



Water, Water Everywhere ...

Materials:

Students can be divided into two or three groups depending on the size of the classroom. Each group is given:

1 - 1,000 ml Beaker	1 - 100 ml Graduated Cylinder
Water	Small Petri Dish
Salt	Bucket
Eye Dropper	Ice Cube Tray
Map of the World or a Globe	

Description:

Have a map or globe at the front of the classroom. Ask the students to estimate the total amount of or (percentage) of potable water on the planet. Use the map to encourage the response.

1. After you receive their answers, explain that they are going to do an experiment to see if they are correct. Have them fill the 1000 ml Beaker with water. Tell them that beaker is all the water on the Earth. (Oceans Contain 97% of the Earth's water.)
2. Instruct the student to pour 30 ml of water into a 100 ml beaker. This represents the fresh water on Earth (about 3% total). Instruct the students to pour salt into the remaining water in the 1000 ml beaker. This is the ocean water, which is salt water and not suitable for drinking. Use map to emphasize the quantity of water in the Oceans. You may want to ask students to compute the percentage of fresh vs. salt water based on the measurements they are provided.
3. Ask students to guess where most of the freshwater is located on Earth. Tell them and show them on the map that 80% of the world's freshwater is frozen in the polar ice caps and glaciers. Have them compute how much of the "fresh water" in their beaker is frozen. Have the students pour 6 mls of fresh water into a Petri dish. Pour the rest of the water into an ice cube tray to represent the frozen water. Tell the students this water represents the non-frozen fresh water available. About 1.5 mls of this water is surface water (in lakes, streams, and rivers). The rest is underground.
4. Using the eyedropper, have the students remove a single drop from the water in the dish and release that drop into the bucket, encouraging the kids to be quiet so they can hear it hit the bottom. This one drop represents the clean, fresh, non-polluted and available water for use (about .003% of the total).
5. Discuss the demonstration with the students. Ask the students what the implications are of having such a small portion of water available for use. What does it mean for management of our water resources? What can students do to conserve water? Discuss some water efficiency ideas.

Evaluation:

Did students follow directions? Did they understand the difference between the amount of water that covers the Earth's surface and the amount that is usable? Did they correctly compute the equations?