

Geologic Column lab

Directions:

- 1) Look at the different rock types (e.g. limestone, siltstone, etc.) Identify the rock type for each layer based on its texture.
- 2) Use colored pencils to shade in these rock types (one color for all the conglomerate; a different color for all the limestone, etc.) There will be a total of 7 different colors used.
- 3) Cut out the individual pieces of each outcrop around the edges and along any unconformities (the jagged or curved lines ONLY as shown by the dotted line in *Outcrop 1*). Include the rock type labels, and **DO NOT CUT ALONG THE STRAIGHT HORIZONTAL LINES!**
- 4) Keep the pieces of each outcrop together, and label the back of each piece with a letter and number. For example, the top piece for *Outcrop 1* would be labeled "1A", while the bottom piece would be labeled "1B".
- 5) Keeping each of the four outcrops separate from each other, find layers that have the same rock layers and contain the same fossils. Move the pieces up and down until all of the rock layers AND fossils line up horizontally. Once you get it lined up, ask the teacher to check your work.
- 6) Glue the pieces down to a separate sheet of lined paper.

Analysis Questions: Answer in complete sentences on the back of your finished geologic column.

- 1) How many distinct rock layers are in the entire geologic column that you assembled?
- 2) In your completed geologic column, which rock layer is the oldest? Which is the youngest? Describe the layers in terms of the rock type AND the fossils they contain.
- 3) Out of the three basic rock categories (igneous, sedimentary, and metamorphic) which type do all of these layers belong to? Why is that important in the field of Paleontology? (*HINT* → **Think about it!**)
- 4) Look at the unconformity in *Outcrop 2*. Which rock layers are partially or completely missing? How do you know?
- 5) At the unconformities, what do you think must have happened to cause certain layers to be missing?
- 6) Read about index fossils on p. 345. Which fossils in your column can be used as an index fossil to help date a particular layer? Why would these fossils make good index fossils?

* Conclusion:

Write a paragraph that explains how rock layers and fossils that may be found in completely different locations can still be used to piece together a more complete record of geologic time. How does this tell us about evolution? With this in mind, write a second paragraph that explains your own geologic column, from the bottom to the top. This should include a rundown of environmental changes and the species (symbols) that evolved and went extinct over the course of geologic time.

