



Topic **Resources (Water)**

- Objectives
- Hypothesize distribution of earth's water.
 - Compare hypothesis to actual allocation of earth's water.
 - Explore water resource management strategies to meet local demand with projected supply.

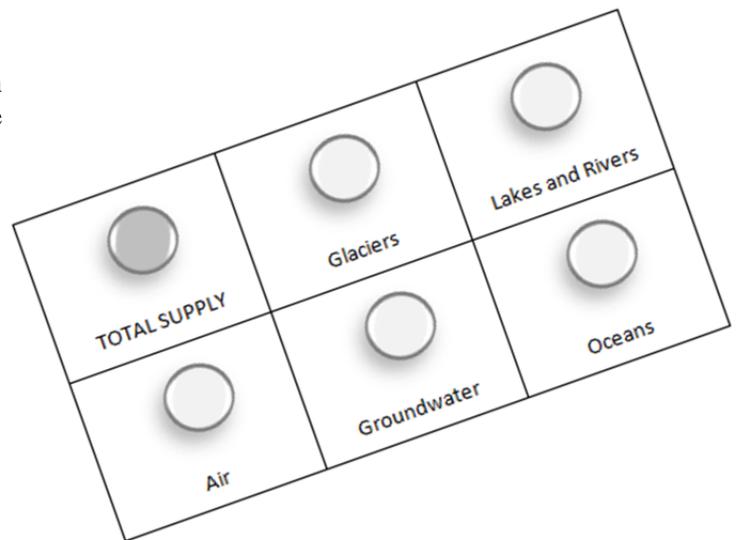
Duration 15-20 minutes

Assessment Type Diagnostic

Most of the water on our planet is contained in two areas that most people can't readily access or use. All of the water that is on this planet is the same water that we've always had! This activity shows students how very limited the water that we have to use is relative to the total supply. It adds an urgent perspective to protecting and conserving our precious water – and all natural - resources.

Set-up

In advance, prepare 'distribution cards' with six areas (large enough to accommodate one container) labeled as indicated in the figure.

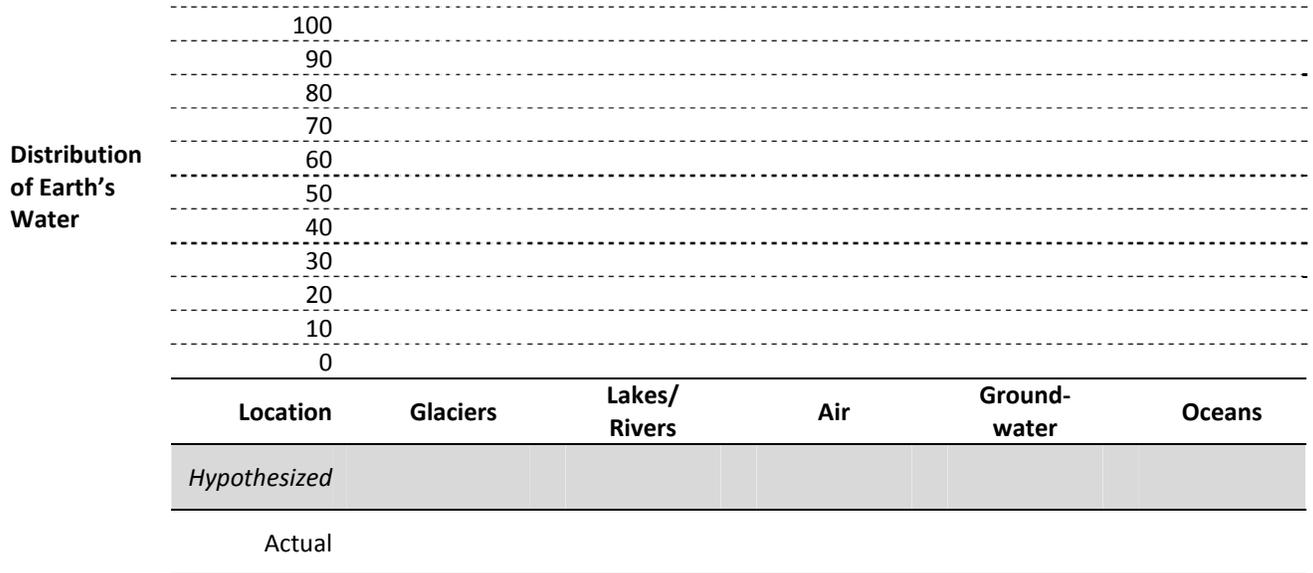


Materials

- 6 small containers
(i.e. plastic condiment cups)
- distribution card
- dropper
- water supply

Instructions

1. Place one container in each of the six areas on the distribution card.
2. Use the dropper to count 100 drops of water into the "Total Supply" container. Each drop is proportional to one percent of the earth's water.
3. Your task is to remove each drop from the total supply and place it in one of the location containers. When you are finished you will have a representation of the world distribution of water.
 - a. Hypothesize on what percentage of the earth's water (number of drops) is stored in each location.
 - b. Use the dropper to move that many drops of water from the total supply to each category.
 - c. Indicate your estimated values on a bar chart as shown below.



4. As instructed, use another color to mark the actual percentages of water in each location.

Notes

Students may also perform this activity using 1000 drops in the "Total Supply" rather than 100 drops. This changes the math slightly, but allows more accurate allocation of resources.

Timesaver! For the total supply, instead of counting out 100 drops students can measure 100 mL and simply show the relative amounts in each area (without the impact of the depleted total supply).

Actual percentages are generally reported as follows: Glaciers = 2%; Lakes/Rivers = 0.02%; Air = 0.001%; Groundwater = 0.6%; and Oceans = 97%. Have students display/share their data prior to revealing the actual numbers. This allows students to confront their misconceptions.

Discussion Questions

- For which area was your guess closest to the actual?
- Which of these locations contain that water that we use for drinking?
 - Why are these the only sources of fresh water?
 - How do you think modern technology affects our water supply?
 - What steps must we take to protect these supplies?
- What are some methods that could be used to make fresh water more accessible?
- Although water is a renewable resource, why should care be given to avoid polluting any water source?

Reality Check! Evaluation

- Did student's estimates of earth's water distribution sum to 100%?
- Did they reasonably compare their hypotheses to the actual allocation of earth's water?
- Were water resource management strategies discussed in terms of meeting local demand with the projected supply?