtuous, or moral, example to those around him. Adams believed that it was his duty to advance the cause of freedom for all men. He spent much of his life living up to this ambition.

Adams felt that education was important to his ability to improve the lives of others. At age 16, Adams went to Harvard College. Since his father and maternal grandfather were clergymen, the family expected Adams to also become a minister. However, he was not certain that this was the best career path for him. After graduating, he spent some time teaching, which afforded him an opportunity to think further about his future, and after much thought, he decided to pursue a career in law. He got a job working for a lawyer named James Putnam and also met many other good lawyers whose examples he wanted to emulate, or follow.

Adams had an excellent ability to observe and to write. His reports on law cases, as well as his articles and journals, are great examples of a keen mind that thought deeply and tried to carefully consider the heart of issues. Despite his talent for writing and observing, Adams was often frustrated by his inability to speak in a way that would captivate and engage his audience. He was intensely passionate about what was right and wrong, and he often wished that he could keep his feelings under control while he spoke. His anger and frustration regularly surfaced when he argued or defended a point, which gave him a reputation for being **irritable** and hard to manage.

As a young lawyer, John Adams was a loyal citizen of Great Britain, but he also believed strongly that the British colonies in North America should have had the ability to rule themselves. At that time, he did not think that the colonies should break free from England and become their own country. However, as the unfair practices of the British king caused more and more hardship in the lives of the colonists, Adams began to change his mind. He wrote several arguments against the taxes and other regulations that the British government imposed on the colonists.

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biography, USA, history, leaders, government

Lexile®: 1220L
Word Count: 984

Time: _____

John Adams (continued)

It was through his opposition to the injustices of the British government that Adams began to gain some fame in the colonies and notoriety, or fame, abroad. He believed in two important principles, which influenced his writings and actions—specifically, that free people deserved the right to be taxed only with their agreement, and that free people should be able to have fair trials.

One famous event, in particular, tested Adams's commitment to the principle of a fair trial. In 1770, British soldiers killed five colonists during a protest in Boston. While the soldiers had clearly done something terrible, Adams believed that everyone deserved a fair trial, so he acted as lawyer for the soldiers. While he believed that representing these men might be misconstrued, or misunderstood, by the public, he also felt that he had to uphold the soldiers' right to a fair trial. His sense of justice impressed the people of Massachusetts who soon elected him to the state's governing body.

Later, Adams was sent to the Continental Congress, which was the convention where representatives of the 13 colonies decided to separate from Great Britain. By this time, Adams knew that there was no way for the colonies to obtain freedom unless they declared independence from Great Britain, so Adams was a vocal supporter of separation. Because of his ability to write and his knowledge of law and history, he had a persuasive influence on the other members of the Continental Congress.

Throughout the American Revolution, John Adams worked hard for American freedom. He wrote constantly, often publishing articles in newspapers that had a powerful influence on the state constitutions of many of the new American states. He worked hard as the head of the organization that managed the American soldiers, and he also served as an ambassador to Europe, trying to gain allies in the many countries there. As an ambassador for the United States, Adams received a large loan from the Netherlands, without which the United States might have lost the war against Great Britain.

Although Adams was known as a contentious, sometimes irritating person, and he did not achieve the same degree of fame as some other US presidents, such as Thomas Jefferson, his work proved to be of extraordinary value. His devotion to his country and the principles of freedom required great personal sacrifice, but he never hesitated in his duty. Because of these many reasons, John Adams is considered to be an example of a great American citizen.

Answer comprehension questions on page 198.

Snoring

Do you snore while you sleep? Or do you know someone who does? A common joke about snorers compares them to the sound of lumberjacks cutting down trees with chainsaws. While some people may snore softly, others can produce a rather loud and unpleasant sound. The average snore, as a matter of fact, is about 60 **decibels**, though some snores reaching 90 decibels have been recorded! That is as loud as the noise from most garbage disposals or food blenders. As loud as snoring can be, the noise is only one of several health concerns that can affect snorers.

The noisy sounds that are made by a snorer will be heard whenever there is an obstruction to the flow of air through the passages at the back of the nose and mouth. This is the part of the airway where the tongue and upper throat meet the uvula and the soft palate (the roof of the mouth). Snoring occurs as a result of these body parts rubbing against each other and vibrating during the process of breathing. At least 45 percent of adults snore at least occasionally, and 25 percent snore regularly. The percentage of those who snore tends to increase with age.

Many who snore may do so without realizing it, and yet they may be doing harm to their social lives and their health. For one thing, snorers who share a room with a sibling or a roommate, as well as those who share a bed with a spouse, may both annoy these people and cause them to suffer through sleepless nights. Studies have shown that people who are affected by a snoring roommate or spouse can lose an average of an hour or more of sleep each night.

Snoring may be a sign of more serious health problems. Snoring disrupts the body's normal pattern of sleeping, meaning that those who snore may frequently wake up and may be deprived of a good night's rest. As a result, snoring can cause excessive daytime sleepiness, lack of focus, and increased irritability or grumpiness in the day that follows. In children, snoring may indicate undiagnosed problems with the tonsils (in the throat) and adenoids (in the nose), both parts of the immune system. Surgery involving the removal of these body parts, called a tonsillectomy or adenoidectomy, may be required to correct the issue. Since these body parts become irrelevant for adults, their removal should not present any lasting problems for a child. Snoring may also be caused by a crooked jaw, which results from built-up tension in the muscles. Chronically loud snorers have been shown to have a 67 percent higher risk of stroke and a 34 percent higher chance of heart attack.

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health

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Word Count: 900

Time: _____

Snoring (continued)

Another serious health concern for which snoring may offer a warning sign is sleep apnea. Sleep apnea is a disorder in which the body experiences either several abnormal pauses in breathing or periods of low breathing during sleep. Each pause in breathing is called an apnea, and an apnea may last anywhere from a few seconds to a few minutes in duration. Apneas may also occur anywhere from five to 30 or more times per hour for a total of hundreds of times during one night of sleep. As a result, the brain and body may not get all of the oxygen that they need. A study conducted in the United States revealed that about one out of every 15 Americans is affected to some degree by sleep apnea. Weight gain is often associated with an increased risk of sleep apnea.

Fortunately, there are a number of treatment options available to those who snore, and the majority of these are aimed at clearing the blockage in the airway. Because fat tissue can press on the throat, snorers may be advised to lose weight. If snorers smoke, quitting the habit may help, as smoking tends to cause the throat to swell. Some people may receive relief when they sleep on their sides, which prevents the tongue from blocking the throat. Others may benefit from nasal sprays, nose clips or strips, anti-snoring pillows or clothing, and possibly prescription medicine. A dentist may make them a device that moves the lower jaw and tongue forward.

For sleep apnea sufferers, an overnight sleep test called a *polysomnogram* might be needed to determine the seriousness of the problem. During this type of examination, electrical equipment records brain activity, airflow, heart rate, and other information as the patient sleeps. In mild cases of sleep apnea, some of the previously discussed treatment options may be used. In moderate or severe cases, the snorer may be advised to wear a special mask, which is placed over the nose or mouth, or both, while sleeping. The mask is hooked up to a machine that sends a continuous flow of air into the nostrils, thus keeping the airway open so that it is not impaired. If a deviated septum, which means an irregularly shaped nasal passage, is the cause of the sleep apnea, surgery—used as a last resort—may be recommended.

If someone in your family, a friend, or a roommate—even you—are among those who snore, it is unnecessary to keep suffering through night after night of restless sleep. A visit to a local physician or ear, nose, and throat specialist may be just what is needed to return your nights of peaceful sleep.

Answer comprehension questions on page 199.

Bounty Hunters

When the police arrest a person for a crime, a judge may decide on a sum of money, or bail, for that person. The more serious the crime is, the higher the bail amount will be. If the bail is paid, this person, called a *suspect*, may leave jail, and the court will hold onto the bail until the end of the suspect's trial. Bail is meant to help ensure that the accused will appear in court to be tried according to the law. It is also meant to protect those who are innocent from having to stay in jail for weeks or even months—however long it may take for the case to go to trial. Because bail can be very costly, a bail bond agent may be needed to help cover the cost of the bail. This is a person who lends money to the accused to help pay bail. The purpose of this system is to ensure that crimes are properly investigated and that suspects are fairly tried in court.

Sometimes, however, the suspect may decide not to come to the scheduled court appearance. Missing a court appearance is referred to as *skipping town* or *running from the law*. The police are very busy, so they usually do not have the time to track down, or locate, the missing suspect, who is also called a *fugitive*. In such a situation, a bail bond agent may hire a bounty hunter, also known as a *bail enforcement agent* or *fugitive recovery agent*, to find and bring back the fugitive.

Bounty hunting is not an easy job. The hours can be very long, averaging anywhere from 80 to 100 hours per week, and bounty hunters often spend an extended period of time away from home. They have to conduct a good deal of research on the people who they hunt, obtaining social security numbers, phone numbers, addresses, and license plate numbers, to help them locate the fugitives. They may have to wait and watch places where a fugitive lives, works, or regularly visits, an activity that can take hours or even days. They try to find people who can give them clues to the fugitive's whereabouts so that they can make an arrest.

Once the fugitive is **apprehended**, bounty hunters must then return that person to jail in the area where the fugitive was first arrested, and that drive can be hundreds or even thousands of miles depending on how far the fugitive traveled.

Though bounty hunters often carry weapons for protection, they rarely use them in their work. Very few fugitives resist arrest, and those who do usually only try to run away.

Bounty hunting is a job that requires a lot of detective work as well as patience, and most bounty hunters are very effective at recovering missing suspects. According to the National Association of Bail Enforcement Agents, bounty hunters capture nearly 90 percent of their targets, and that amounts to about 31,500 fugitives each year in the United States. The job also comes with an attractive monetary reward; a bounty hunter may receive anywhere between 10 and 20 percent of the bail money for bringing in a fugitive, so bounty hunters who consistently do their job well can earn a good yearly salary.

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jobs, government

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Word Count: 983

Time: _____

Bounty Hunters (continued)

Though most of them are male, bounty hunters can be men or women. Many bounty hunters are former police officers or private detectives or have otherwise worked in law enforcement. That said, experience in these types of jobs is not required. More and more colleges are even offering certification training and degrees in bounty hunting, but the most important preparation for the job comes from good thinking skills, which means that a bounty hunter needs to predict what a fugitive will do. Bounty hunters also need to understand and follow all federal and local laws.

In the United States, bounty hunters have varying levels of authority, depending on the laws of the state where they work. Some states require bounty hunters to be licensed, and others require them to register as law enforcement officers. Only three states—Illinois, Kentucky, and Oregon—require bounty hunters to have a court order to make an arrest. In some places, bounty hunters' authority can exceed, or go higher than, that of the local police. Surprisingly, bounty hunters are not required to wear a uniform identifying themselves as officers of the law. They also do not need to obtain a warrant, and they can trespass on the fugitive's private property. All of this is legal under the terms of the bail agreement that the fugitive originally signed. However, bounty hunters do not have any legal protection if they follow a fugitive out of the country.

Bounty hunters are depicted throughout popular media. Many police and detective stories include plots in which a bounty hunter must track down a fugitive. Because a bounty hunter can travel all over the country, these stories can be very exciting and involve a variety of interesting characters and situations. The popular science fiction series Star Wars features a bounty hunter as one of its popular characters. Boba Fett is the name of this bounty hunter who is hired by Darth Vader to track down the heroes of the rebellion. And bounty hunters are even featured in reality TV. One TV series highlighted the work of Duane "Dog" Chapman, a famous bounty hunter who tracked fugitives with the help of his family members. As someone who once served time in a Texas prison, Chapman not only captured fugitives but encouraged them to change their lives and become lawful citizens.

Although it is not a common career path, this job can offer a great deal of satisfaction to bounty hunters who find fulfillment in knowing that they are supporting the legal system. By locating and returning fugitives, they do their part to ensure that suspects are tried in court.

Answer comprehension questions on page 200.

Prosthetics

Prostheses exemplify an innovative, cutting-edge technology that is improving the lives of millions of people around the world. In medical terminology, a prosthesis is an artificial or human-made device that a person uses, in place of a missing body part, to function more easily in day-to-day life. Prostheses aim to help people gain or recover a full range of abilities that may have been lost due to traumatic injuries, illness, or **congenital** birth defects. Experts within this field of medicine are concerned with attaching mechanical devices or equipment to the human body with the expectation that these devices will essentially function as an integral component of the patient's body. The science of designing and creating prostheses is called *prosthetics*.

Simple prostheses have been used since ancient times to replace missing teeth, arms, legs, and other body parts. Archaeologists have uncovered evidence that ancient Egyptians created prosthetic toes for people who had lost their big toes, and these prosthetic toes would have helped these people walk with greater facility. As technology and resources have advanced over the centuries, the design and creation of prostheses have improved significantly. Probably the most common prosthesis in the world is dentures, or artificial teeth, sometimes also called *false teeth*, which help people who have lost their teeth. In the past, false teeth were made of metal or even wood, so they usually looked artificial and often broke. Today, such prostheses are made to look and function like real teeth, so that people who wear modern dentures can chew food normally and can brush their teeth, as well. Dentures can also be removed easily for cleaning and for comfort.

Another common prosthesis whose technology has advanced significantly is the artificial limb. Many people have seen an image of a pirate with a leg missing who walks around with the help of a wooden leg attached to the knee. Captain Hook, a character from the Peter Pan story, is another pirate who wears a prosthesis. This pirate's name comes from the fact that he lost his hand to a crocodile and replaced his missing hand with a hook. Today, wooden legs and hook hands can be replaced by robotic prostheses. If a prosthesis is robotic, this means that it is able to move and behave in a fashion that approximates the movement of the limb that is being replaced. For example, a robotic prosthetic hand is able to open and close, hold things, and even use simple tools. For this kind of prosthesis to work, however, it must be controlled by the person who is using it.

A technology that allows a person to control his or her artificial robotic limb is called a *biosensor*. Biosensors are connected to nerves and muscles in the person's body so that they can receive signals from the person's brain. Because of this extraordinary technology, people with a robotic prosthesis can do activities that they would never be able to do without the artificial body part.

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technology, health, sports

Lexile®: 1230L
Word Count: 891

Time: _____

Prosthetics (continued)

Another modern advancement in prosthetics is the technology called cosmesis. Experts in this field focus on creating prostheses that look and feel like real body parts. These prostheses are often very expensive, but they can be extremely beneficial to people who wish to avoid the appearance of having an artificial body part. Scientists can use cosmesis to make a prosthetic body part whose appearance perfectly matches the color and skin patterns of the person who will use the prosthesis.

Many amputees or congenital patients may use one prosthesis for everyday use and another for participating in sports or specialized recreational activities. This may be especially helpful for seriously injured athletes who wish to continue competing in sports. For example, one talented athlete enjoyed running and was a successful track and field champion. Then she was involved in a serious car accident that resulted in the loss of one of her legs. She was devastated by the realization that she would no longer be able to compete as a runner. However, with the support of her doctors, she was fitted for a prosthetic leg that enabled her to walk normally again. She longed to be able to run, but the prosthetic caused pain and began to fall off when she attempted to run. Over the next year, her doctors presented her with a new prosthesis. Rather than be designed for appearance, this prosthetic leg was created to help her maintain balance and run as effectively as she had before the accident. It took her time to get used to the new leg, and it felt very different from her walking prosthesis, but she quickly gained an appreciation for this alternative leg. Although she cannot run as fast as she did before the accident, she is determined to work hard to continue improving her speed. With her athletic prosthesis, her desire to compete has been renewed. She did not qualify for the most recent Olympic team, but she represented her country at the Paralympic Games, which celebrate the skill of athletes with various physical challenges, including those who compete with prostheses.

The field of prosthetics advances every year. Some scientists are even working toward creating a prosthetic heart for people with heart disease or other heart problems. The science of prosthetics has certainly progressed a long way since the use of wooden teeth and legs.

Answer comprehension questions on page 201.

Renaissance Fairs

During the early Middle Ages, the quality of living in Western Europe suffered due to hunger, war, and disease, and many of the important cultural contributions of the ancient Greek and Roman civilizations were either forgotten or lost. However, an important shift began in the 14th century. Many of the forgotten cultural contributions were rediscovered, and there was great interest and proliferation of art, science, and technology. This era, or time period, of cultural growth in Western Europe is called the *Renaissance*, based on a French word that means "rebirth."

The culture of this era lives on today through Renaissance fairs. Sometimes called *Renaissance festivals* or *medieval fairs*, these events are outdoor gatherings that celebrate the culture and customs of the Renaissance era. Some people go to the fairs to learn more about Western European history, and other people attend these events to eat and drink delicious foods, including cider, fish, meat, and vegetables. Still other attendees come to shop for art, books, clothing, crafts, or jewelry, and some couples even schedule weddings at Renaissance fairs. However, one common factor that is shared by all festival participants is that they come to be entertained.

What will you see and hear at a Renaissance fair? Most fairs are hosted in a large outdoor space, such as a park or field. Attendees can walk throughout the field and see a series of structures, the majority of which are tents that are decorated in bright colors and have a medieval style. Some structures, such as stages, may even have thatched roofs, covered in straw, which were common during the Renaissance. Often, these structures are decorated with flags, shields, and other crests that are typical of the Renaissance. As attendees wander past these structures, they will likely hear music, laughter, and an unusual form of English. Many people at a Renaissance fair choose to adopt some of the language features of Early Modern English, a form of English that was spoken in England during the Renaissance. Early Modern English is very similar to the forms of English that people speak today, but it has some differences in pronunciation, grammar, and vocabulary. Many attendees use the works of William Shakespeare as a model of Early Modern English. The use of special decorations and language can help those who attend Renaissance fairs imagine that they have traveled back to the Renaissance era.

There is no required dress code for attending a Renaissance fair, but participants are encouraged to dress in costumes that reflect the fashions of the era. Most vendors and performers at a fair will certainly be dressed in costume. People usually wear fabrics that reflect the technology available in the Renaissance, such as leather, linen (a type of cloth), wool, and straw. Costumes are usually in earth tones, or colors that range from yellows and greens to browns and oranges. Clothing is selected to reflect the social class that a performer or attendee wishes to portray. For example, a person might wear a loose, white linen shirt with a leather vest, tight linen breeches (pants without pockets), leather boots, and a straw hat, or someone else might wear a long dress, an apron, leather shoes, and a tight linen cap. Those who wish to portray aristocracy or royalty would wear clothing in bright colors with decorative ribbons, beads, lace, and jewelry. Many people find that wearing a costume increases their enjoyment of Renaissance fairs.

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culture, Europe, history, arts

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Word Count: 977

Time: _____

Renaissance Fairs (continued)

Many people visit Renaissance fairs to shop for unique items. Renaissance fairs attract artisans, skilled tradespeople, who create items that resemble products from the Renaissance era. Visitors to Renaissance fairs might get the chance to see some of these artisans at work. Glassblowers carefully form delicate objects out of liquid glass. Leather workers craft intricate designs in belts and bags. Carpenters and carvers make items out of wood. Tailors and dressmakers show their clothing designs. Metal workers display shields, armor, and swords inspired by such tools used in the Renaissance. Attendees can also buy flowers, jewelry, pottery, toys, and books in open air markets similar to those from the Renaissance.

Visitors at a Renaissance fair are sure to get hungry, and thankfully most fairs have a variety of delicious foods for purchase. Many fairs offer themed foods that celebrate the culinary history of Western Europe, including roasted nuts, sausages, soups, and baked goods. Farmers markets may also be found at Renaissance fairs. These markets invite local farmers to sell their crops directly to attendees. Some farmers markets also include **vendors** who offer other food products including honey and cheese. Of course, attendees can also buy modern food choices, such as ice cream, hot dogs, and soda pop. Because visitors often like to eat while they walk through the fair, the majority of food options are designed to be conveniently carried, such as turkey legs. Some fairs have more elaborate meals that are eaten at tables. These meals may include multiple courses, or dishes, and may be hosted by actors portraying kings and queens and may include live shows.

Dinner shows are not the only form of performances at Renaissance fairs. Visitors can be entertained by jugglers and jesters, which are like clowns. Fairs are filled with the sounds of singers and musicians, who often use instruments similar to those that were popular during the Renaissance. Some songs may include lyrics in English, but others may be sung in other Western European languages, including French, Spanish, Italian, and Latin. Games are popular attractions and may include archery competitions, and skilled performers may demonstrate jousting, which involves two knights on horseback.

Renaissance fairs are a fun way to learn about history by participating in a recreation of some of the most interesting and exciting elements of the era. Many attendees find that one visit is not enough, and they make Renaissance fairs a regular part of their annual routine.

Answer comprehension questions on page 202.

Flying Cars

The 1968 film *Chitty Chitty Bang Bang* features a flying car that takes a family on an exciting adventure, and the 1961 film *The Absent-Minded Professor* also includes a flying car that is powered by a professor's unusual rubber invention. The 1960s cartoon series *The Jetsons* often showed flying cars as a common form of transportation in its vision of the future. Likewise, in the 1980s, the time traveling *Back to the Future* movie and its sequels suggested that flying cars would be common by the year 2015. These examples from movies and TV demonstrate that many people in the 20th century believed that flying cars were a sign of the future. Now that we have come into the 21st century, many people may be asking themselves the question, "Where are our flying cars?"

Flying cars, of course, are not yet filling up our skies the way regular cars do on a busy highway. Certainly, almost everyone who has to drive to and from work through rush hour or any other type of traffic jam has wished that they could take off into the air and leave the other commuters behind on the ground. Transportation agencies across the world are struggling to keep up with ever-expanding populations, so creating a new "road" in the sky remains an appealing idea. Estimates suggest that the average driver in the United States spends an hour a week in traffic jams, which is the equivalent of 4.2 billion hours collectively across the entire driving population. Just think what people could do with all that time lost in traffic jams!

Over the years, a number of inventors have tried to make flying cars a reality. The first attempt at a motorized flying car took place in 1917. A mechanic introduced his Autoplane, which had three levels of wings that were 40 feet (12.2 meters) in length and a propeller at the back. The Autoplane was designed to drive on roads and fly through the sky. Though the Autoplane was unable to stay in the air for more than a short distance, many people today consider it to be the first flying car design.

Over the next several decades, other inventors built many other potential flying cars. One of these was Airphibian, introduced in 1946, which consisted of a small car that looked like the front of a plane and a separate back end containing wings. The front end was used for road travel, and the back end could be added when the vehicle was to be used for air travel. Unfortunately, Airphibian, like many other models, was never successful. In fact, some inventors even died while testing their machines.

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technology

Lexile®: 1240L
Word Count: 973

Time: _____

Flying Cars (continued)

More recently, one inventor dedicated more than four decades and millions of dollars to creating his Skycar. In 1965, the first Skycar hovered above the ground but could not travel anywhere. In 1989, this same inventor introduced the M200X, which was designed to fly as high as 50 feet (15 meters) at 100 miles per hour (160 kilometers per hour), but it never went into mass production. Following this was the Skycar M400, which was designed to take off and land vertically, like a helicopter. It was expected to reach speeds of up to 400 miles (644 kilometers) per hour and would travel distances as far away as 900 miles (1,449 kilometers). In case of an accident, both airbags and parachutes would be programmed to deploy to lessen the impact of a crash. This model was expected to become one of the first mass-marketed flying cars, but like many of the flying cars before it, it never became a marketable reality.

In the summer of 2011, a US company announced a flying car called the Transition Roadable Light Sport Aircraft. As its name suggests, this vehicle **transitions**, or transforms, from a plane to a car in just 30 seconds. The plane's wings fold up along the side in order for the car to fit on the road. The vehicle operates on regular gasoline and can travel about 450 miles (724 kilometers) on one tank of fuel.

Despite all the excitement about flying cars and the considerable investment in developing possible designs, there remain several obstacles to their widespread use. First, operators would need to possess both a driver's license and pilot licensing and certification. Although many adults possess a driver's license, pilot licensing is very uncommon among the general public, and this significantly lowers the potential group of flying car operators. Additionally, in the United States, a flying car would require approval from the Federal Aviation Administration, a government body that ensures the safety of aircraft. There are also practical concerns to consider, such as what to do in emergencies. For example, if car drivers encounter a mechanical problem, they can simply pull over to the side of the road, but what if the same problem occurs at a height of hundreds of feet? Even experienced pilots sometimes collide with trees, mountains, buildings, or other objects. Flying car pilots might be less experienced and more likely to experience a collision. Lastly, there is also the issue of price. Although the price would eventually drop during mass production, these vehicles would likely cost hundreds of thousands of dollars each when they are first released, making it difficult for the companies to stay in business long enough to reach mass production.

For many people, flying cars are the ultimate symbol of the future, but given the shifts and realities of our society, are flying cars really the necessity that we once thought they were? In truth, other automotive technologies such as alternative fuel engines and self-driving cars are making far more realistic progress. That said, flying car dreamers insist that obstacles can be overcome, and as far as they are concerned, a future with flying cars is just over the horizon.

Answer comprehension questions on page 203.

Polar Bears

Polar bears possess several remarkable features that allow them to survive in one of the harshest climates on Earth, where temperatures in the warmer months range from -31 to 28 degrees Fahrenheit (-35 to -2 degrees Celsius), and where the winters, which are even colder, last for as long as eight months. Scientists have studied these bears for years and have discovered that polar bears have several features that make them uniquely well-adapted to living and thriving in such a difficult environment.

Polar bears are enormous creatures. Male polar bears can weigh as many as 1500 pounds (680 kilograms) and can grow to be over 9 feet (2.7 meters) long. Because of their size and shape, polar bears differ greatly in appearance from their other bear cousins, such as brown bears and black bears. Polar bears have thick, short legs, a long head and nose, small ears, and a short tail.

Polar bears are able to withstand the freezing temperatures of the far north due to their fur and the layer of fat under it. Polar bears have unusual fur, which consists of two layers: one very dense layer, called *underfur*, that is right next to the skin, and another layer of hairs that are called *guard hairs*. This outer layer of transparent hair is clear but appears white or nearly white. Guard hairs are also very long, reaching 6 inches (15 centimeters) on some parts of the body. These layers of fur help keep a polar bear warm even in the cold arctic wind. However, it is not just their fur that keeps them warm. Polar bears have approximately 4 inches (10 centimeters) of fat, or **blubber**, under their skin. The layers of fur and fat keep polar bears warm in the incredibly cold temperatures of the Arctic. In fact, they are able to stay so warm that they can become overheated if the outside temperature rises above 50 degrees Fahrenheit (10 degrees Celsius).

Polar bears have paws, or feet, that help them survive in the arctic climate. Their feet, which are larger than most other bears' feet, help them balance on slippery ice, swim through icy waters, and walk on the fragile surface of thin ice and snow without falling through. The bottoms of polar bears' feet are covered with small hairs that help the bears keep their balance while walking on slick ice and snow. Polar bears' claws, which are much shorter than those of a brown bear or black bear, are curved and help these animals grab their prey and easily dig into ice.

Polar bears are sometimes described as perfect hunting machines. While their sense of hearing is unremarkable, their sense of smell is extraordinary. In fact, they can smell their prey from nearly one mile (1.6 kilometers) away. They can also see very well, which helps them find prey in the vast distances of the Arctic.

Continued on the next page.

animals, Americas, Europe, Asia, weather

Lexile®: 1240L
Word Count: 989

Time: _____

Polar Bears (continued)

Polar bears employ a variety of methods to catch seals, their primary food source. For example, polar bears hunt for seals by searching for places on the ice where seals rest from swimming. Polar bears also look for places where mother seals are caring for their young since the young seals are easier to catch. A third method for catching seals demonstrates a remarkable instinct in polar bears. When hunting, polar bears often need to swim from one ice island to another in search of food. When polar bears, using their keen sense of smell, walk past breathing holes in the ice where seals come up for air, polar bears stop there and wait next to these holes. Then, as seals come up to breathe through the hole, polar bears can smell the seals and reach out quickly with their sharp claws to catch their food.

Polar bears do not always eat the entire seal after killing it. Adult polar bears usually begin by eating the skin and blubber of a seal, which provide crucial calories to help keep these bears warm. Adult bears may also eat the seal's meat, but mother bears usually save the meat for their young because the growing bodies of baby bears require the nutrients from seal red meat. Whatever polar bears do not eat is left for other animals, such as foxes and birds, to finish.

In the summer months, when ice islands are more scarce, a polar bear might also prey on and consume a wide variety of other kinds of food. These kinds of food might include eggs, birds, crabs, walruses, and small whales. If polar bears cannot find anything to eat, they are capable of living off their own fat for several months until food is found.

Polar bears' behavior is often solitary and focused almost entirely on hunting for sustenance. As such, the behavior of polar bears differs from other bears, including brown bears. Most brown bears mark out an area where they live and hunt, and then they stay inside that territory. Polar bears, however, are not at all territorial, and one polar bear might wander over several hundred miles as it hunts. In fact, some polar bears have been known to swim nearly 200 miles (320 kilometers) or more into the open sea as they search for food.

Polar bears generally live alone after they reach adulthood, but this does not mean that they are not social animals. Indeed, they have been seen playing together and spending evenings in the company of other bears. However, despite the existence of a strong friendship between adult polar bears, it is uncommon to see two polar bears spending longer than a few days together.

A common saying suggests that the lion is the king of the jungle, given its strength and power over other animals in the African wilderness. But if a king were chosen as ruler of the Arctic, the honor would no doubt be given to the mighty polar bear.

Answer comprehension questions on page 204.

The Beatles

In 1956, 16-year-old John Lennon, influenced by the music of Chuck Berry and Elvis Presley, among others, formed a rock group—one of more than 300 rock groups in Liverpool, England—called the Quarrymen. He recruited 15-year-old guitarist Paul McCartney, who brought 14-year-old classmate and lead guitarist George Harrison into the band. Along with bass player Stuart Sutcliffe and drummer Tommy Moore, they changed their band name to Johnny and the Moondogs, then the Silver Beetles, and, eventually, the Beatles, a term based on the word *beetles*, combined with the term *beat*—as in beats of music. Over the years, the Beatles became one of the most popular rock bands of all time.

Like many rock groups, the Beatles changed both members as well as band names. In August 1960, Moore was replaced by new drummer Pete Best. In April 1961, Sutcliffe left the group to become a painter, and McCartney switched from playing guitar to playing bass.

The band played music at popular nightclubs including the Star Club in Hamburg, Germany, and at the Cavern Club in Liverpool. When businessman Brian Epstein first spotted the Beatles performing at the Cavern Club in 1961, he was not impressed with their appearance or their manners. They dressed in black leather jackets and jeans, and they smoked cigarettes and ate food in the middle of their performances on stage. Nevertheless, he believed that the young men could both write and play good music, and that was enough to convince him to become the group's new manager.

Epstein convinced the young men to improve their image. The leather jackets and jeans were replaced by gray suits and "mop-top" haircuts, and the Beatles behaved better on stage during performances. After being rejected by nearly every record company in England, they were finally hired by producer George Martin in April 1962. In August, Best was replaced by 22-year-old drummer Ringo Starr, born Richard Starkey, because the original band members decided that Best's drumming skills were not good enough.

The Beatles' first single, "Love Me Do," was moderately successful, but the follow-up "Please Please Me" reached #2 on the list of Top 20 music songs in the United Kingdom (UK) in 1962. The following year (1963), three additional singles, including "I Want to Hold Your Hand," also reached the UK Top 20. In October, the band went on their first tour of Europe. In 1964, the Beatles were invited to perform at such popular UK music venues as the London Palladium and Royal Albert Hall. These performances helped the Beatles gain recognition as a respected musical group. In fact, one classical music critic called them "the greatest composers since Beethoven."

The popularity of the Beatles extended beyond the UK. In 1964, the Beatles traveled to the United States and made their American television debut on the *Ed Sullivan Show*, a popular music and variety program. This appearance, in fact, launched what was called the "British Invasion," a period of great popularity among American audiences in the music of several UK music bands, including the Beatles, the Rolling Stones, and

Continued on the next page.

culture, arts, Europe

Lexile®: 1240L
Word Count: 999

Time: _____

The Beatles (continues)

others, who dominated the rock and roll and pop music charts. The Beatles increased in popularity among millions of young people in the UK, the USA, and around the globe. This widespread popularity of the Beatles was named "Beatlemania." During the week of April 4, 1964, all five of the top singles on the Billboard Top 40 music chart in the USA were Beatles songs.

"Beatlemania" continued through 1964 and into 1965. In addition to their music, the Beatles entertained audiences with movies like *A Hard Day's Night* in 1964 and *Help!* in 1965. In 1965, they also set a new concert attendance record, with over 55,000 screaming fans paying to see them perform at Shea Stadium in New York City. On October 26, 1965, the Beatles were honored by Queen Elizabeth II at Buckingham Palace in London.

Over the next few years, as protests against the Vietnam War increased, the Beatles' popularity also grew. The band altered their image, growing out their hair while also changing their music, which became more political and was influenced by the cultures of South Asia. The Beatles learned about practice of meditation and followed the philosophies of the Maharishi Mahesh Yogi, who served as their **guru**, or advisor. In particular, the albums *Sgt. Pepper's Lonely Hearts Club Band* in 1967 and *The White Album* in 1968 demonstrated this new sound.

By 1970, the members of the Beatles had developed artistic differences, as well as varying individual interests, and the band members separated. During the next decade, as fans hoped for a Beatles reunion, Lennon enjoyed success as a solo artist, recording classic hits, including "Imagine." McCartney and his wife, Linda, formed the band Wings, which had chart-topping hits of its own. Harrison and Starr also enjoyed successful solo careers in music and film.

On December 8, 1980, Lennon was tragically murdered in New York City by a mentally disturbed fan. Eight years later, in 1988, the Beatles were added to the Rock and Roll Hall of Fame, and in 1995, Harrison, McCartney, and Starr, the three surviving members of the group, reunited to release two new songs. In 2000, the album 1, a compilation of the Beatles' number one hits, became the top-selling album of the decade and introduced the Beatles' music to a new generation of fans. Harrison, who was diagnosed with lung cancer in the late 1990s, passed away November 29, 2001. McCartney and Starr have continued solo careers into the 21st century and occasionally perform songs together.

The Beatles' legacy is impressive. It includes 45 songs in the Top 40 hits, including 20 songs that reached the number one spot. Though the music of many performers over the past 50 years have been forgotten, the music of the Beatles endures. Perhaps, just like the works of the great classical composers, the music of the Beatles will continue to entertain and inspire many generations of music lovers.

Answer comprehension questions on page 205.

Meteorologists

What is a meteorologist? The suffix *-ology* means "the study of," and *-ist* refers to a person involved in a given occupation. Therefore, a meteorologist is a person who studies meteors. When people think of meteors, the first thing that often comes to mind is the image of an asteroid, a large space rock, speeding toward Earth, perhaps causing the destruction of the dinosaurs or creating a deep crater. However, an alternative definition of the word *meteor* means any atmospheric phenomenon. The word is actually derived from a Greek word meaning "high in the sky." Because the atmosphere is made up of all of the gases surrounding the Earth, any event that happens in the sky—including hail, lightning, and changes in wind—counts as a meteor by this definition. These atmospheric events are the object of a meteorologist's study.

Weather events can be explained by the interaction of basic atmospheric variables over time, including temperature, air pressure, and water vapor. For this reason, meteorologists are often able to use complex mathematics and computer technology, as well as past patterns, to predict future weather. In fact, meteorologists are perhaps best known as weather forecasters. Radio and TV reporters who give the weather forecast are sometimes licensed meteorologists, although many of them merely receive information from a meteorologist and transmit it to a broader audience. Meteorologists must **synthesize**, or bring together, a lot of information in order to make a good prediction, so it is often difficult to be completely accurate in these forecasts, but they do their best to convey accurate predictions and succeed most of the time.

Of course, not all meteorologists are weather forecasters. Many do research on the effects of atmospheric phenomena, changes in climate, or environmental issues related to the Earth's atmosphere. They identify and document weather patterns for future use and learn more about climate change and damage to the ozone layer. They try to educate the public on atmospheric changes and on human interaction with their environment. This can mean protecting the atmosphere from dangerous human-made chemicals and pollutants or warning people of possibly harmful weather events like hurricanes and tornadoes. Meteorologists can work in the private, industrial, or government sector and may work alone or on a team with many other scientists.

Meteorologists have been following weather patterns for centuries. The Greek scholar Aristotle is considered the father of meteorology, and he wrote the first book on the subject in 340 BC. It is only in the last century or two that complex technology has made the era of modern meteorology possible. Until about the 19th century, meteorologists were unable to track weather patterns at the speed at which they move. In the past, meteorologists used tools like the weather balloon, a balloon with enough lifting power to carry a measuring device into the sky. The device could take readings such as temperature and air pressure and would remotely send them back down to Earth. Sometimes, the devices also took pictures to give meteorologists a better view of the weather patterns.

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jobs, technology, weather, geography

Lexile®: 1250L
Word Count: 901

Time: _____

Meteorologists (continued)

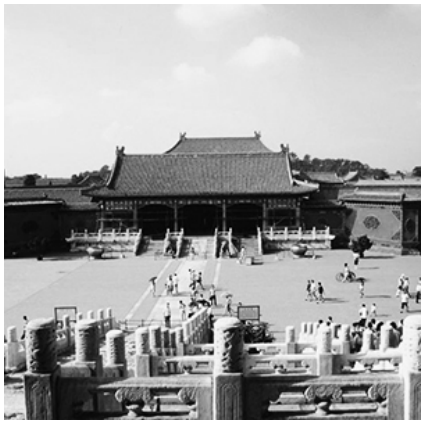
Today, many modern technologies have been added to the meteorologist's set of tools. Satellites above the Earth can now capture not only cloud cover but also temperature, wind speed, and other information about the climate. Although meteorologists are spread throughout the world and work together to produce an accurate global picture of weather patterns, satellites can fill in gaps where there are no weather stations, such as atmospheric areas covering the ocean. Special aircraft are now available to measure climatic readings, to take samples of particles in the air for further research, and to more closely observe dangerous weather events. Meteorologists use radar technology to detect and measure precipitation by producing an electronic beam and reading the response. A special type of radar, called Doppler, can also measure wind speed and direction. More recently, modern computers have been invented, providing the computing power necessary to numerically model atmospheric behaviors using complex algorithms and enormous sets of data in a reasonable amount of time. Meteorologists must have the skills to use all of these tools, to interpret their output, and to communicate the results to their colleagues and the general public.

In order to become a meteorologist, one must have a solid education in general science. Many colleges offer undergraduate programs in meteorology or atmospheric sciences, which includes meteorology but is a little broader. Many weather forecasters need a bachelor's degree; however, meteorologists who want to specialize usually choose to attend graduate school. A master's or doctoral degree is generally required for meteorologists who want to participate in atmospheric research for a career. The specific training they receive there will prepare them to work in a more focused field. For example, they could study how pollution from volcanoes impacts hurricane frequency or the effect of ozone holes on polar ice caps. Rather than projecting weekly weather forecasts, meteorologists who participate in research will usually identify patterns to predict long-term climatic events.

Depending on one's interests, a career as a meteorologist could lead a person down assorted professional paths that would impact people everywhere. Meteorology is a rewarding occupation and one in which a person could learn a great deal about the atmosphere around the planet and the cause and effect of various weather events. Those who are curious about the phenomena that occur in the atmosphere may want to pursue a career in meteorology.

Answer comprehension questions on page 206.

Empress Dowager Cixi



The Forbidden City is a large palace in Beijing, China. Many years ago, it was also the home of the emperor of China. In 1851, a young woman entered the Forbidden City to join the emperor's household. In time, she would rise to power, controlling all of China. Today she is known as Empress Dowager Cixi (see-chee), who ruled China for 48 years through her son and later through her nephew. Her reign is an intriguing part of China's history.

During Cixi's time, it was common for the emperor to have many concubines, women who lived in his household and could bear him children. Being chosen as a concubine granted Cixi no power in the Chinese government. However, in 1855, she gave birth to the first and only son of the emperor. As a result, she was immediately promoted to a position second only to the Empress Ci'an, the emperor's wife. Although her rank was less than that of Ci'an, Cixi was celebrated as the mother of the emperor's heir, or the person who would someday rule the country.

As a member of the imperial household, Cixi had learned to read and write, and because of these skills, the aging emperor frequently used Cixi to help with government affairs. She often read documents to him and recorded his wishes about how his empire should be ruled. Through these experiences, Cixi learned a great deal about the people, government, and laws of China, and as a result, she understood what it would require for her to gain more power.

Near the end of his life, the emperor took actions to try to ensure a smooth transition of power, so before he died, he appointed eight men whom he trusted to rule as regents, or advisors, for the young future emperor. He also gave some official powers to Cixi and to his first wife, Ci'an, hoping that they would together help his son grow to have the wisdom needed to rule China. The emperor believed that the powers he granted to the empresses would serve as a balance against the power he had granted to the eight regents. By separating this power, the emperor hoped that no one would be able to steal control of China before his son became old enough to rule the country on his own. After the emperor's death, Cixi's title became empress dowager, which means that she was the mother of the new emperor.

As Empress Dowager, Cixi held little political power, but she had made many powerful friends, especially among those who were not given power by the eight regents. To gain the power that she **craved**, Cixi implemented a daring plan in which she privately rallied, or gathered, the support of other government leaders who were ignored by the regents.

The emperor died while he and his court were away from the Forbidden City, so while the court made preparations to return, Cixi traveled ahead to put her plan into action. She and her allies had time to create a plot that would destroy the regents' power. They told the people that the regents had committed terrible crimes and were to blame for the emperor's death. In the end, three of the most influential regents were killed, leaving Cixi and Ci'an as the most powerful leaders in China.

Continued on the next page.

history, Asia, biography, leaders, government

Lexile®: 1270L
Word Count: 995

Time: _____

Empress Dowager Cixi (continued)

Working together with Ci'an, Cixi tried to improve the state of the government. At first, she tried to learn from Western countries by hiring foreigners to teach modern subjects at schools in China and by sending young Chinese people to study in the United States. However, she was not pleased with the results given the changed attitudes of those who had been sent abroad to study. In 1881, she stopped the practice of sending young Chinese students to study in the West, and she rejected foreign ways. Many experts believe that Cixi was worried that Western ideas about government would result in the end of her power over China, so her fear of foreigners came from her fear of losing power.

In the meantime, Cixi's son grew old enough to rule, but he proved to be a very weak emperor. Cixi continued to control the political affairs of China up until her son's death as a young man. Because her son died without a child to rule after him, Cixi selected her nephew to take the throne. Because her nephew was still a child at the time he was made emperor, political power stayed with Cixi and Ci'an. When her nephew became old enough to rule, the empress dowager retired and let him lead China. He tried to take the country in a different direction, implementing political reforms to make China more modern. These changes proved to be too much and happened too fast, so Cixi returned to power, disgracing the emperor and sending his supporters out of the country.

In contrast to her nephew, who wanted to change China by adopting foreign ideas, the empress dowager supported the Boxer Rebellion, which was a nationwide attempt to send all of the foreigners and foreign influence out of China. Conflicts between Chinese nationalists and foreigners spread across China resulting in the invasion of the Forbidden City. Cixi agreed to end the conflict when she learned that she would still be able to maintain her political position and power. Interestingly, in the later years of her life, she began reforms to modernize China and improve relations with foreign powers, the very political actions that she had resisted for much of her life.

Many historians have presented Cixi as a selfish ruler who gathered wealth and built beautiful palaces and gardens for her own enjoyment while many of her people suffered. However, contrasting accounts by individuals who knew the empress dowager describe her as intelligent, thoughtful, graceful, and determined. Regardless of these contradictory perceptions, any account would certainly admit that she is a fascinating figure and one of the most influential people in Chinese history.

Answer comprehension questions on page 207.

Improvisational Performers

The curtain opens, the crowd applauds, and the actors run out onto the stage, eager to begin their performance. Before they can do so, however, they need the audience's help and must wait for a cue on how they should start. The master of ceremonies, or host, asks the crowd, "What is a place of business you have visited in the past week?" Enthusiastically, a young lady in the back row blurts out, "The grocery store!" The host accepts the suggestion, and Performer 1 steps forward to begin the scene. Pretending to push a broom across the floor, he is soon joined by Performer 2, who mimics the action of carrying in boxes of fruit. She is then followed by Performer 3, coming forward as an angry customer who confronts the two store employees about a rotten batch of apples he has bought. For the next several minutes, the three of them work together in this manner and create a unique theatrical experience. This story is an example of a game from a typical improvisational—or improv, for short—theatrical performance.

Whereas most types of live theater involve rehearsed and memorized scripts, songs, or dancing, improvisers do not use scripts of any kind, and what they perform on stage on any given night is not rehearsed beforehand. Instead, they take ideas from the audience and, using their skills and imagination, build on those ideas, creating the scene as they perform it. The verb *improvise*, as a matter of fact, comes from a Latin word meaning unforeseen or unplanned, which is an appropriate label for this type of performance in which the actors do not know what will happen ahead of time.

Because improv performers do not work with a script, they follow an important rule to ensure that performances are successful: the agreement guideline. This means that when one performer introduces an idea into a scene, it should instantly be accepted as reality by the others, and they must add to it by expanding the story, or narrative, of the scene. Failure to accept a new idea into a scene is referred to as a *denial* or *blocking*, and this kind of action should be avoided since it **impedes**, or prevents, performers from using their creativity. The agreement guideline helps create a more successful experience for performers and the audience.

There are many skills that improvisers must develop to excel at their craft. Improvisers must be good listeners and observers, paying close attention to what the other performers say and do in a scene. They should be spontaneous, possess the ability to make bold choices, and use good communication skills. It is also helpful if performers possess a variety of acting skills such as miming, speaking with different accents, and being knowledgeable about current topics in popular culture and the news. Effective improv performers practice often so that their skills remain sharp.

Improvised performances are entertaining for a variety of reasons, chief among them the fact that they are a different experience each time. Just as no two fingerprints are alike, no two improv shows are ever the same because audience members are actively involved in the development of each performance. And although much of improvised theater is comedic in nature, it can also be serious or tragic.

jobs, arts, hobbies

Lexile®: 1270L
Word Count: 879

Time: _____

Continued on the next page.

Improvisational Performers (continued)

Perhaps the most popular form of improvisational performance is called spot improv, in which the host gathers ideas from the audience, and the actors incorporate those ideas into the performance, as demonstrated in the first paragraph of this passage. This type of improv usually falls into two categories: short form, which only lasts for a few minutes, and long form, which can last up to a half-hour or longer and may even turn into a full-length play or musical performance. The length can drastically change the tone of the performance and provides a very different experience for both actors and observers.

Though improv is often performed live on stage, it is also employed in almost every other type of theater or media. Many of the silent movies of the early 20th century, such as those of Charlie Chaplin and Buster Keaton, feature a good deal of improvised acting. Even today, some actors in comedic films and television programs improvise some of the material. Many actors claim that this makes their work more enjoyable, and the results often produce scenes that are even more entertaining than the scripted plan.

Though a strong foundation in theater skills certainly helps, one does not need to be a professional actor to become a good improviser. People who take classes to learn improv might not be looking to perform it on stage. They may, for example, want to learn how to better handle a job interview or how to do better in social situations, and they think that practicing improv can improve their confidence and public speaking skills. Most anyone who is willing to learn improv can find great success with this art form.

People who are interested in learning improv may want to sign up for a class at a school or community theater. New improv performers may not become professional actors anytime soon, but they are sure to have a great deal of fun and learn about themselves as a result of the experience.

Answer comprehension questions on page 208.

The Anger of Vulcan

The word *volcano* derives from Roman mythology. In ancient Roman culture, Vulcan was the blacksmith of the gods. As a blacksmith, he forged, or created, tools using his smithy, a metal crafting workshop. In most stories from Roman mythology, Vulcan's forge is said to be under a volcano. It is often described as being under Mount Etna in Sicily, a region of Italy. When Vulcan gets angry and pounds his hammer hard in his forge, the heat and pressure rise and cause the fire and molten metal to explode out of the top of the mountain. This is how volcano gets its name: the word comes from Vulcan's name.

It is not surprising that ancient Romans developed a myth to explain the origins of volcanic eruptions. The Roman civilization, which was located in modern-day Italy, was home to several active volcanoes, including Mount Etna and Mount Vesuvius. The destructive Mount Vesuvius is famous for destroying the city of Pompeii in 79 AD. The Romans were very familiar with the devastation that can result from a volcanic eruption. The myth of Vulcan may have helped Romans understand why a volcano is sometimes inactive and at other times erupts in smoke and ash. They may have likened Vulcan to a human who is sometimes peaceful and calm, but can suddenly become angry, **aggressive**, and even violent with little warning. The damage caused by volcanoes in Roman times is similar to the problems that volcanoes can still cause in our day.

When people think of volcanic eruptions, often one of the first images that comes to their minds is of hot lava. They think of the red, hot, viscous liquid snaking its way down the mountainside burning and destroying living things in its path. This is certainly true, even today. On the Big Island of Hawaii, people are forced to evacuate their homes when volcanic flows approach their villages or farms. The locals are helpless to prevent damage caused by this fiery rock, and often the only way for people to deal with these lava flows is to simply get out of the way.

Even though lava can cause damage, it is not the only danger when a volcano erupts. The smoke and ash that are released from some volcanic eruptions can have a serious impact on people in a large area surrounding the mountain. Ash contains light-weight pieces of burned rock and other material that rise into the air when a volcano erupts violently. The ash and smoke can travel a long distance from the volcano before falling to the ground and causing many problems for plants, animals, people, and even machines. When an Icelandic volcano erupted in 2010, the smoke and ash from its activity forced airplanes across Northern Europe to stop flying for almost a week. Airlines and pilots refused to fly since the smoke contained tiny particles of burning rock that could destroy jet engines and cause planes to fall from the sky. The delay in travel resulted in millions of dollars in losses for businesses not only in Europe but also across the globe.

Continued on the next page.

nature, myths

Lexile®: 1270L
Word Count: 905

Time: _____

The Anger of Vulcan (continued)

In addition to the lava, smoke, ash, and poisonous gases from volcanoes, volcanologists now think that even the intense heat of a violent explosion can be deadly. For many years, scientists thought that the volcanic victims in Pompeii died as a result of ash poisoning, but a new theory suggests that it was the intense heat from the explosion that killed many of the people. When Mount Vesuvius erupted in the Roman Empire hundreds of years ago, the city of Pompeii was buried in ash so deep that the city was forgotten for centuries. When the city was rediscovered in modern times, scientists thought that ash, smoke, and poisonous gas had killed the people before they could evacuate the city. Now, however, scientists think that many of the people died almost immediately when Vesuvius first erupted. They believe that the eruption released a big wave of extremely hot air, more than 570 degrees Fahrenheit (over 300 degrees Celsius), which burned the citizens of Pompeii to death before they had a chance to flee or to die from the poisonous ash and gas. This would explain why many of the bodies uncovered from Pompeii are frozen statues of people who did not even seem to notice that a volcano was threatening their city. The wave of heat killed them before they even knew that there was a threat from the eruption.

Clearly, there are various dangers associated with volcanoes. Not only can they kill people, but they can destroy the surrounding land. Sometimes the danger comes from the molten rock, sometimes it results from the smoke, ash, and gases that are released during the explosion, and sometimes the threat can come from the scorching temperatures that result from a volcanic explosion.

In ancient Roman times, these powerful, violent effects from volcanoes were blamed on the fiery temper of the god Vulcan. When he was angry, he would pound away in his subterranean forge, sending fire, smoke, ash, and molten rock up to the surface, endangering the lives of humans. Geologists today now know that the movement of tectonic plates and hot spots in the mantle are to blame for volcanic eruptions, but when we see the destructive impact that volcanoes can have on people and on the environment, it is hard not to imagine Vulcan, working angrily at his forge.

Answer comprehension questions on page 209.

Meteor Showers

space

Lexile®: 1280L
Word Count: 903

Time: _____

In a popular children's story, a character name Chicken Little erroneously believes that "the sky is falling" when he is hit on the head by an acorn. Thrown into a sudden panic, Chicken Little races off to warn his friends and neighbors, including Henny Penny and Goosey Loosey, of what he fears is their impending doom. The friends frantically search for a safe place to hide before the sky falls down on them.

The sky does not fall in real life, of course, even though there are times when the stars that populate the nighttime sky look as if they are falling to Earth when the planet rotates away from them. Even though some objects in the night sky are sometimes called *falling stars* or *shooting stars*, these objects are actually meteors (rocks and other particles from space), and when several of these objects are seen at the same time, this phenomenon is known as a *meteor shower*.

During each hour of the day, four or five meteors regularly enter Earth's atmosphere. When that number climbs to 15 or more, the event is classified as a meteor shower, and a typical meteor shower may feature anywhere between tens to hundreds of meteors per hour. Periods of intense meteor showers are called *meteor outbursts* or *meteor storms*, and these events may include more than 1,000 meteors in one hour.

For years, the appearance of meteor showers in the sky has both fascinated and bewildered the inhabitants of the Earth. An ancient Egyptian record tells of a night when the stars appeared to jump around like grasshoppers. The Romans believed that a meteor shower meant that their gods were angry at them.

Fortunately, modern science offers a simple explanation behind the cause of meteor showers. They are celestial events that take place when a number of meteors appear to originate from the same point in the sky, which is called the *radiant*. These meteors are created when streams of interplanetary or cosmic debris enter Earth's atmosphere at very high speeds, traveling along approximately the same trajectory. The very fastest meteors have been known to travel at speeds of up to 26 miles (42 kilometers) per second.

Each year, only about 500 meteors actually reach the Earth's surface. A small percentage of meteoroids, called *grazing fireballs* enter the outermost edges of Earth's atmosphere before returning on a path through space. Falling meteors that survive the trip through the atmosphere before burning up completely are called *meteorites*. Fortunately, the meteors that reach Earth are not the size of the "planet killers"—such as the ones that threaten to destroy Earth in the Hollywood movies *Armageddon* or *Deep Impact*. In reality, most meteors are pieces of dust that are smaller than a grain of sand in size. As a result, they quickly **disintegrate** upon entering Earth's atmosphere and never reach the surface. That said, scientists have recovered rare meteors as large as 33 feet (10 meters) in diameter.

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Meteor Showers (continued)

Earth is not the only planet in our solar system that is known to have meteor showers. Our neighbor Mars, for example, has its own meteor showers, although they differ from the ones that can be seen on Earth. This difference results from the fact that Earth and Mars travel different paths as they orbit the sun, and they pass through the paths of different comets, meteors, and other space debris.

Generally speaking, meteor showers are named after the constellation, meaning the group of stars, from which they appear to originate or the star that is close to the radiant at the peak of the shower. Aquariids, for example, are named for the star delta Aquarii, while Perseids get their name from the constellation Perseus.

Some observers have remarked that a good meteor shower is as spectacular as a fireworks display, but the good news about watching a meteor shower is that observers do not have to wait until a holiday to see one. A number of meteor showers are known to occur at various times throughout the year such as the Leonids meteor shower, which occurs during November. There are also numerous meteor showers that regularly happen in the month of August. The brightness of a meteor's burning means that a telescope or a pair of binoculars is not needed to observe a meteor storm. In fact, most meteor displays are best viewed with one's own eyes, which allow for a wide-angle view of nature's great star show. However, observers need to be vigilant, since meteors flash by in a second or less.

The best time to see meteor showers is from midnight to dawn, toward the eastern part of the sky. Observers should get as far away as possible from the artificial lights of the city to a place where the sky is darker, and meteors are more easily visible. Prepared spectators will remember to bring a coat or blanket (and maybe even bug repellent) since it can get quite cold outside observing the night sky. Those who make such plans are in for a visual treat as they witness contact between the Earth and objects from outer space.

A popular song in the United States from the 1950s encourages the listener to "catch a falling star and put it in your pocket; save it for a rainy day." Though catching a meteor is unlikely, not to mention unsafe, watching a meteor shower can be a great experience.

Answer comprehension questions on page 210.

Tornadoes

A tornado is a phenomenon of nature that is universally recognized by a large column of violently swirling air. The extraordinary sight of a tornado appears as a pillar of dark, nearly black air that extends from low clouds in the sky to the ground. A tornado can reach speeds of over 300 miles per hour (483 kilometers per hour), causing immense damage to everything in its path. Few other acts of nature can cause as much devastation as a tornado when it is at the peak of its aggression.

Whether big or small, tornadoes are often identified by a condensation funnel, the narrow end of which touches the ground and creates a dense haze of dust and destruction. To be classified as a tornado, a rotating column of air must extend from the cloud base to the ground. This column of air may spin violently and at extreme speeds. Although some tornadoes may seem to spin in place, tornadoes actually move forward at approximately 30 miles (50 kilometers) per hour; particularly fast tornadoes have been known to move forward at 70 miles (110 kilometers) per hour. Occasionally, a single storm will produce multiple tornadoes, called a *tornado family*, with either multiple tornadoes appearing simultaneously or in succession to one another.

About 70 percent of all tornadoes are classified as *weak tornadoes*, meaning that their wind speed or velocity is fewer than 110 miles (177 kilometers) per hour. Weak tornadoes are not particularly violent, and, thus, are not very destructive, nor do they persist much longer than ten minutes. Nearly 30 percent of all tornadoes are classified as *strong tornadoes*, which have wind speeds that range from 110 to 205 miles (177 to 330 kilometers) per hour and often last close to 20 minutes. Only about two percent of all tornadoes are classified as *violent tornadoes*. Their winds can reach speeds as high as 318 miles per hour (512 kilometers per hour), and they can last longer than one hour. Even though they are rare, violent tornadoes are responsible for about 70 percent of the deaths caused by tornadoes each year because these tornadoes are so powerful.

Tornadoes have been observed on every continent except Antarctica. However, tornadoes occur most frequently in the United States, predominantly in the vast plains to the east of the Rocky Mountains. Their prevalence in this region is due to the distinctive geography of an area known as "Tornado Alley." Tornado Alley is located in the center of the North American continent between the tropics of the Caribbean and the cold Arctic Circle of Canada. Because there is no major east–west mountain range to impede the flow of air between the hot winds from the south and the cold winds from the north, Tornado Alley presents ideal conditions for the formation of tornadoes. In the central United States, the middle of Tornado Alley, the movement of atmospheric moisture is obstructed by the Rocky Mountains. This obstruction allows dry air to accumulate in the lowest level of the atmosphere, or the troposphere, causing the frequent formation of tornadoes in the Great Plains to the east. Furthermore, the Gulf of Mexico provides a profusion of low-level moisture, while a copious amount of dry air is supplied by the Southwest desert. This distinctive topography, or landscape of this region, generates numerous potent and long-living tornadoes countless times each year as warm and cold air continually **collide**.

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weather, geography, USA

Lexile®: 1300L
Word Count: 996

Time: _____

Tornadoes (continued)

The occurrence of tornadoes is related to the seasons of the year. In the USA, during the seasonal transitions of spring and autumn as the weather turns from cold to warm and from warm to cold, respectively, thunderstorms frequently occur, increasing the potential for tornado formation. Tornadoes are least common in winter and most common in spring. In the southern US states, such as Texas, tornadoes occur more often between the months of March and May, while in northern states, such as Nebraska and South Dakota, most tornadoes occur during the hot summer months. While conditions that generate the formation of a tornado can potentially occur at any time of the year, tornadoes can also be caused by tropical hurricanes and cyclones, which tend to materialize and strike the Earth between June and November. Solar heating contributes to tornado formation; therefore worldwide, most tornadoes occur in the late afternoon, though devastating tornadoes can happen at any time of day.

Individuals who live in the central plains of the United States have learned to watch for signs of a tornado. One of the first clues of a potential tornado is the development of very wet weather, such as a severe thunderstorm with lightning and heavy rain. Another indication is when the sky becomes very dark and may even appear to be a slight shade of green. Furthermore, when a section of clouds, called a *wall cloud*, suddenly appears to hang lower in the sky less than a mile from the ground, most residents of the plains know that a tornado may soon form. An additional clue is when the sky produces hail stones that may be as large as the size of a baseball. A final sign of a tornado is when a loud noise similar to the roar of an approaching train can be heard.

In the central region of the United States, where tornadoes are frequent, several strategies are in place to ensure people's safety. For example, in Kansas, Texas, and Oklahoma, schools practice tornado drills regularly. Most homes in these states have storm cellars, which are underground rooms built with stone walls and floors. When the National Weather Service issues a tornado warning, people in these areas know that they should move to designated safety locations.

Although the idea of watching a tornado might be a tempting, individuals should avoid taking the risks associated with being out in the open where tornadoes rage. The safest idea is to move quickly to a protected location and wait for the storm to pass.

Answer comprehension questions on page 211

BASE Jumping

Acrophobia is an extreme fear of high places, and those who deal with this fear often experience vertigo, a feeling of dizziness or a loss of balance, when they get close to the edge of a tall balcony or a mountain cliff. But even if BASE jumpers are acrophobic, which is unlikely, they face this fear with a sense of bravery and excitement, because BASE jumping is all about the thrill, or excitement of climbing heights and parachuting off of them.

The acronym *BASE* stands for buildings (and monuments), antennas, spans (or bridges), and earth (cliffs, canyons, and gorges). It is a term that was created by a group of adventurous friends. In 1978, Carl Boenish, a member of this group and a filmmaker by profession, filmed four friends making the first BASE jumps using special parachutes (which give users greater control over their speed and direction) and the tracking technique (which aids jumpers in moving horizontally while freefalling). These jumps were made off of the top of the El Capitan rock formation, at a height of 3,000 feet (910 meters), in Yosemite National Park, located in California. Even though several BASE jumps had been made before that time, these particular jumps are considered by many people to be the beginning of the BASE jumping phenomenon.

While similar in many ways to skydiving out of airplanes, BASE jumping has several distinct characteristics. First, BASE jumping is much more dangerous than skydiving. While BASE jumpers use parachutes just as skydivers do, there are, unfortunately, many more fatalities, or deaths, among BASE jumpers. The slightest mistake or bad timing can have lethal consequences, and that is why many BASE jumpers will make 100 or more skydiving jumps before attempting their first BASE jump. In the year 2002, approximately one out of 60 BASE jumpers was killed in attempting a BASE jump. By contrast, in the year 2006, only one out of every 100,000 skydiving jumps resulted in death. Ironically, Carl Boenish, who helped create the BASE acronym, is among those who **perished** while BASE jumping; in 1984, he died while jumping off of the Troll Wall, a tall mountain near the west coast of Norway.

Another distinction between skydiving and BASE jumping is the difference in elevation. Because BASE jumps are made at much lower altitudes than skydives are made, jumpers have a lot less time with which to react when things go wrong. While skydivers can expect a trip of three or more minutes back to the ground after pulling their parachute cords, many BASE jumps commonly take just 30 seconds or fewer to complete. One thing that can go wrong, for example, is called *tumbling*, which means moving in a spin that can be difficult to control. With BASE jumping, tumbling may occur as soon as the jumper leaps off of the object. Due to the shorter distance to the ground, a jumper may have to pull the cord in the middle of a tumble before being able to correct it. As a result, there is a much greater probability of becoming tangled in the parachute or of experiencing other related problems. Also, because BASE jumping frequently occurs in more enclosed environments, BASE jumpers often have much smaller areas where they are able to find a landing place. A jumper who leaps off of a tall building, for example, has to quickly find somewhere safe to land in the crowded streets of the urban area below.

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sports, hobbies

Lexile®: 1310L
Word Count: 935

Time: _____

BASE Jumping (continued)

Additionally, those who participate in BASE jumping are at risk of being arrested by the police. This is because BASE jumping is illegal in many places due to the risks involved with such a dangerous activity. People who own buildings, antennas, and bridges often do not want BASE jumpers leaping off of them, and jumpers have been arrested for doing so without first obtaining permission to climb and jump from these places. Once arrested, jumpers can be charged with a variety of crimes including trespassing, breaking and entering, or reckless endangerment. The primary concern is that BASE jumpers could injure themselves, spectators, and property as a result of the jump.

Still, despite the dangers involved, BASE jumpers are willing to take risks for the thrill of jumping. Additionally, there is a culture of fame and recognition within the BASE jumping community. Once a BASE jumper has made at least one jump from each of the four categories (buildings, antennas, spans, and earth), he or she is awarded a "BASE number" in recognition of this achievement. The first jumper to launch from all four locations, for example, is ranked BASE #1; the next jumper to accomplish the task was honored with BASE #2; and so on. By January 2016, more than 2,000 BASE numbers had been awarded to jumpers all across the globe. Additionally, Night BASE jumping numbers are assigned to those who perform jumps from each category at night (Night BASE #1, Night BASE #2, and so on).

BASE jumpers have their own contests and competitions, with winners being judged on how accurate their landings are or how many tricks, such as flips and twists, they can do while falling. The records that these jumpers have set are shocking and might lead some people to ask, "What kind of person would want to do that?" Although BASE jumping may not be a sport that is widely practiced, many people enjoy watching videos of BASE jumpers as they soar through the air. Even if the sport is too dangerous for most people, for some, it is hard to deny the attraction that comes from the feeling that one can fly!

Answer comprehension questions on page 212.

Michelangelo Buonarroti

Michelangelo, one of the most famous and beloved artists in the history of the world, was so well known and popular during his lifetime that two biographies of his life were published while he was still alive. Because of his extraordinary talent and great fame, people called him *Il Divino*, which means "the divine one" in Italian. The style and artistry of his sculptures and paintings during the Renaissance period were so widely respected that they continue to be studied and imitated to this day.

Soon after Michelangelo was born in Caprese, Italy, in 1475, his family moved to Florence, where he lived for much of his childhood and youth. His full name at birth was Michelangelo di Lodovico Buonarroti Simoni. His father was a banker who periodically worked in the government, and his mother died when he was just seven years old. After her death, Michelangelo spent time in the home of a stonecutter where the young boy gained his first experiences shaping stone.

While still very young, Michelangelo was sent to school to study grammar. However, Michelangelo showed no interest in studying grammar and instead demonstrated an increasing interest in art, so he went to study as an apprentice to a successful Florence painter. When he was 14 years old, Michelangelo's obvious talent earned him the opportunity to study art at an academy established by Lorenzo de Medici, the ruler of Florence, and Michelangelo studied sculpture there for two years and produced his first two sculptures, one of which was commissioned by Medici. After Medici's death, Michelangelo returned to his father's house, and since he could not afford costly materials, such as marble stone, he continued his art using mostly wood and other less expensive materials.

When Michelangelo was 19, he again returned to the court of the Medici family under the patronage of Lorenzo de Medici's son Piero. His work with the Medici family was again abruptly ended when, after two years, Piero was forced to flee the city during an invasion by King Charles of France. Michelangelo moved to Venice, and then to Bologna, where he created religious art for churches. Soon after, he moved back home to Florence and returned to work for the Medici family, who tried to sell one of Michelangelo's statues to a wealthy church leader in Rome. The Medicis, hoping to get more money for the sculpture, asked Michelangelo to trick the church leader into thinking that the sculpture was an ancient statue from the era of the Roman empire. Even though the trickery was exposed, the church leader was so impressed with the quality of Michelangelo's work that he invited Michelangelo to come work for him in Rome.

When Michelangelo arrived in Rome, he was only 21 years old, but his reputation as a talented artist was spreading quickly. While in Rome, Michelangelo created one of his most famous pieces, a sculpture called the *Pieta* which depicts Mary, the mother of Jesus, holding her son's dead body. People were stunned at the remarkable skill, emotion, and beauty in the sculpture, and the work quickly propelled Michelangelo, who was only 24 at the time, to celebrity status.

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Europe, history, biography, arts

Lexile®: 1320L
Word Count: 899

Time: _____

Michelangelo Buonarroti (continued)

Michelangelo spent years being commissioned by various popes and wealthy individuals to create paintings and sculptures. His sculptures of people were famous for their detail and for the fact that he usually sculpted their naked forms. All of his work was well known for the way it represented the human form with magnificent size and muscle.

The statue of the Biblical hero *David* is one of Michelangelo's most famous pieces. Many people are not aware that *David* is not entirely Michelangelo's work since previous artists had started the statue 40 years earlier but had not progressed far beyond the basic shape. At only 26 years old, Michelangelo petitioned officials of the Florence Cathedral that they give him the opportunity to finish the sculpture, creating the well-known statue of *David*. The statue became a source of pride to locals and a symbol of the independence and strength of the city of Florence in the face of much stronger and more powerful cities in the surrounding region. Today, *David* is one of the world's most recognized statues, and there are numerous reproductions of it in museums around the world.

It was during his time in Rome that Michelangelo completed what is widely considered his most famous painting. Over the course of four years, he designed and completed the painting of the ceiling of the Sistine Chapel, which remains one of the most famous paintings in the world and continues to serve as a symbol of the artistic genius of this man who created some of the greatest works of the Renaissance era.

As Michelangelo matured, and his extraordinary skill with sculpture and painting grew in fame, people **clamored** for his attention and hungered to learn more about this remarkable artist. However, he preferred to live a solitary life, and he was not always an easy person to make friends with. In general, Michelangelo lived a simple life, taking little interest in the social culture of the country in which he lived. He ate only when very hungry, and often slept in his clothes and boots. While he wrote powerful love poetry at times, he never married. He died in 1564 at the age of 88 and left a remarkable legacy of paintings, sculptures, and architecture.

Answer comprehension questions on page 213.

William Wilberforce

The cruel and inhumane practice of slavery, in which people are bought and sold as property and are forced to work against their will, is, unfortunately, almost as old as the Earth itself. The history of slavery, according to some historians, goes as far back as the year 8000 BC, predating even the existence of written records. Though this practice gained wide acceptance for thousands of years, opinions began to change in the 18th century. That was when many abolitionists, meaning opponents, began to speak out against slavery and to demand that it be stopped. One of the most notable and most important of these voices belonged to a British politician named William Wilberforce.

The only son of Robert and Elizabeth Wilberforce, William Wilberforce was born into a very wealthy family in the town of Hull, England, on August 24, 1759. When Wilberforce was nine years old, his father passed away. Elizabeth Wilberforce then sent her son to London to be educated by his uncle and aunt. While he was in London, Wilberforce met John Newton, a former slave trader who had **renounced** the practice and was a fervent abolitionist. Perhaps most famous for writing "Amazing Grace" and other Christian hymns, Newton was a minister in the Anglican Church. Wilberforce and Newton became lifelong friends, and Newton encouraged Wilberforce to use his influence for the good of humankind.

In 1776, Wilberforce began studies at Cambridge University, where his peers came to know him as a charismatic speaker and a natural leader. In 1780, when he was just 21 years old—the youngest age at which one can be elected to the office—he was voted into Parliament. Not long after this, Wilberforce converted to Christianity. As a result of religious convictions and his interactions with Newton and others, Wilberforce chose to champion the cause of abolishing the slave trade.

The abolitionist movement was not very popular with the British people at the time, however, and Wilberforce faced persecution for his conviction. He was savagely beaten in the street by an angry sea captain who opposed the work of abolitionists. Wilberforce also received multiple death threats from those who wished to scare him into giving up the cause. Admiral Horatio Nelson, who would later become famous for his service to Great Britain during the Napoleonic Wars, publicly denounced Wilberforce and called him a hypocrite. The term *hypocrite* is used to describe a person who claims one set of values but acts in contrast to them. Perhaps Nelson, knowing that Wilberforce had previously led a life of luxury which involved the use of products and comforts that had been produced as a result of slave labor, felt that Wilberforce had no right to end slavery when many people, including Nelson, felt it would upset the stability of the British Empire.

Nevertheless, Wilberforce continued to fight for his beliefs, supporting a proposed law to the House of Commons in 1793 that advocated a gradual emancipation of all slaves within the country. It failed to pass by just eight votes, and a similar bill, which banned British ships from carrying slaves to foreign lands, failed to pass by only two votes.

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history, biography, Europe, leaders, government

Lexile®: 1320L
Word Count: 940

Time: _____

William Wilberforce (continued)

Wilberforce reintroduced his abolition bill each year throughout the remainder of the 1790s, and each year it failed to pass. Though he found that he was practically the only member of Parliament championing these ideas, he continued to press forward despite the indifference and opposition, believing that such efforts would be successful in time. Wilberforce also devoted his efforts to helping the poor and refugees from the French Revolution, as well as to improving the conditions in hospitals, mental asylums, and correctional facilities.

With the dawn of the 19th century, William's efforts finally began to be recognized and supported by those with whom he served in Parliament. In February 1807, his abolition bill passed overwhelmingly by a vote of 283 to 16, putting an official end to the slave trade within the British Empire. Despite this great achievement, the law did not free existing slaves, a cause to which William would devote the next quarter-century of his life. At the same time, he also lobbied for other nations, including the United States, to pass similar laws.

On July 26, 1833, the House of Commons passed a law that marked the official end of all slavery throughout the British empire. A mere three days afterward, William passed away at the age of 73, having given his life to abolition and having lived just long enough to see it become a reality. Within a few years, the example set by Great Britain was soon followed by other major world powers. By the 1850s, most of South America had adopted similar laws. In 1861, Tsar Alexander II of Russia freed the nation's 23 million serfs. In the United States, President Abraham Lincoln issued the Emancipation Proclamation in 1863, and by 1865, the 13th Amendment to the Constitution was passed to officially end slavery in the United States.

Today, slavery is still practiced in a handful of places across the globe, often in the form of debt bondage, indentured servitude, child laborers and soldiers, and other variations. There are actually more slaves today—estimated to be somewhere between 12 and 27 million—than at any other point in world history. That said, the percentage of people who live in slavery today is smaller than it was during Wilberforce's time. However, many world leaders point out that there is still work to be done toward freedom for all people. The efforts of William Wilberforce and other courageous abolitionists can inspire people today who are working toward this cause.

Answer comprehension questions on page 214.

The Fountain of Youth

For thousands of years, many people and cultures across the globe have told tales of a fountain of youth: a source of water with magical powers that gives eternal youth to the person who drinks from its waters. There are numerous legends of this mystical fountain and just as many stories of the adventurers who sought out its location.

Legends of the fountain date back to ancient times. An early account comes from Herodotus, an ancient Greek historian, who wrote of a fountain in Ethiopia, which he believed gave Ethiopians their long life spans. In another legend, Macedonian conqueror Alexander the Great is rumored to have searched for the fountain through the Land of Darkness, a mythical and continually dark region located near the Black Sea. Likewise, the story of John Mandeville, written in the Middle Ages, contains a reference to the fountain being located in India.

Some of the people of the Caribbean islands were among those who believed in the idea of a fountain of youth. When the Spanish began to arrive there in the late 15th century, the Caribbean natives shared their belief with these European explorers. One of the explorers was Juan Ponce de León, who accompanied Christopher Columbus on his second voyage to the New World in the fall of 1493, a journey that took them to the island of Hispaniola—site of present-day Haiti and the Dominican Republic. Ponce de León also explored the neighboring island of Puerto Rico and in 1509, was named its governor by King Ferdinand II. Within a few short years, Ponce de León went exploring again, this time to modern-day Florida where many believe that he searched for the Fountain of Youth.

Ponce de León could very well have heard about the legend of the land of Bimini from the Arawak people during the time he spent in Hispaniola. The Arawak people believed that Bimini, in the western part of what is now known as the Bahamas, was a place of great wealth and riches, the most important treasure there being the fountain and its life-giving waters. An Arawak chief named Sequene had previously sailed out into the Caribbean Sea in search of Bimini and had not returned, and while some of his people feared he had drowned or been killed, others felt that he had found the fountain and was living in luxury and great comfort. Whatever Ponce de León's motivations or intentions were regarding Bimini, Ferdinand II granted him a royal charter to search for it in the year 1512.

If Ponce de León's quest in sailing for Bimini was, indeed, to find riches and the Fountain of Youth, then the expedition was a failure. Some historians suggest that he, in addition to other Spanish explorers, searched without success for the Fountain of Youth all along the coastline and through the lakes, rivers, and swamps of what is now the state of Florida. However, the fountain is not mentioned in the royal charter, and no references of any kind were made to the fountain in any of Ponce de León's personal writings.

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myths, Americas, geography, history, health

Lexile®: 1380L
Word Count: 978

Time: _____

The Fountain of Youth (continued)

Despite no record of Ponce de León's sighting of the Fountain of Youth, the journey was considered a great success. On April 2, 1513, Ponce de León and his crew explored what they believed was an island, which they named *La Florida*, a Spanish term for "flowery." They soon discovered that it was actually a peninsula that they had found, and there was a great deal more land to be explored both north and west of their initial landing point. It was one of the first known sightings of the North American continent by a European explorer. On an additional trip to Florida in 1521, Ponce de León was shot in the thigh with a poisoned arrow by a member of the Calusa tribe, a group of people native to southwestern Florida. Soon after, the poison claimed the explorer's life.

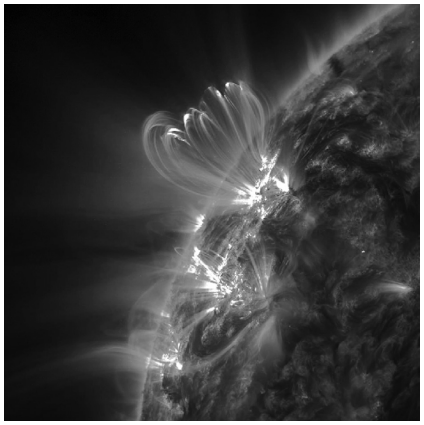
In the five centuries since Ponce de León's travels and discoveries, the legend of the Fountain of Youth has survived to our day in the stories of pop culture. In a 1953 Disney cartoon, Donald Duck visits the site of the fountain while vacationing in Florida and makes his three nephews believe that its magical powers really work. In the 2006 motion picture *The Fountain*, a scientist played by Hugh Jackman searches desperately for the fountain's healing waters to save his wife, who is dying of a terminal illness. In 2011, the fourth *Pirates of the Caribbean* film, *On Stranger Tides*, depicts a race between pirates Jack Sparrow and Blackbeard to become the first traveler to find the mythical site.

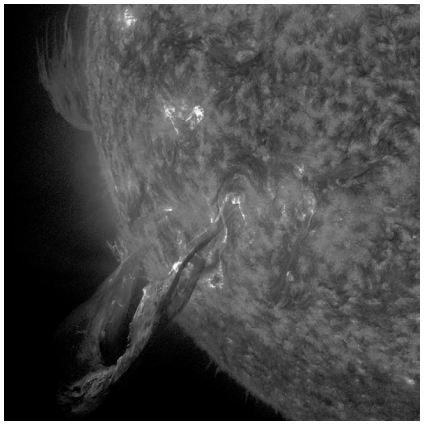
Today, the Fountain of Youth National Archaeological Park stands in the city of St. Augustine, Florida—the oldest city in North America and the spot where, many believe, Ponce de León first came ashore on the continent. In 1904, the 15-acre (61,000-square-meter) park was created as a place where people could come to learn about the history of the Timucuan tribe, native to the area, and of the Spanish conquistadors. Tourists are even invited to drink from the waters of the park's fountain to "see if your visit grants you the secret to eternal youth."

Many people do not believe that the Fountain of Youth is a specific place; instead, they propose that any practice or activity that helps a person stay or feel young can serve as a **figurative** fountain of youth. For some people, a fountain of youth is an activity, such as laughing and spending time with family and friends. For others, it may involve taking quiet time to think deeply or to read a book. It might be running, playing sports, dancing, or other regular exercise. It could also be creating art, composing music, or traveling to many beautiful sites, including the Caribbean islands and the shores of Florida.

Answer comprehension questions on page 215.

Solar Flares





Sometimes magnetic energy accumulates in the sun's solar atmosphere and is suddenly released. This energy release results in an abrupt and intense change in brightness, and this phenomenon is referred to as a *solar flare*. Solar flares are some of the strongest events that occur on the surface of the sun, and they can be very violent eruptions. Just how violent can these eruptions be? Solar flares will most commonly last for the space of a few minutes in length, and during that time, they can release an amount of energy equal to millions of hydrogen bombs. This is an amount that equates to approximately 10 million times the energy that is released during a volcanic eruption on Earth. As impressive as these figures are, the energy from a solar flare is still only less than 10 percent of the total energy that the sun emits each second of each day.

Perhaps another **astounding** statistic is the temperature to which the sun may soar during a solar flare. Scientists estimate that the sun normally has a temperature of approximately 9941 Fahrenheit (5778 Kelvin) at its surface. However, when solar flares occur, the temperature inside these flares is believed to reach somewhere between 18 and 36 million degrees Fahrenheit (10 and 20 million degrees Kelvin). Some of the hottest flares that have been observed have even achieved a shocking 180 million degrees Fahrenheit (100 million degrees Kelvin). These figures make the hottest day of the summer in the hottest desert on Earth look only mildly warm by comparison and not at all uncomfortable.

Typically, there are three distinct stages of a solar flare, and each can last anywhere from a few seconds to a few hours in length. First comes the precursor stage, during which the process of the release of magnetic energy is begun, and some "soft" X-ray emission can be detected. Next is the impulsive stage, when gamma rays, radio waves, and "hard" X-rays are produced. The third and final stage is called the *decay stage*, and it consists of the buildup and decay of soft X-rays.

Because they are difficult to see due to the bright emission from the sun's photosphere, solar flares cannot be viewed from Earth simply by looking up at the sun. Regardless, it is never a good idea to attempt to look directly at the sun because rather harmful damage to the eyes can occur by doing so. Specialized scientific instruments such as telescopes can be used to observe both the optical and radio emissions from solar flares. In order to see such solar emissions as gamma rays and X-rays, scientists need to use telescopes that have been sent into space, as these emissions do not enter Earth's atmosphere.

Continued on the next page.

space, technology, geography

Lexile®: 1390L
Word Count: 963

Time: _____

Solar Flares (continued)

The first recorded solar flare was observed separately by Richard C. Carrington and Richard Hodgson on September 1, 1859. This first known solar flare, sometimes called the Solar Storm of 1859 or the "Carrington Event," was also the most powerful solar flare to have been observed so far. Both Carrington and Hodgson witnessed a large flare of white light when they were using telescopes to examine sunspots, which are places on the sun's surface that appear dark because they are cooler in temperature than the photosphere, meaning the outside area of the sun, which surrounds them. The flare that these men witnessed was such a powerful release of energy that it disrupted several telegraph systems on Earth. Many telegraphs were damaged, and some telegraph operators experienced electrical shocks from their equipment that had been overloaded by energy emanating from the solar flare. Reports from locations closer to the polar regions of the planet indicated that particularly spectacular auroras, meaning the northern lights and southern lights, were seen as a result of the solar flare. Observers remarked that the movement, size, and color of the auroras were unusually remarkable, a trend that has since been observed with additional solar flare instances.

As with the Carrington Event, solar flares have been known to cause problems on and around Earth. Occasionally, solar flares have been associated with coronal mass ejections, or CMEs, which are massive bursts of solar wind—a stream of charged particles expelled from the sun's upper atmosphere. CMEs can be harmful because they can affect the Earth's magnetosphere, sometimes knocking out electrical power or disrupting shortwave radio communication. They can also present radiation hazards to astronauts and spacecraft. The threat of these disruptions is troubling to scientists who plan future space travel, including trips to the moon or Mars. Experts have estimated that, due to society's heavy dependence on electrical and digital technologies, if Earth were hit today with a solar flare the size of the one during the Carrington Event, the cost would exceed 1 billion dollars in damage to the United States alone.

The cause of solar flares is something that scientists do not completely understand at present, although these flares are believed to be produced in the sun's magnetic fields. Some of these magnetic fields will occasionally point in opposite directions from each other and will react strongly together, which results in solar flares. These reactions are more likely to occur during periods when the sun is more "active," which refers to times when the movement of materials on the sun's surface create an abundance of solar flares, which in turn results in an increase of solar flares. In contrast, when the sun goes through a "quiet" period, there is typically an average of less than one solar flare per week.

Because scientists' understanding of solar flares is limited, the prediction of solar flares is difficult, and experts do not know exactly where or when solar flares will occur. However, when solar flares do happen, observers can expect a fascinating show in the sky.

Answer comprehension questions on page 216.

Kangaroos

Comprehension Questions

Circle the best answer.

1. The main purpose of this passage is to give information about
   a. farmers who raise kangaroos.
   b. the region where kangaroos live.
   c. the unique qualities of kangaroos.
   d. special efforts to protect kangaroos.

2. An appropriate alternative title for this passage is
   a. Funny Animal Stories.
   b. The History of Australia.
   c. Marsupials Around the World.
   d. The Large, Hopping Creature.

3. Kangaroos mostly travel by
   a. flying.
   b. walking.
   c. jumping.
   d. swimming.

4. As a baby, a marsupial
   a. lives in the ocean.
   b. has wings and feathers.
   c. hides in its mother's pouch.
   d. leaves its parents to live alone.

5. The native Australian word for kangaroo
   a. is no longer known.
   b. means "strong kicker."
   c. is similar to the English word.
   d. means "rabbit with a long tail."

6. The passage suggests that kangaroos are most likely to eat
   a. birds.
   b. grass.
   c. insects.
   d. worms.

7. From this passage, we can infer that kangaroos are rare because they
   a. only live in one country.
   b. cannot find enough food.
   c. are eaten by large animals.
   d. are dying from new diseases.

8. The author begins the passage by
   a. explaining the climate of Australia.
   b. describing a kangaroo's unusual appearance.
   c. telling an old Australian story about kangaroos.
   d. stating the importance of kangaroos in Australia.

9. The author mentions a deer (paragraph 6) to explain a kangaroo's
   a. diet.
   b. call.
   c. movement.
   d. appearance.

10. A *linguist* (paragraph 7) is someone who studies
    a. tails.
    b. jokes.
    c. languages.
    d. kangaroos.

Check your answers on page 217.

Neil Armstrong

Comprehension Questions

Circle the best answer.

1. This passage is about a man who was famous for
   a. fighting in a war.
   b. traveling to space.
   c. running a business.
   d. designing airplanes.

2. An appropriate alternative title for this passage is
   a. A Famous Step for All.
   b. A Proud Hero for Korea.
   c. The World's First Astronaut.
   d. The Hard Fight for Education.

3. As a young child, Armstrong hoped to
   a. fly airplanes.
   b. travel to Asia.
   c. become a teacher.
   d. write space stories.

4. As a member of the Air Force, Armstrong primarily
   a. trained new pilots.
   b. tested new aircraft.
   c. repaired broken planes.
   d. flew helicopter rescues.

5. At the University of Cincinnati, Armstrong taught
   a. public speaking.
   b. airplane piloting.
   c. business leadership.
   d. aerospace engineering.

6. We can infer that, as a teenager, Armstrong
   a. did not do well in school.
   b. was a popular school athlete.
   c. often fought with his parents.
   d. worked hard to learn new things.

7. We can infer that NASA chose Armstrong for the Apollo mission because
   a. they felt sorry for him.
   b. other astronauts got sick.
   c. he was respectful and smart.
   d. his father worked at NASA.

8. The author begins this passage by
   a. describing Armstrong's mother and father.
   b. mentioning Armstrong's childhood wishes.
   c. listing some of Armstrong's greatest actions.
   d. quoting some of Armstrong's famous words.

9. The author mentions the *Gemini 8* mission to
   a. suggest that Armstrong needed more training.
   b. show why Armstrong decided to leave NASA.
   c. explain how Armstrong and Aldrin became friends.
   d. demonstrate Armstrong's ability to problem solve.

10. If someone is *humble* (paragraph 7), that person
    a. has no ability to read.
    b. does not like to brag.
    c. likes to study science.
    d. is an excellent teacher.

Check your answers on page 217.

The Polar Lights

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. stories about ancient cultures.
   b. scientists who study electricity.
   c. people who live in polar regions.
   d. strange moving colors in the sky.

2. An appropriate alternative title for this passage is
   a. The Tale of Princess Aurora.
   b. Understanding the Dancing Aurora.
   c. Studying the Light from the Sunrise.
   d. Visiting the Town of Aurora, New York.

3. The aurora most commonly contains the colors
   a. red and green.
   b. blue and white.
   c. orange and pink.
   d. yellow and purple.

4. The scientific name for the northern lights is
   a. aurora polaris.
   b. aurora alaskis.
   c. aurora borealis.
   d. aurora australis.

5. The polar lights are primarily caused by
   a. the sunrise.
   b. forest fires.
   c. solar winds.
   d. the sea tide.

6. In Alaska, the northern lights are best viewed in the month of
   a. March.
   b. May.
   c. June.
   d. July.

7. The passage suggests that more people would see the aurora if
   a. more cities were built close to the poles.
   b. winters in northern regions were shorter.
   c. the planet were farther away from the sun.
   d. people created less pollution from factories.

8. The author mentions cloudy weather (paragraph 4) in describing
   a. why the aurora appears.
   b. what the aurora looks like.
   c. how to best see the aurora.
   d. an old legend about the aurora.

9. The author mentions Roman times (paragraph 5) to
   a. offer one ancient belief about the aurora.
   b. explain that the aurora is a new phenomenon.
   c. describe scientific experiments on the aurora.
   d. name the person who first observed the aurora.

10. If something is *deceased* (paragraph 5), it
    a. has no friends.
    b. is much smaller.
    c. has many colors.
    d. is no longer living.

Check your answers on page 217.

Ernest Shackleton

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. a healer.
   b. a teacher.
   c. an explorer.
   d. a politician.

2. Shackleton is best remembered for his
   a. medical treatment of illnesses.
   b. diplomatic mission to Antarctica.
   c. scientific research in South America.
   d. commitment to his goals and his team.

3. Shackleton's father wanted him to become
   a. a ship builder.
   b. a medical doctor.
   c. an officer in the navy.
   d. an explorer in the Arctic.

4. Shackleton received a gold medal from the
   a. British Army.
   b. British Parliament.
   c. Royal Geographical Society.
   d. Scottish Geographical Society.

5. Mount Erebus is located in
   a. Africa.
   b. Europe.
   c. Antarctica.
   d. South America.

6. The author mentions Frank Wild (paragraph 5) in describing Shackleton's
   a. desire to become famous.
   b. life growing up in Ireland.
   c. work in the merchant navy.
   d. care for members of his team.

7. The author concludes by
   a. asking some thoughtful questions.
   b. comparing Shackleton to his father.
   c. inviting readers to do something new.
   d. telling why people remember Shackleton.

8. Shackleton only took five men with him when he left Elephant Island because
   a. the men had been fighting.
   b. the rest of the men had died.
   c. there was little room in the boat.
   d. only five men knew how to swim.

9. Shackleton's personality can best be described as
   a. brave.
   b. angry.
   c. careful.
   d. cheerful.

10. *Circumnavigate* (paragraph 8) means
    a. become a famous sailor.
    b. travel around something.
    c. move to another country.
    d. survive a difficult experience.

Check your answers on page 217.

Sumo Wrestling

Comprehension Questions

Circle the best answer.

1. This passage is mainly about a
   a. traditional Japanese sport.
   b. Japanese TV sports program.
   c. famous wrestler from Japan.
   d. history of Japan's universities.

2. An appropriate alternative title for his passage is
   a. Family Traditions from Ancient Japan.
   b. Diet and Exercise Habits of Modern Japan.
   c. A Young Man's Journey to Wrestling Fame.
   d. Honoring the Past with Today's Competitions.

3. During a match, a sumo wrestler usually wears
   a. a loincloth.
   b. a silk robe.
   c. an armor suit.
   d. a cotton uniform.

4. Salt is thrown onto the ring to
   a. keep the ground warm.
   b. signal the end of a match.
   c. show that the ring is ready.
   d. stop wrestlers from slipping.

5. Professional sumo wrestlers are expected to live
   a. with their grandparents.
   b. alone in the countryside.
   c. in small apartments in Tokyo.
   d. in groups at training complexes.

6. We can infer that sumo wrestlers eat
   a. only rice and fish.
   b. mostly junk food.
   c. only after a match.
   d. large quantities daily.

7. We can infer that a yokozuna will retire if he
   a. wants to go to school.
   b. argues with his coach.
   c. loses several matches.
   d. decides to get married.

8. The author begins the passage by
   a. defining some key terms.
   b. describing a regular match.
   c. summarizing a historical tale.
   d. naming some famous wrestlers.

9. The author mentions Mongolia (paragraph 7) to
   a. explain the history of sumo wrestling.
   b. highlight the clothing origins of sumo.
   c. show changes in the types of wrestlers.
   d. state the location of sumo tournaments.

10. If something is *prohibited* (paragraph 4), it is
    a. popular with fans.
    b. considered illegal.
    c. symbolically clean.
    d. traditionally important.

Check your answers on page 217.

Dreams

Comprehension Questions

Circle the best answer.

1. The main idea of this passage is that
   a. most people do not receive enough sleep at night.
   b. dream journals can help people remember their dreams.
   c. there is much that we still do not understand about dreams.
   d. nightmares are bad dreams that can interfere with healthy sleep.

2. The best alternative title for this passage is
   a. What Our Brains Do When We Are Sleeping.
   b. Why Comfortable Beds Lead to Better Sleep.
   c. Problems That Result from Poor Sleep Habits.
   d. Using Dreams to Better Understand Ourselves.

3. The recommended number of hours of sleep for an adult is
   a. 7.
   b. 8.
   c. 9.
   d. 10.

4. A recurring dream is one that
   a. occurs many times.
   b. is quickly forgotten.
   c. occurs when a person is awake.
   d. is about a person's family or friends.

5. A Native American dreamcatcher is used to
   a. protect people from nightmares.
   b. improve memory when sleeping.
   c. eliminate dreams during the night.
   d. encourage thoughtful daydreaming.

6. The author mentions a computer (paragraph 1) to explain
   a. what the brain does at night.
   b. how scientists study dreams.
   c. where bad dreams come from.
   d. why some people sleep too much.

7. In the conclusion, the author
   a. invites readers to think about their dreams.
   b. warns readers against too much daydreaming.
   c. tells readers to share their dreams with their friends.
   d. offers a personal experience with dream interpretation.

8. The passage suggests that if a person does not experience REM sleep, that person
   a. is probably a child.
   b. is probably an adult.
   c. will not have any dreams.
   d. will have many nightmares.

9. We can infer that daydreams are often the result of
   a. a sleeping pill.
   b. too much sleep.
   c. chemicals in the air.
   d. a person's imagination.

10. If someone is *pursued* (paragraph 6) that person is being
    a. invited somewhere.
    b. taught by someone.
    c. helped in some way.
    d. followed by something.

Check your answers on page 217.

Llamas

Comprehension Questions

Circle the best answer.

1. This passage is mostly about a
   a. large pack animal.
   b. type of warm clothing.
   c. group of sheep farmers.
   d. village in South America.

2. An appropriate alternative title for this passage is
   a. Gentle Helpers.
   b. Difficult Times.
   c. Forgotten Places.
   d. True Excitement.

3. Unlike llamas, camels have
   a. flat teeth.
   b. large eyes.
   c. long necks.
   d. back humps.

4. Llamas mostly eat
   a. birds.
   b. plants.
   c. insects.
   d. lizards.

5. Llamas usually fight to
   a. hunt for food.
   b. gain social rank.
   c. show playfulness.
   d. keep humans away.

6. We can infer that male llamas
   a. can hurt baby llamas.
   b. can copy human voices.
   c. are friendlier to humans.
   d. are smaller than females.

7. The passage suggests that if llamas disappeared
   a. many villages would suffer.
   b. bird populations would increase.
   c. many businesses would improve.
   d. camel populations would decrease.

8. The author mentions sheep in the introduction (paragraph 1) to explain
   a. where the word *llama* originated from.
   b. how llamas are related to other animals.
   c. when llamas became popular in Europe.
   d. why llamas are common in South America.

9. The author ends the passage by emphasizing
   a. the importance of llamas in people's lives.
   b. the threats to the health and safety of llamas.
   c. the popularity of llamas in books and movies.
   d. the similarities between llamas and other animals.

10. If something is more *diverse* (paragraph 3), it has more
    a. time.
    b. power.
    c. money.
    d. variety.

Check your answers on page 217.

Wind Power

Comprehension Questions

Circle the best answer.

1. The main purpose of this passage is to explain
   a. the science and benefits of wind energy.
   b. the best way to create a simple windmill.
   c. the dangers and problems with wind power.
   d. the creation of the world's first wind turbine.

2. An appropriate, alternative title for this passage is
   a. Running out of Time and Money.
   b. Advice for Building a Better Car.
   c. Living Near the Quiet Countryside.
   d. A Cleaner Way to Power the Future.

3. All of the following are renewable sources of energy EXCEPT
   a. sun.
   b. coal.
   c. wind.
   d. water.

4. Wind power as a source of electricity first become popular in
   a. China.
   b. France.
   c. Denmark.
   d. the United States.

5. In 2015, the percentage of global production of electricity by wind power was about
   a. 3.5 percent.
   b. 13.5 percent.
   c. 25.5 percent.
   d. 45.5 percent.

6. The passage suggests that in the future,
   a. a greater percent of global electricity will be created by wind power.
   b. electricity from oil and gas will be cleaner and safer than wind energy.
   c. all of the electricity in the United States will come from wind turbines.
   d. Denmark will create more wind energy than China and the United States.

7. The author's attitude toward wind power is mostly
   a. funny.
   b. fearful.
   c. hopeful.
   d. disappointed.

8. The author introduces the topic of the passage by
   a. telling a funny joke.
   b. asking some questions.
   c. describing a famous person.
   d. explaining a scientific process.

9. The author mentions cities (paragraph 8) when discussing
   a. how a wind turbine works.
   b. problems related to wind power.
   c. successful wind power companies.
   d. how wind travels around the planet.

10. To *harvest* (paragraph 8) means to
    a. push.
    b. build.
    c. record.
    d. gather.

Check your answers on page 217.

Déjà Vu

Comprehension Questions

Circle the best answer.

1. This passage is mainly about a feeling of
   a. losing all of one's memories.
   b. wanting to meet new people.
   c. experiencing something before.
   d. communicating with one's mind.

2. The author's attitude toward the topic is one of
   a. anger.
   b. sadness.
   c. certainty.
   d. curiosity.

3. Emile Boirac was the first person to
   a. use the term déjà vu.
   b. have a déjà vu experience.
   c. identify déjà vu as a brain malfunction.
   d. connect déjà vu to recognition memory.

4. Déjà vu occurs most frequently in
   a. babies and children.
   b. middle-aged parents.
   c. retired senior citizens.
   d. teens and young adults.

5. A recollection memory occurs when a person
   a. senses a supernatural force during an event.
   b. remembers the specific details of an event.
   c. recalls an event at the same time that it happens.
   d. gets a general feeling of familiarity during an event.

6. The passage is organized in the form of a
   a. series of possible explanations.
   b. comparison between two people.
   c. story with two interesting characters.
   d. problem with a recommended solution.

7. The author comes to the conclusion that
   a. the true cause of déjà vu remains unknown.
   b. theories about déjà vu have no scientific basis.
   c. those who have experienced déjà vu are special.
   d. there should be more funding into déjà vu research.

8. We can infer that parapsychology
   a. investigates brain injuries and illnesses.
   b. is not considered a modern scientific field.
   c. does not offer any explanations for déjà vu.
   d. is respected by 70 percent of brain scientists.

9. The passage suggests that *déjà vu* is a French term because
   a. the majority of déjà vu experiences happen in France.
   b. the person who first used the term was a French speaker.
   c. the first recorded déjà vu experience happened in France.
   d. most brain scientists communicate in the French language.

10. A *distinction* (paragraph 6) is
    a. a scientist who studies brain functions.
    b. a force that comes from a mysterious source.
    c. an event that teaches an important life lesson.
    d. a separation of things into different categories.

Check your answers on page 217.

Genealogy

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. how genealogy work is done.
   b. when genealogy became popular.
   c. what professional genealogists do.
   d. why genealogy research is difficult.

2. Genealogy mostly involves collecting
   a. information about one's ancestors.
   b. important dates in a country's history.
   c. favorite books and poems from family.
   d. old photographs from different countries.

3. A family tree includes a branch for each
   a. childhood pet.
   b. country visited.
   c. person's parents.
   d. place called home.

4. A census usually records all of the following EXCEPT
   a. ages.
   b. names.
   c. hobbies.
   d. addresses.

5. Compared with genealogy, family history is more concerned with
   a. births.
   b. deaths.
   c. stories.
   d. marriages.

6. The passage suggests that genealogy work has become easier due to
   a. easy access to the internet.
   b. faster medical recording systems.
   c. better international transportation.
   d. the use of English around the world.

7. We can infer that genealogy is easier for people who
   a. do not have any living grandparents.
   b. do not participate in religious groups.
   c. read from books instead of computers.
   d. come from countries with census records.

8. The author mentions a great-uncle (paragraph 5) to
   a. explain how difficult it is to read genealogical records.
   b. tell how most people collect family history information.
   c. describe how to become a professional family historian.
   d. show the interest people feel in learning about ancestors.

9. The author concludes the passage by
   a. encouraging readers to start genealogy work.
   b. explaining where genealogy records are stored.
   c. comparing genealogy to other popular hobbies.
   d. highlighting the financial benefits of genealogy.

10. A person's *ancestry* (paragraph 6) refers to one's
    a. current job.
    b. family history.
    c. education level.
    d. favorite hobbies.

Check your answers on page 217.

Static Electricity

Comprehension Questions

Circle the best answer.

1. The main purpose of this passage is to
   a. explain how static electricity works.
   b. highlight important uses of static electricity.
   c. describe scientists who studied static electricity.
   d. summarize research studies about static electricity.

2. An appropriate alternative title for this passage is
   a. Small Electrical Charges.
   b. The Dangers of Electricity.
   c. Powering Electrical Devices.
   d. Electricity and Thunderstorms.

3. Static means
   a. still.
   b. fast.
   c. exciting.
   d. powerful.

4. The charge of an electron is
   a. neutral.
   b. negative.
   c. positive.
   d. financial.

5. Static electricity is created when
   a. protons grow larger in size.
   b. a nucleus becomes smaller.
   c. extra electrons collect on an object.
   d. atoms move from one place to another.

6. The passage suggests that static electric sparks
   a. are always invisible.
   b. can injure most adults.
   c. are surprising but harmless.
   d. can be used to power computers.

7. We can infer that static electricity can occur in all of the following EXCEPT
   a. swimming in a lake.
   b. walking on a carpet.
   c. rubbing a balloon on one's hair.
   d. pulling a blanket over one's head.

8. The author mentions shoes (paragraph 4) to explain how static electricity
   a. can collect.
   b. hurts people.
   c. affects water.
   d. was discovered.

9. The author concludes the passage by
   a. describing how static electricity was first discovered.
   b. naming some scientists who studied static electricity.
   c. encouraging readers to avoid contact with static electricity.
   d. highlighting some fun activities involving static electricity.

10. If something is *generated* (paragraph 2), it is
    a. placed.
    b. created.
    c. watched.
    d. touched.

Check your answers on page 217.

3D Printing

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. science fiction stories.
   b. special medical procedures.
   c. a manufacturing innovation.
   d. the history of the printing press.

2. The best alternative title for this passage is
   a. Products Built by Robots.
   b. Incredible Books for Kids.
   c. Newly Designed Hospitals.
   d. Beautiful, Expensive Houses.

3. Johannes Gutenberg lived
   a. during the 15th century.
   b. during the 21st century.
   c. in 1920.
   d. in 1999.

4. Before an object can be 3D printed, a
   a. computer file must be created.
   b. 2D version needs to be printed.
   c. similar object has to be scanned.
   d. mold should be carved from wood.

5. Doctors have used additive manufacturing to
   a. develop new medicines.
   b. create human body parts.
   c. communicate with patients.
   d. perform difficult operations.

6. The author begins this passage by
   a. contrasting those who use technology with those who do not.
   b. highlighting an important historical innovation.
   c. describing the person who invented 3D printing.
   d. illustrating the value of education in the advancement of science.

7. The author concludes this passage by
   a. sharing a personal experience with bioprinting.
   b. imagining how this technology will be used in the future.
   c. warning against the widespread use of 3D printing.
   d. inviting readers to pursue a career in additive manufacturing.

8. The author compares the printing press and 3D printing by stating that
   a. one helped in the spread of ideas and the other helps in the spread of objects.
   b. one only benefited rich people and the other is useful for all people.
   c. one was only used by teachers and the other is only used by doctors.
   d. one was funded by the government and the other is funded by business.

9. The author suggests that 3D printing is most like
   a. growing a flower.
   b. sculpting a statue.
   c. baking a loaf of bread.
   d. building a block tower.

10. *Subtracted* (paragraph 4) can mean
    a. built faster.
    b. made smaller.
    c. closed tighter.
    d. stretched longer.

Check your answers on page 217.

Christopher Reeve

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. an award for people who do amazing things.
   b. an organization that helps disabled children.
   c. the career of an actor who survived an accident.
   d. the making of a movie about a popular superhero.

2. The best alternative title for this passage is
   a. Theatrical Productions.
   b. The Best Comic Books.
   c. Recovering from Tragedy.
   d. Meeting the Love of My Life.

3. Reeve was born in
   a. Princeton, New Jersey.
   b. Hartford, Connecticut.
   c. Hollywood, California.
   d. New York City, New York.

4. Reeve's most famous acting role was in
   a. *Superman.*
   b. *In the Gloaming.*
   c. *A Matter of Gravity.*
   d. *The Yeoman of the Guard.*

5. Reeve was injured
   a. while driving his car.
   b. at an award ceremony.
   c. when he fell from a horse.
   d. during the filming of a movie.

6. The author begins this passage by
   a. listing Reeve's theatrical awards.
   b. telling about Reeve's hometown.
   c. describing Reeve's best-known work.
   d. comparing Reeve's life with Superman's.

7. The author mentions Brooke Ellison (paragraph 9) to
   a. explain Reeve's reasons for becoming an actor.
   b. highlight people's ability to overcome challenges.
   c. illustrate the importance of preparing for one's career.
   d. contrast the lives of doctors with the lives of educators.

8. We can infer that Reeve's wife, Dana,
   a. helped him in his charity work.
   b. died from heart failure in 2004.
   c. became a famous US politician.
   d. wrote books about health science.

9. In the years after his injury, Reeve
   a. spent time helping others.
   b. recovered the ability to walk.
   c. refused to talk about his illness.
   d. never returned to acting in films.

10. *Paralysis* (paragraph 7) refers to
    a. an organization that funds research.
    b. a program that teaches parenting skills.
    c. a loss of ability to move part of the body.
    d. an exhaustion resulting from performance.

Check your answers on page 217.

Earth's Crust

Comprehension Questions

Circle the best answer.

1. This main purpose of this passage is to describe
   a. tools used to study Earth's crust.
   b. different features in Earth's crust.
   c. how mountains formed on Earth's crust.
   d. how Earth's crust differs from Mars's crust.

2. Information for this passage probably came from scientists who study
   a. outer space.
   b. rocks and dirt.
   c. ancient cultures.
   d. animals and plants.

3. Igneous rock is formed from
   a. volcanic eruptions.
   b. several layers of sand.
   c. high levels of pressure.
   d. ancient dinosaur bones.

4. Sedimentary rock is most commonly found in
   a. oceanic crust.
   b. continental crust.
   c. the upper mantle.
   d. the lower mantle.

5. Mountains are formed by the movement of
   a. wild animals.
   b. strong winds.
   c. ocean waves.
   d. tectonic plates.

6. The passage suggests that rock below the lithosphere
   a. is in hot liquid form.
   b. contains layers of dirt.
   c. is mostly metamorphic.
   d. floats on an ocean of ice.

7. We can infer that scientists study the center of Earth by
   a. sending computers into volcanoes.
   b. regularly traveling to Earth's center.
   c. making predictions using technology.
   d. digging rocks out of the Earth's center.

8. The author introduces the idea of a crust (paragraph 2) by
   a. comparing Earth to bread.
   b. mentioning several animals.
   c. sharing several facts about the sun.
   d. describing the movement of clouds.

9. The author concludes the passage by
   a. describing life under the ocean.
   b. warning readers about earthquakes.
   c. offering a prediction about the future.
   d. summarizing the history of the planet.

10. To *drill* (paragraph 10) means to
    a. look far.
    b. heat up.
    c. dig down.
    d. move close.

Check your answers on page 217.

Penguins

Comprehension Questions

Circle the best answer.

1. This passage is about a type of
   a. bird.
   b. whale.
   c. insect.
   d. reptile.

2. An appropriate alternative title for this passage is
   a. Fantastic Fliers in the Desert!
   b. Amazing Swimmers in the Sea!
   c. Brave Climbers in the Mountains!
   d. Remarkable Runners in the Forest!

3. Smaller penguins live
   a. farther north.
   b. farther south.
   c. on larger islands.
   d. on smaller islands.

4. To keep their eggs warm, penguins
   a. hold the eggs on their feet.
   b. bury the eggs in the ground.
   c. hide the eggs inside thick trees.
   d. keep the eggs under their wings.

5. Penguins move fastest
   a. on dirt.
   b. in the air.
   c. on rocks.
   d. in the water.

6. The passage suggests that male penguins
   a. frequently eat their young.
   b. are very responsible parents.
   c. find a new partner each year.
   d. live away from other penguins.

7. We can infer that penguins use their wings to
   a. swim fast.
   b. hold food.
   c. jump high.
   d. warm eggs.

8. The author mentions fish (paragraph 8) to describe
   a. why penguins fly.
   b. what penguins eat.
   c. how penguins swim.
   d. where penguins sleep.

9. The author concludes the passage by
   a. explaining how penguins catch food.
   b. encouraging readers to protect penguins.
   c. sharing a traditional story about penguins.
   d. highlighting humans' interest in penguins.

10. A *colony* (paragraph 4) is
    a. an island covered in ice.
    b. a group of living things.
    c. a bird with very large feet.
    d. a place with warm weather.

Check your answers on page 217.

Rockets

Comprehension Questions

Circle the best answer.

1. This passage is mainly about
   a. famous scientists who built rockets.
   b. the military applications of rockets.
   c. the development of rocket technology.
   d. locations that are used to launch rockets.

2. An appropriate alternative title for this passage is
   a. The Military Might of China.
   b. The Importance of Satellites.
   c. The Men Who Visited Space.
   d. The Power to Reach the Stars.

3. Black powder was discovered in ancient
   a. China.
   b. Russia.
   c. Arabia.
   d. Mongolia.

4. Robert Goddard used liquid oxgen to
   a. make rockets heavier.
   b. launch rockets higher.
   c. create a new rocket paint.
   d. prevent rockets from breaking.

5. During World War II rockets were used mostly
   a. as mining tools.
   b. as combat weapons.
   c. to launch artificial satellites.
   d. to send astronauts into space.

6. We can infer from the passage that satellites
   a. only last a few years.
   b. contain many tiny rockets.
   c. are launched using rockets.
   d. were invented 800 years ago.

7. The passage suggests that most rocket technology today is used
   a. by the military.
   b. for space travel.
   c. in scientific study.
   d. for firework displays.

8. The author mentions Genghis Khan to
   a. teach how rockets were first invented.
   b. explain the spread of rocket technology.
   c. warn against the use of rockets by the military.
   d. show how rockets could be used for space travel.

9. The author concludes the passage by inviting readers to
   a. visit a rocket launch site.
   b. study rocket science in school.
   c. remember the origin of rockets.
   d. build and launch their own rocket.

10. *Thrust* (paragraph 2) means
    a. fuel.
    b. weight.
    c. movement.
    d. technology.

Check your answers on page 217.

Yawning

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. why people yawn.
   b. which animals yawn.
   c. how to avoid yawning.
   d. the dangers of yawning.

2. Yawning means to
   a. fold our arms tightly.
   b. rub our eyes slowly.
   c. open our mouths widely.
   d. bend and stretch our legs.

3. Some ancient cultures believed that yawning meant
   a. one's family was feeling sick.
   b. the soul was leaving the body.
   c. one's job was about to improve.
   d. the weather was about to get cold.

4. Yawning often happens when people are
   a. tired or bored.
   b. nervous or shy.
   c. angry or upset.
   d. excited or surprised.

5. Children with autism often have difficulty
   a. sitting still in a chair.
   b. doing math problems.
   c. recognizing others' feelings.
   d. remembering important ideas.

6. The passage suggests that we do not yawn to get more oxygen because
   a. people who exercise do not yawn very much.
   b. people inside yawn as much as people outside.
   c. people who live in tall buildings yawn normally.
   d. people in a room with less air do not yawn more.

7. We can infer that the reason people yawn at night is because their brains
   a. have become cold.
   b. feel very excited.
   c. want them to stay alert.
   d. no longer sense daylight.

8. The author begins the passage by
   a. quoting from a scientific study.
   b. comparing yawning with smiling.
   c. sharing some old beliefs about yawning.
   d. providing definitions for some key words.

9. At the end of the passage, the author recognizes that
   a. the truth behind yawning is still unknown.
   b. younger people yawn more than older people.
   c. pets do not yawn even though wild animals do.
   d. scientists have no interest in studying yawning.

10. A *custom* (paragraph 1) is
    a. a way to compare.
    b. a group of people.
    c. an enjoyable game.
    d. a common practice.

Check your answers on page 217.

The Corps of Discovery

Comprehension Questions

Circle the best answer.

1. This passage is mainly about
   a. famous Shoshone women in history.
   b. early explorers from the United States.
   c. the life of President Thomas Jefferson.
   d. the successful career of William Clark.

2. The best alternative title for this passage is
   a. Remarkable US Presidents.
   b. Political Events in US History.
   c. Journey Across the Western USA.
   d. Sailing Along the Mississippi River.

3. The Louisiana Purchase was completed in
   a. 1801.
   b. 1803.
   c. 1804.
   d. 1806.

4. The Corps of Discovery began its journey
   a. in St. Louis, Missouri.
   b. on the coast of Oregon.
   c. on the coast of Louisiana.
   d. in Yellowstone, Wyoming.

5. Sacagawea was a member of the
   a. Omaha tribe.
   b. Chinook tribe.
   c. Missouri tribe.
   d. Shoshone tribe.

6. The author cites the number 827,000 (paragraph 1) to
   a. emphasize the enormous increase in US territory.
   b. show the high number of US citizens at that time.
   c. highlight the expensive price of the Louisiana Purchase.
   d. explain the long distance between the East and West coasts.

7. The author mentions a US dollar coin (paragraph 10) to
   a. make a comparison with the cost of goods in 1803.
   b. offer a reminder of the generous nature of William Clark.
   c. name a symbol of early American dedication to commerce.
   d. give an example of the government's honoring of Sacagawea.

8. The Corps of Discovery received supplies from Cameahwait's village because
   a. President Jefferson was a personal friend of Cameahwait.
   b. William Clark had previously lent supplies to Cameahwait.
   c. Cameahwait recognized Sacagawea as a fellow Shoshone.
   d. Meriwether Lewis could speak Cameahwait's native language.

9. The Corps of Discovery was considered to have succeeded because
   a. their work helped Americans settle in the West.
   b. they helped President Jefferson acquire Alaska.
   c. their journals were made into a Hollywood film.
   d. they identified a Northwest Passage to the Pacific.

10. If someone is *provisioned* (paragraph 5), that person is
    a. given supplies.
    b. injured in an attack.
    c. tired from working.
    d. recognized by a friend.

Check your answers on page 217.

Bobsledding

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. famous bobsledders.
   b. how to build a bobsled.
   c. the history of bobsledding.
   d. why people enjoy bobsledding.

2. Bobsledding is
   a. a game for pet dogs.
   b. a new computer tool.
   c. a winter racing sport.
   d. an outdoor fashion show.

3. The first bobsled was invented in
   a. Norway.
   b. Germany.
   c. Switzerland.
   d. Great Britain.

4. A two-person bobsled can be no longer than
   a. 2.1 meters.
   b. 2.7 meters.
   c. 3.3 meters.
   d. 3.8 meters.

5. To start a bobsled down the track, the team members must
   a. open a gate.
   b. push the sled.
   c. jump off a ledge.
   d. turn on the motor.

6. The passage suggests that, compared to older bobsleds, today's bobsleds are
   a. longer and wider.
   b. taller and thicker.
   c. heavier and slower.
   d. faster and stronger.

7. We can infer that all women and men who bobsled are
   a. quiet.
   b. brave.
   c. European.
   d. lightweight.

8. The author mentions the Iditarod (paragraph 2) to
   a. describe another type of racing with sleds.
   b. emphasize the dangers of racing with sleds.
   c. explain where the first bobsled race was held.
   d. highlight the importance of dogs in bobsledding.

9. The author concludes the passage by
   a. describing the sport's most popular team.
   b. comparing different types of winter events.
   c. explaining how people can try this activity.
   d. highlighting the most common types of injuries.

10. If something is *durable* (paragraph 5), it does not
    a. cost much.
    b. break easily.
    c. move very well.
    d. have many colors.

Check your answers on page 217.

Geocaching

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. the history of GPS technology.
   b. a game that uses GPS technology.
   c. how GPS technology uses satellites.
   d. how the military use GPS technology.

2. Geocaching is similar to
   a. playing football.
   b. collecting garbage.
   c. hunting for treasure.
   d. building with blocks.

3. Dave Ulmer placed his first GPS stash in
   a. a pill bottle.
   b. an old book.
   c. a black bucket.
   d. an empty bathtub.

4. Dave Ulmer called his game the
   a. Great American GPS Stash Hunt.
   b. GPS Hide-And-Seek Competition.
   c. Global Computer Race with Satellites.
   d. International Treasure Location Game.

5. To find nearby geocaches, a website user should enter
   a. a zip code.
   b. a city name.
   c. an ID number.
   d. a set of coordinates.

6. The passage suggests that the main requirement for geocaching is
   a. a GPS receiver.
   b. a military vehicle.
   c. a membership fee.
   d. a personal satellite.

7. We can infer that a geocache can be placed anywhere EXCEPT
   a. underwater.
   b. underground.
   c. in an ice cream shop.
   d. along a mountain trail.

8. The author mentions videos (paragraph 4) to
   a. offer examples of geocache prizes.
   b. describe how people find geocahes.
   c. tell why GPS technology was created.
   d. explain how people learned about GPS.

9. The author concludes the passage by
   a. sharing a geocaching story.
   b. listing some geocaching rules.
   c. comparing geocaching to other games.
   d. naming some good geocache locations.

10. A *stash* (paragraph 4) is a
    a. hiking trail.
    b. hiding place.
    c. set of good directions.
    d. computer game.

Check your answers on page 217.

Pawnbrokers

Comprehension Questions

Circle the best answer.

1. This passage is mostly about a job that involves
   a. making jewelry.
   b. teaching classes.
   c. buying and selling.
   d. fixing old machines.

2. An appropriate alternative title for this passage is
   a. Friends for Life.
   b. Performing Onstage.
   c. Cash for Treasures.
   d. Enjoying the Outdoors.

3. If customers fail to repay the loan, pawnbrokers
   a. throw the items in the trash.
   b. get to keep or sell the items.
   c. mail the items to the customers.
   d. must give the items to the police.

4. The oldest records of pawnbrokers come from
   a. ancient China.
   b. Medieval Europe.
   c. Depression-era USA.
   d. the Roman civilization.

5. Most pawn loans are for
   a. $5 to $10.
   b. $70 to $100.
   c. $200 to $500.
   d. $1,000 to $4,000.

6. The passage suggests that King Henry V pawned his jewels because
   a. he did not want them anymore.
   b. he needed some money quickly.
   c. he was afraid France would steal them.
   d. he did not know that they were valuable.

7. We can infer that pawnbrokers are good at
   a. lifting heavy objects.
   b. speaking other languages.
   c. interpreting people's actions.
   d. working with computer systems.

8. The author begins the passage by describing
   a. a fairytale character.
   b. an old office building.
   c. a government meeting.
   d. an imaginary situation.

9. The author concludes the passage by emphasizing
   a. the variety of items in a pawn shop.
   b. the poor health of most pawnbrokers.
   c. the best way to become a pawnbroker.
   d. the dangers of working in a pawn shop.

10. If something is *authentic* (paragraph 6), it is
    a. real.
    b. fake.
    c. rich.
    d. poor.

Check your answers on page 217.

Piranhas

Comprehension Questions

Circle the best answer.

1. This passage is mostly about a type of
   a. fish.
   b. cow.
   c. bird.
   d. plant.

2. Piranhas are often believed to be very
   a. old.
   b. cute.
   c. dangerous.
   d. mysterious.

3. An omnivore is something that
   a. hunts food at night.
   b. swims in fresh water.
   c. eats plants and animals.
   d. lives in water and on land.

4. Piranhas are most famous for their
   a. dark colors.
   b. sharp teeth.
   c. strong smell.
   d. loud sounds.

5. Many people learned about piranhas through Theodore Roosevelt's
   a. play.
   b. book.
   c. movie.
   d. painting.

6. The passage suggests that Roosevelt's depiction of piranhas is based on
   a. imaginative ideas.
   b. traditional legends.
   c. unnatural circumstances.
   d. scientific research studies.

7. We can infer that piranhas are important to
   a. international pet traders.
   b. zoos in the United States.
   c. their native environment.
   d. the fishing industry in Asia.

8. The author mentions saws (paragraph 5) to explain
   a. different types of piranhas.
   b. how fishers catch piranhas.
   c. the ways that people use piranhas.
   d. how piranhas can damage local trees.

9. The author concludes the passage by
   a. describing how piranhas move around.
   b. explaining where piranhas can be seen.
   c. restating the reason why piranhas are feared.
   d. telling who first discovered piranhas in nature.

10. If something is *aggressive* (paragraph 6), it is likely to
    a. hide.
    b. swim.
    c. sleep.
    d. attack.

Check your answers on page 217.

Princess Grace

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. an actor who became a real princess.
   b. famous princesses who do charity work.
   c. the responsibilities of modern princesses.
   d. a movie about a princess who loves to travel.

2. The best alternative title for this passage is
   a. Her Greatest Role.
   b. Hollywood Business.
   c. Monaco in the Summer.
   d. Watch a Movie with Me.

3. Grace was born in
   a. France.
   b. the UK.
   c. Monaco.
   d. the USA.

4. Grace's first movie role was in
   a. *Mogambo*.
   b. *The Father*.
   c. *Fourteen Hours*.
   d. *The Country Girl*.

5. Grace first met Rainier while she was
   a. performing a play in Africa.
   b. filming a movie in Monaco.
   c. attending a film festival in France.
   d. conducting charity work in the USA.

6. The author mentions Grace's uncles (paragraph 2) to
   a. display Grace's devotion to her American family.
   b. explain who introduced Grace to Prince Rainier.
   c. show that Grace had the courage to overcome failure.
   d. highlight how performing was part of her family culture.

7. The author mentions the Red Cross to
   a. illustrate Grace's commitment to serving her people.
   b. compare the lives of North Americans with Europeans.
   c. name one of the most popular Hollywood films of this era.
   d. show how people tried to save Grace after her car accident.

8. We can infer that the people of Monaco
   a. did not like to watch American movies.
   b. were never told that Grace died in 1982.
   c. wanted to become official citizens of France.
   d. were happy with Rainier's marriage to Grace.

9. We can conclude from the passage that Princess Grace
   a. was the second wife of Prince Rainier of Monaco.
   b. supported arts education more than health education.
   c. loved her life in the USA more than her life in Monaco.
   d. valued her royal and motherly duties more than acting.

10. To *boost* (paragraph 7) means to
    a. buy.
    b. visit.
    c. discuss.
    d. improve.

Check your answers on page 217.

Solar Panels

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. weather.
   b. energy.
   c. housing.
   d. government.

2. The main purpose of this passage is to
   a. warn against the misuse of solar panels.
   b. explain the use and benefits of solar panels.
   c. predict how solar panels can change society.
   d. compare solar panels with coal power plants.

3. PVCs create electricity from
   a. oil.
   b. coal.
   c. wind.
   d. light.

4. One barrier to using solar panels is that people think they
   a. are too expensive.
   b. only work in cities.
   c. cause air pollution.
   d. damage water sources.

5. In the Northern Hemisphere, solar panels should face
   a. east.
   b. west.
   c. south.
   d. north.

6. The passage suggests that within the next few years
   a. solar panel use will increase.
   b. solar panel production will stop.
   c. solar panels will be powered by oil.
   d. solar panels will be more expensive.

7. We can infer that solar panels work best
   a. at nighttime.
   b. in rainy climates.
   c. under large trees.
   d. during the summer.

8. The author mentions calculators (paragraph 1) to
   a. predict how much a solar panel costs.
   b. tell a story about the solar cell inventor.
   c. give an example of solar-powered devices.
   d. describe how electrons move in solar cells.

9. The author mentions ten years (paragraph 4) to
   a. explain solar panels' return on investment.
   b. compare solar panels with fossil fuel energy.
   c. detail how long it takes to build a solar panel.
   d. warn how soon solar panels need to be replaced.

10. If something is *tilted* (paragraph 5), it is
    a. easy to install.
    b. used frequently.
    c. placed at an angle.
    d. becoming more expensive.

Check your answers on page 217.

Antarctica

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. the life of scientists who study Antarctica.
   b. the early explorers who crossed Antarctica.
   c. the difficulty of creating maps of Antarctica.
   d. the conditions and activities on Antarctica.

2. Antarctica is the world's largest
   a. country.
   b. desert.
   c. continent.
   d. mountain.

3. Compared to the United States, Antarctica is
   a. larger.
   b. wetter.
   c. greener.
   d. warmer.

4. All of the following animals live in Antarctica EXCEPT
   a. seals.
   b. ducks.
   c. lizards.
   d. penguins.

5. In Antarctica, countries are allowed to
   a. drill for oil.
   b. train soldiers.
   c. mine for gold.
   d. study animals.

6. The passage suggests that the middle of Antarctica
   a. has little natural wildlife.
   b. is warmer than the coasts.
   c. receives heavy snow yearly.
   d. contains no research stations.

7. We can infer from the passage that most people in Antarctica live in
   a. fancy hotels.
   b. large cities.
   c. campgrounds.
   d. research stations.

8. The author mentions earthquakes (paragraph 5) when describing
   a. scientific research.
   b. plant and animal life.
   c. temperature records.
   d. wind and rain patterns.

9. The author mentions New Zealand (paragraph 6) when explaining
   a. the early explorers.
   b. difficulties with travel.
   c. concerns with tourism.
   d. the mountainous areas.

10. A *treaty* (paragraph 4) is
    a. an agreement between countries.
    b. a person who studies natural history.
    c. an animal that lives in the cold ocean.
    d. a place that is protected from pollution.

Check your answers on page 217.

King Christian X

Comprehension Questions

Circle the best answer.

1. This passage is mostly about a man who
   a. tried to attack towns in Russia.
   b. stopped Sweden in World War II.
   c. invaded Germany in World War I.
   d. became a symbol of Danish courage.

2. Christian's father was
   a. a Swedish soldier.
   b. the king of Denmark.
   c. a politician from Norway.
   d. the German prime minister.

3. Christian and his wife had
   a. two sons.
   b. no children.
   c. two daughters.
   d. a son and a daughter.

4. Christian and the prime minister disagreed on
   a. attacking the German Army.
   b. letting the king ride his horse.
   c. invading the capital of Norway.
   d. returning a region to Denmark.

5. As a result of his political mistake, Christian lost
   a. his wife.
   b. his palace.
   c. some of his power as king.
   d. many important military ships.

6. The passage suggests that as a young king, Christian's attitude towards change was
   a. surprise.
   b. confusion.
   c. happiness.
   d. resistance.

7. We can infer that Christian's attitude towards Nazi Germany was
   a. fear.
   b. humor.
   c. boldness.
   d. excitement.

8. The author mentions Jewish people (paragraph 9) to
   a. explain the king's political mistakes.
   b. describe the main culture of Denmark.
   c. summarize the history of the Netherlands.
   d. show the king's desire to protect his people.

9. The author ends the passage by describing how Christian
   a. traveled the world teaching children.
   b. changed the people's opinion of him.
   c. wrote about his life in a famous book.
   d. died before regaining the people's trust.

10. If something is *defiant* (paragraph 10), it
    a. cannot read well.
    b. should not sleep.
    c. will not cooperate.
    d. has very little money.

Check your answers on page 217.

Mount Fuji

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. a Japanese nature poem.
   b. a volcanic mountain in Japan.
   c. a famous painting from Japan.
   d. an old Japanese hotel and resort.

2. An appropriate alternative title for this passage is
   a. Great Artists in Japan Today.
   b. An International Symbol of Japan.
   c. The History of the Japanese Government.
   d. Interesting Cities to See When Visiting Japan.

3. The capital city of Japan is
   a. Tokyo.
   b. Osaka.
   c. Fujiyama.
   d. Yokohama.

4. The reported first person to climb Mount Fuji was
   a. a Japanese monk.
   b. a British explorer.
   c. a British princess.
   d. a Japanese ambassador.

5. Switchbacks are designed to
   a. protect famous art.
   b. make hiking easier.
   c. keep people warm at night.
   d. collect money from tourists.

6. The passage suggests that the weather at the top of Mount Fuji
   a. remains cold almost all year long.
   b. is the nicest of any place in Japan.
   c. is dangerously hot due to the volcano.
   d. only has wind for two days each year.

7. We can infer that the trails on Mount Fuji can
   a. become very crowded.
   b. be covered with wild dogs.
   c. only be used during the night.
   d. be dangerous in the summertime.

8. The author mentions *The Capital of the Tycoon* (paragraph 4)to
   a. share some Japanese poetry about Mount Fuji.
   b. describe a war that was fought near Mount Fuji.
   c. show the importance of Mount Fuji in business.
   d. explain how foreigners learned about Mount Fuji.

9. The author mentions Hokusai (paragraph 9) to
   a. recommend the Mount Fuji hot springs.
   b. explain Mount Fuji's volcanic history.
   c. highlight Mount Fuji's role in art.
   d. describe the towns near Mount Fuji.

10. To *comprise* (paragraph 2) means to
    a. see.
    b. form.
    c. visit.
    d. climb.

Check your answers on page 218.

Parkour

Comprehension Questions

Circle the best answer.

1. This passage is mostly about a
   a. military school.
   b. group of friends.
   c. physical activity.
   d. new type of plane.

2. An appropriate alternative title for this passage is
   a. Jumping with Style.
   b. Competing for Money.
   c. Training with Soldiers.
   d. Using Amazing Machines.

3. Parkour involves all of the following EXCEPT
   a. running.
   b. jumping.
   c. climbing.
   d. swimming.

4. In parkour, Follow the Leader is
   a. a tall building.
   b. a training game.
   c. an internet video.
   d. a piece of clothing.

5. The name *parkour* was created by a group of
   a. teachers.
   b. soldiers.
   c. builders.
   d. teenagers.

6. The passage suggests that parkour participants are most concerned with
   a. having fun and telling silly stories.
   b. studying about history and architecture.
   c. earning a great deal of money and fame.
   d. improving their ability to move and think.

7. We can infer that some parkour participants have been injured while
   a. driving race cars.
   b. running on trains.
   c. dropping out of airplanes.
   d. jumping from tall buildings.

8. The author mentions an eye (paragraph 2) to
   a. describe a famous group of parkour athletes.
   b. give warnings about common parkour injuries.
   c. highlight the crowds that like to watch parkour.
   d. emphasize how quickly parkour moves happen.

9. The author concludes the passage by
   a. listing some benefits of parkour.
   b. comparing parkour to popular sports.
   c. explaining how parkour was created.
   d. describing popular parkour competitions.

10. To *trespass* (paragraph 6) means to
    a. wear protective clothing.
    b. climb higher than before.
    c. hurt oneself by moving fast.
    d. go where one is not allowed.

Check your answers on page 218.

Steve Jobs

Comprehension Questions

Circle the best answer.

1. This passage is about a man who
   a. built the first computer.
   b. led many technology companies.
   c. wrote beautiful music.
   d. acted in several popular movies.

2. An appropriate alternative title for this passage is
   a. Applying for a Computer Job.
   b. Amazing Buildings in California.
   c. Innovating in the Computer Industry.
   d. Quietly Helping Others.

3. The Silicon Valley got its name from electronics items that were
   a. sold inexpensively in that region.
   b. manufactured in that region.
   c. exported to Asia from that region.
   d. properly recycled in that region.

4. Jobs and Wozniak met
   a. while watching a Pixar movie.
   b. through a club for computer users.
   c. during a summer internship.
   d. at college in Oregon.

5. Jobs originally left Apple because
   a. of conflict with coworkers.
   b. he wanted to make movies.
   c. of his cancer diagnosis.
   d. he lost interest in computers.

6. The passage suggests that Apple was responsible for
   a. the success of computer animated films.
   b. making personal computers popular.
   c. developing new types of music.
   d. the invention of cell phone technology.

7. From this passage, we can infer that Jobs had an attitude of
   a. patience.
   b. determination.
   c. happiness.
   d. humor.

8. The author begins the passage by mentioning
   a. how large computers used to be.
   b. why Jobs liked studying art.
   c. when Jobs bought his first computer.
   d. where most smartphones are built.

9. The author mentions a mouse (paragraph 6) to
   a. describe an animated film character.
   b. explain how Jobs became sick.
   c. demonstrate an innovative design.
   d. tell why Wozniak left Apple.

10. If something is *profitable* (paragraph 8), it
    a. makes money.
    b. has new ideas.
    c. uses computers.
    d. works very hard.

Check your answers on page 218.

X-Rays

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. a scientific discovery.
   b. a book about science.
   c. a group of famous scientists.
   d. a school for studying science.

2. An appropriate alternative title for this passage is
   a. New Forms of Medicine.
   b. The Dangers of Traveling.
   c. Seeing What We Cannot See.
   d. Discovering Forgotten History.

3. When Roentgen discovered X-rays, he noticed that a screen across the room was
   a. floating.
   b. glowing.
   c. melting.
   d. bending.

4. In an X-ray machine, the anode
   a. collects the X-radiation.
   b. turns electrons into X-rays.
   c. creates an electrical current.
   d. focuses X-rays at the target.

5. X-rays can easily pass through all of the following EXCEPT
   a. skin.
   b. bone.
   c. muscle.
   d. clothing.

6. We can infer that Roentgen's discovery of X-rays happened
   a. by accident.
   b. at an airport.
   c. on his birthday.
   d. a few years ago.

7. The passage suggests that, compared with the past, X-radiation today
   a. causes fewer illnesses.
   b. is only used in airports.
   c. does not create images.
   d. cannot be used in space.

8. The author introduces the topic by
   a. explaining how X-radiation is created.
   b. warning against the use of X-radiation.
   c. describing the accidental discovery of X-rays.
   d. listing some of the useful applications of X-rays.

9. The author mentions train stations (paragraph 7) to explain how X-rays
   a. can be dangerous.
   b. are used in security.
   c. were first discovered.
   d. help with engineering.

10. *Flaws* (paragraph 7), are
    a. illnesses.
    b. mistakes.
    c. metal aprons.
    d. medical tools.

Check your answers on page 218.

American Bison

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. early settlers in America.
   b. a North American animal.
   c. a famous American hunter.
   d. indigenous peoples of America.

2. An appropriate alternative title for this passage is
   a. Life on the American Plains.
   b. Saving What Was Almost Lost.
   c. Learning to Enjoy a New Place.
   d. The Longest Horns in the World.

3. Compared to bison, buffalo have
   a. longer hair.
   b. shorter ears.
   c. shorter tails.
   d. longer horns.

4. The bison population dropped to low numbers by 1900 mainly because of
   a. a terrible fire.
   b. not enough food.
   c. very cold weather.
   d. too much hunting.

5. Some of the people who tried to save bison were
   a. hunters.
   b. lawyers.
   c. teachers.
   d. ranchers.

6. The passage suggests that Buffalo Bill
   a. was born in Africa.
   b. liked to hunt in Asia.
   c. was a famous cowboy.
   d. protected American bison.

7. We can infer that bison stay together because
   a. they live in small cages.
   b. older bison get lost easily.
   c. hunting works better as a group.
   d. it provides protection from wolves.

8. The author introduces the passage by
   a. describing a famous person.
   b. quoting from a poetry book.
   c. telling a joke about a big city.
   d. comparing two important battles.

9. The author concludes the passage by
   a. offering some travel advice.
   b. comparing two similar animals.
   c. summarizing an important lesson.
   d. making a prediction about the future.

10. To *shed* something (paragraph 4) means to
    a. look for it.
    b. get rid of it.
    c. use it carefully.
    d. paint it a new color.

Check your answers on page 218.

Halley's Comet

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. a famous space object.
   b. a rocket for space travel.
   c. an artificial satellite in space.
   d. a telescope for viewing space.

2. An appropriate alternative title for this passage is
   a. A Returning Visitor Throughout History.
   b. A Surprising Discovery About Our Planet.
   c. A New Reason to Communicate Globally.
   d. A Better Way to Travel Through the Universe.

3. Halley's Comet can be seen about every 75 or 76
   a. days.
   b. weeks.
   c. months.
   d. years.

4. Edmond Halley was the person who first
   a. recognized that the comet regularly returned.
   b. made a written record after seeing the comet.
   c. viewed the comet from a rocket in outer space.
   d. took a picture of the comet using photography.

5. The 1066 appearance of the comet happened during the same year that
   a. Chinese scientists invented stone tablets.
   b. the British Museum discovered Babylon.
   c. William the Conqueror defeated England.
   d. Mark Twain was born in the United States.

6. The passage suggests that Halley's Comet is easier to see when
   a. Saturn is close to Earth.
   b. Jupiter moves near the comet.
   c. the sun heats the comet's nucleus.
   d. the comet moves past a full moon.

7. We can infer that it took centuries before a scientist recognized the comet because
   a. the comet has a very long orbit.
   b. the comet looks similar to a moon.
   c. the comet can only be seen with a powerful telescope.
   d. the comet can only be seen in the Southern Hemisphere.

8. The author focuses the beginning of the passage on a description of
   a. what Halley's Comet is and why we can see it.
   b. the best places on Earth to see Halley's Comet.
   c. the outer space event that created Halley's Comet.
   d. famous people who were named for Halley's Comet.

9. The author focuses the last part of this passage on a description of
   a. recorded sightings of Halley's Comet.
   b. telescopes built to observe Halley's Comet.
   c. times when Halley's Comet crashed into Earth.
   d. what Halley's Comet teaches about Earth's history.

10. If something is *visible* (paragraph 9), it is easy to
    a. see.
    b. fight.
    c. travel.
    d. learn.

Check your answers on page 218.

Ultimate

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. a hobby for indoor play.
   b. a fun way to do homework.
   c. the creation of a new sport.
   d. the popularity of a video game.

2. Ultimate is played using a
   a. disc.
   b. ball.
   c. rock.
   d. stick.

3. Ultimate players move across the play area by
   a. biking.
   b. skating.
   c. running.
   d. swimming.

4. Points are scored in Ultimate by
   a. hitting many objects into a hole.
   b. throwing an object into a basket.
   c. catching an object in an end zone.
   d. knocking many objects to the floor.

5. Ultimate was created by a group of
   a. young students.
   b. football coaches.
   c. university professors.
   d. professional athletes.

6. The passage suggests that Ultimate is often played
   a. in forests.
   b. in classrooms.
   c. in open fields.
   d. in swimming pools.

7. We can infer that Ultimate is unlike most traditional sports because Ultimate
   a. appeals to a wide range of people.
   b. allows only young students to play.
   c. players are paid very high salaries.
   d. requires professional athletic skill.

8. The author mentions the company Wham-O (paragraph 1) to explain
   a. how the game was invented.
   b. why the game's name changed.
   c. how Yale students learned the game.
   d. why there are no referees in the game.

9. The author ends the passage by encouraging readers to
   a. try playing a game of Ultimate.
   b. invent their own alternative sport.
   c. wear good shoes when playing games.
   d. visit the campus of Rutgers University.

10. A *tournament* (paragraph 7) is a group of
    a. rules.
    b. athletes.
    c. colleges.
    d. contests.

Check your answers on page 218.

Duct Tape Art

Comprehension Questions

Circle the best answer.

1. The main idea of this passage is that
   a. surprisingly, duct tape can be used to make art.
   b. clearly, artists have been using duct tape for centuries.
   c. some of the world's best art is made from duct tape.
   d. all art students are required to make duct tape statues.

2. An appropriate alternative title for this passage is
   a. Repairing Damaged Art with Tape.
   b. The Most Artistic Prom Couple.
   c. From Army Tool to Art Form.
   d. Soldiers Express Feelings with Art.

3. Duct tape was first developed in the
   a. 1770s.
   b. 1890s.
   c. 1940s.
   d. 2010s.

4. Duct tape is traditionally colored
   a. gray.
   b. white.
   c. black.
   d. orange.

5. The Desecrator in Newburyport was
   a. an art statue.
   b. an art teacher.
   c. a fashion show.
   d. a formal dance.

6. The passage suggests that most people find duct tape art to be very
   a. ugly.
   b. funny.
   c. traditional.
   d. unexpected.

7. We can infer ShurTech Brands, LLC sponsors the Stuck at Prom® contest to
   a. encourage higher sales of its products.
   b. provide schools with more art supplies.
   c. make sure that more students attend prom.
   d. win awards at professional fashion shows.

8. The author introduces the topic by
   a. telling a short joke.
   b. quoting a famous artist.
   c. explaining a common saying.
   d. summarizing a historical event.

9. The author mentions websites (paragraph 6) to
   a. highlight the best place to buy duct tape.
   b. compare traditional and new forms of art.
   c. explain the history of duct tape as a repair tool.
   d. suggest places where duct tape art can be seen.

10. A *donation* (paragraph 9) is a
    a. gift.
    b. statue.
    c. dress.
    d. party.

Check your answers on page 218.

Tsunamis

Comprehension Questions

Circle the best answer.

1. The main topic of this passage is
   a. dangerous ocean waves.
   b. cities located on the coast.
   c. scientists who study the sea.
   d. earthquake warning systems.

2. The best alternative title for this passage is
   a. Nations at War.
   b. Meteorite Attack.
   c. A Terrible Force of Nature.
   d. Preparing for the Unexpected.

3. The word tsunami comes from
   a. Thai.
   b. Chinese.
   c. Japanese.
   d. Indonesian.

4. A tsunami can have a top speed of about
   a. 55 miles per hour.
   b. 100 miles per hour.
   c. 161 miles per hour.
   d. 600 miles per hour.

5. A drawback occurs about five
   a. miles out at sea from the shoreline.
   b. kilometers inland from the shoreline.
   c. hours after a tsunami reaches the shore.
   d. minutes before a tsunami reaches the shore.

6. The author mentions Hawaii (paragraph 7) to
   a. explain how scientists monitor possible tsunamis.
   b. name a region that recovered from a bad tsunami.
   c. highlight that tourists are not prepared for tsunamis.
   d. show how some places are protected from tsunamis.

7. The author concludes by
   a. explaining key terms.
   b. offering safety advice.
   c. sharing a personal story.
   d. asking thoughtful questions.

8. We can infer that people who live more than 1 mile from the coast
   a. probably live well below sea level.
   b. will be the first to hear warning sirens.
   c. may not need to evacuate during a tsunami.
   d. can see a tsunami before people on the coast can.

9. Based on the information in this passage, we can infer that tsunamis
   a. cause most earthquakes to occur.
   b. are the result of tidal movements.
   c. in the Pacific Ocean are very gentle.
   d. are uncommon in the Atlantic Ocean.

10. In this passage, to *register* (paragraph 8) means to
    a. pay for something.
    b. write down in a book.
    c. show a person's feeling.
    d. measure a certain amount.

Check your answers on page 218.

Jackie Robinson

Comprehension Questions

Circle the best answer.

1. This passage is mostly about a man who
   a. was the first African American to play in Major League Baseball.
   b. established the first baseball league for African American players.
   c. coached the only African American team in Major League Baseball.
   d. hired the first professional African American ball player in the USA.

2. An appropriate alternative title for this passage is
   a. Fighting Wars and Fighting Politicians.
   b. Changing Laws That Treat Workers Unfairly.
   c. Finding a Separate Place to Feel Safe in College Sports.
   d. Overcoming Racism to Become the Most Valuable Player.

3. Robinson was born in the state of
   a. Kansas.
   b. Georgia.
   c. California.
   d. New York.

4. In high school, Robinson played all of the following sports EXCEPT:
   a. hockey.
   b. baseball.
   c. football.
   d. basketball.

5. Robinson first played with the Dodgers in
   a. 1919.
   b. 1935.
   c. 1947.
   d. 1962.

6. The passage suggests that Robinson never served outside the USA during the war due to
   a. an unfair arrest.
   b. an airplane crash.
   c. his sports injuries.
   d. his mother's illness.

7. We can infer that Robinson's first year in Major League Baseball was very
   a. boring.
   b. friendly.
   c. peaceful.
   d. challenging.

8. The author begins this passage by describing
   a. the creation of Major League Baseball.
   b. the high school sports awards of Robinson.
   c. the formal rules of Major League Baseball.
   d. the anti-racism achievements of Robinson.

9. The author mentions a bus (paragraph 5) to
   a. highlight the dedication of Robinson's mother.
   b. describe a memorable trip with Robinson's team.
   c. explain an example of racism that Robinson faced.
   d. show the support that Robinson received from mentors.

10. If a person *excelled* (paragraph 4), that person
    a. cheated.
    b. watched.
    c. did well.
    d. spoke loudly.

Check your answers on page 218.

Star Wars

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. an unusual film director.
   b. a powerful movie studio.
   c. a popular series of movies.
   d. a science fiction film actor.

2. The main purpose of this passage is to
   a. summarize the plot of the Star Wars movies.
   b. explain the creation of the Star Wars movies.
   c. tell about how Star Wars changed filmmaking.
   d. describe the life of the man who made Star Wars.

3. In the beginning, many crew members though that Lucas's project was
   a. scary.
   b. boring.
   c. exhausting.
   d. unprofessional.

4. The first Star Wars that was released was called
   a. *Star Wars: Episode IV – A New Hope*.
   b. *Star Wars: Episode V – The Empire Strikes Back*.
   c. *Star Wars: Episode VI – Return of the Jedi*.
   d. *Star Wars: Episode VII – The Force Awakens*.

5. In 2012, the Star Wars franchise was bought by
   a. George Lucas.
   b. 20th Century Fox.
   c. the US government.
   d. the Walt Disney Company.

6. The passage suggests that additional movies beyond the first three films
   a. have still not been made.
   b. have also been successful.
   c. were not popular with audiences.
   d. were destroyed by George Lucas.

7. We can infer that the Star Wars films are effective at teaching
   a. foreign languages.
   b. good moral values.
   c. how to write and perform music.
   d. principles of scientific engineering.

8. The author begins the passage by
   a. describing Lucas's hometown.
   b. mentioning Lucas's earlier films.
   c. telling a story about Lucas's childhood.
   d. explaining where Lucas went to school.

9. The author concludes the passage by
   a. quoting a famous line from a Star Wars film.
   b. listing some reasons why Star Wars is popular.
   c. predicting the plot of future Star Wars movies.
   d. describing the success of Star Wars toys and books.

10. If something *malfunctioned* (paragraph 2), it did not
    a. look new.
    b. feel happy.
    c. work properly.
    d. cost very much.

Check your answers on page 218.

The Equator

Comprehension Questions

Circle the best answer.

1. The best alternative title for this passage is
   a. A Good Place to Go Hiking.
   b. An Exciting Trip to the Poles.
   c. Around the Middle of the Globe.
   d. Animals in Tropical Rain Forests.

2. Information for this passage likely came from
   a. musicians.
   b. politicians.
   c. geographers.
   d. photographers.

3. The name of the country of Ecuador was based on
   a. its early settlers.
   b. its global location.
   c. a common animal.
   d. a European explorer.

4. According to the author, the Kennedy Space Center is located in Florida because
   a. rocket fuel is easily found near the Florida coastline.
   b. the effect of gravity is weaker in the southern states.
   c. construction building costs are less expensive in Florida.
   d. people in southern states are more supportive of space travel.

5. An equinox is a time of year when
   a. rain forests near the equator are the coldest.
   b. day and night are of equal length at the equator.
   c. the equator receives the greatest amount of rainfall.
   d. the movement of wind near the equator is strongest.

6. The author mentions Mount Kilimanjaro (paragraph 6) to
   a. illustrate the range of animal species at the equator.
   b. show that not all equatorial regions are hot and wet.
   c. offer an example of an equatorial satellite launch site.
   d. contrast plant life in wet and dry areas near the equator.

7. The author concludes this passage by
   a. warning against traveling to equatorial regions.
   b. comparing wildlife at the equator and the poles.
   c. suggesting that the loss of rain forests is dangerous.
   d. encouraging readers to plant tropical trees in their cities.

8. The equatorial region is usually the warmest region on Earth because it
   a. rotates the quickest.
   b. includes the most trees.
   c. has the lowest elevation.
   d. receives the most sunshine.

9. The author suggests that, compared to tropical rainforests, polar regions have
   a. wetter seasons.
   b. lower elevations.
   c. less animal diversity.
   d. higher human populations.

10. A *hemisphere* (paragraph 4) means a
    a. dry season.
    b. half of a globe.
    c. type of energy.
    d. northern animal.

Check your answers on page 218.

United States Coast Guard

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. protecting US waters.
   b. cleaning US beaches.
   c. visiting US museums.
   d. vacationing at US coasts.

2. The main purpose of this passage is to
   a. summarize the history and mission of the Coast Guard.
   b. describe famous leaders who served in the Coast Guard.
   c. highlight a typical day for a member of the Coast Guard.
   d. explain the events resulting in the creation of the Coast Guard.

3. The Coast Guard's motto means that its members always try to be
   a. ready to help.
   b. slow to anger.
   c. fast and powerful.
   d. cheerful and friendly.

4. All of the following are parts of the Coast Guard mission EXCEPT maritime
   a. safety.
   b. society.
   c. security.
   d. stewardship.

5. Graduates of the OSC must commit to serving in the Coast Guard for a minimum of
   a. 1 year.
   b. 2 years.
   c. 3 years.
   d. 4 years.

6. The passage suggests that the Coast Guard helps with all of the following EXCEPT
   a. collecting illegal imports at the seaport.
   b. reporting an oil spill from a damaged ship.
   c. studying the fish populations in local ponds.
   d. finding the crew from a missing fishing boat.

7. We can infer that admission to the Coast Guard Academy is
   a. very selective.
   b. very secretive.
   c. only for men.
   d. only for women.

8. The author mentions Alexander Hamilton (paragraph 1) to
   a. explain how the Coast Guard was created.
   b. show how the Coast Guard helps fishermen.
   c. describe an ideal Coast Guard service member.
   d. highlight some concerns about the Coast Guard.

9. The author concludes the passage by
   a. providing stories of dangerous Coast Guard missions.
   b. predicting what the Coast Guard will do in the future.
   c. listing reasons why people choose to work for the Coast Guard.
   d. emphasizing the kinds of skills that people learn in the Coast Guard.

10. If something is *authorized* (paragraph 1), it is
    a. lost.
    b. written.
    c. enjoyed.
    d. approved.

Check your answers on page 218.

Ferdinand Magellan

Comprehension Questions

Circle the best answer.

1. The main purpose of this passage is to
   a. tell why Magellan is famous.
   b. highlight Magellan's kindness.
   c. describe Magellan's education.
   d. compare Magellan with Columbus.

2. Magellan dedicated his life to
   a. ship building.
   b. animal science.
   c. sailing and exploring.
   d. sports and entertainment.

3. Magellan's expedition was paid for by the king of
   a. Italy.
   b. Spain.
   c. France.
   d. Portugal.

4. Magellan's expedition was looking for
   a. a passage to East Asia.
   b. a city in South America.
   c. an explorer from Africa.
   d. a diplomat from Portugal.

5. The number of men who returned to Europe aboard the Victoria was
   a. 18.
   b. 56.
   c. 167.
   d. 240.

6. The passage suggests that some of the crew tried to mutiny because
   a. the crew had finished its job.
   b. two of the ships were broken.
   c. Magellan was a famous pirate.
   d. the men did not trust Magellan.

7. We can infer that most of Magellan's men did not
   a. speak Spanish.
   b. know how to swim.
   c. complete the journey.
   d. like traveling by ship.

8. The author mentions India (paragraph 2) to
   a. emphasize the importance of trade with Asia.
   b. highlight Magellan's unhappiness in Europe.
   c. tell why sailors refused to travel east from Europe.
   d. show how Magellan became interested in sailing.

9. The author concludes the passage by
   a. telling what rewards the expedition's crew received.
   b. describing the conflicts between Spain and Portugal.
   c. restating the reason why Magellan remains famous.
   d. explaining how Magellan's expedition changed Europe.

10. If something is *commenced* (paragraph 8), it is
    a. studied.
    b. started.
    c. watched.
    d. prepared.

Check your answers on page 218.

Caving

Comprehension Questions

Circle the best answer.

1. The main purpose of this passage is to
   a. teach about the spelunking hobby.
   b. protect the natural wonders in caves.
   c. share the story of a famous spelunker.
   d. share information about cave wildlife.

2. An appropriate alternative title for this passage is
   a. How Stalagmites Are Created.
   b. Types of Bats That Live in Caves.
   c. The Importance of the Buddy System.
   d. Exploring the Darkest Places on Earth.

3. According to the passage, cave exploring has become more popular due to
   a. easier access to spelunking gear and equipment.
   b. research showing that spelunking is a harmless activity.
   c. the discovery of caves closer to places where people live.
   d. the increaed interest in exercise among the general public.

4. An example of an urban caving location is
   a. a dark pathway through a forest of trees.
   b. a natural tunnel in the side of a mountain.
   c. a forgotten basement under an old church.
   d. an underwater cave along the coast of the sea.

5. All of the following are important features of a spelunking helmet EXCEPT a
   a. lamp on top to help light the pathway.
   b. set of ear plugs to keep out loud noises.
   c. tight fit to keep it from sliding or falling off.
   d. hard surface to protect it against falling rocks.

6. You can infer from this passage that light in caves usually
   a. only comes from lamps or lanterns.
   b. is present in the early morning hours.
   c. can be seen coming from special rocks.
   d. is brighter in the summer than in the winter.

7. This passage suggests that spelunkers explore as a group
   a. to scare away animals.
   b. in case someone gets injured.
   c. because it is more fun with friends.
   d. in order to train a new cave explorer.

8. The author mentions Great Britain (paragraph 1) when listing
   a. famous cave explorers.
   b. other names for caving.
   c. the best places to find caves.
   d. important caving equipment.

9. The author mentions mud (paragraph 8) to
   a. remind explorers to avoid caves that could flood.
   b. explain how animals survive inside dark caves.
   c. describe the types of minerals that are found in caves.
   d. emphasize the importance of wearing strong boots.

10. *Cairns* (paragraph 8) are
    a. tools for digging into rock walls.
    b. piles of rocks that mark locations.
    c. places with underwater rock caves.
    d. tall rocks that reach toward the ceiling.

Check your answers on page 218.

Ghost Hunting

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. a scary story.
   b. an old building.
   c. a popular movie.
   d. an unusual hobby.

2. The main purpose of this passage is to
   a. summarize a story about ghosts.
   b. convince people to believe in ghosts.
   c. describe how people search for ghosts.
   d. tell about a famous team of ghost hunters.

3. Based on a 2008 survey, the portion of Americans who believe in ghosts is about
   a. one tenth.
   b. one quarter.
   c. one third.
   d. one half.

4. Ghost hunters try to collect evidence of ghosts using
   a. traps.
   b. cameras.
   c. weapons.
   d. chemicals.

5. The term *paranormal investigators* is used to describe
   a. ghost hunters.
   b. very old spirits.
   c. scary buildings.
   d. electronic devices.

6. The passage suggests that most ghost hunters are
   a. rich.
   b. tired.
   c. angry.
   d. curious.

7. We can infer that most ghosts have
   a. long white hair.
   b. hidden treasure.
   c. unresolved problems.
   d. plans to scare people.

8. The author mentions Gettysburg (paragraph 2) to
   a. describe a scary movie that is popular.
   b. give an example of a haunted location.
   c. explain how ghost hunters use the internet.
   d. tell about the life of a famous ghost hunter.

9. The author concludes the passage by
   a. questioning ghost hunting.
   b. describing a famous ghost.
   c. summarizing a ghost story.
   d. quoting a famous ghost hunter.

10. *Skeptics* (paragraph 7) are people who
    a. hide.
    b. hunt.
    c. doubt.
    d. speak.

Check your answers on page 218.

Global Warming

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. a global lack of water to grow food.
   b. an increase in the planet's temperature.
   c. a need to reduce the size of large cities.
   d. a loss of important animals through hunting.

2. The main purpose of this passage is to
   a. list some causes and effects of global warming.
   b. explain how scientists measure global warming.
   c. tell how global warming affects business activities.
   d. describe how experts study global warming science.

3. Over the past 100 years, the average global temperature has increased about
   a. 1 degree Celsius.
   b. 5 degrees Celsius.
   c. 10 degrees Celsius.
   d. 50 degrees Celsius.

4. One example of a natural cause of global climate change is
   a. cattle farming.
   b. volcanic eruptions.
   c. airplane transportation.
   d. mass production factories.

5. Coal is an example of a
   a. fossil fuel.
   b. vegetable diet.
   c. carbon-based gas.
   d. renewable energy.

6. The passage suggests that an average global temperature increase of two degrees
   a. has only happened once in the history of Earth.
   b. is unlikely to happen within the next 1000 years.
   c. can have serious consequences for life on Earth.
   d. is a natural change that happens every decade or so.

7. We can infer that an activity that would help reduce global warming is
   a. eating fruit instead of hamburgers.
   b. drinking fewer cups of water each day.
   c. using air conditioning to keep buildings cold.
   d. frequently visiting colder countries by airplane.

8. The author begins the passage by
   a. telling a funny joke.
   b. sharing a personal story.
   c. quoting a famous scientist.
   d. describing a common concern.

9. The author concludes the passage by
   a. offering some possible solutions.
   b. summarizing an event from history.
   c. predicting a terrible event in the future.
   d. comparing our planet with other planets.

10. If something is *extreme* (paragraph 8), it is
    a. usually happy.
    b. often forgotten.
    c. very high or low.
    d. neither good nor bad.

Check your answers on page 218.

Sudoku Puzzles

Comprehension Questions

Circle the best answer.

1. The passage is mostly about
   a. a puzzle game that uses numbers.
   b. people who enjoy creating puzzles.
   c. ways that puzzles improve memory.
   d. how to get better at solving puzzles.

2. An appropriate alternative title for this passage is
   a. The Popularity of Number Place.
   b. An Amazing Invention from Italy.
   c. Using Computers to Play Fun Games.
   d. Why Math Is Difficult for Some People.

3. The normal size of a sudoku puzzle is
   a. 6 by 6.
   b. 9 by 9.
   c. 16 by 16.
   d. 100 by 100.

4. The first modern sudoku puzzles were created by a
   a. retired American architect.
   b. French newspaper reporter.
   c. Japanese computer scientist.
   d. young Chinese math student.

5. The first World Sudoku Championship was held in
   a. Italy.
   b. Japan.
   c. India.
   d. China.

6. The passage suggests that people who struggle with math
   a. can enjoy solving sudoku puzzles.
   b. are the best sudoku puzzle creators.
   c. have an advantage at sudoku puzzles.
   d. will find sudoku puzzles very difficult.

7. We can infer that, compared to a normal sudoku puzzle, Sudoku-zilla would
   a. take much longer to complete.
   b. be completed by a team of players.
   c. contain only pictures and no numbers.
   d. require the use of a pen instead of a pencil.

8. The author mentions the Middle East (paragraph 3) to
   a. explain the history of sudoku puzzles.
   b. tell about an enormous sudoku puzzle.
   c. describe one of the best sudoku players.
   d. name a place where sudoku contests are held.

9. The author ends the passage by
   a. offering a warning.
   b. telling some jokes.
   c. giving an invitation.
   d. sharing a personal story.

10. A *grid* (paragraph 2) is a
    a. puzzle that is difficult to solve.
    b. set of numbers in a regular order.
    c. square containing smaller squares.
    d. tool that is used to erase written errors.

Check your answers on page 218.

Franklin D. Roosevelt

Comprehension Questions

Circle the best answer.

1. The main topic of this passage is
   a. the loving marriage of two great people.
   b. an important battle during World War II.
   c. a surprising victory in American politics.
   d. the life of a president of the United States.

2. The best alternative title for this passage is
   a. A Soldier Who Died Far Away from Home.
   b. A Leader Who Overcame Great Difficulties.
   c. A Man Who Won at Whatever He Attempted.
   d. A Father Who Loved His Children Above All.

3. FDR married
   a. his distant relative.
   b. his friend's daughter.
   c. a university president.
   d. a member of the navy.

4. The US president immediately prior to FDR's presidency was
   a. Herbert Hoover.
   b. Warren Harding.
   c. Woodrow Wilson.
   d. Theodore Roosevelt.

5. FDR was elected president of the United States for a second time in
   a. 1932.
   b. 1933.
   c. 1935.
   d. 1936.

6. The author begins this passage by
   a. providing details about FDR's parents.
   b. telling about FDR's childhood interests.
   c. describing a difficult event in FDR's life.
   d. listing FDR's many political achievements.

7. The author mentions the Great Depression (paragraph 6) to
   a. explain some of FDR's policies.
   b. illustrate how FDR lost an election.
   c. contrast FDR's riches with the people's poverty.
   d. demonstrate FDR's reasons for entering politics.

8. The passage suggests that the "New Deal"
   a. came from the United Nations.
   b. helped improve the US economy.
   c. was defeated by opposition parties.
   d. caused many people to lose their jobs.

9. We can infer that FDR died
   a. during a battle in Europe.
   b. in the attack on Pearl Harbor.
   c. months after the end of World War II.
   d. from a combination of health problems.

10. In this passage, a *term* (paragraph 7) refers to
    a. a period of time.
    b. an award for service.
    c. an important person.
    d. a law to protect people.

Check your answers on page 218.

Bar Mitzvahs

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. a famous religious leader.
   b. a type of religious clothing.
   c. an important religious book.
   d. a special religious ceremony.

2. An appropriate alternative title for this passage is
   a. Excited to Leave Home.
   b. Happy to Have Freedom.
   c. Worried about One's Future.
   d. Ready to Take Responsibility.

3. The term bat mitzvah refers to
   a. an old man.
   b. a young man.
   c. an old woman.
   d. a young woman.

4. In Jewish culture, a child is considered Jewish at
   a. birth.
   b. 6 or 7 years old.
   c. 12 or 13 years old.
   d. adulthood.

5. At these ceremonies, young people often
   a. lead a traditional dance.
   b. read from a religious text.
   c. wear a coat that they made.
   d. perform a song that they wrote.

6. The passage suggests that, after the ceremony, most young people
   a. feel ready for marriage.
   b. stop obeying Jewish law.
   c. no longer live with their parents.
   d. participate more in religious events.

7. We can infer that, prior to the 20th century, these types of ceremonies
   a. were less complicated.
   b. were only for young women.
   c. were not permitted by the Talmud.
   d. were only celebrated by American Jews.

8. The author introduces the topic by
   a. explaining a key term.
   b. asking a set of questions.
   c. summarizing a historic event.
   d. comparing two cultural groups.

9. The author mentions the Middle Ages (paragraph 7) when discussing
   a. who is invited to attend the ceremony.
   b. how the ceremony developed over time.
   c. why the ceremony is no longer important.
   d. which types of ceremonial clothing are worn.

10. To *recite* (paragraph 8) means to
    a. stand tall and proud.
    b. share something funny.
    c. make a special promise.
    d. read aloud from memory.

Check your answers on page 218.

Dolly the Sheep

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. creating copies of animals.
   b. practices for farming sheep.
   c. studying rare and extinct animals.
   d. teaching sheep to follow directions.

2. An appropriate alternative title for this passage is
   a. An Important Animal Birth!
   b. New Diseases Threaten Sheep!
   c. Interesting Animals Discovered!
   d. Scottish Farmers Take a Holiday!

3. Dolly died from
   a. lung cancer.
   b. lack of food.
   c. human hunting.
   d. cloning problems.

4. The Pyrenean ibex is an example of
   a. an extinct animal that lived in the mountains.
   b. an animal that is a relative of today's elephants.
   c. an animal that reproduces using natural cloning.
   d. an extinct type of dinosaur that has been cloned.

5. Cloning can help scientists
   a. learn about the weather.
   b. prevent and cure diseases.
   c. study farm animal behavior.
   d. create new medical equipment.

6. The passage suggests that compared to natural cloning, artificial cloning
   a. costs far less.
   b. is less successful.
   c. has fewer problems.
   d. happens much faster.

7. We can infer that the scientists who created Dolly were motivated by
   a. riches and fame.
   b. a love of dinosaurs.
   c. scientific discovery.
   d. a need for sheep wool.

8. The author mentions Dolly's lambs (paragraph 6) to
   a. highlight the value of Dolly's wool.
   b. suggest that Dolly was a healthy sheep.
   c. show how some mammals can clone naturally.
   d. encourage the protection of endangered species.

9. The author concludes the passage by
   a. explaining how dinosaurs are cloned.
   b. warning about the dangers of cloning.
   c. listing some of the benefits of cloning.
   d. naming animals that have been cloned.

10. To *replicate* (paragraph 3) means to
    a. have an idea.
    b. make a copy.
    c. move quickly.
    d. study carefully.

Check your answers on page 218.

Burj Khalifa

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. historical buildings around Dubai.
   b. the construction of a tower in Dubai.
   c. extreme weather conditions near Dubai.
   d. a team of talented architects from Dubai.

2. An appropriate alternative title for this passage is
   a. The Inexpensive Cost of Luxury.
   b. Remarkable Towers Across Asia.
   c. The Tallest Building in the World.
   d. New Technologies in the Middle East.

3. The number of floors in the Willis Tower is
   a. 101.
   b. 110.
   c. 160.
   d. 207.

4. The CN Tower is located in
   a. Taiwan.
   b. Canada.
   c. the USA.
   d. the UAE.

5. Giorgio Armani uses 37 floors of the Burj Khalifa for a
   a. TV station.
   b. fancy hotel.
   c. design studio.
   d. shopping mall.

Check your answers on page 218.

6. The passage suggests that many buildings in Dubai
   a. are extremely tall and famous skyscrapers.
   b. also serve customers who are very wealthy.
   c. have been weakened by the extreme climate.
   d. have been designed by international architects.

7. We can infer that apartments in the tower sold out within hours because
   a. the tower's apartments were very popular.
   b. there were only a few apartments in the tower.
   c. the price of the apartments was extremely low.
   d. there are very few apartment buildings in Dubai.

8. The author mentions the Willis Tower (paragraph 3) when describing the
   a. floor record of the Burj Khalifa.
   b. unique shape of the Burj Khalifa.
   c. materials used to construct the Burj Khalifa.
   d. team of architects who designed the Burj Khalifa.

9. The author concludes the passage by
   a. describing a recent visit to the center of Dubai.
   b. emphasizing the skill required to build the tower.
   c. comparing the tower to other buildings in Dubai.
   d. predicting when the next tallest tower will be built.

10. A *facade* (paragraph 9) is
    a. the tallest point of a tower.
    b. a decorative water fountain.
    c. the outside wall of a building.
    d. a material used to reflect sunlight.

Giraffes

Comprehension Questions

Circle the best answer.

1. The main purpose of this passage is to
   a. share interesting facts about an animal.
   b. detail how zoos take care of their animals.
   c. explain why some animals are endangered.
   d. tell traditional stories about African animals.

2. An appropriate alternative title for this passage is
   a. As Fast as a Cheetah.
   b. In the Waters of Africa.
   c. The Tallest Land Animal.
   d. A Trip to Your Local Zoo.

3. A male giraffe weighs about as much as
   a. a bicycle.
   b. a small car.
   c. an airplane.
   d. a pickup truck.

4. The number of vertebrae in a giraffe's neck is
   a. 7.
   b. 10.
   c. 14.
   d. 25.

5. Giraffe's prefer to eat
   a. birds and lizards.
   b. grass and insects.
   c. lions and cheetahs.
   d. flowers and leaves.

6. The passage suggests that the greatest number of giraffes die from
   a. lion attacks.
   b. dry weather.
   c. human actions.
   d. lightning storms.

7. We can infer that a giraffe is most likely to be found in the
   a. forests of Brazil.
   b. mountains of China.
   c. rivers of New Zealand.
   d. grasslands of South Africa.

8. The author introduces the topic by
   a. highlighting giraffes' size.
   b. describing giraffes' sounds.
   c. comparing giraffes to elephants.
   d. telling a story about a giraffe's birth.

9. The author mentions fingerprints (paragraph 9) in
   a. comparing human and giraffe legs.
   b. describing how male giraffes fight.
   c. explaining the pattern of a giraffe's spots.
   d. telling how police track down giraffe hunters.

10. If something is *vigilant* (paragraph 8), it is very
    a. strong.
    b. careful.
    c. beautiful.
    d. interesting.

Check your answers on page 218.

Hiccups

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. a type of dieting medicine.
   b. an uncontrollable movement.
   c. an exciting new exercise plan.
   d. a sickness affecting old people.

2. An appropriate alternative title for this passage is
   a. A Cold Glass of Water.
   b. An Irrating Experience.
   c. Choosing Healthy Food.
   d. Dealing with a New Baby.

3. The diaphragm refers to
   a. a joke.
   b. a doctor.
   c. a muscle.
   d. an illness.

4. The author mentions all of the following possible causes of hiccups EXCEPT
   a. eating too quickly.
   b. drinking soda pop.
   c. walking on a hard floor.
   d. swallowing too much air.

5. Intractable hiccups are ones that last
   a. less than an hour.
   b. about one day.
   c. about one week.
   d. more than a month.

6. The passage suggests that some people thought that Jennifer Mee's hiccups were
   a. illegal.
   b. healthy.
   c. pretend.
   d. dangerous.

7. We can infer that the group that is most likely to experience hiccups is
   a. old men.
   b. old women.
   c. young men.
   d. young women.

8. The author mentions a paper bag (paragraph 6) to
   a. suggest a possible way to end hiccups.
   b. describe a scientific study about hiccups.
   c. show how a person often starts hiccupping.
   d. explain what the body does during a hiccup.

9. The author tells the story of Charles Osborne (paragraph 9) to
   a. offer a way to eliminate hiccups.
   b. describe how hiccups are studied.
   c. explain how hiccups can be started.
   d. show that people can live with hiccups.

10. If something is *startled* (paragraph 6), it
    a. has enough sleep.
    b. has too much time.
    c. is scared suddenly.
    d. is not very popular.

Check your answers on page 218.

Hypnotists

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. helping people stop bad habits.
   b. performing exciting magic shows.
   c. influencing the subconcious mind.
   d. solving crimes with police psychologists.

2. The main idea of this passage is
   a. some people doubt that hypnosis is real.
   b. hypnotism has many useful applications.
   c. hypnotism is a safe game to play with friends.
   d. some people use hypnosis to improve memory.

3. A stage hypnotist often uses a pocket watch to
   a. help someone enter a trance.
   b. safely measure a hypnotic state.
   c. time the length of a performance.
   d. cause a person to make ticking sounds.

4. The passage mentions all of the following methods to begin hypnosis EXCEPT
   a. listening to relaxing music.
   b. sitting on a pile of objects.
   c. paying attention to a quiet voice.
   d. carefully following a swinging coin.

5. Hypnosis is like daydreaming because in both states the person
   a. is bored.
   b. is relaxed.
   c. must be asleep.
   d. must be standing.

6. The passage suggests that hypnotism could help someone who wants to
   a. become taller.
   b. have a deeper voice.
   c. stop being afraid of cats.
   d. get faster at running races.

7. We can infer from the passage that police
   a. do not believe in hypnotism.
   b. will arrest stage hypnotists.
   c. may use hypnotism to learn about crimes.
   d. often need hypnotism to reduce work stress.

8. The author introduces the passage by
   a. describing a common image of a hypnotist.
   b. defining some keywords related to hypnosis.
   c. summarizing the history of hypnotic practices.
   d. sharing a personal experience with hypnotism.

9. The author mentions reading a book (paragraph 5) to
   a. explain what the mind does during a trance.
   b. show that hypnosis can solve reading problems.
   c. give an example of a way to end a person's trance.
   d. suggest an easy way to become an expert hypnotist.

10. *Hypnotherapy* (paragraph 7) is a
    a. club for people who enjoy hypnosis.
    b. way of using hypnotism to help people.
    c. belief that people cannot be hypnotized.
    d. training program for professional hypnotists.

Check your answers on page 218.

John Adams

Comprehension Questions

Circle the best answer.

1. This passage is about a man who is remembered as
   a. a champion of freedom.
   b. the most patient American.
   c. the first president of the USA.
   d. a man who improved farming.

2. An appropriate alternative title for this passage is
   a. Traveling to Learn Languages.
   b. Using Words to Bring Change.
   c. Making Good Friends for Life.
   d. Writing Interesting Storybooks.

3. Adams's most famous political position was as
   a. mayor of Boston.
   b. governor of Maryland.
   c. sentator from New York.
   d. president of the United States.

4. Adams was born in
   a. England.
   b. Virginia.
   c. Pennsylvania.
   d. Massachusetts.

5. Adams's family wanted him to become a
   a. lawyer.
   b. teacher.
   c. minister.
   d. politician.

6. The passage suggests that Adams changed his opinion about
   a. the value of writing.
   b. the need for education.
   c. loyalty to Great Britain.
   d. protecting people's rights.

7. We can infer from the passage that Adams was not as popular as Jefferson due to Adams's
   a. family.
   b. writings.
   c. personality.
   d. appearance.

8. The author mentions an event in 1770 (paragraph 7) to demonstrate Adams's
   a. dedication to his wife.
   b. commitment to fairness.
   c. desire to read other languages.
   d. difficulty in speaking politely.

9. The author mentions the Netherlands (paragraph 9) to highlight Adams's
   a. many political enemies.
   b. European family history.
   c. efforts during the Revolution.
   d. talent for writing news articles.

10. If someone is *irritable* (paragraph 4), that person is
    a. never honest.
    b. always funny.
    c. frequently lost.
    d. easily angered.

Check your answers on page 218.

Snoring

Comprehension Questions

Circle the best answer.

1. The main purpose of this passage is to
   a. discuss the social consequences of frequent snoring.
   b. describe common causes and treatments for snoring.
   c. provide a brief history of medical research into snoring.
   d. share amusing stories about snoring from popular media.

2. Information in this passage primarily comes from the field of
   a. entertainment.
   b. manufacturing.
   c. medical science.
   d. law enforcement.

3. Snoring results from
   a. an ear infection.
   b. a serious headache.
   c. a blockage in the airway.
   d. a cavity in the back teeth.

4. The passage mentions all of the following negative effects of snoring EXCEPT
   a. excessive thirst.
   b. a grumpy attitude.
   c. daytime sleepiness.
   d. difficulty focusing.

5. Adults with severe sleep apnea may need to
   a. wear a sleep mask to increase air flow.
   b. sleep in a larger bed with more pillows.
   c. use a device to move their jaw forward.
   d. have their tonsils and adenoids removed.

6. The passage suggests that the group which is most likely to snore is
   a. women.
   b. children.
   c. single people.
   d. senior citizens.

7. We can infer that sleep apnea
   a. results from family stress.
   b. affects teenagers the most.
   c. currently has no treatment.
   d. is linked to a person's weight.

8. The author mentions lumberjacks in the introduction to describe
   a. injuries that result in snoring.
   b. the noise some snorers make.
   c. how fresh air improves breathing.
   d. a job that causes sleeping problems.

9. The author concludes the passage by inviting readers to
   a. visit a doctor.
   b. try a new bed.
   c. move to a warmer climate.
   d. purchase medical equipment.

10. *Decibels* (paragraph 1) are
    a. stories about snoring.
    b. tools for cooking food.
    c. measurements of sound.
    d. people who work outside.

Check your answers on page 219.

Bounty Hunters

Comprehension Questions

Circle the best answer.

1. This passage describes a job in the field of
   a. performing arts.
   b. criminal justice.
   c. health insurance.
   d. physical science.

2. An appropriate alternative title for this passage is
   a. Stealing and Hiding.
   b. Racing and Winning.
   c. Studying and Improving.
   d. Investigating and Tracking.

3. The purpose of bail is to
   a. pay for damaged property.
   b. help a suspect hire a lawyer.
   c. provide better police equipment.
   d. ensure that a suspect attends court.

4. A fugitive refers to someone who
   a. arrests suspects.
   b. works in a prison.
   c. runs from the law.
   d. sees a crime happen.

5. A bounty hunter has no legal protection when
   a. arresting a suspect in a city that has police.
   b. traveling with a suspect in a personal vehicle.
   c. working with a team of other bounty hunters.
   d. following a suspect outside the country's borders.

6. The passage suggests that the most important qualities of bounty hunters are
   a. wealth and fame.
   b. humor and trickery.
   c. politeness and friendliness.
   d. intelligence and lawfulness.

7. We can infer that stories involving bounty hunters are usually
   a. sad.
   b. funny.
   c. exciting.
   d. romantic.

8. The author begins the passage by
   a. explaining the bail system.
   b. sharing a story about a judge.
   c. describing life in a US prison.
   d. naming a popular bounty hunter.

9. The author mentions Star Wars (paragraph 9) when
   a. describing main responsibilities of a bounty hunter.
   b. listing laws that restrict what bounty hunters can do.
   c. giving examples of bounty hunters in popular media.
   d. explaining the education and training of bounty hunters.

10. If someone is *apprehended* (paragraph 4), that person is
    a. angry.
    b. caught.
    c. terrible.
    d. missing.

Check your answers on page 219.

Prosthetics

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. dentists who design and create artificial teeth.
   b. robots who do tasks that humans cannot easily do.
   c. devices that replace a missing or damaged body part.
   d. sports competitions for people with physical challenges.

2. An appropriate alternative title for this passage is
   a. Becoming a Star Athlete.
   b. Building a New Computer.
   c. Providing Power to the Disabled.
   d. Working with Disappointed Children.

3. There is evidence of prosthetics in ancient Egypt in the form of
   a. false teeth.
   b. hook hands.
   c. wooden legs.
   d. artificial toes.

4. A robotic prosthesis is one that
   a. has natural skin color.
   b. is built for a machine.
   c. has the ability to move.
   d. is controlled by the brain.

5. The Paralympic Games is an event for
   a. athletes with disabilities.
   b. children who cannot talk.
   c. doctors who design prostheses.
   d. researchers who study robotics.

6. The passage suggests that false teeth were primarily designed to help
   a. smiles look better.
   b. people chew food.
   c. teach new dentists.
   d. perform magic tricks.

7. We can infer from the passage that, in the future, prostheses will
   a. have a more robotic appearance.
   b. cost much more than they do today.
   c. help with a greater variety of disabilities.
   d. work much better than natural body parts.

8. The author mentions pirates (paragraph 3) to
   a. give examples of prostheses.
   b. highlight natural looking prostheses.
   c. describe the expense of prosthetic limbs.
   d. emphasize advances in prosthetic design.

9. The author shares the story of an athlete (paragraph 6) to
   a. show how prostheses are better than natural limbs.
   b. tell why sports teams buy prostheses for their players.
   c. explain why someone might own more than one prosthesis.
   d. describe why scientists have trouble designing brain sensors.

10. If something is *congenital* (paragraph 1), it
    a. exists at birth.
    b. only affects males.
    c. is designed for babies.
    d. results from an accident.

Check your answers on page 219.

Renaissance Fairs

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. a festival celebrating history.
   b. a game involving horse riding.
   c. interesting wedding celebrations.
   d. parties for people who trade books.

2. The Renaissance is
   a. a kind of British play.
   b. a type of food from France.
   c. a period of European history.
   d. a style of costumes from Italy.

3. Many structures at Renaissance fairs are
   a. barns.
   b. tents.
   c. houses.
   d. statues.

4. Many people at Renaissance fairs like to speak a form of
   a. Old World French.
   b. New World Spanish.
   c. Late Century Italian.
   d. Early Modern English.

5. All of the following are common Renaissance fair activities EXCEPT
   a. enjoying good food.
   b. shopping for jewelry.
   c. listening to live music.
   d. playing computer games.

6. The passage suggests that jesters are
   a. fast.
   b. strong.
   c. funny.
   d. beautiful.

7. We can infer that that someone is attending a Renaissance fair based on that person's
   a. car.
   b. pet.
   c. clothing.
   d. hair color.

8. The author introduces the topic by
   a. comparing new and old food.
   b. summarizing historical events.
   c. sharing some Medieval phrases.
   d. describing Renaissance clothing.

9. The author mentions glass (paragraph 5) to
   a. explain a dining custom.
   b. emphasize a possible danger.
   c. describe traditional buildings.
   d. highlight the work of artisans.

10. *Vendors* (paragraph 6) are people who
    a. eat food.
    b. sell things.
    c. make jokes.
    d. play sports.

Check your answers on page 219.

Flying Cars

Comprehension Questions

Circle the best answer.

1. The main purpose of this passage is to
   a. discuss how flying cars will change traffic laws.
   b. describe various attempts at creating flying cars.
   c. share details about flying cars from science fiction.
   d. emphasize the need for flying cars in today's society.

2. An appropriate alternative title for this passage is
   a. A Factory Worker's Life.
   b. Visiting Foreign Countries.
   c. Still Waiting for the Future.
   d. The Fastest Cars on the Road.

3. The time per week that the average US driver spends in traffic jams is
   a. 1 hour.
   b. 2 hours.
   c. 4 hours.
   d. 8 hours.

4. The flying car with a separate back end containing wings was called
   a. Skycar.
   b. Jetson.
   c. Autoplane.
   d. Airphibian.

5. The Transition flying car operates on
   a. solar power.
   b. liquid propane.
   c. regular gasoline.
   d. electrical battery.

6. The passage suggests that the idea of a flying car is
   a. popular but difficult.
   b. easy but uninteresting.
   c. humorous and foolish.
   d. dangerous and impossible.

7. One factor that would make flying cars less useful is
   a. the expense of airplane tickets.
   b. the joy of flying a personal airplane.
   c. the ease of renting cars at airports.
   d. the discomfort of flying with strangers.

8. The author highlights people's disappointment with flying cars by
   a. contrasting popular TV and movies with current reality.
   b. describing numerous crashes involving flying car models.
   c. explaining the number of passengers in a single flying car.
   d. providing cost comparisons between regular and flying cars.

9. The author mentions pilot licensing to highlight
   a. the first flying cars.
   b. flying car inventors.
   c. alternatives to flying cars.
   d. problems with flying cars.

10. If something *transitions* (paragraph 6), it
    a. flies.
    b. drops.
    c. speeds.
    d. changes.

Check your answers on page 219.

Polar Bears

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. different varieties of polar bears.
   b. threats to polar bear populations.
   c. the characteristics of polar bears.
   d. the role of polar bears in Arctic cultures.

2. An appropriate alternative title for this passage is
   a. King of the Arctic.
   b. Climbers Not Swimmers.
   c. Sleeping Through Winter.
   d. Building Homes in the Snow.

3. An adult male polar bear can be as long as
   a. 3 feet.
   b. 9 feet.
   c. 12 feet.
   d. 20 feet.

4. The author mentions all of the following purposes of polar bear feet EXCEPT
   a. climbing trees.
   b. digging in the snow.
   c. walking on slippery ice.
   d. swimming in the water.

5. The part of a seal that adult polar bears usually eat is the
   a. fat.
   b. eyes.
   c. teeth.
   d. bones.

6. The passage suggests that polar bears spend most of their time
   a. hunting.
   b. playing.
   c. sleeping.
   d. swimming.

7. We can infer that polar bears do best in an environment with
   a. tall trees.
   b. long grass.
   c. warm water.
   d. cold weather.

8. The author mentions holes (paragraph 6) when explaining
   a. where polar bears live.
   b. how well polar bears see.
   c. how polar bears catch food.
   d. why polar bears have long fur.

9. The author mentions walruses (paragraph 8) to
   a. compare socialization practices.
   b. give an example of polar bear food.
   c. list one of the dangers to polar bears.
   d. show differences in swimming skills.

10. *Blubber* (paragraph 3) is a
    a. small fish.
    b. cold wind.
    c. layer of fat.
    d. type of water.

Check your answers on page 219.

The Beatles

Comprehension Questions

Circle the best answer.

1. This passage is mostly about a music
   a. style.
   b. album.
   c. group.
   d. manager.

2. The best alternative title for this passage is
   a. The Rock and Roll Hall of Fame Museum.
   b. Famous Musicians Who Come from the UK.
   c. The History of British Rock and Roll Culture.
   d. One of History's Most Successful Rock Bands.

3. Pete Best left the Beatles
   a. for political reasons.
   b. because he became sick.
   c. to fight in the Vietnam War.
   d. due to his weak musical skill.

4. Brian Epstein wanted to change the Beatles'
   a. name and lead singer.
   b. accents and song lyrics.
   c. appearance and behavior.
   d. musical style and instruments.

5. In 1965, the Beatles set a record for having
   a. the best-selling album in history.
   b. the highest-earning music single.
   c. the highest attendance at a musical performance.
   d. the greatest number of weeks with a Top 40 song.

Check your answers on page 219.

6. The author begins this passage by
   a. quoting lines from a famous Beatles song.
   b. sharing the history of the Beatles' formation.
   c. comparing the Beatles with other rock bands.
   d. describing the music style that the Beatles played.

7. The author mentions the Rolling Stones (paragraph 6) to
   a. give an example of a former name for the Beatles.
   b. explain how the Beatles found their music manager.
   c. contrast the Beatles' old songs with popular music today.
   d. show that the Beatles were not the only popular UK band.

8. Between 1965 and 1967, the Beatles
   a. played no live music performances.
   b. refused to travel outside of the UK.
   c. became more political in their message.
   d. were recognized by their leather jackets.

9. Young people today are likely to be familiar with the Beatles because
   a. new Beatles albums are released every year.
   b. the Beatles appear in many current movies.
   c. the original Beatles recently toured the USA.
   d. old music by the Beatles is still popular today.

10. A *guru* (paragraph 8) is a
    a. British politician.
    b. musical instrument.
    c. person who gives advice to others.
    d. traditional musical style from Asia.

Meteorologists

Comprehension Questions

Circle the best answer.

1. The main purpose of this passage is to
   a. compare meteorological devices.
   b. explain what a meteorologist does.
   c. describe extreme meteorological events.
   d. summarize the life of the first meteorologist.

2. Meteorology is the study of
   a. objects in outer space.
   b. computer technology.
   c. the planet's plants and animals.
   d. the atmosphere and weather.

3. Most people are familiar with meteorologists who are
   a. research scientists.
   b. weather forecasters.
   c. technology inventors.
   d. university educators.

4. Aristotle is recognized by meteorologists as the
   a. observer of the first lightning storm.
   b. inventor of the first weather balloon.
   c. author of the first book on meteorology.
   d. photographer of the first meteorological photos.

5. Meteorologists used radar to
   a. observe gaps in the ozone layer.
   b. measure rain and wind patterns.
   c. check the speed of lightning bolts.
   d. track the movement of weather balloons.

6. We can infer that the author of this passage thinks that weather forecasters are
   a. always accurate.
   b. accurate very often.
   c. accurate only sometimes.
   d. never accurate.

7. The passage suggests that most research meteorologists work
   a. for television stations.
   b. in stations near the ocean.
   c. without any university degree.
   d. with scientists from other countries.

8. The author begins this passage by
   a. defining an important key term.
   b. describing a common problem.
   c. telling a story about a famous person.
   d. asking a set of interesting questions.

9. The author mentions volcanoes (paragraph 6) to
   a. explain how rainfall impacts cities.
   b. give an example of a research topic.
   c. describe the life of a famous scientist.
   d. show where research stations are located.

10. To *synthesize* (paragraph 2) means to
    a. attend graduate school for many years.
    b. share useful ideas with other scientists.
    c. combine information from multiple sources.
    d. closely follow a single weather phenomenon.

Check your answers on page 219.

Empress Dowager Cixi

Comprehension Questions

Circle the best answer.

1. This passage is mostly about a woman who
   a. left China to study in the West.
   b. was arrested for spying on China.
   c. held great political power in China.
   d. taught the Chinese emperor to read.

2. An appropriate alternative title for this passage is
   a. A Peaceful Life.
   b. A Powerful Mother.
   c. A Beautiful Wedding.
   d. A Disappointing Daughter.

3. As a young woman, Cixi gained power in the court because she
   a. was elected by the people.
   b. married a powerful regent.
   c. gave birth to the emperor's son.
   d. invaded the palace with her army.

4. According to the passage, Ci'an was Cixi's
   a. enemy.
   b. mother.
   c. co-ruler.
   d. daughter.

5. The Boxer Rebellion fought against
   a. royalty in Chinese politics.
   b. traditional Chinese culture.
   c. Western influence in China.
   d. Chinese soldiers in the West.

6. We can infer that Cixi's feeling toward the regents was
   a. sadness.
   b. respect.
   c. cooperation.
   d. competition.

7. The passage suggests that historians disagree
   a. about when Cixi's son died.
   b. on the quality of Cixi's leadership.
   c. about whether Cixi ruled over China.
   d. on the date that Cixi became a mother.

8. The author mentions literacy (paragraph 3) to explain
   a. how the emperor selected his friends.
   b. how Cixi learned about China's politics.
   c. why China was such a powerful country.
   d. why some Chinese did not like foreigners.

9. The author mentions the United States (paragraph 7) to
   a. name one of Cixi's greatest enemies.
   b. detail Cixi's plans for improvement.
   c. explain how Cixi was able to gain control.
   d. describe how Cixi learned to read and write.

10. If someone *craved* something (paragraph 5), that person
    a. gave something.
    b. wrote something.
    c. found something.
    d. wanted something.

Check your answers on page 219.

Improvisational Performers

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. people who like to go to the theater.
   b. famous movie and television actors.
   c. writing scripts for stage performances.
   d. performing without a planned script.

2. An appropriate alternative title for this passage is
   a. Performers Who Can Sing and Dance.
   b. The Need for More Serious Performances.
   c. The Excitement of an Unplanned Performance.
   d. Performances at a Famous New York City Theater.

3. The word improvise is related to a Latin word which means
   a. unplanned.
   b. uninteresting.
   c. unforgettable.
   d. uncomfortable.

4. Charlie Chaplin was
   a. an improv movie star.
   b. a movie theater owner.
   c. a television show director.
   d. the creator of improv theater.

5. Improv classes can help people develop all of the following EXCEPT
   a. stronger muscles.
   b. better social skills.
   c. greater confidence.
   d. improved speaking.

6. The passage suggests that a good improv performer
   a. prepares a set of jokes ahead of time.
   b. adds to the ideas of other performers.
   c. likes to talk to and control other people.
   d. rejects suggestions that are silly or strange.

7. We can infer that if we attended several improv shows,
   a. each performance would be very different.
   b. the first performance would be the best show.
   c. the audience would have to perform at each show.
   d. the performers would be tired during the last show.

8. The author introduces the passage by
   a. describing an improv scene.
   b. comparing improv to shopping.
   c. highlighting the benefits of improv.
   d. naming some popular improv actors.

9. The author mentions fingerprints (paragraph 5) in
   a. comparing the talents of different improv actors.
   b. explaining the differences between improv shows.
   c. describing the best time to watch an improv show.
   d. telling how difficult it is to train as an improv actor.

10. If something *impedes* (paragraph 3), it
    a. laughs loudly.
    b. speaks quickly.
    c. stops something.
    d. grows something.

Check your answers on page 219.

The Anger of Vulcan

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. scientific tools.
   b. Hawaiian legends.
   c. Roman mythology.
   d. volcanic eruptions.

2. The best alternative title for this passage is
   a. Types of Volcanoes.
   b. The Tourism Industry.
   c. The Impact of Eruptions.
   d. Dangers in the Roman Era.

3. For the Roman gods, Vulcan's job was to
   a. fight the gods' enemies.
   b. make objects from metal.
   c. form mountains and hills.
   d. protect the gods' treasures.

4. Vulcan's personality was
   a. lazy.
   b. angry.
   c. lonely.
   d. fearful.

5. When lava flows threaten villages, locals react by
   a. digging holes to trap the lava.
   b. using cold air to cool the lava.
   c. building a wall around the lava.
   d. getting out of the way of the lava.

6. The city of Pompeii
   a. was buried in ash.
   b. was built by Vulcan.
   c. is located in Hawaii.
   d. has never been found.

7. The author mentions Iceland to
   a. illustrate the need for volcano warning systems.
   b. explain how volcanoes damage natural wildlife.
   c. offer an example of a region that is safe from volcanoes.
   d. demonstrate the widespread impact of volcanic smoke.

8. The passage suggests that most of the people of Pompeii died from
   a. poisonous gas.
   b. fast-moving lava.
   c. extremely hot air.
   d. collapsed buildings.

9. We can infer that a volcanic eruption is caused by the
   a. force of hot winds against caves.
   b. actions of an ancient Roman god.
   c. movement of underground rocks.
   d. construction of cities on mountains.

10. Someone who is *aggressive* (paragraph 2) is likely to
    a. have large muscles.
    b. attack other people.
    c. be a good teammate.
    d. hide personal feelings.

Check your answers on page 219.

Meteor Showers

Comprehension Questions

Circle the best answer.

1. The main purpose of this passage is to
   a. announce upcoming meteor showers.
   b. educate readers about meteor showers.
   c. summarize movies about meteor showers.
   d. inform readers about recent meteor showers.

2. Information from this passage comes primarily from the field of
   a. politics.
   b. biology.
   c. economics.
   d. astronomy.

3. Romans believed that meteor showers
   a. displayed the gods' anger.
   b. were the wishes of children.
   c. were groups of grasshoppers.
   d. displayed a season of good luck.

4. Meteors become a meteor shower when
   a. there are at least 15 meteors in the group.
   b. the meteors are at least 33 feet in diameter.
   c. the meteors travel at least 26 miles per second.
   d. at least 50 percent of the meteors land on Earth.

5. Meteors are named based on the
   a. star groups where they originate.
   b. country where they are observed.
   c. speed at which the meteors travel.
   d. month of the year that they appear.

6. The passage suggests that Hollywood films about meteors
   a. exaggerate the size of meteorites.
   b. help scientists study meteor paths.
   c. depict meteor showers in the spring.
   d. are not very popular with audiences.

7. We can infer that meteors are best viewed
   a. in a large city at night time.
   b. with a telescope during the day.
   c. in the countryside in August.
   d. with binoculars toward the west.

8. The author introduces the topic by
   a. comparing Earth to Mars.
   b. defining some key words.
   c. summarizing a children's story.
   d. describing a typical meteor shower.

9. The author mentions bug repellent (paragraph 10) to
   a. describe the appearance of a burning meteor.
   b. explain how to avoid being hit by a meteorite.
   c. provide an estimate of the average meteor size.
   d. suggest how to prepare to view a meteor shower.

10. To *disintegrate* (paragraph 6) means to
    a. shine brightly.
    b. move very slowly.
    c. break in tiny pieces.
    d. have a bumpy surface.

Check your answers on page 219.

Tornadoes

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. how experts find and study tornadoes.
   b. how tornadoes are created and identified.
   c. what scientists can do to prevent tornadoes.
   d. which tornadoes were the most destructive.

2. An appropriate alternative title for this passage is
   a. Building Houses in Tornado Alley.
   b. Nature's Most Violent Wind Storms.
   c. A Town in the Middle of the Great Plains.
   d. Unusual Weather Patterns Around the World.

3. A strong tornado has wind speeds of
   a. 40 to 75 miles per hour.
   b. 76 to 109 miles per hour
   c. 110 to 205 miles per hour.
   d. 206 to 300 miles per hour.

4. Most tornadoes occur in
   a. Asia.
   b. Africa.
   c. Europe
   d. North America.

5. Tornadoes are usually caused by
   a. long periods without rain.
   b. pollution from large cities.
   c. the mixing of hot and cold air.
   d. heat from decomposing forests.

6. The passage suggests that tornadoes are less frequent in regions with
   a. deserts.
   b. mountains.
   c. cold winters.
   d. warm summers.

7. We can infer that, during a tornado, a person is safest
   a. under a large tree.
   b. under an old truck.
   c. in an upstairs room.
   d. in a basement room.

8. The author mentions schools (paragraph 7) to
   a. list designated safety locations.
   b. demand more scientific research.
   c. explain safe construction methods.
   d. describe emergency preparations.

9. The author concludes the passage by
   a. offering a warning.
   b. defining a key word.
   c. sharing a personal story.
   d. quoting a famous scientist.

10. To *collide* (paragraph 4) means to
    a. hit.
    b. fall.
    c. repeat.
    d. change.

Check your answers on page 219.

BASE Jumping

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. a military group.
   b. a computer game.
   c. a dangerous sport.
   d. an adventure movie.

2. The term BASE refers to
   a. food that jumpers eat.
   b. clothing that jumpers wear.
   c. tricks that jumpers perform.
   d. locations that jumpers use.

3. One similarity between BASE jumping and skydiving is that they both
   a. use parachutes.
   b. involve airplanes.
   c. are only for women.
   d. are illegal activities.

4. Troll Wall is a mountain in
   a. Iceland.
   b. Norway.
   c. the United States.
   d. the United Kingdom.

5. A BASE jumper can receive a numbered rank once that person has
   a. landed at least 200 successful jumps.
   b. beaten the record for the tallest jump.
   c. finished 100 jumps within a period of 24 hours.
   d. completed a jump from each type of structure.

6. The passage suggests that compared to skydiving, BASE jumping
   a. is less exciting.
   b. is more popular.
   c. is less expensive.
   d. is more dangerous.

7. We can infer that most BASE jumpers are
   a. thrill seekers.
   b. young children.
   c. afraid of heights.
   d. over 60 years old.

8. The author mentions Yosemite National Park as
   a. the location where BASE jumping began.
   b. the only spot where BASE jumping is illegal.
   c. the site where the BASE jumping creator was killed.
   d. the home of a new school for beginner BASE jumpers.

9. The author mentions the police (paragraph 5) when describing
   a. the dangers of BASE jumping.
   b. the best places to do BASE jumping.
   c. the equipment used in BASE jumping.
   d. the people who invented BASE jumping.

10. If someone *perished* (paragraph 3), that person
    a. ran.
    b. died.
    c. worked.
    d. invented.

Check your answers on page 219.

Michelangelo Buonarroti

Comprehension Questions

Circle the best answer.

1. This passage is mostly about a man who
   a. collected Renaissance sculptures.
   b. built Europe's biggest art museum.
   c. created several famous works of art.
   d. trained some of Europe's best painters.

2. Michelangelo is best remembered for his
   a. anger.
   b. talent.
   c. wealth.
   d. kindness.

3. Michelangelo was admitted to an art academy at age 14 because
   a. his father was very rich.
   b. he showed great potential.
   c. his mother was friends with the teacher.
   d. he told the teacher that he was 18 years old.

4. At age 21, Michelangelo sculpted the *Pieta* which depicts
   a. Mary and her son Jesus.
   b. an Italian shepherd boy.
   c. King Charles of France.
   d. an ancient Roman soldier.

5. When Michelangelo began work on the *David* statue,
   a. he broke the stone in half.
   b. he was only 16 years old.
   c. it had already been started.
   d. it was planned to be smaller.

Check your answers on page 219.

6. The passage suggests that the church leader in Rome was more interested in
   a. learning to paint than eating well.
   b. supporting art than punishing sin.
   c. studying grammar than viewing art.
   d. earning money than showing kindness.

7. We can infer that at the time of his death, Michelangelo
   a. was already widely respected as a great artist.
   b. was considered a liar based on his many tricks.
   c. had not achieved fame outside of his home town.
   d. had become the world's most popular art teacher.

8. The author mentions love poetry (paragraph 9) to
   a. show the the artist's skill with language.
   b. emphasize the artist's solitary family life.
   c. point out the artist's popularity with people.
   d. explain where the artist's ideas came from.

9. The author mentions boots (paragraph 9) to
   a. compare two of Michelangelo's sculptures.
   b. highlight Michelangelo's unusual behavior.
   c. explain an unusual law in Michelangelo's time.
   d. describe one of Michelangelo's famous paintings.

10. If someone *clamored* (paragraph 9), that person
    a. felt sad.
    b. told lies.
    c. acted kindly.
    d. asked strongly.

William Wilberforce

Comprehension Questions

Circle the best answer.

1. This passage is mostly about a
   a. sea captain.
   b. military officer.
   c. British politician.
   d. university professor.

2. Wilberforce dedicated his career to
   a. ending slavery.
   b. creating music.
   c. teaching literacy.
   d. traveling the world.

3. Wilberforce was sent to London after
   a. his father died.
   b. he became a slave.
   c. his home was burned.
   d. he graduated university.

4. John Newton is famous for
   a. writing a song.
   b. building a ship.
   c. serving in Parliament.
   d. helping the Russian tsar.

5. Each year in the 1790s, Wilberforce
   a. traveled to western Africa.
   b. taught a class at Cambridge.
   c. proposed the same new law.
   d. wrote to his cousin in France.

6. The passage suggests that Wilberforce joined the abolitionists because
   a. government leaders asked him to help.
   b. the cause matched his religious beliefs.
   c. he had become friends with many slaves.
   d. his mother encouraged him to get involved.

7. We can infer that the life of an abolitionist was
   a. easy.
   b. popular.
   c. dangerous.
   d. uninteresting.

8. The author begins the passage by
   a. telling stories of Wilberforce's early life.
   b. giving a short history of slavery practices.
   c. describing the moment when Wilberforce won.
   d. explaining why some people supported slavery.

9. The author mentions Abraham Lincoln (paragraph 8) to
   a. show why Wilberforce often needed to travel.
   b. demonstrate the impact of Wilberforce's work.
   c. name a person who influenced Wilberforce's beliefs.
   d. explain how Wilberforce became interested in politics.

10. If something is *renounced* (paragraph 2), it is
    a. rejected.
    b. repeated.
    c. restored.
    d. recovered.

Check your answers on page 219.

Fountain of Youth

Comprehension Questions

Circle the best answer.

1. The main purpose of this passage is to
   a. explain when and how a famous explorer died.
   b. provide a history of the early Caribbean cultures.
   c. describe various stories about a legendary location.
   d. summarize a popular film about a group of adventurers.

2. The most appropriate alternative title for this passage is
   a. In Need of a Long Bath.
   b. In Trouble with the King.
   c. In Search of Magic Water.
   d. In Times of War and Peace.

3. The legendary fountain was believed to give
   a. long life.
   b. many riches.
   c. great beauty.
   d. powerful speech.

4. The Greek Herodotus wrote that the fountain could be found in
   a. India.
   b. Florida.
   c. Ethiopia.
   d. Macedonia.

5. Juan Ponce de León was
   a. a biologist.
   b. an explorer.
   c. a famous king.
   d. a history teacher.

6. The author suggests that the fountain
   a. is probably not real.
   b. is located in the Bahamas.
   c. can only be used for good.
   d. can only help young people.

7. We can infer that Juan Ponce de León was
   a. often angry.
   b. very brave.
   c. usually sick.
   d. always happy.

8. The author mentions the Arawak chief named Sequene (paragraph 4) to
   a. emphasize how strongly some groups believed in the fountain.
   b. give an example of people who doubted the legend of the fountain.
   c. explain who the Spaniards blamed for the murder of Ponce de León.
   d. offer evidence that the fountain was located along the coast of Florida.

9. The author concludes the passage by
   a. suggesting that readers visit the Caribbean Islands.
   b. hinting at the true location of the mystical fountain.
   c. reminding readers of the contributions of Ponce de León.
   d. listing alternative interpretations of the secret to long life.

10. If something is *figurative* (paragraph 9), it
    a. involves the use of magic.
    b. represents something else.
    c. helps someone stay healthy.
    d. requires mathematical skill.

Check your answers on page 219.

Solar Flares

Comprehension Questions

Circle the best answer.

1. This passage is mostly about
   a. explosions of energy from the sun.
   b. earthquakes on Earth caused by the sun.
   c. skin diseases that result from too much sun.
   d. how people's attitude is influenced by the sun.

2. The main purpose of this passage is to
   a. teach about the effects and causes of solar flares.
   b. explain how scientists study solar flares from space.
   c. encourage readers to help lower the impact of solar flares.
   d. describe technologies that protect people from solar flares.

3. The number of stages in the creation of a solar flare is
   a. 2.
   b. 3.
   c. 4.
   d. 5.

4. Richard Carrington and Richard Hodgson
   a. worked together to create a solar flare.
   b. cooperated on a book about solar flares.
   c. independently observed the same solar flare.
   d. disagreed on the date of the same solar flare.

5. Solar flares affect auroras by
   a. causing them to stay still.
   b. making them more colorful.
   c. moving them to polar regions.
   d. preventing them from appearing.

6. The passage suggests that the temperature on the surface of the sun is
   a. much hotter than anything humans have felt.
   b. cooler than the temperature inside Earth's core.
   c. similar to the temperature on a hot summer day.
   d. expected to remain constant throughout the year.

7. We can infer that major solar flare events on Earth
   a. are not very frequent.
   b. bring many useful benefits.
   c. only affect the polar regions.
   d. result in strange animal behavior.

8. The author mentions telescopes (paragraph 4) as
   a. the most common cause of solar flare events.
   b. a safe and useful tool to observe solar flares.
   c. the best way to study how solar flares affect other planets.
   d. an example of technologies that are destroyed by solar flares.

9. The author mentions telegraph machines (paragraph 5) to
   a. explain how scientists looked at the first solar flare.
   b. describe the negative effects of solar flares on Earth.
   c. tell how scientists share information about solar flares.
   d. give an example of a device that can predict solar flares.

10. If something is *astounding* (paragraph 2), it is
    a. not true.
    b. surprising.
    c. dangerous.
    d. not important.

Check your answers on page 219.

Answer Key

Kangaroos
1. c 2. d 3. c 4. c 5. c
6. b 7. a 8. d 9. d 10. c

Neil Armstrong
1. b 2. a 3. a 4. b 5. d
6. d 7. c 8. b 9. d 10. b

The Polar Lights
1. d 2. b 3. a 4. c 5. c
6. a 7. a 8. c 9. a 10. d

Ernest Shackleton
1. c 2. d 3. b 4. c 5. c
6. d 7. d 8. c 9. a 10. b

Sumo Wrestling
1. a 2. d 3. a 4. c 5. d
6. d 7. c 8. b 9. c 10. b

Dreams
1. c 2. a 3. b 4. a 5. a
6. a 7. a 8. c 9. d 10. d

Llamas
1. a 2. a 3. d 4. b 5. b
6. a 7. a 8. b 9. a 10. d

Wind Power
1. a 2. d 3. b 4. c 5. a
6. a 7. c 8. b 9. b 10. d

Déjà Vu
1. c 2. d 3. a 4. d 5. b
6. a 7. a 8. b 9. b 10. d

Genealogy
1. a 2. a 3. c 4. c 5. c
6. a 7. d 8. d 9. a 10. b

Static Electricity
1. a 2. a 3. a 4. b 5. c
6. c 7. a 8. a 9. d 10. b

3D Printing
1. c 2. a 3. a 4. a 5. b
6. b 7. b 8. a 9. d 10. b

Christopher Reeve
1. c 2. c 3. d 4. a 5. c
6. c 7. b 8. a 9. a 10. c

Earth's Crust
1. b 2. b 3. a 4. a 5. d
6. a 7. c 8. a 9. c 10. c

Penguins
1. a 2. b 3. a 4. a 5. d
6. b 7. a 8. c 9. d 10. b

Rockets
1. c 2. d 3. a 4. b 5. b
6. c 7. a 8. b 9. c 10. c

Yawning
1. a 2. c 3. b 4. a 5. c
6. d 7. c 8. c 9. a 10. d

The Corps of Discovery
1. b 2. c 3. b 4. a 5. d
6. a 7. d 8. c 9. a 10. a

Bobsledding
1. c 2. c 3. c 4. b 5. b
6. d 7. b 8. a 9. c 10. b

Geocaching
1. b 2. c 3. c 4. a 5. a
6. a 7. b 8. a 9. b 10. b

Pawnbrokers
1. c 2. c 3. b 4. a 5. b
6. b 7. c 8. d 9. a 10. a

Piranhas
1. a 2. c 3. c 4. b 5. b
6. c 7. c 8. c 9. b 10. d

Princess Grace
1. a 2. a 3. d 4. c 5. c
6. d 7. a 8. d 9. d 10. d

Solar Panels
1. b 2. b 3. d 4. a 5. c
6. a 7. d 8. c 9. a 10. c

Antarctica
1. d 2. b 3. a 4. c 5. d
6. a 7. d 8. a 9. b 10. a

King Christian X
1. d 2. b 3. a 4. d 5. c
6. d 7. c 8. d 9. b 10. c

Mount Fuji
1. b 2. b 3. a 4. a 5. b
6. a 7. a 8. d 9. c 10. b

Parkour
1. c 2. a 3. d 4. b 5. d
6. d 7. d 8. d 9. a 10. d

Steve Jobs
1. b 2. c 3. b 4. b 5. a
6. b 7. b 8. a 9. c 10. a

X-Rays
1. a 2. c 3. b 4. b 5. b
6. a 7. a 8. c 9. b 10. b

American Bison
1. b 2. b 3. d 4. d 5. d
6. c 7. d 8. a 9. c 10. b

Halley's Comet
1. a 2. a 3. d 4. a 5. c
6. c 7. a 8. a 9. a 10. a

Ultimate
1. c 2. a 3. c 4. c 5. a
6. c 7. a 8. b 9. a 10. d

Duct Tape Art
1. a 2. c 3. c 4. a 5. a
6. d 7. a 8. c 9. d 10. a

Tsunamis
1. a 2. c 3. c 4. d 5. d
6. a 7. b 8. c 9. d 10. d

Jackie Robinson
1. a 2. d 3. b 4. a 5. c
6. a 7. d 8. d 9. c 10. c

Star Wars
1. c 2. b 3. d 4. a 5. d
6. b 7. b 8. b 9. b 10. c

The Equator
1. c 2. c 3. b 4. b 5. b
6. b 7. c 8. d 9. c 10. b

United States Coast Guard
1. a 2. a 3. a 4. b 5. c
6. c 7. a 8. a 9. c 10. d

Ferdinand Magellan
1. a 2. c 3. b 4. a 5. a
6. d 7. c 8. d 9. c 10. b

Caving
1. a 2. d 3. a 4. c 5. b
6. a 7. b 8. b 9. a 10. b

Ghost Hunting
1. d 2. c 3. c 4. b 5. a
6. d 7. c 8. b 9. a 10. c

Global Warming
1. b 2. a 3. d 4. b 5. a
6. c 7. a 8. d 9. a 10. c

Sudoku Puzzles
1. a 2. a 3. b 4. a 5. a
6. a 7. a 8. a 9. c 10. d

Franklin D. Roosevelt
1. d 2. b 3. a 4. a 5. d
6. c 7. a 8. b 9. d 10. a

Bar Mitzvahs
1. d 2. d 3. d 4. a 5. b
6. d 7. a 8. a 9. b 10. d

Dolly the Sheep
1. a 2. a 3. a 4. a 5. b
6. b 7. c 8. b 9. c 10. b

Burj Khalifa
1. b 2. c 3. b 4. b 5. b
6. c 7. a 8. a 9. b 10. c

Giraffes
1. a 2. c 3. d 4. a 5. d
6. c 7. d 8. a 9. c 10. b

Hiccups
1. b 2. b 3. c 4. c 5. d
6. c 7. c 8. a 9. d 10. c

Hypnotists
1. c 2. b 3. a 4. b 5. b
6. c 7. c 8. a 9. a 10. b

John Adams
1. a 2. b 3. d 4. d 5. c
6. c 7. c 8. b 9. c 10. d

Snoring

1. b	2. c	3. c	4. a	5. a
6. d	7. d	8. b	9. a	10. c

Bounty Hunters

1. b	2. d	3. d	4. c	5. d
6. d	7. c	8. a	9. c	10. b

Prosthetics

1. c	2. c	3. d	4. c	5. a
6. b	7. c	8. a	9. c	10. a

Renaissance Fairs

1. a	2. c	3. b	4. d	5. d
6. c	7. c	8. b	9. d	10. b

Flying Cars

1. b	2. c	3. a	4. d	5. c
6. a	7. c	8. a	9. d	10. d

Polar Bears

1. c	2. a	3. b	4. a	5. a
6. a	7. d	8. c	9. b	10. c

The Beatles

1. c	2. d	3. d	4. c	5. c
6. b	7. d	8. c	9. d	10. c

Meteorologists

1. b	2. d	3. b	4. c	5. b
6. b	7. d	8. a	9. b	10. c

Empress Dowager Cixi

1. c	2. b	3. c	4. c	5. c
6. d	7. b	8. b	9. b	10. d

Improvisational Performers

1. d	2. c	3. a	4. a	5. a
6. b	7. a	8. a	9. b	10. c

The Anger of Vulcan

1. d	2. c	3. b	4. b	5. d
6. a	7. d	8. c	9. c	10. b

Meteor Showers

1. b	2. d	3. a	4. a	5. a
6. a	7. c	8. c	9. d	10. c

Tornadoes

1. b	2. b	3. c	4. d	5. c
6. b	7. d	8. d	9. a	10. a

BASE Jumping

1. c	2. d	3. b	4. b	5. d
6. d	7. a	8. a	9. a	10. b

Michelangelo Buonarroti

1. c	2. b	3. b	4. a	5. c
6. b	7. a	8. b	9. b	10. d

William Wilberforce

1. c	2. a	3. a	4. a	5. c
6. b	7. c	8. b	9. b	10. a

Fountain of Youth

1. c	2. c	3. a	4. c	5. b
6. a	7. b	8. a	9. d	10. b

Solar Flares

1. a	2. a	3. b	4. c	5. b
6. a	7. a	8. b	9. b	10. b

Reading Rate Table

Passage Title	Kangaroos	Neil Armstrong	The Polar Lights	Ernest Shackleton	Sumo Wrestling	Dreams	Llamas	Wind Power	Déjà Vu	Genealogy	Static Electricity	3D Printing	Christopher Reeve	Earth's Crust
Level Group	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**
Lexile®	**1010L**	**1010L**	**1010L**	**1020L**	**1020L**	**1030L**	**1030L**	**1030L**	**1040L**	**1040L**	**1040L**	**1050L**	**1050L**	**1050L**
WPM	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**
Word Count	**729**	**782**	**773**	**807**	**806**	**756**	**797**	**697**	**754**	**754**	**713**	**698**	**824**	**700**
Minutes:Seconds														
:30	1458	1564	1546	1614	1612	1512	1594	1394	1508	1508	1426	1396	1648	1400
:35	1250	1341	1325	1383	1382	1296	1366	1195	1293	1293	1222	1197	1413	1200
:40	1094	1173	1160	1211	1209	1134	1196	1046	1131	1131	1070	1047	1236	1050
:45	972	1043	1031	1076	1075	1008	1063	929	1005	1005	951	931	1099	933
:50	875	938	928	968	967	907	956	836	905	905	856	838	989	840
:55	795	853	843	880	879	825	869	760	823	823	778	761	899	764
1:00	729	782	773	807	806	756	797	697	754	754	713	698	824	700
1:05	673	722	714	745	744	698	736	643	696	696	658	644	761	646
1:10	625	670	663	692	691	648	683	597	646	646	611	598	706	600
1:15	583	626	618	646	645	605	638	558	603	603	570	558	659	560
1:20	547	587	580	605	605	567	598	523	566	566	535	524	618	525
1:25	515	552	546	570	569	534	563	492	532	532	503	493	582	494
1:30	486	521	515	538	537	504	531	465	503	503	475	465	549	467
1:35	460	494	488	510	509	477	503	440	476	476	450	441	520	442
1:40	437	469	464	484	484	454	478	418	452	452	428	419	494	420
1:45	417	447	442	461	461	432	455	398	431	431	407	399	471	400
1:50	398	427	422	440	440	412	435	380	411	411	389	381	449	382
1:55	380	408	403	421	421	394	416	364	393	393	372	364	430	365
2:00	365	391	387	404	403	378	399	349	377	377	357	349	412	350
2:05	350	375	371	387	387	363	383	335	362	362	342	335	396	336
2:10	336	361	357	372	372	349	368	322	348	348	329	322	380	323
2:15	324	348	344	359	358	336	354	310	335	335	317	310	366	311
2:20	312	335	331	346	345	324	342	299	323	323	306	299	353	300
2:25	302	324	320	334	334	313	330	288	312	312	295	289	341	290
2:30	292	313	309	323	322	302	319	279	302	302	285	279	330	280
2:35	282	303	299	312	312	293	309	270	292	292	276	270	319	271
2:40	273	293	290	303	302	284	299	261	283	283	267	262	309	263
2:45	265	284	281	293	293	275	290	253	274	274	259	254	300	255
2:50	257	276	273	285	284	267	281	246	266	266	252	246	291	247
2:55	250	268	265	277	276	259	273	239	259	259	244	239	283	240
3:00	243	261	258	269	269	252	266	232	251	251	238	233	275	233
3:15	224	241	238	248	248	233	245	214	232	232	219	215	254	215
3:30	208	223	221	231	230	216	228	199	215	215	204	199	235	200
3:45	194	209	206	215	215	202	213	186	201	201	190	186	220	187
4:00	182	196	193	202	202	189	199	174	189	189	178	175	206	175
4:30	162	174	172	179	179	168	177	155	168	168	158	155	183	156
5:00	146	156	155	161	161	151	159	139	151	151	143	140	165	140
5:30	133	142	141	147	147	137	145	127	137	137	130	127	150	127
6:00	122	130	129	135	134	126	133	116	126	126	119	116	137	117
6:30	112	120	119	124	124	116	123	107	116	116	110	107	127	108
7:00	104	112	110	115	115	108	114	100	108	108	102	100	118	100

Reading Rate Table

ReadingHorizons ELEVATE®

Passage Title	Penguins	Rockets	Yawning	The Corps of Discovery	Bobsledding	Geocaching	Pawnbrokers	Piranhas	Princess Grace	Solar Panels	Antarctica	King Christian X	Mount Fuji	Parkour
Level Group	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**
Lexile®	**1050L**	**1050L**	**1050L**	**1060L**	**1070L**	**1070L**	**1070L**	**1070L**	**1070L**	**1070L**	**1080L**	**1080L**	**1080L**	**1080L**
WPM	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**
Word Count	**693**	**776**	**724**	**819**	**719**	**825**	**713**	**778**	**810**	**801**	**763**	**766**	**753**	**707**
Minutes:Seconds														
:30	1386	1552	1448	1638	1438	1650	1426	1556	1620	1602	1526	1532	1506	1414
:35	1188	1330	1241	1404	1233	1414	1222	1334	1389	1373	1308	1313	1291	1212
:40	1040	1164	1086	1229	1079	1238	1070	1167	1215	1202	1145	1149	1130	1061
:45	924	1035	965	1092	959	1100	951	1037	1080	1068	1017	1021	1004	943
:50	832	931	869	983	863	990	856	934	972	961	916	919	904	848
:55	756	847	790	893	784	900	778	849	884	874	832	836	821	771
1:00	693	776	724	819	719	825	713	778	810	801	763	766	753	707
1:05	640	716	668	756	664	762	658	718	748	739	704	707	695	653
1:10	594	665	621	702	616	707	611	667	694	687	654	657	645	606
1:15	554	621	579	655	575	660	570	622	648	641	610	613	602	566
1:20	520	582	543	614	539	619	535	584	608	601	572	575	565	530
1:25	489	548	511	578	508	582	503	549	572	565	539	541	532	499
1:30	462	517	483	546	479	550	475	519	540	534	509	511	502	471
1:35	438	490	457	517	454	521	450	491	512	506	482	484	476	447
1:40	416	466	434	491	431	495	428	467	486	481	458	460	452	424
1:45	396	443	414	468	411	471	407	445	463	458	436	438	430	404
1:50	378	423	395	447	392	450	389	424	442	437	416	418	411	386
1:55	362	405	378	427	375	430	372	406	423	418	398	400	393	369
2:00	347	388	362	410	360	413	357	389	405	401	382	383	377	354
2:05	333	372	348	393	345	396	342	373	389	384	366	368	361	339
2:10	320	358	334	378	332	381	329	359	374	370	352	354	348	326
2:15	308	345	322	364	320	367	317	346	360	356	339	340	335	314
2:20	297	333	310	351	308	354	306	333	347	343	327	328	323	303
2:25	287	321	300	339	298	341	295	322	335	331	316	317	312	293
2:30	277	310	290	328	288	330	285	311	324	320	305	306	301	283
2:35	268	300	280	317	278	319	276	301	314	310	295	297	291	274
2:40	260	291	272	307	270	309	267	292	304	300	286	287	282	265
2:45	252	282	263	298	261	300	259	283	295	291	277	279	274	257
2:50	245	274	256	289	254	291	252	275	286	283	269	270	266	250
2:55	238	266	248	281	247	283	244	267	278	275	262	263	258	242
3:00	231	259	241	273	240	275	238	259	270	267	254	255	251	236
3:15	213	239	223	252	221	254	219	239	249	246	235	236	232	218
3:30	198	222	207	234	205	236	204	222	231	229	218	219	215	202
3:45	185	207	193	218	192	220	190	207	216	214	203	204	201	189
4:00	173	194	181	205	180	206	178	195	203	200	191	192	188	177
4:30	154	172	161	182	160	183	158	173	180	178	170	170	167	157
5:00	139	155	145	164	144	165	143	156	162	160	153	153	151	141
5:30	126	141	132	149	131	150	130	141	147	146	139	139	137	129
6:00	116	129	121	137	120	138	119	130	135	134	127	128	126	118
6:30	107	119	111	126	111	127	110	120	125	123	117	118	116	109
7:00	99	111	103	117	103	118	102	111	116	114	109	109	108	101

Reading Rate Table

Passage Title	Steve Jobs	X-Rays	American Bison	Halley's Comet	Ultimate	Duct Tape Art	Tsunamis	Jackie Robinson	Star Wars	The Equator	United States Coast Guard	Ferdinand Magellan	Caving	Ghost Hunting
Level Group	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**
Lexile®	**1080L**	**1080L**	**1090L**	**1090L**	**1090L**	**1100L**	**1100L**	**1110L**	**1110L**	**1120L**	**1120L**	**1140L**	**1150L**	**1150L**
WPM	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**
Word Count	**804**	**728**	**739**	**824**	**732**	**721**	**815**	**789**	**767**	**809**	**693**	**738**	**762**	**719**
Minutes:Seconds														
:30	1608	1456	1478	1648	1464	1442	1630	1578	1534	1618	1386	1476	1524	1438
:35	1378	1248	1267	1413	1255	1236	1397	1353	1315	1387	1188	1265	1306	1233
:40	1206	1092	1109	1236	1098	1082	1223	1184	1151	1214	1040	1107	1143	1079
:45	1072	971	985	1099	976	961	1087	1052	1023	1079	924	984	1016	959
:50	965	874	887	989	878	865	978	947	920	971	832	886	914	863
:55	877	794	806	899	799	787	889	861	837	883	756	805	831	784
1:00	804	728	739	824	732	721	815	789	767	809	693	738	762	719
1:05	742	672	682	761	676	666	752	728	708	747	640	681	703	664
1:10	689	624	633	706	627	618	699	676	657	693	594	633	653	616
1:15	643	582	591	659	586	577	652	631	614	647	554	590	610	575
1:20	603	546	554	618	549	541	611	592	575	607	520	554	572	539
1:25	568	514	522	582	517	509	575	557	541	571	489	521	538	508
1:30	536	485	493	549	488	481	543	526	511	539	462	492	508	479
1:35	508	460	467	520	462	455	515	498	484	511	438	466	481	454
1:40	482	437	443	494	439	433	489	473	460	485	416	443	457	431
1:45	459	416	422	471	418	412	466	451	438	462	396	422	435	411
1:50	439	397	403	449	399	393	445	430	418	441	378	403	416	392
1:55	419	380	386	430	382	376	425	412	400	422	362	385	398	375
2:00	402	364	370	412	366	361	408	395	384	405	347	369	381	360
2:05	386	349	355	396	351	346	391	379	368	388	333	354	366	345
2:10	371	336	341	380	338	333	376	364	354	373	320	341	352	332
2:15	357	324	328	366	325	320	362	351	341	360	308	328	339	320
2:20	345	312	317	353	314	309	349	338	329	347	297	316	327	308
2:25	333	301	306	341	303	298	337	326	317	335	287	305	315	298
2:30	322	291	296	330	293	288	326	316	307	324	277	295	305	288
2:35	311	282	286	319	283	279	315	305	297	313	268	286	295	278
2:40	302	273	277	309	275	270	306	296	288	303	260	277	286	270
2:45	292	265	269	300	266	262	296	287	279	294	252	268	277	261
2:50	284	257	261	291	258	254	288	278	271	286	245	260	269	254
2:55	276	250	253	283	251	247	279	271	263	277	238	253	261	247
3:00	268	243	246	275	244	240	272	263	256	270	231	246	254	240
3:15	247	224	227	254	225	222	251	243	236	249	213	227	234	221
3:30	230	208	211	235	209	206	233	225	219	231	198	211	218	205
3:45	214	194	197	220	195	192	217	210	205	216	185	197	203	192
4:00	201	182	185	206	183	180	204	197	192	202	173	185	191	180
4:30	179	162	164	183	163	160	181	175	170	180	154	164	169	160
5:00	161	146	148	165	146	144	163	158	153	162	139	148	152	144
5:30	146	132	134	150	133	131	148	143	139	147	126	134	139	131
6:00	134	121	123	137	122	120	136	132	128	135	116	123	127	120
6:30	124	112	114	127	113	111	125	121	118	124	107	114	117	111
7:00	115	104	106	118	105	103	116	113	110	116	99	105	109	103

Reading Rate Table

Passage Title	Global Warming	Sudoku Puzzles	Franklin D. Roosevelt	Bar Mitzvahs	Dolly the Sheep	Burj Khalifa	Giraffes	Hiccups	Hypnotists	John Adams	Snoring	Bounty Hunters	Prosthetics	Renaissance Fairs
Level Group	**E**	**E**	**E**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**
Lexile®	**1150L**	**1160L**	**1170L**	**1210L**	**1210L**	**1220L**	**1220L**	**1220L**	**1220L**	**1220L**	**1220L**	**1230L**	**1230L**	**1230L**
WPM	**200**	**200**	**200**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**
Word Count	**748**	**760**	**808**	**876**	**991**	**960**	**948**	**919**	**993**	**984**	**900**	**983**	**891**	**977**
Minutes:Seconds														
:30	1496	1520	1616	1752	1982	1920	1896	1838	1986	1968	1800	1966	1782	1954
:35	1282	1303	1385	1502	1699	1646	1625	1575	1702	1687	1543	1685	1527	1675
:40	1122	1140	1212	1314	1487	1440	1422	1379	1490	1476	1350	1475	1337	1466
:45	997	1013	1077	1168	1321	1280	1264	1225	1324	1312	1200	1311	1188	1303
:50	898	912	970	1051	1189	1152	1138	1103	1192	1181	1080	1180	1069	1172
:55	816	829	881	956	1081	1047	1034	1003	1083	1073	982	1072	972	1066
1:00	748	760	808	876	991	960	948	919	993	984	900	983	891	977
1:05	690	702	746	809	915	886	875	848	917	908	831	907	822	902
1:10	641	651	693	751	849	823	813	788	851	843	771	843	764	837
1:15	598	608	646	701	793	768	758	735	794	787	720	786	713	782
1:20	561	570	606	657	743	720	711	689	745	738	675	737	668	733
1:25	528	536	570	618	700	678	669	649	701	695	635	694	629	690
1:30	499	507	539	584	661	640	632	613	662	656	600	655	594	651
1:35	472	480	510	553	626	606	599	580	627	621	568	621	563	617
1:40	449	456	485	526	595	576	569	551	596	590	540	590	535	586
1:45	427	434	462	501	566	549	542	525	567	562	514	562	509	558
1:50	408	415	441	478	541	524	517	501	542	537	491	536	486	533
1:55	390	397	422	457	517	501	495	479	518	513	470	513	465	510
2:00	374	380	404	438	496	480	474	460	497	492	450	492	446	489
2:05	359	365	388	420	476	461	455	441	477	472	432	472	428	469
2:10	345	351	373	404	457	443	438	424	458	454	415	454	411	451
2:15	332	338	359	389	440	427	421	408	441	437	400	437	396	434
2:20	321	326	346	375	425	411	406	394	426	422	386	421	382	419
2:25	310	314	334	362	410	397	392	380	411	407	372	407	369	404
2:30	299	304	323	350	396	384	379	368	397	394	360	393	356	391
2:35	290	294	313	339	384	372	367	356	384	381	348	381	345	378
2:40	281	285	303	329	372	360	356	345	372	369	338	369	334	366
2:45	272	276	294	319	360	349	345	334	361	358	327	357	324	355
2:50	264	268	285	309	350	339	335	324	350	347	318	347	314	345
2:55	256	261	277	300	340	329	325	315	340	337	309	337	305	335
3:00	249	253	269	292	330	320	316	306	331	328	300	328	297	326
3:15	230	234	249	270	305	295	292	283	306	303	277	302	274	301
3:30	214	217	231	250	283	274	271	263	284	281	257	281	255	279
3:45	199	203	215	234	264	256	253	245	265	262	240	262	238	261
4:00	187	190	202	219	248	240	237	230	248	246	225	246	223	244
4:30	166	169	180	195	220	213	211	204	221	219	200	218	198	217
5:00	150	152	162	175	198	192	190	184	199	197	180	197	178	195
5:30	136	138	147	159	180	175	172	167	181	179	164	179	162	178
6:00	125	127	135	146	165	160	158	153	166	164	150	164	149	163
6:30	115	117	124	135	152	148	146	141	153	151	138	151	137	150
7:00	107	109	115	125	142	137	135	131	142	141	129	140	127	140

Reading Rate Table

Passage Title	Flying Cars	Polar Bears	The Beatles	Meteorologists	Empress Dowager Cixi	Improvisational Performers	The Anger of Vulcan	Meteor Showers	Tornadoes	BASE Jumping	Michelangelo Buonarroti	William Wilberforce	The Fountain of Youth	Solar Flares
Level Group	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**
Lexile®	**1240L**	**1240L**	**1240L**	**1250L**	**1270L**	**1270L**	**1270L**	**1280L**	**1300L**	**1310L**	**1320L**	**1320L**	**1380L**	**1390L**
WPM	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**
Word Count	**973**	**989**	**999**	**901**	**995**	**879**	**905**	**903**	**996**	**935**	**899**	**940**	**978**	**963**
Minutes:Seconds														
:30	1946	1978	1998	1802	1990	1758	1810	1806	1992	1870	1798	1880	1956	1926
:35	1668	1695	1713	1545	1706	1507	1551	1548	1707	1603	1541	1611	1677	1651
:40	1460	1484	1499	1352	1493	1319	1358	1355	1494	1403	1349	1410	1467	1445
:45	1297	1319	1332	1201	1327	1172	1207	1204	1328	1247	1199	1253	1304	1284
:50	1168	1187	1199	1081	1194	1055	1086	1084	1195	1122	1079	1128	1174	1156
:55	1061	1079	1090	983	1085	959	987	985	1087	1020	981	1025	1067	1051
1:00	973	989	999	901	995	879	905	903	996	935	899	940	978	963
1:05	898	913	922	832	918	811	835	834	919	863	830	868	903	889
1:10	834	848	856	772	853	753	776	774	854	801	771	806	838	825
1:15	778	791	799	721	796	703	724	722	797	748	719	752	782	770
1:20	730	742	749	676	746	659	679	677	747	701	674	705	734	722
1:25	687	698	705	636	702	620	639	637	703	660	635	664	690	680
1:30	649	659	666	601	663	586	603	602	664	623	599	627	652	642
1:35	615	625	631	569	628	555	572	570	629	591	568	594	618	608
1:40	584	593	599	541	597	527	543	542	598	561	539	564	587	578
1:45	556	565	571	515	569	502	517	516	569	534	514	537	559	550
1:50	531	539	545	491	543	479	494	493	543	510	490	513	533	525
1:55	508	516	521	470	519	459	472	471	520	488	469	490	510	502
2:00	487	495	500	451	498	440	453	452	498	468	450	470	489	482
2:05	467	475	480	432	478	422	434	433	478	449	432	451	469	462
2:10	449	456	461	416	459	406	418	417	460	432	415	434	451	444
2:15	432	440	444	400	442	391	402	401	443	416	400	418	435	428
2:20	417	424	428	386	426	377	388	387	427	401	385	403	419	413
2:25	403	409	413	373	412	364	374	374	412	387	372	389	405	398
2:30	389	396	400	360	398	352	362	361	398	374	360	376	391	385
2:35	377	383	387	349	385	340	350	350	386	362	348	364	379	373
2:40	365	371	375	338	373	330	339	339	374	351	337	353	367	361
2:45	354	360	363	328	362	320	329	328	362	340	327	342	356	350
2:50	343	349	353	318	351	310	319	319	352	330	317	332	345	340
2:55	334	339	343	309	341	301	310	310	341	321	308	322	335	330
3:00	324	330	333	300	332	293	302	301	332	312	300	313	326	321
3:15	299	304	307	277	306	270	278	278	306	288	277	289	301	296
3:30	278	283	285	257	284	251	259	258	285	267	257	269	279	275
3:45	259	264	266	240	265	234	241	241	266	249	240	251	261	257
4:00	243	247	250	225	249	220	226	226	249	234	225	235	245	241
4:30	216	220	222	200	221	195	201	201	221	208	200	209	217	214
5:00	195	198	200	180	199	176	181	181	199	187	180	188	196	193
5:30	177	180	182	164	181	160	165	164	181	170	163	171	178	175
6:00	162	165	167	150	166	147	151	151	166	156	150	157	163	161
6:30	150	152	154	139	153	135	139	139	153	144	138	145	150	148
7:00	139	141	143	129	142	126	129	129	142	134	128	134	140	138

Reading Fluency Progress Chart - Level E

ReadingHorizons ELEVATE®

Passage Title															
Comprehension Questions Correct															
Words Per Minute	1351-1550														
	1151-1350														
	951-1150														
	801-950														
	651-800														
	551-650														
	451-550														
	351-450														
	301-350														
	251-300														
	241-250														
	231-240														
	221-230														
	211-220														
	206-210														
	201-205														
	196-200														
	191-195														
	186-190														
	181-185														
	176-180														
	171-175														
	166-170														
	161-165														
	156-160														
	151-155														
	146-150														
	141-145														
	136-140														
	131-135														
	126-130														
	121-125														
	116-120														
	111-115														
	106-110														
	101-105														
	96-100														
	91-95														
	86-90														
	81-85														
	76-80														
	71-75														

Reading Fluency Progress Chart - Level F

Words Per Minute	Passage Title														
	Comprehension Questions Correct														
	1751-1950														
	1551-1750														
	1351-1550														
	1151-1350														
	951-1150														
	801-950														
	651-800														
	551-650														
	451-550														
	351-450														
	301-350														
	291-300														
	281-290														
	271-280														
	261-270														
	251-260														
	246-250														
	241-245														
	236-240														
	231-235														
	226-230														
	221-225														
	216-220														
	211-215														
	206-210														
	201-205														
	196-200														
	191-195														
	186-190														
	181-185														
	176-180														
	171-175														
	166-170														
	161-165														
	156-160														
	151-155														
	146-150														
	141-145														
	136-140														
	131-135														
	126-130														
	121-125														

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