Geologic Cross-section and Column Project

**Objective:** Students will demonstrate their understanding of reading geologic history by constructing a cross-section. Using relative dating techniques, each student will construct a geologic cross-section and a corresponding geologic column that list those events in relative order.

**Materials:** ● 1 sheet of white paper. ● Several strips of different colored paper. ● Glue, scissors, markers or colored pencils.

**Procedure: 1.** Use a pencil to draw an outline or a geologic cross-section on a piece of white paper. The cross-section must include a minimum of the following requirements (If you choose to add more events to your cross-section they must be correct and according to the laws of geology). **2.** Construct the cross-section with great craftsmanship using colored paper or original drawings.

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| **Requirements** | |
| □ A minimum of 6 different layers.  □ 1 unconformity  □ At least 3 cross-cutting events  □ 2 fossils  □ One example of the principle of included fragments.  □ A folded or tilted event. | □ At least one present day erosion event.  □ An answer key (**geologic column**) that lists the events from oldest to youngest. 1=oldest, x=youngest (on the front of the cross-section).  □ All layers and events must be labeled with letters or numbers that match your geologic column. |

EXTRA CREDIT FOR 3-D MODELS!

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| **Concept** | **Exceeds Expectations (5)** | **Meets expectations (4)** | **Below expectations (3)** | **Needs more work (2)** |
| **Geologic Principles**   1. **Superposition** 2. **Cross-cutting** 3. **Horizontality** 4. **Inclusions** | All processes or events shown are accurate. Demonstrates student understanding of the geologic principles. | All processes or event shown are accurate. Demonstrates only minor errors in the understanding of the geologic principles | 1-2 processes or events are missing or inaccurate. Geologic principles are not fully understood. | 3 or more processes or events are missing or inaccurate. Understanding of the geologic principles is not shown. |
| **Requirements** | All the geologic process requirements as well as 2 or more additional requirements are present. | Minimum requirements are present. | 1 required event is missing. | 2 or more required events are missing. |
| **Construction and craftsmanship.** | Attractive, neat and well-constructed with attention paid to details. | Neatness and construction is consistent with the skills and abilities of a high school student. | Neatness and construction needs work or is inconsistent for a high school student. | Poorly constructed for a high school student. |