

The Availability of Water

Why should we be concerned about water? After all 70% of the earth's surface is covered by water. That should be enough for everyone! Water can be found almost everywhere on Earth—in the soil, rivers, oceans, lakes, underground and in the atmosphere. But how much of this water is available for human use?

Aim: To promote the recognition of the limited availability of fresh water in the world.

Uses: This activity can serve as a good introduction to further learning activities on water use and the importance of water use efficiency.

Year levels:

This activity can be adapted to suit a range of year levels from middle primary to lower secondary.

Equipment needed:

- 20 litres of water in a large container
- 3 smaller containers
- 500ml measuring cup / measuring cylinder
- Eye dropper

(Adapted from Lennox, S, 2001, *Stormwater Teaching Guide Stage 4-5*, NSW Environment Protection Agency.)

Activity Outline:

1. Place 20L of water in a large container—This represents all the water in the world (includes oceans, lakes, rivers & groundwater).
2. Remove 500ml and place in a separate container— This represents the total amount of freshwater on Earth. The remaining 19.5L in the large container represents the water in the oceans. (97.5% of the total water volume)
3. Remove 375ml from the 500ml container—This represents all the freshwater in glaciers, ice-caps, soil and the atmosphere that is unavailable for human use.
4. Remove 5 drops from the remaining 125ml—The remainder represents the water that is not readily available for human use due to pollution, remoteness or too deep in the ground.
5. The 5 drops represents the clean water that is available for human use (0.007% of all the water on the Earth.)



Discussion Questions:

1. Where does our drinking water come from?
2. What do you use water for?
3. What do you and your family use water for each day? How could this be measured?
4. Can you see evidence of water problems in the local area (pollution, shortages)? How is your behaviour contributing to these problems?
5. What are actions we can undertake on a local and wider level to conserve our precious water?

Follow-up and Extension:

- Conduct research and complete a survey of water use in the school, home or local council. Analyse the results to identify patterns of high use etc.
- Develop a water use management plan to help reduce water consumption in the school.
- Analyse the quality of water run-off in the school ground and identify point and non-point source pollution, develop a plan to tackle problems.

Curriculum Links:

Science—Science as a human endeavour, Life and living
SOSE—Place and space

Interesting Facts:

- The average Queensland household uses more than 900 litres of water a day.
- About 55% of household water is used in the garden.
- Australia is the highest user of water per capita in the world, despite being the driest inhabited continent
- There are 30 big dams and 3,500 weirs in the Murray-Darling Basin, and nearly three times the annual average flow in the Murray River is stored in dams and weirs.
- A person can survive for nearly two months without food, but less than a week without drinking water.

