

Three Basics Types of Rocks

Igneous Rocks (I)

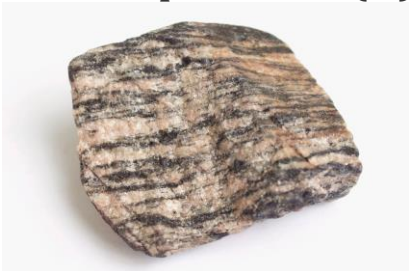


Igneous rocks are formed from the solidification of molten rock material. They have a crystalline structure, composed of an interlocking mosaic of mineral crystals. These crystals may be randomly set into the rock or they may show some form of alignment. They lack structures like layers (sedimentary rocks) and foliation (metamorphic rocks). No fossils will be evident. There are two basic types.

Intrusive igneous rocks crystallize below Earth's surface, and the slow cooling that occurs there allows large crystals to form. Examples of intrusive igneous rocks are diorite, gabbro, granite, pegmatite, and peridotite.

Extrusive igneous rocks erupt onto the surface, where they cool quickly to form small crystals. Some cool so quickly that they form an amorphous glass. These rocks include andesite, basalt, obsidian, pumice, rhyolite, scoria, and tuff.

Metamorphic Rocks (M)



Metamorphic rocks have been modified by heat, pressure, and chemical processes, usually while buried deep below Earth's surface. Exposure to these extreme conditions has altered the mineralogy, texture, and chemical composition of the rocks. There are two basic types of metamorphic rocks.

Foliated metamorphic rocks such as gneiss, phyllite, schist, and slate have a layered or banded appearance that is produced by exposure to heat and directed pressure. This foliation is often wavy, not flat like the layers of a sedimentary rock.

Non-foliated metamorphic rocks such as hornfels, marble, quartzite, and novaculite do not have a layered or banded appearance. Rather, these rocks have a more random arrangement.

Sedimentary Rocks (S)



Sedimentary rocks are formed by the accumulation of sediments. Layers may be evident, grains may be poorly held together, and you may be able to rub them off with your fingers. The presence of fossils also helps to distinguish sedimentary rocks from igneous or metamorphic specimens. There are three basic types of sedimentary rocks.

Clastic sedimentary rocks such as breccia, conglomerate, sandstone, siltstone, and shale are formed from mechanical weathering debris.

Chemical sedimentary rocks, such as rock salt, iron ore, chert, flint, some dolomites, and some limestones form when dissolved materials precipitate from solution.

Organic sedimentary rocks such as coal, some dolomites, and some limestones form from the accumulation of plant or animal debris.

Rocks Found in Pennsylvania



Schist (M)



Quartzite (M)



Limestone (S)



Dolomite (S)



Sandstone (S)



Shale (S)



Chert (S)



Slate (M)



Siltstone (S)



Coal (S)



Claystone (S)



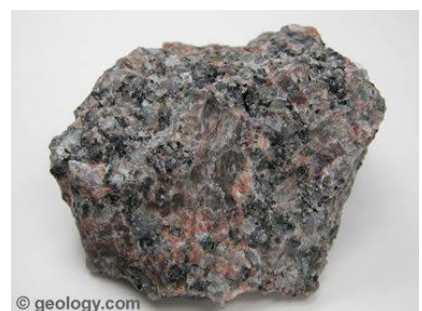
Gneiss (M)



Pegmatite (I)



Phyllite (M)



Granite (I)