

Classifying Rocks

Use the following descriptions to help you identify the rocks you have been given. Record your findings on the “Kinds of Rocks” chart.

SEDIMENTARY rocks are formed from small particles of rock and other materials that are created through weathering. Most sediments are depositing by running water. Some are left by wind, glacial ice, or evaporation. The size of the sediments is determined by the speed of moving water. The faster the water, the bigger the rock it can move. Most sedimentary rocks were formed of sediments deposited or left by ancient shallow seas.

Sedimentary rocks usually have rounded sediments, or particles. They are often layered. Some common sedimentary rocks found in Utah are sandstone, conglomerate, and shale.



Sandstone



Conglomerate



Shale

Shale is formed from particles of clay which were deposited in deep, quiet waters. It is usually red, brown, or gray. When it is wet it has a “muddy” smell.

Sandstone is formed from particles of sand that were deposited near the shore where there was wave action. It is rough and grainy to touch. It may have fossils in it. Under a hand lens, you usually see sand grains.

Conglomerate are sediments, pebbles, and other sized rocks cemented together by minerals from water.

METAMORPHIC rocks are rocks that have been changed by heat and pressure. The heat comes from volcanoes and other hot rocks under Earth’s surface. Pressure comes from the layers of rock that press down on layers below them. Metamorphic rocks may have crystals or layers because they are formed from other rocks. Some common metamorphic rocks found in Utah are marble, gneiss (nice), and schist (shist).



Marble



Gneiss



Schist

Marble is a large-crystal rock formed from limestone. Its color depends on the presence of different minerals. It can be pink, red, yellow, brown, green, or black.

Gneiss has parallel streaks or bands of minerals in it. It may be formed from a variety of rocks, including granite or basalt. It feels rough to the touch.

Schist is formed from shale or slate. It has layers and may be very shiny.

IGNEOUS rocks are formed when magma, or melted rock from deep inside Earth rises and cools. This cooling may happen below the surface or on the Earth. When magma cools slowly below the surface, the igneous rock formed may have large crystals, which are very easy to see. Other igneous rocks form on Earth's surface and cool more quickly. Their crystals are usually extremely small. Igneous rocks are usually not layered. They may have air holes in them, or they may be glasslike.

Some common igneous rocks found in Utah are obsidian, granite, pumice, and basalt.



Obsidian



Granite



Pumice



Basalt

Obsidian is a glass formed from rapidly cooled lava. It forms so quickly there is not time for crystals to grow. It has very sharp edges. Early people found this very useful for making tools such as arrowheads.

Granite is made up of mainly coarse (large) grains of quartz, feldspar, and mica. (Quartz is a clear glass-like mineral, feldspar can be pink or gray and mica may be clear or black.) The individual grains in granite are large because they formed as magma cooled slowly deep in the earth. Granite is usually speckled and varies in color from gray to red according to the different amounts of minerals.

Pumice is hardened lava froth. Because the froth contains gas bubbles, the rock is peppered with holes, like a honeycomb. Pumice floats in water.

Basalt is a common igneous rock. The grains in basalt are fine or small. It is often a heavy, dark-colored rock. Large pieces of basalt may split into many-sided columns.