

NAME: _____ PERIOD: _____ DATE: _____

LAB PARTNERS: _____ LAB #20

INTERPRETING GEOLOGIC EVENTS

INTRODUCTION

The earth's crust is made up of different layers of rock material and sediments. The processes of rock formation, weathering, erosion, and deposition have caused the earth's crust and surface to change over millions of years. The only place where you may see these changed layers of material is where the crust reveals a profile of its interior such as in road cuts or eroded canyons. By analyzing these profiles the geologist can determine the past earth history of a region.

OBJECTIVES

While working on this laboratory exercise you will:

1. List the possible sequence of formation of each of the rock layers found in each geologic diagram.
2. Determine when the normal sequence of rock formation in an area has been changed due to forces such as faulting, erosion, folding, tilting, and intrusions.
3. Be able to correctly answer laboratory summary questions showing the relationship of geologic principles that control the sequence of geologic events as they occur in the earth.

MATERIALS

Earth Science Reference Tables

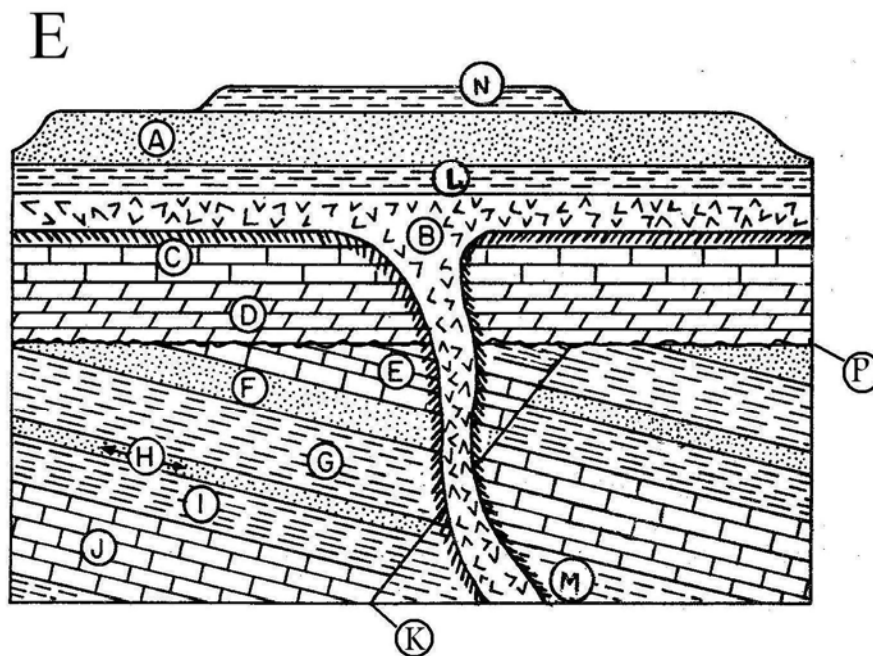
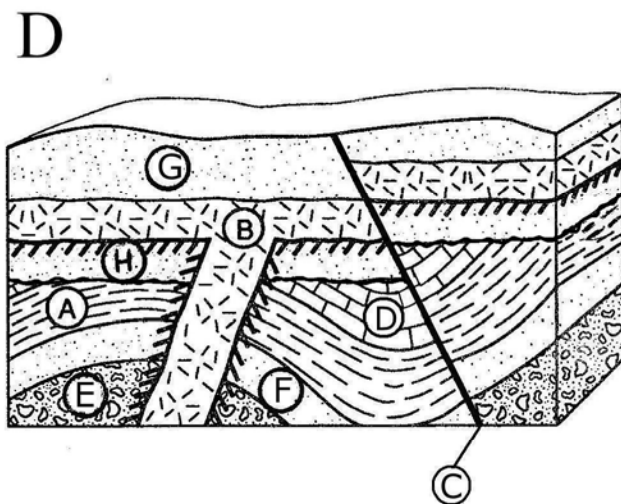
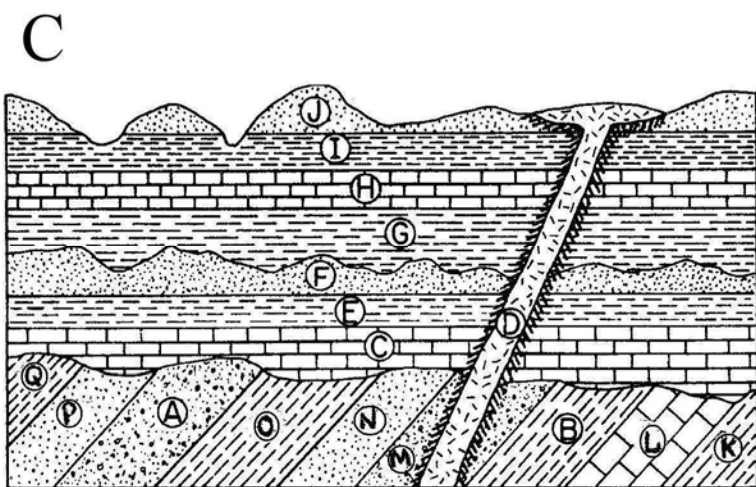
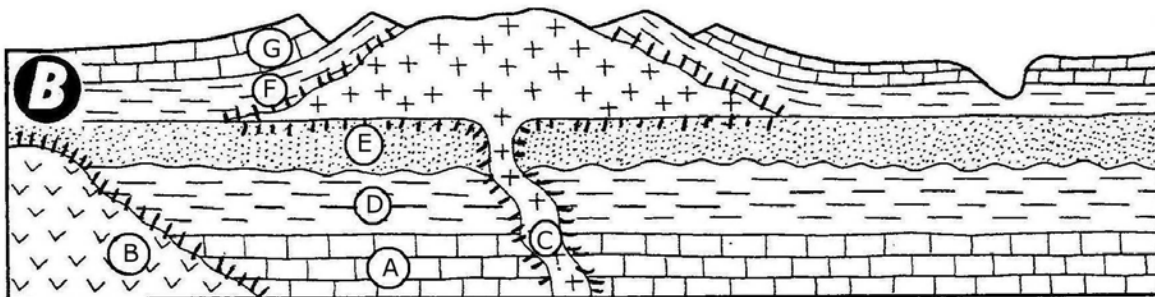
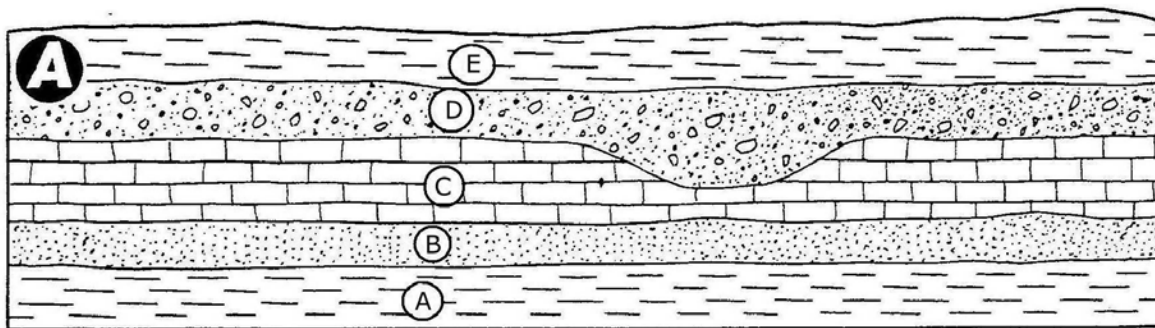
Scissors

Colored Pencils

APPROXIMATE TIME 2 Periods

PROCEDURES

1. Examine the cross sections A-E.
Determine the sequence of events that occurred in each diagram.
Include: Sequence of rock layer formation (relative ages).
When faulting, folding, tilting, erosion, intrusions occurred.
2. On page 3 of the lab write down the sequence of events that occurred in each diagram. List the oldest event first working down the list toward the youngest (most recent event).
3. On page 4 of the lab write down the sequence of events that occurred in Diagram F. List the oldest event first working down the list toward the youngest (most recent event).
4. Answer the Questions about diagram F as listed on page 5.
5. Answer the Laboratory Summary Questions as listed on page 6.



A.
Oldest-

B.
Oldest-

Youngest-

Youngest-

C.
Oldest-

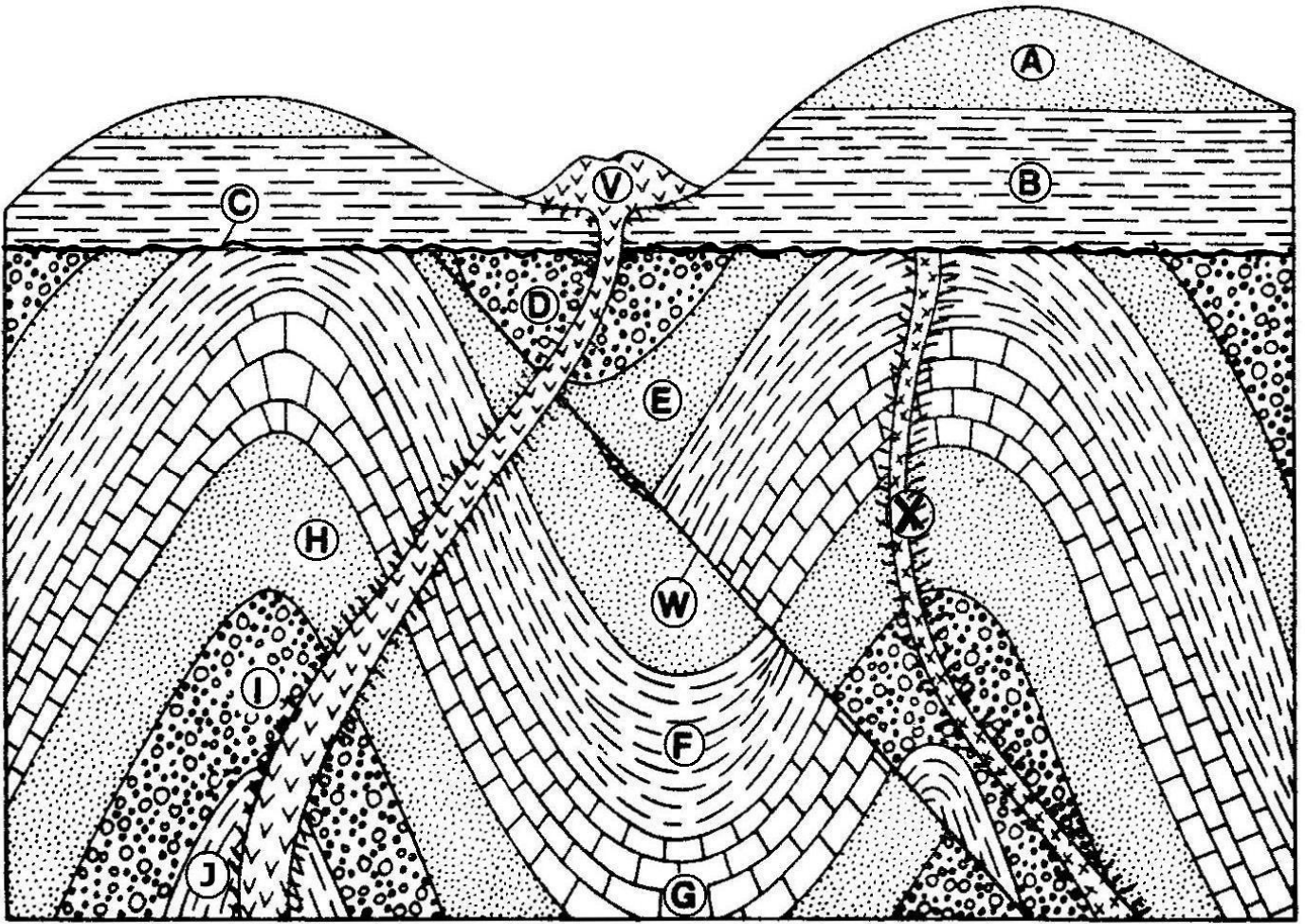
D.
Oldest-

Youngest-

Youngest-

E.
Oldest-

Youngest-



F.

OLDEST -


YOUNGEST -

THESE QUESTIONS ARE FOR DIAGRAM F ONLY.

1. Which of two igneous rock units is the oldest, and how do you know that this is true?

2. Name the rock that was formed by contact metamorphism at location X and draw its map symbol.

Map Symbol:



3. What is the difference between the boundaries labeled **C** and **W**?

4. On diagram F, place two arrows, one on each side of fault W, to show the relative movement of the rock units on each side of the fault. Explain how you determined the movement in the space provided below.

LABORATORY QUESTIONS (Answer using complete sentences)

1. How does the Principle of Superposition help you to determine the relative ages of the rock layers in each of the diagrams?

2. List at least 2 factors that might change the sequence of rock layers as described in question #1 by the Principle of Superposition. Explain each.

3. Compare the age of an intrusion, fold, fault, or tilting to the age of the layers that they have been found? Explain.

4. Define- Unconformity.

5. How do you know layer F in diagram B was deposited before the intrusion of C took place?

6. Which layer in diagram E would not likely contain fossils? Explain.

7. How does the Principle of Uniformitarianism help to solve the problem of determining the past earth history of a region?
