



## **Every Drop Water Demonstration, Inventory and Engagement Guide**

### Inventory:

- 1 bucket and cover
- 1 inflatable globe
- 2 measuring cups
- 2 eyedroppers

Time management note: This activity can be adapted when time is limited by not using volunteers, and simply pointing out that the bucket represents all water on earth, and dropping drops of water in several student's hands to illustrate all of the fresh surface water on earth is in each drop.

### Materials Needed:

- 5 gallon bucket full of water
- 2, 2 cup, clear, measuring cups
- Inflatable globe (inflated)
- 1 eyedropper
- White board/smart board (not included)
- White board marker (not included)

### Procedure:

- Explain to students that the water in the 5-gallon bucket represents all the water on Earth. Hold up globe to illustrate. Ask them to name the kinds of water that exist in, on or around Earth. They should be able to name rivers, lakes, oceans, clouds or water vapor, ice caps, groundwater, water held in soil, and water held in plants and animals. Write places on a dry erase or smart board as they think of them. Provide hints so that all types of water are mentioned.
- Ask two students to come up and help with the demonstration. Ask one of them to remove two cups of water from the bucket, using a measuring cup. Have the student hold that amount so everyone in the class can see it.
- Ask the class: What does the water in the cup represent?
  - Answer: Freshwater.
- Ask the class: What does the water in the bucket represent?
  - Answer: Saltwater.
    - Explain that the saltwater is not usable by humans because drinking it would make us very sick.
- Move the bucket aside. Ask the first student to pour 1/2 cup of water into a measuring cup held by another student.
- Ask the class: What does the 1-1/2 cups still left in the two-cup measurer represent?



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- Answer: Polar ice caps. Explain that this water is unavailable for our use because it is frozen. (Students may jump in here that they are melting! This is true, but mention that they are melting into salt water if it comes up).
- Set this cup aside. The first student can return to his or her seat.
- Ask the class: What does the 1/2 cup of water represent?
  - Answer: Groundwater, surface water (e.g. lakes, rivers, wetlands), and water vapor in the atmosphere.
- Have the class guess how much water should be removed from the cup to represent only the surface water on Earth. After a few guesses, pull out the eyedropper and draw some water into it. Place one drop of water into the hand of a few students. Explain that one drop of water out of a whole 5-gallon bucket represents the water that we see and can touch every day, and that we have the power to keep clean!
- Allow the class to think about this for a minute.
- Then explain to them that the total amount of water on the planet is not going to change. Even though water moves around on the planet and changes from one kind to another, we will never have any more than we have right now.

### Conclusion:

- Have the students work in groups to come up with one or two things they can do every day to help keep the one drop of water safe and clean. Have each group share their ideas with the class.

### Sources:

<http://www.miseagrant.umich.edu/lessons/lessons/by-broad-concept/earth-science/water-quantity/324-2/>