



## **Lab: Modeling Relative Dating and Laws of Stratigraphy**

### **Materials:**

- 5 different colored containers of modeling clay
- Straws
- Plastic wrap
- Paper plate
- Colored pencils or crayons

### **Warm up**

In your own words, explain the following laws of stratigraphy:

1. Law of superposition - \_\_\_\_\_

\_\_\_\_\_

2. Law of original horizontality - \_\_\_\_\_

\_\_\_\_\_

3. Law of lateral continuity - \_\_\_\_\_

\_\_\_\_\_

4. Law of cross-cutting relationships - \_\_\_\_\_

\_\_\_\_\_

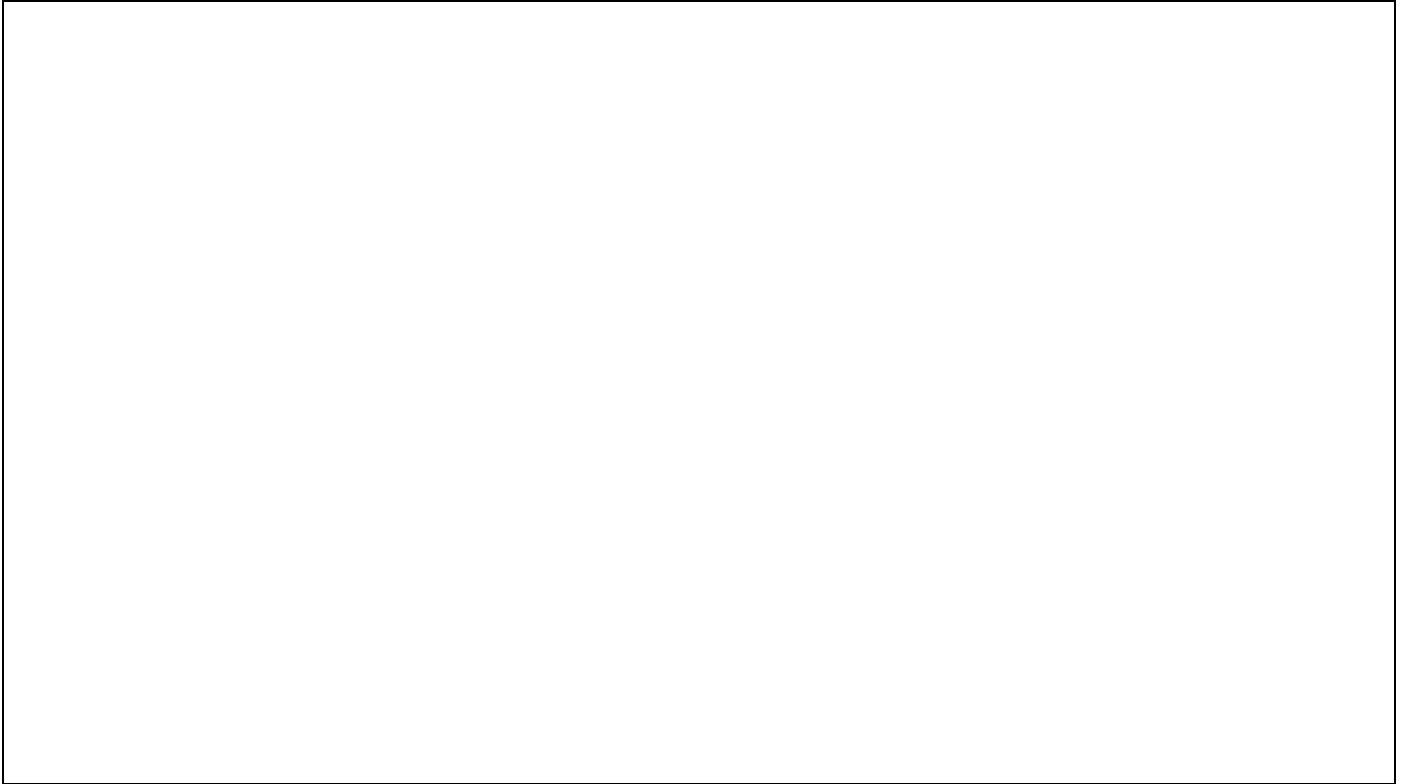
### **Part 1**

### **Directions:**

1. Take about a handful of one color of modeling clay and flatten it out so it's about between 2-4 centimeters thick. The clay will represent a layer of sedimentary rock. Place your layer on a paper plate.
2. Take another half handful of modeling clay, this time of a different color, and flatten it. Take the second piece of modeling clay and place it on top of the first.
3. Continue using the modeling clay to create a geologic column that is at least 5 layers. In 3 of the layers your column, include 2 of the following features: intrusion, fault, unconformity, discontinuity and folding.

4. Sketch and color the layers in your geologic column in the space below. Label your layers A-E, with A being the layer deposited first.
5. Write the names of you and your group members on the paper plate. Wrap the plate and modeling play in plastic wrap to preserve for part 2.

**Your group's geologic column:**

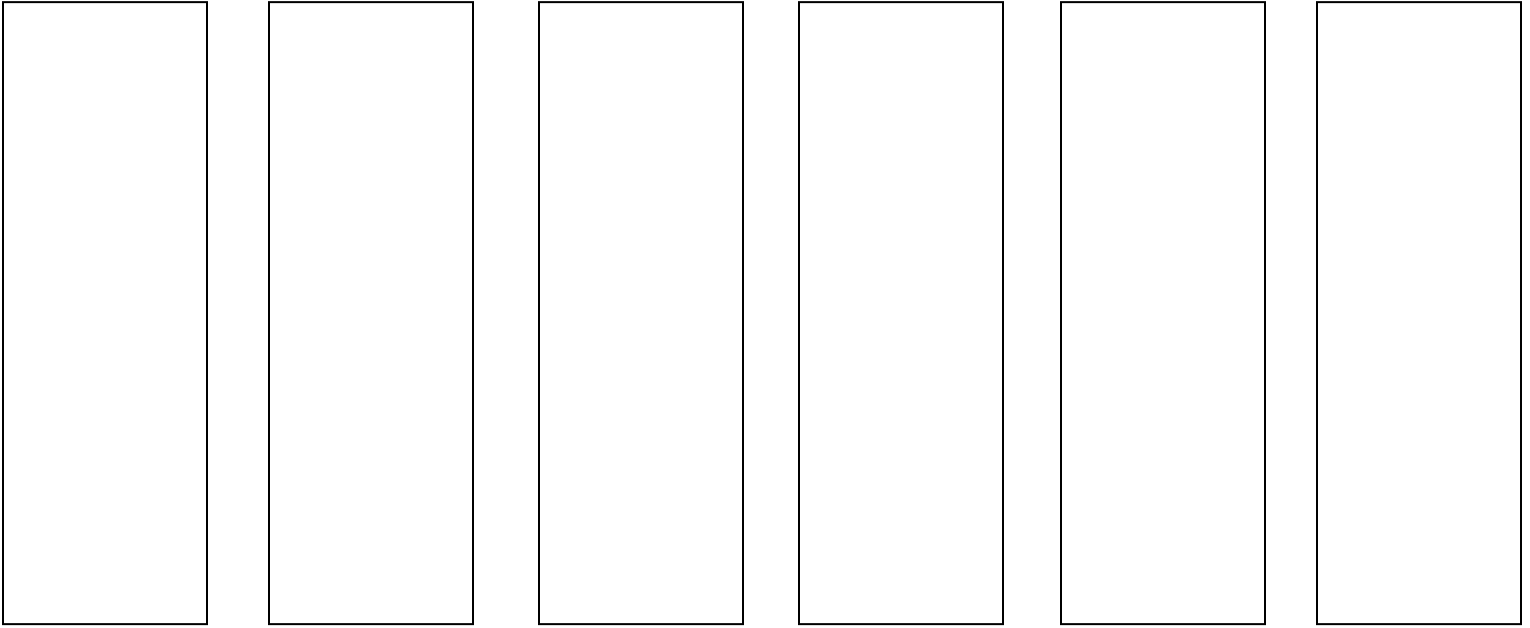


**Part 2**

**Directions:**

1. Retrieve and unwrap your modeling clay column. Trade columns with a different group.
2. Using a straw, take a core sample of the new geologic column. Do this by pushing one end of the straw into the clay until it reaches the paper plate. Pull the straw out of the clay and observe.
3. Sketch and color each of the layers found in your straw core in the space below. Take 3-5 more core samples and sketch and color each.

**Core samples:**



Sample 1

Sample 2

Sample 3

Sample 4

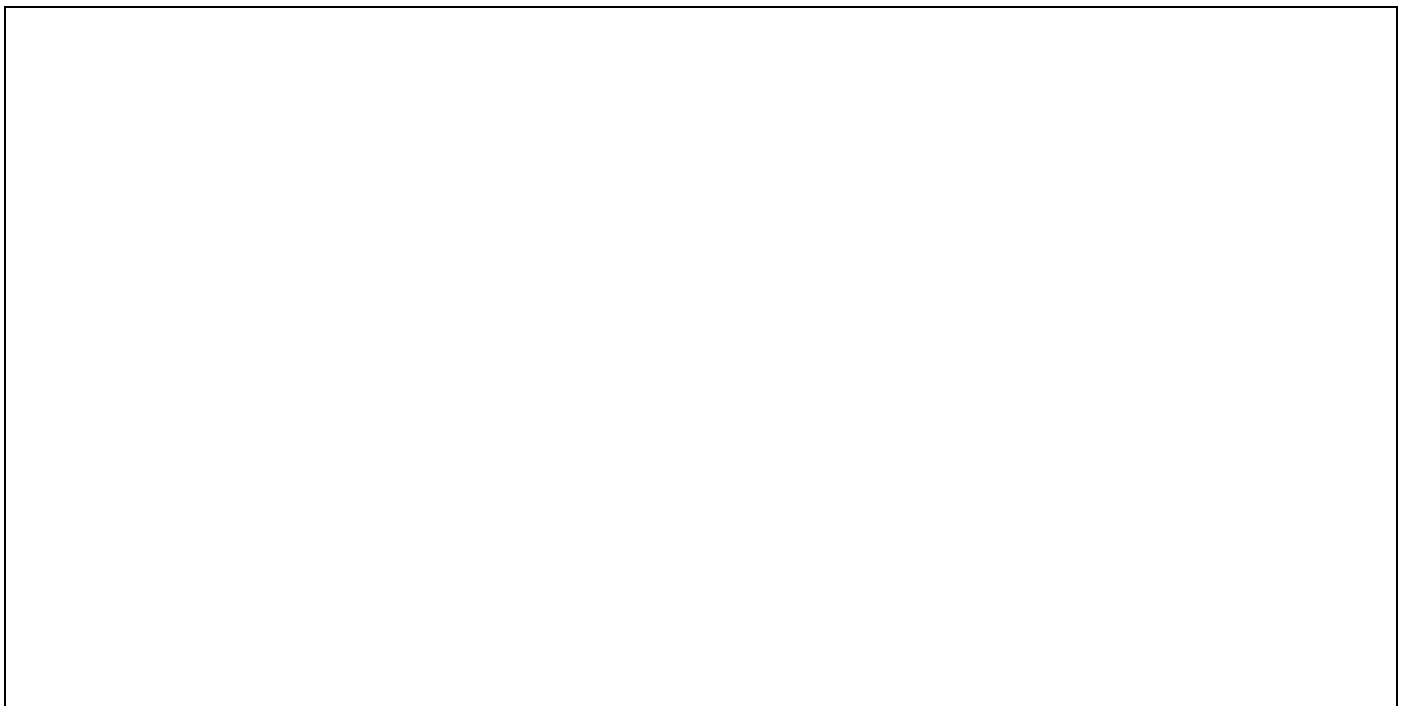
Sample 5

Sample 6

**Claim – Evidence - Reasoning**

Using your straw cores, sketch and color the layers of other group’s geologic column in the space below. Label your sedimentary layers A-E, with A being the layer deposited first. With each label, write the law of stratigraphy that supports your claim. Once complete, compare your sketch to the what the other group had to check your accuracy.

**Other group’s geologic column:**



**Extension questions:**

1. Were there any differences between your sketch of the other group's column and theirs? If so, explain the inaccuracies.

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2. How could a geologist make a mistake when trying to map out layers of the Earth?

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3. How could you tell the relative age of each rock layer? How could a geologists working in the field use this information when attempting to date rocks or fossils?

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4. Why would geologists not expect to find every rock layer flat and in chronological order in every core sample? What sort of geologic processes would cause these types of differences?

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