**Scientific Method – Erosion (Hands-on iPad Activity)**

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**Purpose:** Students will utilize the scientific method to study and learn how erosion occurs.

**Materials:**

15 Small plastic containers (8X6X3) Sand or dirt (1 1/2c/group of 2 students)

5 - 1 cup measuring cups Approx 1 – 2 gallon bags of rocks

Approx 7 pouring containers (glass beakers Weeds if available (picked by roadside)

with a spout) 3 small plants (purchased at end of summer)

iPads (if available)

**Procedure:**

Day 1: Introduction

Introduce students to the project the day before by reviewing the scientific method, explaining the following instructions and what materials would be available the next day. I did not give them any ideas on what question to ask or hypothesis to state because I wanted them to come up with their own ideas. I told them they would use the materials to make a model to demonstrate how erosion occurs. Each student was assigned a partner and they were given 10 minutes of class to collaborate on their plans for the next day. (Most did not know what erosion was but they were able to look it up on their iPads and read about it and view images.)

Day 2: Activity

1. Display the following instructions on the eno board from your computer or using Reflection on the iPad.

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1. Write a question about erosion that you would like to answer.
2. Make a list of materials you will use. Be specific. List how much sand, water, or how many rocks you will use. List all supplies!
3. Make a hypothesis, or prediction, about what you think will happen when you set up your model.
4. Carry out your plan.
5. Write down **EVERY** step you do as you set up your model.

Be sure to number each step.

1. Collect and record data.
2. Describe the results.
3. Analyze your data. What did you learn about erosion?
4. Tell your conclusion. Did the model work or not? How would you change it if you did it again?
5. Read over the instructions with the students, answer any questions, and let them go for it.

Assessment:

1. Students were told all aspects of the project had to be done in class before they left (approximately one hour, including clean up).
2. They were instructed to record the demonstration of their model on their iPad, then show it to me for a grade. (10 points)
3. They also had to have all procedures, materials, etc. recorded, using scientific method, and graded by me before class was over. (10 points)

**Notes:**

With the iPads, it was very easy to finish the assessments before class was over. Students work at different paces, and the videos were only 15 – 30 seconds long. Once they understood the criteria for recording the scientific method the students were organized, and correcting them was quick.

Most important, with the iPads I had enough time to work with struggling students, view the model demonstrations with each pair of students, and to discuss their understanding of erosion and recording of data using the scientific method.