

Field Trip Alternative Homework

Name: _____

Student ID: _____

Go to [this web site](http://www.bobspixels.com/kaibab.org/geology/gc_geol.htm) (http://www.bobspixels.com/kaibab.org/geology/gc_geol.htm) to answer the following questions:

1. What is the name of the rock formation that forms the uppermost layers at the rim of the Grand Canyon?

a. What ancient environment(s) does this rock unit represent?

b. What is its approximate age (in millions of years)?

c. What happened to the younger rock layers above this rim-forming rock formation?

2. What is the age of the oldest rock units in the Grand Canyon (in billions of years)?

3. What is the age of the rocks that make up the Dox Formation (in billions of years)?

a. Click on the photo of the Dox Formation on the upper left of the web page. What type of topography (land shape) is present (steep cliffs, moderate angle slopes, low-angle slopes, etc.)? Describe it.

b. What rock type makes up the Dox Formation?

c. Based on the surface topography seen in the photo, is the rock type that makes up the Dox Formation soft and easily eroded (low hills, subdued topography), or hard and resistant (forms steep cliffs)?

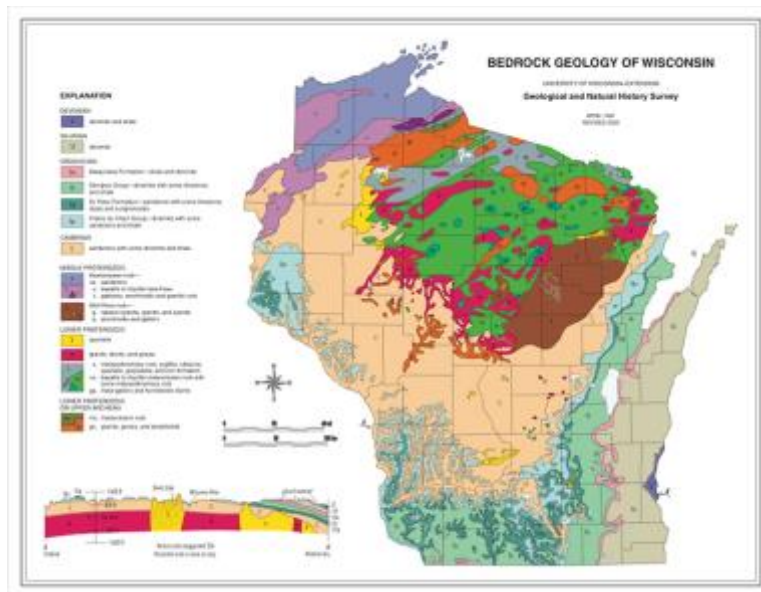
d. If we generalized this relationship to all the rock units in the Grand Canyon, what rock types make gentle slopes and which make steep (near vertical) ones?

4. What is an unconformity?

5. How old is the Hermit Shale (in millions of years)?

6. The Grand Canyon began forming when the current Rocky Mountains were uplifted. When did this occur (in millions of years)?

7. Click on the map below to download a higher-resolution version:



Above: Bedrock geology map for Wisconsin. From the Wisconsin Geological Survey. <https://wgnhs.uwex.edu/pubs/m067/> You can obtain digital versions of the maps from the Wisconsin Geological Survey (<https://wgnhs.uwex.edu/wisconsin-geology/>) and obtain other information in digital publications here: <https://wgnhs.uwex.edu/>

a. Using the Bedrock Geology map above (and link to the higher-resolution version), what is the age (name of geologic period or approximate age of rocks that make up the Door Peninsula (NE point of Wisconsin east of Green Bay)?

b. What rock type (name, ex. sandstone, limestone, shale, dolostone, etc.) is this?

8. The sedimentary rock layers in eastern Wisconsin once extended across the entire state. Why are the youngest rock layers now only found in the very eastern edge of Wisconsin?

a. What general rock type are these (rock name)?

3. Some of the rocks that make up the Grand Canyon walls are the same age as many of the rocks that are found in Wisconsin. Which rocks found in Wisconsin are ***age equivalent*** (**formed during the same geologic Period**) as rocks in the Grand Canyon. List the rock names from each site and the period in which they formed. (Hint, look at the Map Explanation for the Wisconsin map, and at the "Geologic Period" column on the figure at the bottom of the [Grand Canyon Rock Layers page](#).)

4. Write a complete paragraph comparing the types of rocks (e.g. sandstone, limestone, shale, etc.) that are ***age equivalent*** across both locations. In your paragraph, be sure to explain why you think the rocks that formed at the same time in these two places are the same rock type or different rock types.