

CLARK COUNTY MINERALS EDUCATION WORKSHOP

The Frenchman Frolic II –Constructing a Geologic Cross-Section
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Introduction

Geologic maps carry more information that is seen at first glance. Information about the faults and angles of intersection of rock types with the surface make it possible to show a cross section of types of rocks that is projected below the surface.

Materials:

- Topographic map of the area of interest (base map of the geologic map)
- Geologic map of the area of interest (Frenchman Mountain in this case)
- Topographic cross section made in previous session
- Colored pencils
- Ruler and protractor

Procedure:

1. Study the geologic map and develop questions about the map.
 - a. What part of the world does this map show?
 - b. In what ways is the Frenchman Mountain geologic quadrangle the same as the topographic map of the Frenchman Mountain quadrangle?
 - c. What do the colors on this map represent?
 - i. What information is given about the colors on the map?
 - d. What do the symbols on this map represent?
 - e. What information does this map give you that you could add to your topographic profile or cross-section across the landscape represented by this map?
2. Make a geologic cross-section of the same area covered by your topographic cross section.
3. Using a combination of the legend explaining the map colors and symbols, and the locations and juxtaposition of the colored areas on your map and in your cross-section, tell the geologic history of this area.
4. The following are some common sense relationships to help you.
 - a. LAW OF ORIGINAL HORIZONTALITY: Most sediments, when originally formed, were laid down in horizontal layers.
 - b. THE LAW OF SUPERPOSITION: In any sequence of layered rocks, a given bed must be older than any bed on top of it. This is fundamental to the interpretation of Earth history from rocks.
 - c. The LAW OF CROSS-CUTTING RELATIONS: A rock or any feature is younger than any rock or feature that it cuts across or truncates.

References

- http://ees2.geo.rpi.edu/field_methods/pictures/101901%20class/cross_section_all.pdf