



All the Water in the World

Key Messages

1. Although the earth is covered mainly by water, only a small amount is available for human consumption
2. Water is a limited resource and we need to use water resources wisely.

What will I be doing?

You will be conducting an experiment with small groups of students to demonstrate that even though the earth's surface is 71% water, less than 1 % is available for human use

There are 2 parts to this activity centre

Part 1;

- Referring to the globe – what is it, what is the earth mostly covered with? The blue represents water. 71% of the earth is covered by water, that is why we are known as the blue planet.
- Show them the litre (1000ml) beaker of water and tell them that it represents all of the water on earth.
- Next, ask students what type of water is found in the Pacific, Atlantic, etc. oceans?
- Pour 970 ml of water into a beaker
- This represents the amount of salt water on earth. (97%)
- Encourage discussion with the students about the ability to drink salt water. Can people drink salt water? Why not? (taste, not healthy to drink salt water – dehydrates us)
- **97%** of the earth's water is salt water – we can not drink this, remaining 3% is fresh water
- **2%** - Pour 20 ml into a second beaker; this is representative of the amount of water frozen in polar ice caps and glaciers. Can people use this water? Why not? (can not drink ice cubes – can't drink the glacial ice)
- **1%** Pour 10 ml into the third beaker. This represents the Earth's freshwater. (this is not accessible to drink – too far below the earth's surface in groundwater, or the water has been contaminated)
- With the eye dropper drop – collect 1 eye drop full of water from the 10 ml beaker. This is representative of the available fresh water. From all the water in the world – this is how much is available for the whole earth's population to share
- Ask the students to explain why water is considered a limited resource. (Although there is a lot of water, a very small amount is available for human use).



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Part 2;

- Assisting students to make a bead bracelet
- The beads represents all the water in the world
- Provide a string to each student
- Have students tie a knot near one end of the string
- Explain what each bead represents; once explained what each bead represents, divide students into smaller groups, and rotate through each bead station

7 BEADS;

Clear white beads represent SALT WATER

This represents the amount of salt water on earth. (97%)

2 BEADS;

Clear light blue beads represent FROZEN fresh WATER

This represents the amount of water that is frozen in glaciers and ice caps in the world (2%)

1 BEAD;

Dark blue beads represent the FRESH WATER that is not available to drink

This represents the amount of water that is too far beneath the earth's surface, not accessible, or Contaminated and not available to drink (1%)

1 BEAD;

Light Blue beads represent the FRESH WATER that is available to drink (actually even smaller than one bead!)

- Tie off after last bead – tie around wrist (might need adult/ volunteers to help with this)

Background Information

- On a planet that is 71% covered with water, this resource is one of the limiting factors for life on Earth.
- On a global scale only a small percentage of water is available, but this percentage represents a large amount per individual.
- For some, water may appear plentiful, but for others it is a scarce commodity.
- Canada has 0.5 % of the world's population, but its landmass contains 9% of the world's renewable water supply
- Canada is one of the largest water consumers in the world, second only to the United States



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Average daily domestic water use (per capita)

