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### 34. WHAT KIND OF ROCK IS IT?

**Overview:** Take a look around and what kind of rocks do you see? The Yuma area has a long history when it comes to rocks. Students will explore the Garden to see the different rocks and minerals present.

**Objective:** Students will explore the Garden to see how many different rocks and mineral are available in this small area. They should be able to identify at least 10 different rocks and minerals after their visit and know what we use them for.

**Time needed:** Approximately 45 minutes.

**Group Size:** 4-6

**Age appropriateness:** 3rd grade and up.

**Site:** Any site in the Garden, but a good starting place is the granite hill below the towers.

**Background:** Yuma has a unique feature of having a rock hill under the tower at the marine base across from YCG, a hill under the water tank in the north part of town (10th St.) at Indian Hill across the river in California and the one at the Garden by the towers. These are all made up of granite and are in a straight line on a map. There is a lot to learn about this area and the fault in the middle of this hill is a good one to show students. This is a Pre-Cambrian area of about 2 billion years. The mountains you see are probably about 50 million years old. The fault is considerably younger. Students will be able to find granite and gneiss all around them. They will find the minerals mica, feldspar, quartz, hornblende and various other minerals. This activity should help students see that rocks and minerals are different and very important to our lives.

**Materials:**

Provided at the Garden

Field Guides

Hand lenses

Samples of rocks and minerals from the Garden

Provided by the classroom teacher

Labeled rocks from school

**Preparation:**

**Pre Activity:** Videos, posters, reading material on rocks and minerals, field guides and hands-on looking and classifying different specimens of rocks and minerals.

**Procedure:**

1. Students look at a variety of rocks and minerals in the Garden and try to classify them.
  2. They will then try to identify the minerals found in the rocks.
  3. Students should spend time on the granite hill under the towers and compare and contrast the types of rock along the fault.
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4. Talk about plate tectonics and how these mountains were thrust up from the ground and how the fault came along later.
  5. Explain about the San Andrea's fault on the west side of the Imperial Sand Dunes and the Algodones fault that branches off of it and runs to the gulf.

**Modifications:** Younger students can observe rocks of different sizes, colors, shapes, and textures.

**Extensions:** Students can do exploring at home or around the area and bring in some rocks and minerals and compare them to what you observed at the Garden. Students can write a story about the rocks they found or about a particular rock and how it got here. Math could be done by measuring widths of color bands or sizes and weights of various rocks. Invite a geologist into the classroom to share information with your students.

**Reference List:**

Out of the Rock, National Energy Foundation.  
The Practical Geologist, Douglas Dioxin and Raymond Burner.  
Roadside Geology of Arizona, Hulk Chronic  
The Rockhound's Guide to Arizona, Ger. Blare  
Rocks and Minerals, Carson-Delouse Publishing  
Rocks and Minerals, Teacher Created Materials  
Geology, Rocks, and Minerals, Milkier Publishing Co.  
A Field Manual for the Amateur Geologist, Alan M. Cvancara  
Field Geology in Color, D.E.B. Bates and J.F. Kirkaldy  
The Rockhound Manual, Gordon Fay  
Assorted Field Guides

**Time of Year:** any

**\*\*This activity was created by Paul Myers.**