

PRECIOUS RESOURCE

GRADES 3-8

This activity was designed as a companion for the music video “Conservation Dogs.”

BACKGROUND

The Conservation Pack includes dogs, kids, adults and other creatures working together to protect the environment around us. We can’t survive without water, soil, and other natural resources. When we all work together, we CAN make a difference!

In this video, the Conservation Dogs see pollution in the water and enlist kids to help clean it up. While the dogs find kids to help, the kids need to find others because it is too big of a project for one person. Keeping the Earth clean and protecting our natural resources requires everyone to do their part. The video also emphasizes the importance of spending time outdoors. It’s easy to get caught up in video games and TV but being outdoors presents a variety of activities that allow us to spend time together and learn to appreciate nature. Everything we do to help the Earth including using reusable water bottles, planting trees, and properly disposing of trash will help protect our planet.

MATERIALS

Clear gallon container
Clear cup to measure ½ cup of water
Eyedropper

TEACHER PREPARATION

Fill a clear container with one gallon of water. Optional: add a small amount of blue food coloring to make it easier to see the water.

Water is a necessity for all living things. As humans, our bodies are composed of 50-75% water, depending on our age. Below is a breakdown of the distribution of water on our planet. Only one percent of Earth’s water is available for drinking. Because there is no new water on our planet, it is important we do our part to not waste or pollute it.

Some facts about water use:

- An average American uses 140-170 gallons of water per day.
- An average American family of four uses 881 gallons of water per week simply from flushing the toilet.
- Every day in the United States, we collectively drink about 110 million gallons of water.

Earth's Water Supply	
Salt Water	97.5%
Fresh Water	2.5%

Distribution of Fresh Water (2.5% of Earth's total supply)

Glaciers and Ice Caps	68.6%
Groundwater	30.1%
Surface Water	1.3%

Distribution of Surface Fresh Water (0.01% of Earth's total supply)

Atmosphere	0.22%
Water in Plants & Animals	0.22%
Rivers	0.46%
Lakes	22.63%
Ice and Snow	73.1%

INSTRUCTIONS

Part 1 – Water is a Limited Resource

1. Explain to the students that the gallon of water represents all the water on the planet. Ask the students how much of the Earth is covered by water (70-75%). Ask them where most of the water is held (oceans) and explain that because oceans hold salt water we cannot use it. Next ask the students to estimate how much of the gallon is fresh water.
2. Pour out $\frac{1}{2}$ cup of water, and explain that this represents all the fresh water on the planet and everything else is salt water. Ask the students where we find fresh water on Earth (lakes, rivers, underground, frozen in ice, and in living things). Explain that not all of the fresh water is available for our use, and have them guess how much is available.
3. Use the eyedropper to drip one drop of water out of the $\frac{1}{2}$ cup measure, and explain that is all the water that is currently available to us. The rest of the cup is frozen water, in plants/animals, in the atmosphere, or in unreachable deep groundwater aquifers.
4. Optional: Using Microsoft Excel, have the students work in pairs to create 3 pie graphs (Earth's total water supply, distribution of fresh water, and distribution of surface fresh water) that represent the distribution of Earth's water supply as per the above percentages.

Adapted from http://www.beloit.edu/sepm/Water_Works/how_much_water.html

Part 2 – How much water do you use?

Divide students into groups or work as a class to complete the Personal Water Use worksheet <http://media.trb.com/media/acrobat/2011-10/191446540-14090352.pdf> and discuss the results.

1. Explain to the students that there is never new water on the planet. All the water that exists has been here when the dinosaurs lived, is all we have now, and is all there will be for the future.
2. Discuss the water cycle as the way the water moves around the planet and how it can act as a way to filter the water.

DISCUSSION QUESTIONS

What forms can water be found in?

How much water is available to us?

Where does your drinking water come from?



- Science (Grades 6-8)
 - o Earth & Space
 - Understand and apply knowledge of the water cycle, including consideration of events that impact groundwater quality
 - o Life Science
 - Understand and demonstrate knowledge of the social and personal implications of environmental issues
- Social Studies (Grades 6-8)
 - o Geography
 - Understand how physical processes and human actions modify the environment and how the environment affects humans
- 21st Century Skills (Grades 6-8)
 - o Technology Literacy
 - Use critical thinking skills to conduct research, solve problems, and make informed decisions using appropriate technological tools and resources

