

ALL THE WATER IN THE WORLD

PURPOSE: Students will learn about various land forms and locations where water can be found on Earth, and how much of Earth's water is able to be used by humans. Students will discuss ways they can conserve water at home.

MATERIALS (PER GROUP)

- 3 Pipets
- 3 Spoons
- Water colored with blue food coloring
- 8 Clear Containers Labelled:
 - All The Water In The World
 - Groundwater
 - Icecap/Glaciers
 - Soil Moisture
 - Lakes
 - Atmosphere
 - Ocean
 - River

VOCABULARY

Water (Hydrologic) Cycle:

Describes how water moves throughout the Earth. Water can change forms from solid to liquid to gas as it heats up and cools down throughout the cycle.

Groundwater:

This is the water found beneath Earth's surface in aquifers and fractures in bedrock.

SET-UP

Prepare one set of the materials listed above for each table group (2-4 students recommended). Place one demonstration set aside for you to use at the end of the lesson. Fill each group's "All the Water in the World" container with blue water.

PRE-ACTIVITY DISCUSSION

Looking at a globe, you can clearly see that Earth is a water planet. In fact, about 70% of the Earth is covered in water. Can your students name some of the locations where we might find water?

Water can be found in lakes, rivers, and oceans. There is also water locked up in icecaps and glaciers, underground in aquifers, in the atmosphere, and absorbed into the soil!



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DIRECTIONS

1. Challenge your students to arrange their seven empty containers from MOST to LEAST amount of water. You may show an image of Earth to help them form predictions.
2. Once their containers have been arranged, they will use pipets and spoons to distribute water from their “all the water in the world” container into each of the seven containers.
3. Once your students have finished distributing the water among their containers, let them walk around to observe how other group's have distributed their water.
4. Using your teacher demonstration set, show your students the actual distribution of water.

ACTUAL DISTRIBUTION OF WATER:

Icecaps/Glaciers: 4.5 spoonfuls
Groundwater: 1.5 spoonfuls
Lakes: 4 drops
Soil Moisture: 1 drop
Atmosphere: 1/5 drop
Rivers: Not enough to measure
Oceans: The rest of the water!

POST-ACTIVITY DISCUSSION

If you look at a globe, you can clearly see that Earth is a water planet. About 70% of Earth's surface is covered in water. Of the total water supply on Earth, 97% is found in the oceans. That means 3% of all the water in the world is freshwater. Of this freshwater, 2.34% is locked up in icecaps and glaciers! This means, out of all the water in the world, less than 1% is usable by humans.

CLIMATE CONNECTIONS

As the world's average temperature rises, we are seeing more severe and widespread weather events recorded each year, such as drought and wildfires. Our demand for water is increasing, yet our clean, freshwater supply is decreasing. With less than 1% of the Earth's water available for use by living beings, it is important to understand the importance of conserving water.

1. Can you think of some ways we can work together to conserve water at school? At home?
2. Can you think of other ways we might be able to acquire drinkable freshwater?

TEKS ALIGNMENT

1st Grade: (b) 1A, 1G, 10C, 11B, 11C ; 2nd Grade: (b) 1A, 1G, 12A; 3rd Grade (b) 1A, 1G, 11B, 11C;
4th Grade: (b) 1A, 1G, 3A, 10A; 5th Grade: (b) 1A, 1G, 3A, 11;
6th Grade (b) 1A, 11B; 7th Grade (b) 1A, 11A.



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