

Water Distribution



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OVERVIEW

Students measure water into different containers to visualize the uneven distribution of water on Earth.

SCIENCE QUESTION

How is water distributed on Earth?

GRADE

5th

TIME

20 minutes

STANDARDS

5-ESS2-2: Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.

Objectives

At the end of the lesson, students will be able to:

- Identify the largest and smallest natural reservoirs of water on Earth
- Describe how uneven distribution of water resources impacts drinking water

Materials

- 1 liter container
- 3 bowls (at least 2 tbsp. capacity)
- Measuring cup
- Tablespoon
- Teaspoon
- 1/4 teaspoon
- Eyedropper or reusable straw
- Food coloring (optional)
- Water

Instructions

1. In this grade level module, students will first participate in the activity and then watch the lesson video.
2. Inform students that they will be dividing water into 4 containers to represent the distribution of water on earth. Share the 4 categories with students and review what each means:
 - Ocean
 - Ice- frozen water, including glaciers and sea ice
 - Groundwater- water held underground in the soil or in pores and crevices in rock
 - Surface freshwater- lakes, ponds, streams (all sizes, from large rivers to small creeks), and freshwater wetlands
3. Measure 1 liter / 1000 mL of water and pour it into the largest container. If desired, you can add a few drops of food coloring to the water to make it easier to see. Explain that this represents all of the water on planet Earth.
4. Ask students to guess how much water is in each of the 4 categories. To guess, students should pour water into the 4 containers, each representing one of the categories, and label them. Exact measuring is not necessary here— this is to get students thinking about which category is the largest, which is the smallest, and so forth.
5. When students are done guessing, pour all the water back into the first container.
6. Take 30 mL (2 tablespoons) from container 1 and transfer it to container 2. The largest container should have 970 mL remaining; that represents the water in the ocean, which is 97% of the total water on Earth.
7. Measure 6 mL (just under 1¼ teaspoon) from the second container and pour it into the third container. That leaves the second container with 24 mL. This represents ice, which is 2.4% of the world's water.
8. Move 2 drops of water from container 3 into container 4. This leaves 5.8 mL in container 3, which represents groundwater-- 0.58% of the total water on Earth.
 - Note: If an eyedropper is not available, you can use a spoon to drop a few drops of water into the last container. It's okay if it's not two drops exactly; the visual comparison is more important.

9. The 2 drops in container 4 represents all the surface freshwater on earth. Most of our drinking water comes from this source.
10. Ask students: does this seem like a lot compared to the other categories? Does this seem like a lot of water to share between 7 billion people on earth?
11. Reinforce that because we have so little surface freshwater, it is a precious resource and should be used wisely. This is why water conservation, or using water wisely, is so important.
12. After completing the activity, students will clean up and then watch the lesson video.

Visit www.sdcoastkeeper.org to check out supplemental videos, activity books, and more to extend the lesson!