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A. Statement

Students will examine different materials found in our earth and observe their permeability. First they will make a prediction as to what they think will happen as they pour water through a funnel with these materials in it, and then they will examine the results. Using a ground water model, I will then use the information they have gathered to talk to them about aquifers as their source of water.

B. Objectives/Goals

Students will understand that some materials easily let water flow through them, but others stop the flow or retard it. Students will see a connection between the makeup of the material and its permeability. Students will relate this information to their source of water through class discussion.

C. Implementation Statement

I will use this project in my water pollution unit so that students will understand that the materials in the earth will directly affect the flow of water pollution underground and in well systems.

D. Assessment

Students will record their predictions about the materials, and then time the movement of the water through the material and then record this.

E. My project

- a. Funnels using the bottoms of 2 liter bottles will be set up with beakers to catch the water. A coffee filter will be used so the sand, for example, stays in the funnel.
- b. Students will use these materials in their funnels: clay, sand, gravel, soil, crushed limestone
- c. Students will make a prediction about each material as to how quickly the water will flow through the material (fast, slow, not at all). They will also rank them from fastest to slowest.
- d. Students will set up each funnel and pour the same amount of water through each one. They will pour the water into the funnel and time it.
- e. They will record their results and write a conclusion about the ability of the water to flow through the material.
- f. Actually what I would like to do is give them the assignment of finding which of these materials will let water flow through them. I will have materials available, and they must write out a procedure, have it approved, and carry out the experiment.**
- g. As a class, we will talk about their results and introduce the terms: porosity and permeability.

- h. Talk about where the students' water come from.
- i. What is an aquifer?
- j. The materials you tested are in our ground and determine where we get our water from. Show the students a groundwater model and ask them where the water would be held and where the water would be stopped.
- k. How would this water get to your faucet? Go into wells, water treatment, water towers, and into their house.
- l. Use this as a springboard to later talk about water pollution.