

Rock Classification

Classifying Rocks

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SUMMARY

Like minerals, rocks are classified into different groups. In each groups, the rocks are further classified. To classify a rock, scientists observe its texture—a characteristic all rocks have.

Scientists classify rocks

- Geologists observe the rock's color, texture, and determine its mineral composition to classify it.
 - This helps a scientist learn the rock's **origin** or how and where it formed.
- Color is not always the best way to classify a rock. Many rocks share the same color and many samples of the same rock come in a variety of colors. Some rocks, like coal and obsidian, are always black.
- The **texture** is the look and feel of the rock's surface.
- Most rocks are made of particles of minerals and other rocks. These particles are called **grains**.

Classifying rocks by its texture

- To describe texture, scientists observe the size, shape, and pattern of the rock's grain.
- Grain Size describes how big the grains are and has two subclassifications:
 - **Coarse-grained**: the grains of the rock are large and easy to see with the naked eye.
 - **Fine-grained**: the grains of the rock are small and not easy to see. You may need a hand lens to see the grains.
- Grain shape describes the shape of the grains and has two subclassifications:
 - **Rounded**: the grains of the rock (not the rock itself) are rounded, smooth, and have soft edges.
 - **Jagged**: the grains of the rock are rough and jagged.
- Grain pattern describes how the grains are arranged and has four subclassifications:
 - If the rock is igneous or sedimentary:
 - **Banded**: The grains are in layers.
 - **Nonbanded**: The grains are randomly arranged.
 - If the rock is metamorphic:
 - **Foliated**: The grains are in layers
 - **Nonfoliated**: The grains are randomly arranged.
- There is one last category of grain and that is no visible grain. A rock with **no visible grain** is a rock that lacks any grain because it is not made of minerals or other rocks.
 - Examples of this include flint and obsidian.
 - Rocks with no visible grain are very smooth and shiny. They have the appearance of dark glass.

Classifying rocks by its mineral composition

- Scientists can also observe a rock's mineral composition to classify it.
- Most rocks are made of certain combinations of minerals. If the scientist can identify which minerals are in the rock, they are better able to identify it.
- To do this, scientists will observe the size and shape of the crystals. (Larger crystals would indicate the rock formed inside the earth, smaller crystals would indicate it formed at or near the surface.)
- Scientists can also perform the mineral property tests. For example, if a rock reacts to acid, it probably contains calcite.