Directions: Please read the passage "Buckminster Fuller: Architect of the Future." Then answer the questions that follow.

Buckminster Fuller: Architect of the Future

by Mona Gedney

Picture a home that can be shipped across the country in a box and erected immediately, using solar power to provide energy. It sounds very modern. However, this house was designed and built over 70 years ago by Buckminster Fuller. Devising ways to improve living conditions on what he called "Spaceship Earth" was a lifetime job for Fuller, a man of unusual vision and imagination.

Born in New England in 1895, he produced his first invention at the age of ten. During the summers spent at his family's island home off the coast of Maine, he had to row four miles each day to pick up the family mail on the mainland. It was a long trip, and he disliked having to row with his back to where he was going. He noticed that jellyfish pushed themselves along by ejecting spurts of water. He designed a small jet-propulsion unit modeled after their behavior. Operated by pushing and pulling on a pole, his "mechanical jellyfish" opened and closed like an inverted umbrella. He now moved speedily through the sea and could see where he was going.

Fuller served in the Navy during World War I. There he learned to do more with less as there was limited space onboard a ship. He was exposed to cutting-edge technologies, such as the radio, which he predicted would transform life as we knew it. And he was right. He also invented a device that saved many navy pilots' lives. His invention got him into the U.S. Naval Academy where he received a formal education in engineering and architecture.

When he got out of the Navy, he married Anne Hewlett, daughter of a well-known architect, and went to work in her father's construction company in Illinois. Being a good architect but a bad businessman, Fuller ruined the company. He and his family were stranded in Chicago in 1927. With no money and no prospects for the future, he sat staring out at Lake Michigan for hours one cold night. And then he had an inspiration. He would use his skills to improve living conditions. He would create structures that respected the environment. He was certain that better living conditions could be provided for more people while using fewer natural resources. He would make this the guiding light of his life.

By 1929 he had a model home ready to show. It was a hexagonal house. It was divided into a large living room, two bedrooms, two bathrooms, a library, and a kitchen. It was topped by a large sun deck. It also made use of solar power. The house weighed 6,000 pounds. It was portable, able to be put together and taken apart with ease.

Fuller's model house was displayed in Chicago's Marshall Field Department Store, complete with very modern French furniture. Marshall Field's public relations manager came up with the name for the house. He combined three of Fuller's favorite words: "dynamic," "maximum," and "tension." The resulting name of Dymaxion became Fuller's trademark for many of his inventions.

The first public appearances of Fuller's Dymaxion car produced terrific traffic snarls in 1933. Shaped like a teardrop, the three-wheeled vehicle rode like a dream. It could turn in very tight circles and could be parked with ease. Since it was sleek and streamlined instead of boxy in shape, the car met
with less wind resistance. It used very little fuel because of its shape and could reach a speed of 120 miles per hour. Unfortunately, Fuller had far less interest in marketing his inventions than in creating them. The Dymaxion car was never available for widespread purchase.

In 1949, Fuller released an updated Dymaxion house. These homes were to be sold as kits. As such, he chose aluminum for the main material due to its light weight and durability. A ventilator on top of the house turned in the wind and provided natural cooling for the surprisingly elegant interior. Fuller designed a system for cleaning and recycling the house's water. The prototype was displayed for public view and was written about in magazines across the nation. The house kit was inexpensive and conserved energy and natural resources. It was a hit with the public. Yet in spite of great interest (more than 37,000 orders were placed for it), Fuller never did mass-produce it.

Fuller became best known for his geodesic domes. He discovered geodesic domes while trying to build a house that had a lot of space but used few materials. Using geometric principles, he developed a structure based upon a complex assembly of triangles and spheres. Geodesic domes are able to span large distances without interior support. They also grow in strength as they grow in size and handle extreme weather conditions well. And they can be constructed using fewer building materials.

In 1953, Fuller constructed a geodesic dome of 93 feet in diameter to enclose the courtyard at the Ford Motor Company. He received a patent for his geodesic dome design in 1954. Today more than half a million geodesic domes are in use around the world as arenas, convention centers, and residences. Fuller himself lived in one during the years he spent as a professor at Southern Illinois University. His geodesic dome home, located in Carbondale, is listed on the National Register of Historic Places.

When Buckminster Fuller died in 1983, he left behind a complicated legacy. His Dymaxion products were well-received by the public. He might have transformed the building and automobile industries in the twentieth century. But he never took his products to market. Fuller wasn't a businessman. He was an architect and a futurist, working only to improve life on this spaceship we call Earth. He blazed a trail into the future and hoped that mankind would someday follow his lead. And today we are finally doing so. Every time you hear terms like "energy conservation" and "environmentally friendly," humankind takes another step down Fuller's path.

To which genre does this passage belong?

A  biography
B  historical fiction
C  story
D  legend
2 Why is the word "dynamic" probably included in the name *Dymaxion*?

A to indicate power  
B to conceal danger  
C to show elegance  
D to create trust

**Directions:** Read the passage "The Hudson Riverkeepers." Then answer the questions that follow.

**THE HUDSON RIVERKEEPERS**  
by C.J. Bird

Back in the 1960s, the Hudson River was no cleaner than a sewer. At the time, big industries were dumping pollutants into the river. In fact, New York City was dumping its raw sewage into the Hudson until as late as March 1986. Today, the Hudson River is far less polluted thanks to concerned citizens and a group called the Riverkeepers.

Riverkeepers do exactly what their name says; they care for the river, making sure that the water is clean for people, fish, and wildlife. In 1967, Robert H. Boyle wrote a book about the Hudson River entitled *The Hudson River, A Natural and Unnatural History*. He felt that the Hudson needed a riverkeeper, someone to maintain its health and appearance. This concept was already being used in England. Boyle, a devoted bass fisher and writer for *Sports Illustrated*, was the first to introduce riverkeeping here in America. In 1983, he founded an organization called "Hudson River Fishermen's Association," now known as "Hudson Riverkeeper Funds." To lead the group, he hired John Cronin, a former congressional aide and commercial fisherman, to watch over the Hudson full time.

In 1972, Congress passed the Clean Water Act, a national law designed to protect U.S. lakes, rivers, aquifers and coastal areas. Its primary goal was to restore and maintain the integrity of our waters by eliminating the discharge of pollutants. By giving the public the right to uphold and enforce the Clean Water Act, Congress gave environmental groups the power to fight big polluters. As the head of Riverkeeper, Cronin receives the help of local fishermen and residents, environmental scientists, and legal experts to stop corporations from polluting the Hudson. The fishermen and residents are the eyes and ears of Riverkeeper. They tell Cronin of any strange activity on the river or unusual events in the towns. Riverkeeper investigates the reports and uses scientists to determine the type of pollution. Using the Clean Water Act, Riverkeeper collects evidence and files lawsuits against violators. Local involvement, or "grassroots effort," is the foundation of Riverkeeper and what makes the group so successful.
Robert F. Kennedy, Jr. joined Riverkeeper as the group's chief prosecuting attorney. Along with Karl Copland, he directs ten law students and two professors at Pace College's Environmental Litigation Clinic in New York City. These lawyers-in-training concentrate on prosecuting polluters of the Hudson River while gaining invaluable legal experience. So far, the group has prosecuted over a hundred environmental polluters. They've even taken on such corporate giants as Exxon Oil, and won.

Since the start of Riverkeeper, the Hudson River has made a dramatic recovery. It is no longer thought of as an open sewer. The Hudson River is the only large North Atlantic river that still has strong spawning stocks of its entire historical migratory species. These fish sustain recreational and commercial fisheries up and down the Atlantic coast, amounting to an industry worth several hundred million dollars annually.

Riverkeeper has extended its influence beyond the Hudson River. As part of the Waterkeeper Alliance, it now provides legal and environmental information to communities around the world. There are currently 156 Waterkeeper programs keeping watch over all kinds of bodies of water—rivers, bays, inlets, creeks, and lakes. The number continues to grow. From North America to South America, and from Maine to New Delhi, the Riverkeepers are on patrol.

3 When Riverkeeper *prosecutes* a polluter, what does it do?
   A. secures the Hudson River against the polluter
   B. files legal charges against the polluter in court
   C. patrols the area near the polluter to protect it
   D. punishes the polluter

4 What does the term *grassroots* mean in this passage?
   A. local-level
   B. illegal
   C. agricultural
   D. dirty
Directions: Read the passage “The Odyssey of Homer Hickam.” Then answer the questions that follow.

**THE ODYSSEY OF HOMER HICKAM**
by Laura Bresko

Like many other 14-year olds, Homer Hickam, Jr. loved rockets. A defining moment for him was seeing the Soviet satellite Sputnik travel over his home in Coalwood, West Virginia in 1957. Sputnik was the first manmade satellite ever to orbit the earth. Homer knew from the moment he saw it that he wanted to be a part of space travel. Many children were interested in outer space at the time, but Homer was different. He had enough ambition to last a lifetime. He grew up to become a well-known aerospace engineer and the subject of a major motion picture, "October Sky."

Homer Hickam began pursuing his dreams by building a homemade model rocket. Although his mother encouraged him, his father condemned his dreams as foolishness. Homer Hickam, Sr. was the supervisor of the coal mines, the only industry in Coalwood. He was an important man who was strict with his family and his workers. He believed that his son should follow in his footsteps and was throwing away a lucrative career in coal mining. As the supervisor's son, Homer could have a job in management as soon as he was finished with his schooling.

Homer's first rocket blew up the garden fence, but he didn't give up. Despite his father's opposition, Homer persevered. He had to work hard to learn about rocket science as the required subjects weren't taught in his school. He read every book on the subject that he could find and even taught himself calculus, the advanced math used to design working rockets. After several explosive misfires, he and his friends had success with a rocket that soared five miles above the coal mines. Homer happily admits that they had plenty of help and support from the community, especially from a sympathetic science teacher and the machinists who worked for his father at the mine.

Homer's science teacher encouraged them to submit their rocket project in West Virginia's statewide science fair. The project won first place. Homer headed for the National Science Fair in Washington, DC, filled with the hope that their rocket and research would win an honorable mention. Homer's hopes faded when someone at the fair sabotaged his rocket by stealing its fuel nozzle. The nozzle was the most innovative part of his research and a distraught Homer called home wondering what he should do. He told his father what happened. His father was in the midst of bitter negotiations with striking coal miners and had been for weeks. Coincidentally, his father settled the strike that day and got the machinists to quickly make a new nozzle. The nozzle was sent to Homer on the next bus.

Homer thinks his father may have conceded to the miners' demands so he could get the machinists to construct the missing fuel nozzle. It might have been his father's way of telling Homer he was proud of him or an apology for doubting Homer's abilities. Whatever motivations his father had, receiving the nozzle in time for the final judging helped to shape the rest of Homer's life. The rocket project received the gold medal in the 1960 National Science Fair.

The science fair project propelled Homer and his friends into college with full scholarships to Virginia Tech. Homer eventually went on to NASA. He has had a long, distinguished career as a
NASA aerospace engineer. Among other things, he has trained astronauts for space travel and was one of the designers of the Spacelab.

Homer wonders frequently what would have happened if he had not seen Sputnik streak over the night sky of the grimy coal town where he spent his youth. The flight of that satellite inspired a dream in a young boy to be part of the great adventure of space travel. Homer Hickam, Jr. refused to take "no" for an answer, and as a result, he escaped from a bleak coal mining future and grew up to live his dream.

This passage can best be described as
A a biography.
B historical fiction.
C realistic fiction.
D an autobiography.

Read the following sentences from the passage.

Despite his father's opposition, Homer persevered. He had to work hard to learn about rocket science as the required subjects weren't taught in his school.

When Homer persevered, it means that he
A damaged fences.
B continued despite obstacles.
C was disobedient.
D built rockets.
Directions: Please read the passage "My West Texas Childhood" carefully and answer the questions that follow.

MY WEST TEXAS CHILDHOOD

by Mona Gedney

Dust blew more thickly in those days, but the sun shone more brightly, too. And when the rain came, it fell in larger drops, at first splashing down so sparsely that you could run between the drops, and then suddenly falling by the bucketful. Nothing could compare to the fresh scent of rain falling on a dusty, West Texas town.

Prickly pear cactus dotted the untended lots in town, sprouting blooms in the springtime and occasionally even producing some pears. I roamed our little neighborhood, sometimes with another child, sometimes in the company of a cat or dog. I had a particular horned toad that I was fond of that seemed to return my affection. Perhaps he had just become resigned to my attentions, but every day he allowed me to stroke his back, doing his best to look as ferocious as a miniature dinosaur.

Before I began attending school, the length of each day seemed to stretch out forever and my pattern of activities varied only slightly. On one particular day, however, the pattern changed completely—and I discovered that a small span of time can make a big difference in our lives.

The morning had eased by, and I had hurried in to lunch because my grandmother had baked cornbread. Its warm fragrance had drifted out the open kitchen window, and so I had stayed close to home. She didn't have to call my cousin Bill and me to lunch; when she opened the screen door, we were already standing on the porch.

It was as the butter was melting on my slice of cornbread and I was surreptitiously feeding bites of the detestable fried liver to the small, cooperative dog under the table that the day took an unfamiliar turn. A sudden tattoo of raindrops caused us to pause for a moment. We hadn't had rain in a good many weeks, so I wasn't particularly surprised when Grandma left the table to stand on the front porch and survey the scene.

The rain quickly became ferocious, and there was no attempt at conversation because its drumming on our roof and on the tin roof of the shop next door was deafening. I wasn't surprised to see Grandma methodically make her way through the house, closing whatever windows she deemed necessary. The heat had been oppressive before the rain, so whenever possible, she left the windows at least partially open.

By the time we had reached dessert, which happily was peach cobbler, the rain had stopped. I took that as a good sign. Now I would have an afternoon made pleasant by the unaccustomed rain. Abruptly, however, Grandma stopped in the middle of serving the cobbler and went out on the porch once more. My cousin Bill and I looked at each other uneasily. I was troubled by the reason she had left, but Bill, I think, was troubled more by the fact that she had left before he had received his dessert.

I walked out on the porch and left Bill with the cobbler. I could see immediately what was troubling her. The sky and the very air had taken on a most peculiar shade of sickly green. And everything was extremely still, as though the whole world was holding its breath. Grandma stepped off the porch and walked out far enough to be able to see the sky behind the house. I followed her, but neither of us had to take more than a dozen steps before freezing in place.
On the distant horizon was a swiftly turning black funnel. Watching it for a few moments assured us that it was moving in our direction.

Grandma, unruffled, told me to go in the house and gather up Tex, the little terrier, and, if possible, McGinley, the irascible gray cat. When we got back inside, Bill was allowed to carry the cobbler and the rest of the cornbread. Grandma had swiftly put together a few vital items into a basket, and together we hurried to the root cellar. At a glance, it was no more than a rounded hump of soil with a wooden door lying atop it. Once inside, you walked down a few steps into a small room with earthen walls and floor. The shelves on the walls were lined with jars of peach preserves that Grandma had prepared and placed in this, the coolest storage available to her.

As soon as we were inside, she lit the two kerosene lamps she kept in there. Then she pulled the wooden door shut, which was difficult since the wind had already begun to rise. Then she bolted it shut and turned to Bill and me with a smile. Carefully she gave us gratifyingly large servings of cobbler, and then she began to tell us stories about her own childhood.

Since we adored Grandma and she was usually anything but talkative, Bill and I listened, enthralled, to some of her early adventures. She continued to spoon cobbler into our bowls and to pat Tex and McGinley, who huddled at her feet. I was vaguely aware of the roar overhead, like the passing of a nearby freight train. I noticed, too, that Grandma glanced at the door of the cellar from time to time, and it seemed to be rattling in a most unusual and interesting manner.

After stillness had surrounded us for some time—and after Bill had finished the last bite of cobbler—Grandma unbolted the door and we stepped out into a changed world. Although our house was still intact, across the street and down the side of our lot, the earth had been scoured clean. Happily, the people had all survived because they had sought homemade shelters like our own. Nonetheless, everything else they had was gone.

It was then that I gained a respect not just for nature, but for time. While the minutes had slipped by quickly and quite pleasantly for Bill and me, the world had turned upside down around us. We were fortunate that time, but I knew instinctively that it could not always be the case. On that day, I began to have a healthy respect for time and to appreciate each day.

Read this quotation from the passage.

**Carefully she gave us gratifyingly large servings of cobbler...**

From this quotation, how do Bill and the narrator feel about the cobbler?

A satisfied  
B uneasy  
C dismayed  
D greedy
Read this sentence from the passage.

Since we adored Grandma and she was usually anything but talkative, Bill and I listened enthralled to some of her early adventures.

What does the use of the word *enthralled* indicate about their attitude toward their grandmother?

A. They are a little bored because they have heard the stories before.
B. They wish that she talked less.
C. They find her fascinating.
D. They envy her for the adventures she has had.

Directions: Please read the passage "Edgar Alison Poe" carefully and answer the questions that follow.

**EDGAR ALISON POE**
by Mona Gedney

All right, I know that my name is fairly pitiful, but I really can't help the fact that both of my parents are lifelong devotees of Edgar Allan Poe, or that I am their only child. If I had only had a brother, he might have borne the onus of the name, but since I have none, I am stuck with it. My mother and father's one concession to my gender was changing "Allan" to "Alison."

Since my parents are well educated, imaginative, and sometimes pretty humorous, you would think that they might have anticipated the consequences of saddling a child with such a name. Compared to mine, names like Ima Byrd and Honey Bee are thoughtful parental gestures. The beginning of each school year has always been a nightmare as my new teachers call roll for the first time and look mildly startled as they encounter the familiar "Edgar A. Poe" (which is the way my parents always enroll me) and even more startled when they see that Edgar is a girl.

My parents aren't really cruel, and I have begged them to enroll me as Alison, a perfectly respectable name for a girl, but they declined. They pointed out that since I am not called Alison, enrolling me under that name would be misleading. From my earliest days, I have been known as Eddie. Over the years I have asked that they at least give me a sobriquet; my suggestion was that they call me Allie or even Edie (rhyming with "needy"). Unfortunately, they would not hear of it. They believe that a person's name is a shaping influence in life—and I must say that my experience leads me to agree with them. They, of course, believe that naming me for someone that they find fascinating is the important factor. I know that learning to contend with reactions to my name has made me resilient and stronger than I might otherwise have been.

During my early years in school, only the teachers and other parents realized how truly strange my name is. My classmates merely focused on the fact that I had a boy's name and devoted themselves to making jokes about Eddie.
The real nightmare started when they began to realize just who Edgar Allan Poe was. In seventh grade, we read "The Raven" and a couple of Poe's stories. Brian, one of my classmates, was so taken with them that he immediately read everything by Poe that he could find, including all of the horror stories. He recounted those to some of our classmates at lunch, providing still more fodder for jokes at my expense. They began to inquire after my mental health solicitously, acting concerned about some of the strange quirks revealed in "my" stories—or at least those of one of my ancestors. It did me no good to protest that I was no relation to the writer Poe. They merely patted me on the back, shook their heads sadly, and asked me if I had encountered any ravens lately. Knowing that the cardinal rule for victims of teasing is to act as though the words have no effect, I stopped reacting to their comments. Sure enough, after a while things settled down and I was left in relative peace.

Not until eighth grade was I again confronted with a spate of unwanted attention because of my name. Sure enough, we were reading another of Poe's mystery stories in language arts class, and a ripple of amusement passed over the class when Mrs. Blair asked me to read part of it aloud. I ignored it, determined to do as my parents had recommended and rise above such petty behavior. When we had finished the story and were discussing it, Brian waved his hand in the air and Mrs. Blair asked him for his comment.

"Wasn't Poe a really, really weird guy?" he demanded, glancing at me as he spoke. "I'll bet that people went out of their way to avoid that guy." Clearly Brian had recovered from his infatuation with Poe.

"He was a highly intelligent man, Brian," responded Mrs. Blair mildly. "Many of the details of his life are not agreed upon, but it is clear that he had tragedies to bear. It is also clear that he left us poems, stories, and essays that people still enjoy reading. I can say with certainty that today many people go out of their way to spend time with him through his writing."

I smiled smugly at Brian's discomfiture and felt a deeper fondness for Mrs. Blair than I had yet known. She was not finished, however.

"In fact, Brian, although not everyone agrees about Poe's greatness as a writer, many writers have been influenced by him. I know, for instance, that you enjoy reading Sherlock Holmes stories. A. Conan Doyle, who wrote them, was greatly influenced by Auguste Dupin, the detective that Poe created. Poe is generally considered the father of the mystery story."

By this time, Brian was looking rather deflated, and I was feeling rather proud of my name and my association with Poe. I glanced around the room with confidence, untroubled by encountering the gaze of any of my classmates. So what if my name is Eddie Poe? My name has roots.

That evening I sat at my desk, pondering the events of the day. It had been, I thought, a turning point. After a few minutes, I began to type and my thoughts took shape on the computer screen.

"What are you doing, Eddie?" called my mother as she passed my door.

"I'm writing a mystery," I replied, "a mystery by Edgar Alison Poe."
9 Read this sentence from the passage.

I know that learning to contend with reactions to my name has made me resilient and stronger than I might otherwise have been.

The origin of the word resilient is the Latin word resilire, meaning "jump back." What does resilient mean?

A to move haphazardly or irregularly  
B to withstand with force or exertion  
C to recoil in fear  
D to recover from or adjust easily to misfortune or change

**Directions:** Read the passage "Sacagawea: Slave and Savior." Then answer the questions that follow.

**SACAGAWEA: SLAVE AND SAVIOR**

by Laura Bresko

Many Americans mistakenly believe that the famous Indian woman named Sacagawea (Sah-ca-ja-we-ah) was a guide for the Lewis and Clark expedition. While Sacagawea did accompany the soldiers on their dangerous exploration, she was neither chosen by Lewis and Clark nor was she officially hired as part of the group. Sacagawea was the slave of a French-Canadian fur trader named Charbonneau. In the fashion of the day, Charbonneau called his slave his "wife." Lewis and Clark hired Charbonneau to guide the expedition. Luckily for them, Charbonneau brought his "wife" along.

Sacagawea was born into the Shoshone tribe in 1789. The Shoshone lived in the Rocky Mountains. When Sacagawea was eleven years old, a raiding party from a hostile tribe stole her away from her people. She never saw her parents again. She became a slave and was traded from tribe to tribe. Eventually, she was sold to Charbonneau, who often traveled among the Indians. When Lewis and Clark hired Charbonneau to guide their expedition, Sacagawea was six months pregnant with his child. He took her on the difficult journey anyway.

From 1804 to 1806, Sacagawea, her infant child, and the rest of Captain Lewis and Lieutenant Clark's "Corps of Discovery" journeyed to the Pacific Coast and back. It was the first time that a group of white men journeyed through the Northwest Territories. They were ill-prepared for their journey. Fortunately, Sacagawea was with them. She acted as an interpreter when the explorers encountered hostile Indians. She saved the corps from starvation by teaching them to find edible roots. She taught
them about medicinal herbs and nursed the sick back to health. When the soldiers' boots wore out, she showed them how to make moccasins from animal hides. Without her, the party would have perished in the first few months of their journey.

By the time the expedition reached Sacagawea's homeland in the Rocky Mountains, the soldiers were exhausted and wasting away. When they were met by sixty Indian warriors, things looked bleak. Then the chief of the Shoshone recognized Sacagawea. It was her brother, whom she had not seen for many years. Because of her presence, the Shoshone gave the travelers food and shelter during the harsh winter months. When the spring arrived, Sacagawea persuaded her brother to sell horses to the expedition so that they could journey onward with greater progress. Even though she could have stayed with her tribe, Sacagawea continued on with the Lewis and Clark corps. They reached the Pacific Ocean on November 7, 1805.

The Lewis and Clark expedition was the first official exploration of the territory west of the Mississippi. As such, it provided the foundation for the eventual expansion of the nation. Captain William Clark wrote to Charbonneau after the dangerous mission was completed. He mentioned Sacagawea in his letter. He wrote, "your woman who accompanied you on that long, dangerous, and fatiguing route to the Pacific Ocean and back deserved greater reward for her attention and services on that journey than we had in our power to give her."

In the year 2000, the United States Mint replaced the Susan B. Anthony dollar coin. The new coin is gold in color and features a portrait of Sacagawea carrying her baby. It's the first time that the likeness of a female Native American has been placed on U.S. currency. It's also the first time that the United States has paid tribute to Sacagawea and her legacy to our nation. Times have changed, and the history books are finally recognizing the role that women played in forming our great nation. Almost two hundred years later, Sacagawea is finally receiving recognition for a job well done.

10 This passage is an example of
A an autobiography.
B excerpts from a journal.
C a persuasive argument.
D an historical narrative.

11 In his letter, Captain William Clark mentions a "fatiguing route to the Pacific Ocean."

A fatiguing route means that
A the expedition was memorable.
B the trail was dangerous.
C the trip was exhausting.
D the journey was intriguing.
**ILLINOIS RAIN FOREST**

by Mona Gedney

When we think of rain forests, the term conjures up images of lush greenery in warm climates like Central America. Few of us would connect a rain forest with the state of Illinois, where icy winds sweep down from Canada most months of the year. Nevertheless, Illinois is home to a most unusual tropical rain forest. It covers more than 2,000 acres, contains towering trees, and is 300 million years old.

Miners were digging in a coal mine near Danville, Illinois in 2004. As they dug, they could see the outlines of logs and leaves above them. Miners are accustomed to finding plant fossils as coal is formed from great pressure applied to plant matter over millions of years. Still, this area of the mine had an unusual number of well-preserved specimens. Then an adjacent mine revealed more fossils preserved in its ceilings. Coal excavations were halted and paleobotanists, scientists who study fossil plants, were invited into the mine.

Since that time, the ancient rain forest has been carefully scrutinized. Paleobotanists descend 200 feet below the surface to do their work. On the ceilings above them they can see the remains of the largest fossilized rain forest yet discovered. The ceilings in the mines afford them an unusual look at a horizontal layer of fossils. Best of all, they are able to study an entire ecosystem, preserved in stone.

Before this discovery, scientists were forced to look only at isolated plant fossils. They could never be sure of what the whole forest looked like. But the Illinois rain forest is intact. Scientists can see exactly how things were 300 million years ago, during the Carboniferous Period. During this era, the climate produced great forests that later formed rich layers of coal.

In the Carboniferous Period, Illinois was close to the equator. The rain forest was located on a fault line that was causing the area to sink slowly. Then an earthquake occurred that very abruptly lowered the rain forest below sea level. Mud flooded into the area, keeping things pretty much as they were. The trees and plants drowned, but remained upright.

In that ancient forest, tree ferns and giant horsetails grew 30 feet high, creating a dense canopy. Piercing through the canopy were club mosses—trees that resembled giant asparagus stalks and reached 100 feet into the air. They towered above the lower canopy of ferns and shrubs. Not until late in their lives did they produce a "crown" of branches at the very top of the pole. The cones produced in that crown were often more than a foot in length. The trees' thick bark ultimately became a major ingredient of today's coal.

Scientists have compared the sudden death of the ancient rain forest to a much more modern event. During 1811 and 1812, earthquakes near the New Madrid fault shook the center of the United States. The quakes were as powerful as the famous San Francisco earthquake of 1906, which destroyed a large portion of that city. The New Madrid earthquakes created several sunken lakes, such as Reelfoot Lake in the northwestern corner of Tennessee, and submerged several forests. They rearranged the surface appearance of that part of the country, even changing the course of the Mississippi River.
The rain forest in Illinois was swallowed up during such a cataclysm, millions of years ago. However, the place where it was discovered today shows no signs of the prehistoric disaster. Above the forest of fossils stretch flat, peaceful meadows that offer no clue to the treasures that lie beneath.

What kind of passage is this?

A  persuasive  
B  dramatic  
C  informational  
D  narrative

To which genre does this passage belong?

A  biography  
B  legend  
C  nonfiction  
D  story
Directions: Read the passage "The Oldest Fire in the World." Then answer the questions that follow.

THE OLDEST FIRE IN THE WORLD
by Laura Bresko

The oldest fire in the world has been burning for over 40 years, right here in the United States, and will probably continue for many years to come. In 1962, a fire in a landfill set off a blaze that still burns today. The landfill was built in an abandoned coal-mining pit. Tunnels dug in the walls of the pit led to an enormous seam of anthracite, an extremely dense form of coal. Flames from burning trash traveled through one of the mining tunnels and set off the coal. Although the fire stayed underground, it spread for acres and caused incredible damage. The resulting fumes, heat, and ground instability forced evacuations of local residents from the late 1960s through the early 1990s. The fire continues to spread and cause damage today. No known technology can extinguish the subterranean fire.

Until 1828, few people knew how to ignite anthracite and use it for fuel. Anthracite was so compacted that no ordinary flame could make it burn. Then a Scotsman named James Neilson invented the hot blast furnace. The air produced in the first chamber of the furnace was blown over anthracite, located in the second chamber. The hot air caused the surface of the anthracite to ignite. Because it was so dense, anthracite could produce enough heat to melt iron ore. It was also plentiful and a little went a long way, lowering the cost of iron production. Once the hot blast technique was perfected, anthracite was in demand all over the world. In the United States, anthracite is found exclusively in Pennsylvania. As a result, Pennsylvania's mining industry boomed during the nineteenth century. When newer fuels replaced anthracite in the twentieth century, the black gold rush ended and most anthracite mines were abandoned.

Abandoned mines dot the landscape in Pennsylvania's anthracite country. Towns often use the sites for landfills. Such was the case in Centralia, a small town built directly atop an anthracite seam. When the Centralia landfill caught fire, no one was alarmed; it was down in the ground and contained. They did not realize that Centralia's landfill was similar to Neilson's hot blast furnace. The trash in the landfill provided the fuel to heat up the air in the pit. Dumping continued and the trash burned for weeks, stoking the fire and making it extremely hot. The hot air released by the burning trash traveled through the empty mining tunnels and into the abandoned anthracite mines, causing the coal to ignite.

Despite efforts to douse the fire with water, the landfill continued to burn. Experts were brought in to help with the situation. Readings of the smoke coming from the landfill determined that burning coal was indeed producing some of the smoke. The warning came too late, though. Local fire fighters
poured thousands of gallons of water into the landfill but the fire flared up again in a few days. The fire had already started burning into the Buck Mountain anthracite coal seam lying underneath Centralia, and no one could stop it. State and federal governments spent $3.3 million dollars on unsuccessful efforts to control the fire between 1962 and 1978.

By 1979, large pits in the earth began opening up where the underlying coal had turned to ash. The process, known as subsidence, swallowed roads and destabilized buildings. Pennsylvania Route 61 crumbled despite thousands of dollars spent by the state in 1983 to repair the road. Ground temperatures rose as high as 1000 degrees Fahrenheit just feet below the soil in some areas of town. Smoke rose from cracks in the ground, poisonous gases escaped, and plants withered. Centralia's gas stations closed from fear of explosions. Though residents desperately wanted to leave, they couldn't. Insurance companies canceled their homeowner policies and banks threatened foreclosure. The residents of Centralia were trapped.

In 1984, the U.S. Congress intervened. It appropriated $42 million for the State of Pennsylvania to buy homes from Centralia residents. Congress called this evacuation effort "voluntary acquisition" since the residents could choose not to sell their homes and remain in Centralia. Between 1985 and 1991, 545 residences and businesses were relocated. In 1992, the state government began condemning homes threatened by subsidence and noxious gases such as carbon monoxide. Some diehard residents remained in Centralia, though. According to the state's Department of Environmental Protection, Centralia's former population of 1,100 dropped to 46 by 1996. The current population stands at around ten.

Today, Centralia is an eerie ghost town. The wafting smoke and shifting soil are too dangerous for most to brave. The detour signs on Route 61 give no indication of the troubles in Centralia; most cars just veer around the smoldering town. But for those who are fascinated by the fire, Centralia has become a sort of Mecca. Tourists come to stare at the devastated landscape, and conspiracy theorists gather to share their outlandish ideas. The most hopeful of the visitors are the research teams. They study Centralia's soil, plants, and animals and believe that the effects of the fire will shed light upon the processes that created this planet. Though a terrible tragedy, the Centralia fire may someday lead to breakthroughs in science and technology.

The 1985-1991 evacuation involved "voluntary acquisition." What does this term mean?

A The government only bought homes that Centralia residents were willing to sell.
B The government sought the help of volunteer fire fighters.
C The government bought the town and forced the residents to evacuate.
D Residents could volunteer to stay and keep an eye on the fire.
Read this statement from the passage.

But for those who are fascinated by the fire, Centralia has become a sort of Mecca.

What does this sentence mean? Use information from the passage to support your answer.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________