ROCKS AND MINERALS

What is in a Rock?
Rocks are made up of many tiny pieces of **minerals**. Even if you smash a rock into a hundred pieces, ALL those would still be all the same mineral. Breaking it into pieces would not change the rock’s makeup.

What are Minerals?
**Minerals** are natural, nonliving crystals. They come in many sizes, shapes, and colors which is how scientists tell them apart.

- **Luster** refers to the way a mineral reflects light.
- **Hardness** refers to how easily a mineral can be scratched.
- **Streak color** is a physical property of minerals, which refers to the color a mineral leaves when scratched against a surface.

Scientists use all these characteristics of minerals to identify them in nature.

Lesson Checkpoint:
What are rocks made of?

Types of Rocks
There are several types of rocks, and each is formed in a different way.

Sedimentary Rocks
**How do sedimentary rocks form?**
Erosion is the process of bits of rocks, sand, soil, and dead matter being moved by the wind, water, and gravity. All the eroded materials that eventually settle on land or at the bottom of a body of water are known as sediment. As layers of sediment pile up, the top layers of sediment press the bottom layers together. The weight and pressure from the top layers cause the sediment on the bottom layers to harden, forming **sedimentary rock**.
Igneous Rocks

What are igneous rocks and how do they form?

Igneous rocks form from molten rock called magma, which is the melted rock found beneath the Earth's surface. Igneous rocks can form above and below the Earth. When magma reaches Earth's surface and comes out of a mountain during a volcano, magma is then called lava. Once on the Earth's surface, lava will cool quickly forming igneous rocks. These type of igneous rocks do NOT form crystals (or if they do, they are tiny) because they cool too fast to do so. Forming crystals takes much longer.

Crystals can form in igneous rock when magma slowly rises towards the surface of the Earth and then finds spaces to cool. After a long period of time the magma cools off and begins to harden. While the magma hardens, crystals form in the rocks.

Metamorphic Rocks

Metamorphic rocks are rocks that have changed due to heat and pressure. The weight of rocks pressing down on the other rocks causes the heat and pressure below the Earth’s surface.

Metamorphic rocks can form from sedimentary, igneous, and other metamorphic rocks.

Lesson Checkpoint:

What are three types of rocks?
The Rock Cycle
The rock cycle is the recycling of old rocks into new rocks. It is an ongoing cycle. The rock cycle is caused by heat, pressure, chemical reactions, weathering, and erosion. During the rock cycle, all three type(s) of rocks can change from one type of rock to another. Rocks move through a cycle that takes millions of years.

What is the rock cycle?