Grade 5 Reading OAT Authentic Questions

Reading Applications Informational Text Standard

Amber: The 40-Million-Year-Old Trap Reading Passage Questions

1. Which statement summarizes the main idea of the selection?

   A. Amber can be made into beautiful jewelry for people to admire.
   B. Many things can be learned about our ancient past by studying amber.
   C. The earth has changed in many ways over millions of years.
   D. It is important to keep pieces of amber in museums.

2. Use the selection to summarize how people used amber. Write your answer on a separate piece of paper.

3. What caused amber to form?

   A. Resin was mixed together with honey and oil.
   B. The climate of the earth became warmer.
   C. Giant trees were buried under saltwater.
   D. Air bubbles hardened into clear glass.

4. Why do scientists study insects trapped in amber?

   A. to find out if the insects are alive
   B. to find out where amber is hidden
   C. to learn about the earth's past
   D. to learn how amber cures illnesses

Ancient Fuels, Modern Problems Reading Passage Questions

5. According to the selection, what might happen if we put devices in power plants and vehicles to reduce carbon dioxide?

   A. Transportation costs will rise.
   B. People will use wind energy.
   C. Global warming will increase.
   D. People will burn less fossil fuel.

6. Use the selection to provide two reasons people oppose limiting our use of fossil fuel. Write your answer on a separate piece of paper.

7. Which statement is an opinion?

   A. The world should take a big step toward slowing global warming.
   B. The gasoline and diesel fuel burned by cars and trucks is made from oil.
   C. Coal-burning power plants produce a great deal of electricity.
   D. If we burn less fossil fuel, less carbon dioxide will be produced.

Sneakers! The All-Stars of Footwear Reading Passage Questions

8. Charles Goodyear accidentally discovered rubber. Which statement shows the cause of that accident?

   A. He added some raised notches and a waffle pattern.
   B. He poured hot rubber onto a waffle iron to harden.
   C. He let white liquid latex cool and harden as it dried.
   D. He dropped rubber mixed with sulfur on a hot stove.

9. On a separate piece of paper, write a summary of the the selection. Begin with the main idea. Use the subheadings as a guide. (4 points)

10. Vulcanized rubber is different from rubber used in Europe in the 1700s.

Which statement supports this idea?

A. Vulcanized rubber makes clothing waterproof.
B. Vulcanized rubber can rub out pencil marks.
C. Vulcanized rubber gets sticky in hot weather.
D. Vulcanized rubber stays stretchy in cold weather.

11. What was the first thing manufacturers did that made many people begin to buy sneakers?

A. They made waffle soles for traction.
B. They made a simple, low-cost sneaker.
C. They made lightweight shoes that helped people run faster.
D. They made sneakers that kept basketball players from slipping.

Vision of Mars Reading Passage Questions

12. In the 1800s, people noticed that Mars' red color faded to brown and then grew red again. What did the people think caused the changes in color?

A. cities on Mars
B. canals on Mars
C. storms on Mars
D. seasons on Mars

13. Complete the chart below with two main ideas from the selection and one detail to support each main idea. (4 points)

Main Idea and Details Chart

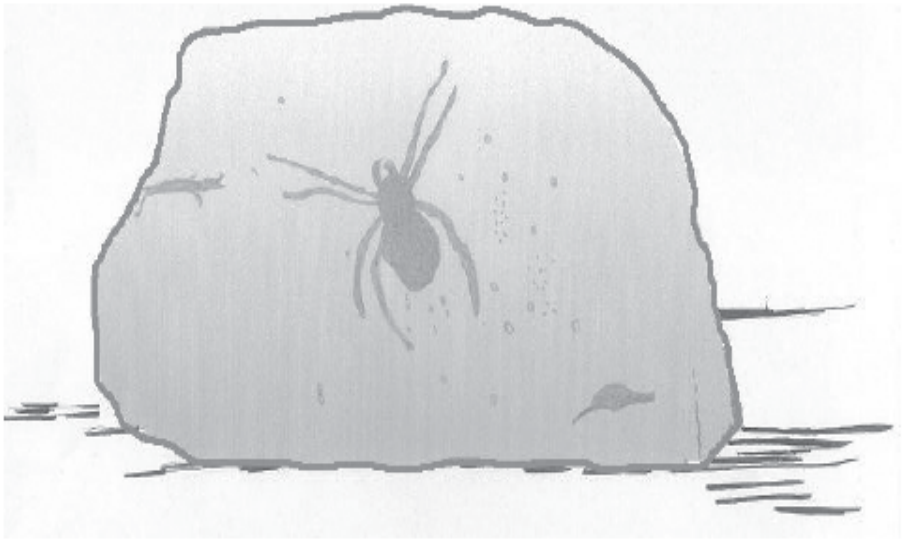
Main Idea	Detail to Support the Main Idea
a.	a.
b.	b.

14. On a separate piece of paper, write a summary of the selection. Remember to include the main idea. Use the subheading as a guide. (4 points)

Directions: Read the selection.

Amber: The Forty-Million-Year-Old Trap

by Marjorie Jackson



Forty million years ago, when the earth was much wetter and warmer, huge forests with many kinds of trees thrived in the far north. Out of some of these trees, stretching as tall as ten-story buildings, oozed a sticky **resin**. Mosquitoes buzzed through the forests, grasshoppers and crickets leaped, and ants and spiders scurried by the trees in search of food. If they carelessly let a leg or wing touch the resin—*zap!*—they were stuck.

Millions of years passed, and the **climate** of the earth altered dramatically. The northlands turned cold and icy. The giant trees fell, buried under the salt water that now covered the land. Far beneath the water, the globs of resin slowly changed, hardening into solid, glowing pieces of amber.

Still millions of years later, storms at sea broke the amber free and tossed it onto beaches for early cave dwellers to find. The cave dwellers wondered if the strange golden stone, warm to the touch, could be solid sunlight. Using flint and bone tools, they carved pieces of amber into the shapes of animals or the sun and wore them on cords around their necks for protection.

For hundreds of years, people used amber in jewelry or to decorate warriors' weapons; some soldiers braided amber beads in their horses' manes to ensure success in battle. Amber was also ground fine and mixed with honey, oil of roses, and crabs' eyes or claws for use as medicine. Amber mixtures were believed to cure earaches, headaches, and any number of diseases. Even wearing buttons or beads carved from amber was thought to keep a person well.

In the early 1700s, King Frederick I of Prussia had an entire room built from 100,000 pieces of amber of many colors—yellow, orange, red, brown, and even blue and green—all fitted together like a giant jigsaw puzzle. When the sun shone through the windows, **nobles** said, they felt as if they were standing inside a jewel box. The room was used and admired for more than 200 years, but in the 1940s, during World War II, it was taken apart and loaded into boxes for storage in a safer place. The boxes were somehow lost, and where the amber room is today remains a mystery.

Some of the oldest pieces of amber are mined in Appalachia, in the eastern United States. The Baltic seacoast also has large deposits. But the Dominican Republic, in the Caribbean, yields the most pieces with insects, leaves, feathers, and other remains of life.

Some pieces of amber have air bubbles inside that keep the light from passing through, making it look cloudy, but many others are clear like glass. The pieces of amber with inclusions of early life or gas bubbles are the most valuable to scientists. They hold clues about the earth's **ecology** millions of years ago and enable scientists to compare early life forms with today's. More than a thousand kinds of insects have been found preserved in amber, from prehistoric flies that proved to be the ancestors of our houseflies to a 140-million-year-old weevil that lived at the time of the dinosaurs. Whole flights of insects were sometimes trapped in one glob of resin; one two-inch piece of amber has 2,000 ants in it! Although most of the preserved insects are now extinct, their **descendants** may still survive, sometimes in new places. A termite found in Mexican amber now lives only in Australia.

Many natural history museums have pieces of amber on display. Look for them during your next visit. These golden traps, 40 or more millions of years old, are the closest thing we have to snapshots of our ancient past.

Word Bank
climate — the usual weather conditions in a particular region
descendants — people or animals coming directly from an earlier, usually similar, type or individual
ecology — environment or habitat
nobles — people of high rank or birth
resin — a sap-like substance that some trees make to protect themselves when cut

Directions: Read the selection.

Ancient Fuels, Modern Problems

by Rebecca L. Johnson

Fossil fuels power our modern way of life. Coal-burning power plants produce much of the world's electricity. Cars and trucks burn gasoline and diesel fuel, which are made from oil. Natural gas heats many homes and offices, and electricity runs air conditioners that cool them.

Although fossil fuels can be very useful, burning fossil fuels adds billions of tons of **carbon dioxide** to the air each year. To slow down global warming, some people say we need to quickly reduce our use of these fuels. Other people think that reducing our use of fossil fuels would be a mistake.

Worldwide, some countries burn a lot more fossil fuel than others do. The high-demand energy users release large amounts of carbon dioxide into the world's atmosphere. The United States, for example, pumps out roughly one-fourth of the world's carbon dioxide emissions.

To Burn or Not to Burn

Most people agree that burning fossil fuels affects **global warming** and that global warming will affect Earth's climate. But what do we do about it? People have very different opinions. Some people think that the world should take a big step toward slowing global warming. How? By reducing the amount of carbon dioxide released into the atmosphere. They suggest several ways to do this.

One way is to conserve energy. If we burn less fossil fuel, we'll produce less carbon dioxide. A second way is to put special devices into power-plant smokestacks and car and truck exhaust systems. These devices capture more carbon dioxide before it is released into the air. A third way is to focus on developing **renewable energy sources**, such as solar energy and wind energy, that could replace fossil fuels and wouldn't add carbon dioxide to the air.

When should we take these actions? "Right now!" say people who want to reduce fossil fuel use. Even though questions remain about the effects of global warming, they say that it's better to act quickly before things get out of control.

Not everyone agrees, however. Those who oppose limiting our fossil fuel use argue that fossil fuels are plentiful and relatively cheap. Reducing the use of fossil fuels would cause unnecessary hardships. They say that fitting power plants and vehicles with carbon dioxide-trapping devices will drive up the cost of electricity and transportation. It also will cost hundreds of billions of dollars to develop renewable energy sources that can truly replace fossil fuels. Who will pay for all these changes?

Some people who are against reducing fossil fuels also point out that global warming has been slow to happen. Why be hasty in making big, expensive changes? Scientists still can't say without a doubt what will happen as the world warms. Shouldn't we wait to take action until scientists know for sure, they ask?

Dramatic changes due to global warming may or may not be part of our future. While there's evidence that global warming is affecting our world, there are still many questions about how extreme those effects could be. Many questions also remain about what we should do about global warming. Should we reduce

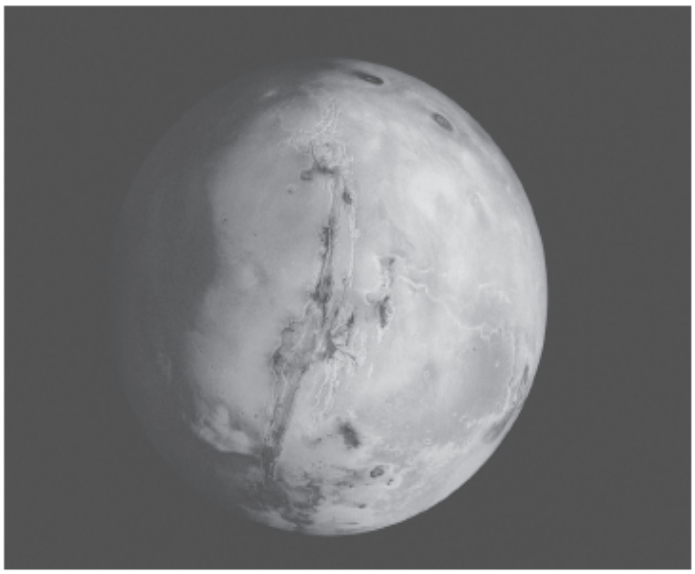
the amount of carbon dioxide in the air as quickly as possible? Or will cutting back on fossil fuel use be too costly? Scientists continue to search for answers to these questions. In the meantime, the debate surrounding global warming keeps heating up!

Word Bank
carbon dioxide *(KAR-buhn die-AHK-side)* — a heat-trapping (greenhouse) gas in the atmosphere produced by living things and by burning **fossil fuels** — fuels, such as coal, oil or natural gas, that are formed from the remains of ancient plants and animals **global warming** — an increase in the Earth's average surface temperature **renewable energy sources** — sources of energy, such as solar or wind energy, that do not get used up

Directions: Read the selection.

Visions of Mars

by Nancy Finton



What's happening on Mars? It's hard to tell. After all, Mars is more than 35 million miles from Earth. That makes it difficult to study. People can only catch glimpses of the planet through telescopes and in photos shot from spacecraft. Then—using science, imagination, or both—they try to figure out what's going on out there. Throughout history people have come up with different ideas about Mars.

Peering through a telescope in the 1800s, an astronomer thought he saw lines crisscrossing Mars. People decided that these lines were canals, or waterways, built by intelligent creatures to direct water across the planet's dry soil.

Other Mars watchers noticed that the red planet sometimes faded to brown, then grew red again. What could cause this? Some figured they were looking at **Martian** plants blooming and dying as the seasons changed.

Today: A Red Dusty Desert and a Big Mystery

NASA has been exploring Mars for nearly 40 years. Spacecraft have orbited, or looped, the planet to take pictures. And robots have explored the Martian surface and sent back electronic information. Based on these findings, scientists

can agree on this: Mars is a frozen red desert whipped by tornadoes and fierce winds. Craters and ancient volcanoes spot its surface.

Experts also agree that the "canals" people thought existed are actually natural peaks and valleys, seen from millions of miles away. And the "plant blooms" are colorful dust storms.

To see scientists disagree, just ask about water on Mars. Water is a huge question because it could be a sign of Martian life. "On Earth, almost wherever there is liquid water, there is life," says NASA's Pascal Lee.

Until a few years ago, most scientists agreed that water had flowed over Mars, but not for millions or billions of years. New photos, however, have changed some minds.

Around 1996, a spacecraft called Mars Global Surveyor (sir VAY er) snapped photos as it began to orbit Mars. The Global Surveyor images showed unusual **gullies**, or narrow valleys, often created by flowing water. Scientists had seen ancient Mars gullies. But these gullies looked newer. They weren't marked by ancient craters or worn down by wind.

Some experts think that streams of water carved the gullies. That means that Mars may have experienced some sort of liquid water flowing on the surface in more recent times. "Thus the question of life on Mars even at present cannot be ruled out," Lee says.

Not everyone agrees with Lee. The problem is, water wouldn't stay liquid on today's Mars. The average temperature of minus 27°F would turn liquid water to ice. Or Mars's low air pressure would quickly turn the liquid into a gas.

So how could water flow? "It's possible that Mars was warmer a few hundred thousand years ago," Lee says.

Other scientists still doubt that there was water less than a million years ago. They are seeking new reasons for the gullies. Some think jets of a gas called carbon dioxide (CAR bun die OX ide) caused them. The answer may come from Odyssey (AH dah see), a spacecraft now orbiting Mars. Its instruments are designed to detect signs of water and other chemicals near the surface of Mars.

2017 and Beyond: A Home Away from Home?

When will humans reach Mars? It's anyone's guess. "A long time ago I bet that the first landing would happen in 2017. I'm sticking to that," Lee says. "Scientifically, it's still possible."

During the next 10 years, NASA plans to send robots to move across the dusty surface of Mars. Robots may even collect the first rock samples to be rocketed back to Earth. But many think that robots can't solve the mysteries of Mars. "Humans are the explorers. They ask the questions," Lee says. "Robots are just some of their tools."

Yet people aren't rushing to Mars. For one thing, getting there takes six months. And once there, people would need to guard against dangers such as poisonous air and temperatures falling to minus 160°F.

Still, some scientists dream of building a research station on Mars. Astronauts would live in inflatable houses and grow food in greenhouses. They would wear airtight suits and explore the planet in vehicles called **rovers**.

While on Mars, astronauts could make breathable air with a machine that pulls oxygen out of the thin Martian atmosphere. They could also use chemicals in the atmosphere to make fuel. "Even the first Mars mission might make rocket fuel to return to Earth," Lee says.

In the more distant future, others hope that humans will be able to live and vacation on Mars. There are even ideas for warming up the planet and giving it a more breathable atmosphere. Will you ever be able to buy a ticket to Mars? For the moment, you'll have to wait and see.

Word Bank
gullies — long, shallow ditches or valleys
Martian — something that exists on or comes from the planet Mars
NASA — National Aeronautics and Space Administration
rovers — vehicles, like cars, that are used on the moon and planets to get around

Directions: Read the selection.

Sneakers!

The All-Stars of Footwear

by Patrick Joseph

Look down at your feet. What are you wearing on them? Odds are the answer is sneakers. Sneakers are everywhere. But how much do you know about this popular footwear? How were sneakers invented? What are they made of? And why are they called "sneakers" anyway?

Rooted in Rubber

The story of sneakers started about 500 years ago. That's when European explorers in Central and South America noticed Native Americans playing with an unusual ball. The ball was made from a milky, white liquid that oozed out of the *cahuchu* (ka OO choo) tree. The liquid, known today as latex (LAY tex), hardened as it dried.

Native Americans had practical uses for latex too. They spread the sticky liquid on their feet. Once it dried, it formed a very thin "shoe" that protected their feet from water. They also made waterproof bottles with latex.

When explorers brought latex samples back to Europe in the early 1700s, scientists started searching for their own ways to use it. In 1770, an English chemist named Joseph Priestley discovered that the gummy stuff could rub out pencil marks. People dubbed it "rubber," and the name stuck.

The Right Stuff

By the early 1800s, manufacturers in the United States and Europe had found many uses for rubber. They used the stretchy, waterproof stuff for raincoats, hoses, elastic bands, and more. But rubber wasn't very good for making most things. It got too brittle in the cold and too sticky in the heat.

That changed in 1839. An inventor named Charles Goodyear mixed rubber and a smelly yellow chemical called sulfur. Then he accidentally spilled the mixture onto a hot stove. The resulting glop stayed firm and stretchy whatever the temperature. It was called vulcanized (VUL can ized) rubber, named after Vulcan, the Roman god of fire.

Sneaking Around

A few years later, manufacturers teamed vulcanized rubber soles, or shoe bottoms, with a tough fabric called canvas. The result was comfortable, lightweight shoes. Up until then, almost everyone wore leather shoes with hard soles that clomped loudly with each step. The new rubber-soled shoes were very quiet. You could easily sneak around in them, so people started calling them "sneakers."

At first, sneakers weren't very popular. For one thing, they were expensive. And people were more excited about using vulcanized rubber to make tires for bicycles—and, later, cars. But in 1916, a rubber company introduced a simple sneaker called Keds. Its price was low, so many people could afford a pair. Keds were a huge success.

A year later, another company called Converse created the first basketball sneaker. The All Star model featured rubber soles that kept players from slipping on the court. They also had canvas tops that went up around the ankle for good support. Sneakers were off and running.

Stepping Up Design

It wasn't until the fitness craze of the 1970s that many people started taking sneakers seriously, though.

Track coach Bill Bowerman was one of these people. He realized that if he could create lighter sneakers, his runners would save energy. In fact, shaving just

one ounce off the shoes would help. The runner's legs would lift 200 fewer pounds over the course of a mile. That could help his athletes win races.

One day in 1971, inspired by his breakfast, Bowerman poured liquid rubber into his wife's waffle iron, and let it harden. The experiment ruined the waffle iron. But it resulted in the first "waffle soles." These were lighter than flat soles because of all the notches in the waffle pattern. Plus they gave better traction, or grip. A new model for sneaker soles hit the pavement.

Modern Wonders

Today, sneakers are big business. In 2000, people in the United States spent more than $15 billion on them. That means they purchased more than 405 million pairs. Modern sneaker designs jump far beyond the first canvas-and-rubber model.

Whether you wear sneakers to play sports or for fashion flair, the choices today are endless. So the next time you get a new pair of sneakers, take a good look at how they're made. Think about what goes into them and all the history behind them. Then slip them on and take off!