

Rocks Rock! Part 1

By Brenda B. Covert

¹ A rock hound is a person who collects rocks. Not only do they collect them, they can identify different rocks by studying their colors, textures, patterns, and hardness. Field guides and other books about rocks and minerals line their bookshelves. They own rock hammers, goggles, work gloves, and magnifying glasses. They have sturdy rock tumbling equipment to polish their finds, and some sort of container in which to display their rocks. It may be an old egg carton, or it may be a wooden display case with many different compartments. Every rock hound knows that rocks rule!

² Rocks are made up of minerals. Some rocks are formed out of only one mineral, while others contain several different minerals. A mineral is a naturally occurring, solid substance that forms as a crystal. There are more than 4,000 different minerals, but of those only about 100 are common. Both diamonds and chalk are minerals. Since rocks are formed from single minerals as well as combinations of minerals, imagine how many different types of rocks exist!

³ Though rocks come in all shapes, sizes, colors, textures, and degrees of hardness, geologists can classify them in three main groups. These groups describe how the rocks were formed. This lesson will cover two of the three classifications. The third and most complex classification will be covered in Part 2.

⁴ Igneous [IG-nee-us] rocks come from volcanic eruptions. They can form either from magma that has cooled and hardened beneath the Earth's surface, or from lava that cooled and hardened once it oozed or exploded onto the Earth's surface or into the ocean. Igneous rocks will have a texture determined by the speed with which the melted rock cooled. If it cooled quickly, the resulting igneous rock will be smooth. If it cooled slowly, the igneous rock will be coarse. There are hundreds of named igneous rocks. Granite is a light-colored igneous rock. Basalt, Earth's most common rock, is dark-colored.

⁵ Sedimentary [said-uh-MEN-tuh-ree] rock forms from sediment - material from the Earth's surface (such as sand, clay, gravel and seashells) that settles in layers at the bottom of watery places. If you were to scoop up a glass of water from a puddle, stream, or ocean, you could watch the sediment in the water slowly sink to the bottom of the glass. Sedimentary rock takes many years to form. As layers settle on top of layers, the bottom layers are compressed. Eventually, they are compacted into rock. They are often recognizable by distinctive stripes or spots. The best example of sedimentary rock is found in the Grand Canyon in Arizona, where the different colored layers of rock can easily be seen. Sandstone is an easy to find rock that usually reveals layers and a variety of colors.

⁶ There are two types of sedimentary rock. Clastic sedimentary rocks are made up of pieces (clasts) of preexisting rocks. Pieces of rock, loosened by weathering, wind up imbedded in sediment. If the sediment is buried deeply, it becomes compacted and cemented, thus forming clastic sedimentary rock.

⁷ Chemical sedimentary rocks are formed over time by a process called chemical precipitation. Water removes some of a rock's minerals and carries them away. Those minerals are deposited somewhere along the way, and they begin to build up. Eventually the water evaporates away or becomes oversaturated with the minerals, thus creating chemical sedimentary rock. Stalactites, stalagmites, and salt are all formed in this manner.

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<p>1. What is a geologist?</p> <p><input type="radio"/> A One who studies maps of the earth.</p> <p><input type="radio"/> B One who looks for logic in rocks.</p> <p><input type="radio"/> C One who studies people who have rocks in their heads.</p> <p><input type="radio"/> D One who studies the earth, especially rocks.</p>	<p>2. Rocks are made up of:</p> <p><input type="radio"/> A Chemicals and clasts</p> <p><input type="radio"/> B Sediment</p> <p><input type="radio"/> C Minerals</p> <p><input type="radio"/> D Volcanic material</p>
<p>3. Rocks can be classified by the following:</p> <p><input type="radio"/> A Animal, vegetable, mineral</p> <p><input type="radio"/> B Pattern, texture, odor, flavor</p> <p><input type="radio"/> C Color, shape, rolling ability</p> <p><input type="radio"/> D Color, pattern, texture, hardness</p>	<p>4. Rocks formed from volcanic eruptions are called:</p> <p><input type="radio"/> A Clastic sedimentary</p> <p><input type="radio"/> B Chemical sedimentary</p> <p><input type="radio"/> C Magmatic</p> <p><input type="radio"/> D Igneous</p>
<p>5. Rocks that have layers or clasts were formed by:</p> <p><input type="radio"/> A Sediment being compressed until it becomes rock</p> <p><input type="radio"/> B Water washing their minerals away</p> <p><input type="radio"/> C Lava oozing in layers out of a volcano</p> <p><input type="radio"/> D The hammering of a rock hound</p>	<p>6. Which of these items is not among a geologist's equipment?</p> <p><input type="radio"/> A Geometrids</p> <p><input type="radio"/> B Gloves</p> <p><input type="radio"/> C Magnifying glasses</p> <p><input type="radio"/> D Goggles</p>
<p>7. There are 4,000 common minerals found in the earth.</p> <p><input type="radio"/> A False</p> <p><input type="radio"/> B True</p>	<p>8. Whether an igneous rock is smooth or rough is determined by:</p> <p><input type="radio"/> A Whether the cooling process was quick or slow</p> <p><input type="radio"/> B Whether it has been put through a rock tumbler</p> <p><input type="radio"/> C How much pressure compacted it</p>

