

ACTIVITY 4.3: Sedimentary Rocks

Objective: To identify sedimentary rocks.

Materials: Sedimentary Rock Classification Key, mystery rocks, HCl, hand lens, Sedimentary Rock Chart, and writing instrument.

Procedure: Follow the numbered instructions to aid you in using the Sedimentary Rock Classification Key and in identifying sedimentary rocks.

1. The Key is divided into two parts--clastic rocks and nonclastic rocks. If you recall, clastic rocks are those formed from fragments of material. Nonclastic rocks are from solutions resulting from various chemical or organic processes and then precipitated.
2. Look at your rock. Determine whether it is clastic or nonclastic.
3. If the rock is a clastic, use chart A. Consider the grain size. Are the grains gravel size, sand size, silt size, or clay size?
4. If the grain size does not determine the identity, consider the composition. Now you should have your rock name.
5. If the rock is nonclastic, refer to chart B. First determine its composition. Is it composed of calcite, dolomite, chalcedony, gypsum, or halite? By determining the composition, you can eliminate several possibilities.
6. Now, if your rock is still not identified, look at the texture. After determining the texture and finding it on the Key, you have your rock name-Bingo!
7. Refer to the Sedimentary Rock Chart. From the Key, you can fill in nearly all the necessary information about your rock--Texture, Clastic or Nonclastic, Composition, and Name. You can find Environment in part III C of Chapter 4.

Below are a few examples to give you practice:

This rock is a clastic rock. It is extremely fine-grained, of clay-sized particles. The rock is _____

A nonclastic, the composition is calcite. What are the possibilities?

It has fossils that are held together by a concretish mixture. It is _____

Obviously clastic, this rock is composed of gravel-sized fragments. What are your guesses?

The fragments are rounded. O.C. is _____

Table A- Clastic Rocks

Texture	Composition/Characteristics	Rock Name
Gravel Size (over 2mm)	Rounded fragments of any rock type; quartz, quartzite, chert dominant	Conglomerate
	Angular fragments of any type of rock; quartz, quartzite, chert dominant	Breccia
Sand Size (1/16 mm to 2 mm)	Quartz with minor accessory minerals (sand may be any color)	Sandstone
	Quartz with at least 25% feldspar (sand) pink to brown in color	Arkose
Silt Size (1/256 mm- 1/16 mm)	Quartz and clay minerals (mud) layered	Siltstone
Clay Size (less than 1/256 mm)	Quartz and clay minerals (fine mud) laminated (layers)	Shale

