



## Arizona Rocks 12

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This month we will start with Sedimentary rocks. A brief description will be given for each of the rock types, but the main goal is to talk about the rocks in Arizona. Again, you can go online to Stan Celestian's geology labs to learn more, pick sedimentary rocks lab at:

<http://www.asu.edu/courses/glg103/PDF%20labs/>

Sedimentary rocks are formed from weathering products of other rocks. The rocks are weathered and broken down. The weathered products are then transported, deposited and turned into sedimentary rocks. There are two main types of sedimentary rocks, clastic or detrital and chemical. The clastic rocks are formed from pieces (clasts or detritus) formed during weathering. These include gravel, sand, silt, and clay. The chemical rocks generally form from material that has been dissolved in water and then precipitated out. There are also sedimentary rocks formed by biological action and from fossil material.

The first sedimentary rock to be covered is breccia, or perhaps better stated as sedimentary breccia as the term breccia is used for some explosive volcanic rocks (volcanic breccia) and for rocks broken up by faulting (fault breccia). Sedimentary breccia is a clastic rock, made up of angular pieces greater than 2mm in size. (Note: Geologists use the metric system for the size of clasts or pieces in the classification of sedimentary rocks. Two millimeters is about 1/12 of an inch and can be seen with the naked eye.) Most breccias have much larger pieces of rock as they are commonly formed as part of landslides or mud flows. If transport in a stream rounds the pieces, the rock is called conglomerate.

There are limited outcrops of breccia around Arizona as it is not a very common sedimentary rock. Examples can be found in Papago Park at Hole-In-The-Rock, Barnes Butte and other locations.



Breccia at Hole-In-The-Rock in Papago Park, these rocks are 20 to 25 million years old



Hole-In-The-Rock, notice the angular pieces of rock at the top.



Breccia in Box Canyon northeast of Florence, pieces of granite and metamorphic rock. Some pieces are slightly rounded indicating a short transport distance. This rock is older than 15 million years.