

## Project Handout

### STRATIGRAPHY and DATA INTERPRETATION



[http://www.sciencebuzz.org/museum/minnesota\\_geology/stories](http://www.sciencebuzz.org/museum/minnesota_geology/stories)

**Site Description:** While on a field excursion, you encounter a new road cut, with fossils weathering out of the strata. You immediately ask for volunteers to help you sample the outcrop, and determine the types of fossils within the strata.

You sample every 0.5 meters, and retrieve approximately 1 m<sup>3</sup> of material at each sampling location. Back in the laboratory, you process the sediments for fossils. In your laboratory notebook, you focus upon three particular fossil types, and their occurrence within the strata intervals. Your data are reproduced on the next page. (**Note:** You chose to record your data relative to the outcrop, so please take notice of whether you measured from the top of the outcrop down to the road, or from the road to the top of the outcrop!)

**Data Analysis:** In order to communicate your data, you need to produce a lab report for your colleagues. The report will include a graph, a sketch, and a summary of what you learned from your data:

- ✓ **Graph.** Represent your data in graphical form. On your graph, *clearly* label
  - the most recent strata, and the oldest strata
  - the type(s) of fossils collected in each layer
  - the layers MOST LIKELY deposited during the Mesozoic
- ✓ **Sketch.** In addition to your graph, you need to provide a sketch of the outcrop, and generally show the locations in which the fossil(s) were found.
- ✓ **Summary.** Summarize your findings. Discuss and overview the
  - fossiliferous layers of the outcrop
  - which sampling locations you determined to have been deposited in the Mesozoic (and why),
  - the paleoenvironment in which these layers were deposited.

**FINAL PRODUCT:** Turn in TWO paper copies of your Final Report no later than \_\_\_\_\_ . Each copy must include the original data, and your Data Analysis (graph, sketch, summary). One copy should have your name and the pledge ("I pledge. . . .

*Signature*) at the top, while the other copy should ONLY have your Data ID number (e.g., a blinded copy).

In industry, it is common to peer-check your colleagues' notebooks and analyses. You will receive a blind copy of data and Final Report on \_\_\_\_\_ and critique it for correct analysis and interpretation, thoroughness, and effective communication. Your critiqued Final Report is due \_\_\_\_\_.

***Objectives:***

- \*The learner will graph fossil occurrences in appropriate graphic format.
- \*The learner will interpret data from an outcrop, and determine origin and/or extinction of fossil organisms
- \*The learner will reconstruct paleoenvironments from fossils and their stratigraphic locations
- \*The learner will communicate fossil information and occurrences in graphic and narrative formats.
- \*The learner will evaluate a blinded copy of a peer's Final Report for completeness and correctness