Name_____ Period____ Date_____

# LAB: GEOLOGIC BLOCK DIAGRAMS

***Structural Geology*** is the scientific study of the geological processes that deform the Earth's crust and create mountains.

One of the important goals of Earth Science is to learn how to visualize geologic structures (examples: tilting, folding, faulting) in **three dimensions**. Students are often asked to visualize structural geometries from geologic maps, cross sections, block diagrams, and actual landscapes.

**PART ONE** - To become more comfortable with geologic block diagrams, answer the following questions ***using the examples on page two*.**

**Example 1:** The landscape shown in the "after" diagram is *best* classified as a

A) plains region B) folded mountain C) plateau region D) volcanic dome

**Example 2:** Assume that the rock layers have not been overturned. Compared to the age of rock layer 6, the age of rock layer 2 is probably

A) younger B) older C) the same

**Example 3:** What action most likely formed this mountain range?

A) earthquake faulting
B) volcanic eruptions
C) glacial erosion
D) contact metamorphism

**Example 4:** The faulting shown in the diagram could have occurred

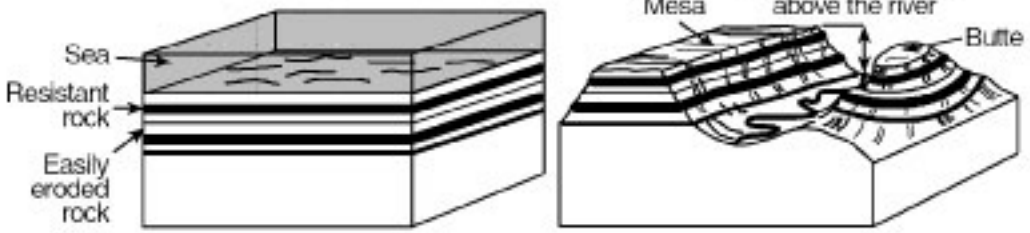
A) 2,100 million years ago
B) 50 million years ago
C) 520 million years ago
D) 250 million years ago

**Example 5:** **I**, **II**, **III**, **IV**, and **V** are locations on the Earth's surface. Which rock layer appears to be the most resistant to weathering?

A) Silurian limestone
B) Ordovician sandstone
C) Mississippian shale
D) Cambrian shale

**PART TWO** - ***On page three,*** each geologic block diagram has one side that was left blank. Using your knowledge of Earth Science, *and a pencil with an eraser*, *complete each diagram by sketching in its missing side*.

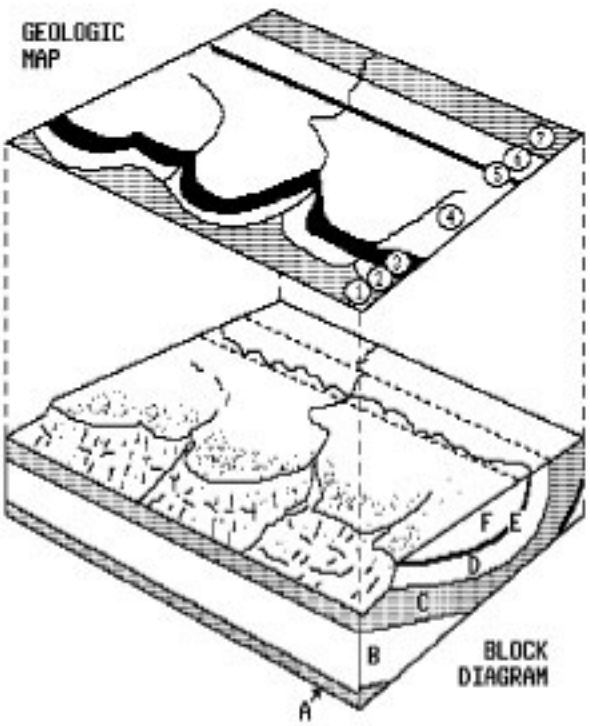
**1. The block diagrams below show a landscape region before and after uplift and erosion.**




BEFORE
Horizontal sedimentary rock layers deposited beneath the sea

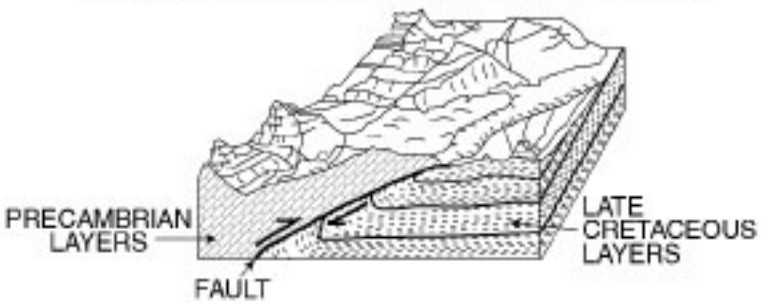
AFTER
The same rock layers after uplift and erosion

**2. The block diagram below shows the underlying rock structure and surface land forms of an area and the geologic map shows the outcrop pattern of the same area.**

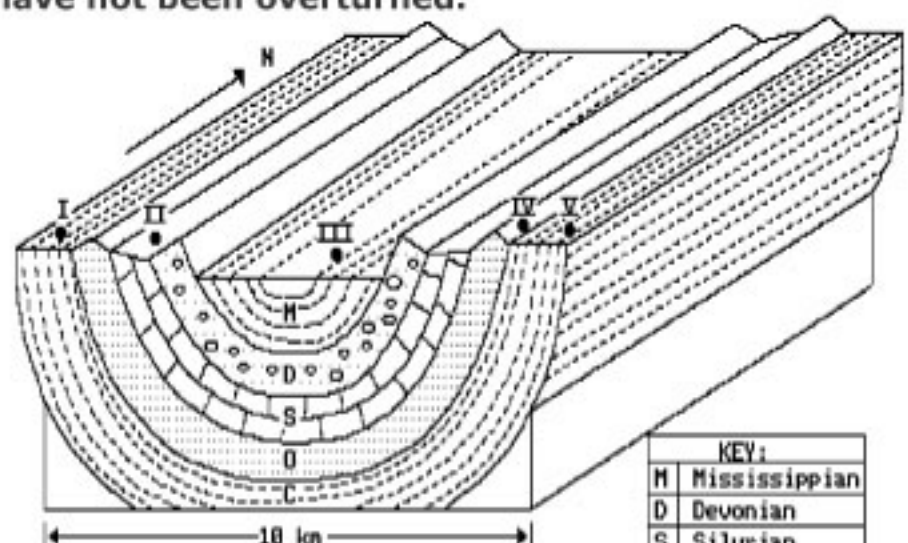



**3. The block diagram below represents a geologic cross section of a mountain range.**

**4. The geologic block diagram below shows surface features and subsurface structures of a section of Montana.**




**5. The block diagram below shows a section of the Earth's crust. The rock layers have not been overturned.**




| KEY: | |
|---|---|
| M | Mississippian |
| D | Devonian |
| S | Silurian |
| O | Ordovician |
| C | Canbrian |