

Relative Dating of Rock Layers in the Grand Staircase and Colorado Plateau

Geology 1P

Mr. Traeger

Name: _____ Period: _____ Date: _____

Purpose

The purpose of this activity is to become more familiar with the concepts of relative dating of rock layers.

Materials

<ul style="list-style-type: none">• Geologic Cross Section of the Cedar Breaks-Zion-Grand Canyon Region	<ul style="list-style-type: none">• Geologic Cross Section of the Grand Canyon-San Francisco Peaks-Verde Valley Region
<ul style="list-style-type: none">• Geologic Time Scale on pages 668-669	<ul style="list-style-type: none">• Pencil

Notes from Lecture

1. What is relative geologic dating?
2. State the Principle of Superposition of Layers.
3. State the Principle of Original Horizontality.
4. What can happen to rock layers after they are originally deposited horizontally?
5. State the Principle of Cross Cutting Relationships.
6. What is an unconformity?
7. Define the 3 Types of unconformities.

Angular Unconformity	Disconformity	Nonconformity

8. What is correlation of rock layers?
9. What are index fossils and why are they useful?

Questions from Geologic Cross Section Chart

1. Start at Verde Valley and move north. Do the rocks get older or younger as you move towards Bryce Canyon? What geologic principal tells you this?
2. Are the San Francisco Peaks older or younger than the sedimentary rock layers they cut across? What geologic principal tells you this?
3. Look for the Hickey Formation near Verde Valley. Why is it no longer seen in the San Francisco Peaks area to the North? What type of unconformity is this?
4. Look at the oldest rocks near the base of the Grand Canyon. What type of unconformity is this? Describe how it happened.
5. How has faulting changed the rock layers that are seen on the chart? What larger phenomena is faulting and folding evidence of?
6. What two areas **that are exposed** will you need to go to in order to correlate the Supai, Redwall, and Tapeats Formations? Why are there different formations between the Tapeats and Redwall formations in these areas?
7. Where would you find a good example of a nonconformity?
8. Why are the younger formations seen in the Bryce Canyon area not visible in the Verde Valley and Grand Canyon areas? What has happened?