Minerals, Minerals…Everywhere!

Word Search Story

Name: _____

Read the following story about how we use minerals and metals in our lives. The words in red are words that are used in the Word Search Puzzle.

Since ancient times, people have used minerals that were found in the Earth to make their lives better. The earliest tools and weapons used by people were made of minerals they learned were hard and could be formed to have a sharp point. Ancient people used minerals like chert, flint, jasper, obsidian and quartzite to make weapons to hunt with and to protect themselves and their families. They also used these minerals to make tools. How did they make these tools and weapons? Sometimes they used other hard-pointed sticks or even rocks to shape these minerals into weapons and tools. An important tool was the clay pot. Pieces of clay pots have been found in Japan that are around 13,000 years old! Can you imagine how difficult it would be to carry things without a pot? It certainly made cooking and storing food and water a lot easier when people learned to make and use clay pots.

Ancient people didn't have money they way we have money. Instead, they traded valuable items for things they needed. Some of the items they used to trade for things they didn't have were minerals and gems like agate, jade, opal, and turquoise. Long long ago, people had to figure out how to create houses so they and their families could be protected from the environment. Ancient people learned they could mix soil with water to make mud. They soon figured out that if they added straw and grass to the mud mixture, the mud would be stronger when it dried. They formed the mud mixture into brick shapes called adobe and stacked them together. What do you think they used to keep the adobe in place? You got it … more mud! Today, bricks are made of clay.

The earthquakes and volcanoes we have today were also part of the lives of ancient people on Earth. The one thing we know for sure is that the land we live on today has changed many times and will continue to change in the future. In some places, like North Georgia, we have mountains and valleys. In some places, erosion from rushing water has caused canyons to form. Wind patterns have caused sand dunes to form on the Georgia coast. Stone Mountain is the result of a volcano that

erupted a long time ago. Stone Mountain is a huge piece of granite that was formed deep inside the earth in a magma chamber. Over millions of years the rocks and earth around this piece of granite eroded leaving this beautiful granite mountain for us all to enjoy.

We have a much easier way of life than ancient people did because scientists have developed technology that makes our lives easier. All of the products we use today come from minerals that are found in the Earth. These minerals are the raw materials used to make the products we use and they have to be mined or taken out of the Earth so we can use them. Imagine how hard it was to dig minerals out of the earth by hand. Today, technology has made this job much easier because a lot of the work is done by machines. Mining is the process of extracting the natural resources of the Earth for people to use in their daily lives.

Mining for minerals is done in many different ways. Some minerals are found near the surface of the Earth and they can be mined by the open pit or strip mining method. Other minerals are hidden deep inside the Earth and can only be extracted by digging a deep shaft straight down into the Earth. Minerals that are extracted from the Earth are called ores. How ores are mined depends on where they are found in the Earth.

Halite is the mineral we make the salt we use on our food from and it is mined like potash is mined. Potash is used to make fertilizer. Both halite and potash are mined underground using the room-and-pillar mining method. Marble is the metamorphic form of limestone and it's mined by the quarry method. The quarry method of mining takes big blocks of marble out of the ground. Marble is used for buildings, flooring and for statutes. Sadly, any fossils that might have been in the sedimentary rock limestone before it was metamorphosed are probably gone because the high heat and pressure required for metamorphic rocks to be formed.

When enough of a mineral is found to make it worthwhile to mine that mineral it is called an ore body. In addition to the mineral, an ore body may contain different metals like tin, titanium, lead, zinc, tungsten, gold and silver. If there are several minerals found in one ore body, a metallurgist may be called in to decide how each mineral should be mined.

Mining minerals and metals can be very expensive so mining companies have to decide if there is enough good quality minerals or metals in a location on the Earth before they begin mining. A geologist is the scientist who comes to the location and determines the size and value of an ore body. Geologists drill holes in the Earth with a core drill that brings material from inside the Earth up to the surface. Geologists inspect the material to determine its mineral content. Chemists study the minerals brought up by the drill core to determine how much of the minerals or metals are in that location of the Earth. After all this information is collected, the geologist can decide if the ore body is large enough to mine and make a profit.