Name:_____ Period:_____ Date:_____

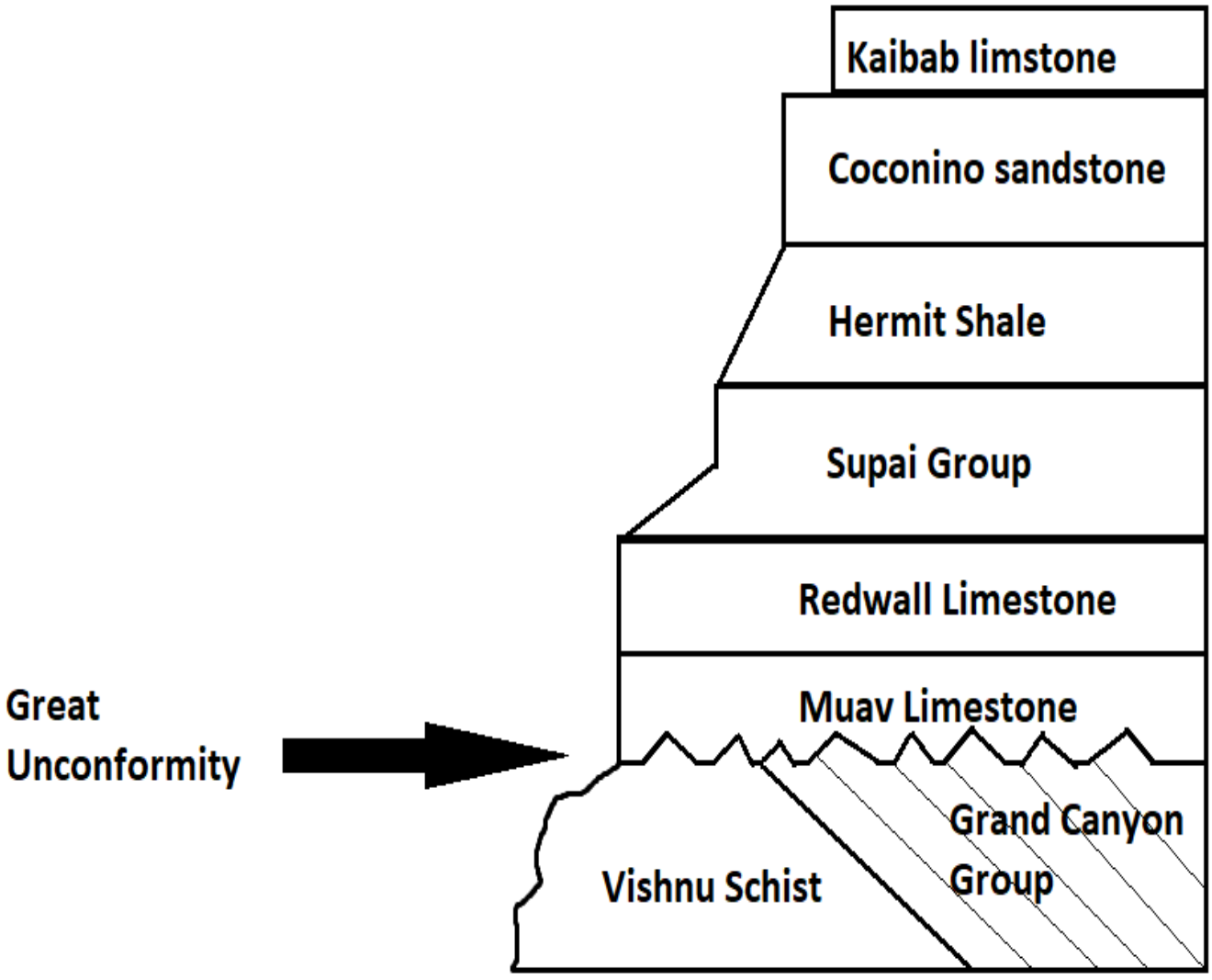
Grand Canyon National Park
Activity: Analyzing Rock Layers

Question: What can we learn about Earth's history by looking at rock layers?

Materials:

- Colored pencils

Procedure - Analyze the rock column from the Grand Canyon below.



1. Color each layer based on the type of rock, using the following key:
    a. Limestone - yellow
    b. Sandstone - red
    c. Shale - gray
    d. Schist - green
    e. The Supai group is mostly made of shale mixed with bits of limestone. Color this layer gray with some dots of yellow.
    f. The Grand Canyon Supergroup is made of both sandstone and limestone. Color these angled layers by alternating between red and yellow.

2. Which rock layer is the youngest? Which layer is the oldest? Cite the principle of geology that explains your answer.

_____

_____

_____

3. What happened to the Grand Canyon Group? Cite the principle of geology that explains your answer.

_____

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4. An unconformity is when there is a gap in an otherwise continuous rock record. The Muav Limestone is around 515 million years old, but the Vishnu Schist is around 1.7 billion years old; that's over a billion years missing from the rock record. What do you think happened to the missing rocks?

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5. Imagine you found a trilobite fossil while on your hike into the Grand Canyon. After talking to a ranger, you learned that you found the fossil in the Redwall Limestone. If you know the rocks in the Supai Group are around 285 million years old, and Muav Limestone are around 515 million years old, how old would you guess your fossil to be? Explain your reasoning.

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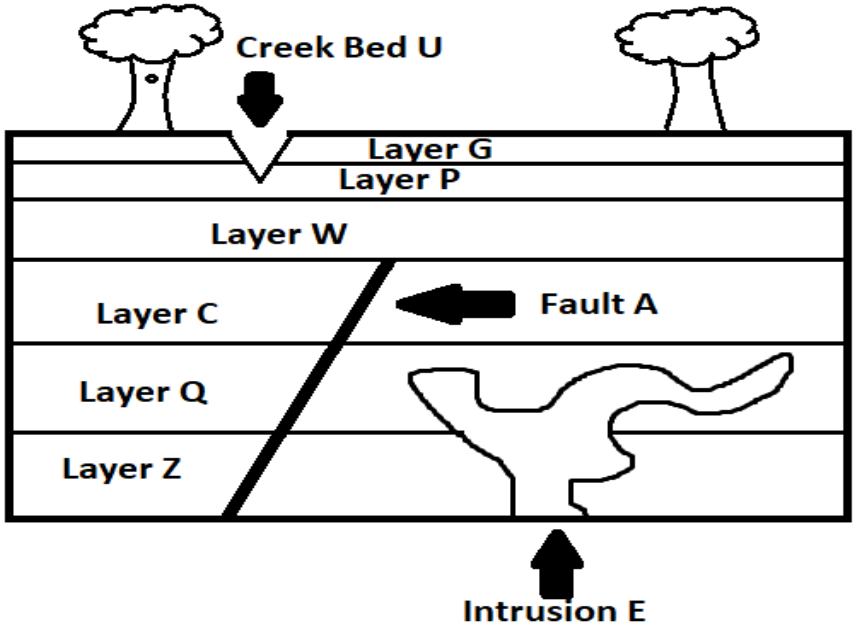
6. Trilobites were marine arthropods that buried themselves in sediment to hide as they looked for food. If you found your fossil in the Redwall Limestone, what kind of environment do you think formed that rock? (hint: What kind of habitat did your trilobite live in?)

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7. Analyze the cross-section below and put the layers and features in the order in which they formed.



Oldest _____; _____; _____; _____; _____; _____; _____; _____; _____; Youngest

8. In the space below, create your own cross-section of rock layers. Include at least two of the following: intrusion, fault, unconformity, and folding. Label each layer and feature with a letter. Then trade your paper with a friend and put the layers they have created in order from youngest to oldest.

Your Cross-Section:

Oldest _____; _____; _____; _____; _____; _____; _____; _____; _____; Youngest