Reading Selection

Rocks—Here, There, Everywhere

You can find rocks just about anywhere. One rock can be very different from another. Remember the properties you and your partner described when you looked at your rocks? Did you know that the properties of a rock can give you clues about how it was formed?

Rocks Formed under Water

Have you ever seen a rock with layers? Some of these rocks were formed under water. They are made up of pieces of other rocks and things like sand, clay, and mud that settled in layers under water. After a long time, the layers piled up and stuck together.

Sometimes, plants, bones, or sea shells got caught in the layers. They formed fossils. Some **fossils** are the prints of plants and animals that lived long ago. Other fossils are actual parts of plants or animals that have been mineralized. Can you find fossils in any of your rocks?

Do you know what a pebble is? If you look closely, you can see pebbles in some rocks that formed under water.

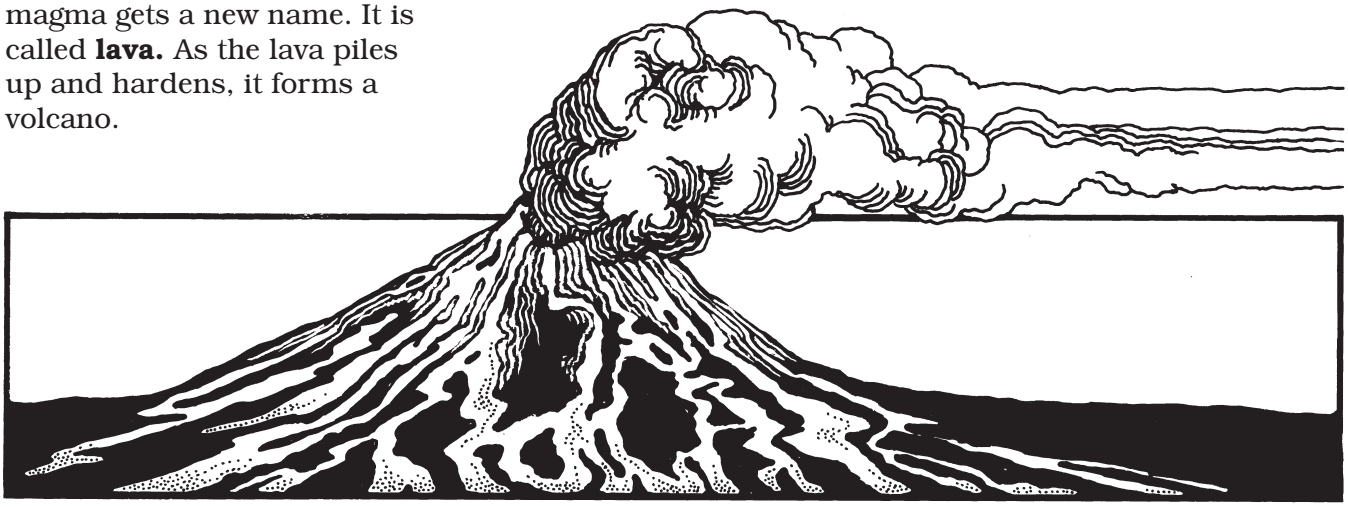
Because these rocks are formed of **sediment,** or bits and pieces of matter that have settled to the bottom of water, scientists call them **sedimentary** rocks.

Look at your rocks. Which ones might be sedimentary? Why?

Rocks Formed under Ground

Some rocks were formed inside the earth. Deep inside the earth, it is very hot. In fact, it is so hot that rocks melt! Melted underground rock is called **magma.**

Sometimes the magma erupts through the surface of the earth. Rocks, flames, and steam spout toward the sky. When this happens, the magma gets a new name. It is called **lava.** As the lava piles up and hardens, it forms a volcano.



Rocks from volcanoes don't always look the same. Some look like glass. They are smooth. This is because they cooled fast. Other rocks from volcanoes cooled slowly. Gas bubbled out, causing small holes to form. Their surface is often rough.

Volcanoes often erupt more than once. As soon as the lava starts to harden, more lava lands on top of it! Rocks formed this way have bands, or streaks, in them.

Sometimes the magma cools very slowly underground. Rocks formed in this way are very hard and heavy. You can see pieces of minerals in them.

Rocks formed from magma are called **igneous.** Which of your rocks do you think could be igneous? What properties make you think so?

Changed Rocks

Rocks don't always stay where they are formed. Over time, earthquakes move them around. As rocks are moved, they can change. They become twisted. They can even break up.

Think about tearing a piece of a paper. It's easy, isn't it? But could you tear up a telephone book? You'd have to be pretty strong. And do you think anyone could be strong enough to tear up a rock? Probably not. But rocks can tear as a result of underground pressure.

Heat also changes rocks. There is heat just under the surface of the earth. It is not hot enough to turn rocks into liquid, but it is hot enough to change them. Think about what happens to a grilled cheese sandwich. The cheese is solid at first, but as soon as it heats up, it becomes soft. It changes form. The same thing can happen to rocks.

Find rocks 5 and 10. Rock 10 was formed from a rock like 5. How are they alike? How are they different? Rocks that have been changed by underground pressure or heat are called **metamorphic.**

Which other rocks do you think could be metamorphic? What properties make you think so?

Rocks will give us clues about how and where they were formed—if we take time to look at them closely.