



ALL THE FRESH WATER IN THE WORLD

Aquifer Adventure
Celebrating Groundwater,
Portland's Buried Treasure



Objectives:

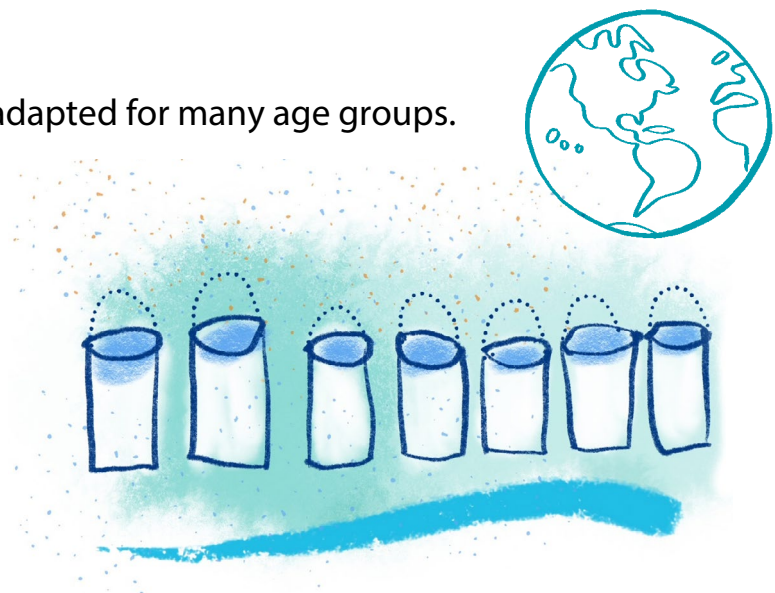
- Learn the major sources of freshwater.
- Understand why drinking water is a limited resource.
- Recognize the need for water conservation.
- Learn where your drinking water comes from.

Duration: 35 minutes

Age level: This activity can be adapted for many age groups.

Materials:

- 7 containers
- Water
- Blue food coloring
- Fresh water sources cards
- Data chart
- Globe



Preparation:

1. Fill the seven containers with colored water in the following amounts. It's okay to round.
 - 824 teaspoons (4.29 quarts or 17 $\frac{1}{4}$ cups)
 - 360 tsp (7 $\frac{1}{2}$ cups)
 - 3.12 tsp
 - 0.6 tsp
 - 0.48 tsp
 - 0.072 tsp or about 7 drops
 - 0.036 tsp or about 4 drops
2. Create a chart to record students' answers. Example on page 3.
3. Prepare sets of the *Freshwater Sources Cards* handouts. Each pair of students should have a set of six cards, one card for each freshwater source. Example on page 4.

Activity steps:

1. Setting the stage

A. Show students a globe of the earth, and engage in a discussion that covers the following questions. Answers are in italics:

1. What covers most of our planet? *Ocean/water*
2. Do you know what percent of the planet is covered by water? *75%*
3. Can we easily drink all of the water? *No, salt*
4. What percent of the water on Earth is salt water? *97%, leaving 3% fresh water*

B. Ask students to name all of the sources of freshwater.

1. Write out a list of the sources.
2. Discuss examples (name a river, or show pictures).
3. Ask if we can drink from each source.

C. The activity

- A. Point out the seven containers of water. Explain that together they represent all the freshwater found in the world. The amount of water in each container is proportional to the actual amount of water found in that water source worldwide.
- B. Explain that their challenge is to figure out which source of water corresponds to each water amount. To do this, they will work in pairs or small groups. Each group will receive a set of cards. The students should converse with their group and then place the cards in order from largest to smallest.
- C. Once students have placed their cards in order, have them approach the containers and set down each card next to the corresponding container, face down.
- D. After all groups have placed their cards, count how many of each type of card was placed next to each container. To include the students in this process, pass out one container of water and its cards to a small group. Ask them to count the number of each source type. Repeat for all the containers.
- E. Have students report their results back to you and record them in the data chart.

D. Wrap up

Discuss the findings and share the correct answers. Discuss with students where their drinking water comes from. How does this activity change the way they feel about their drinking water? Does it lead them to want to change any of their actions? Conservation?

Sources of freshwater	Container with 824 tsp (68.7%)	Container with 360 tsp (30.1%)	Container with 3.12 tsp (0.26%)	Container with 0.6 tsp (0.05%)	Container with 0.48 tsp (0.04%)	Container with 0.072 tsp (0.006%)	Container with 0.036 tsp (0.003%)
Glaciers and ice caps							
Groundwater							
Freshwater Lakes							
Soil moisture							
Atmosphere							
Rivers							
Biological							

Example Data Chart

Answers:

Glaciers and ice caps = 824 tsp (68.7%)

Groundwater = 360 tsp (30.1%)

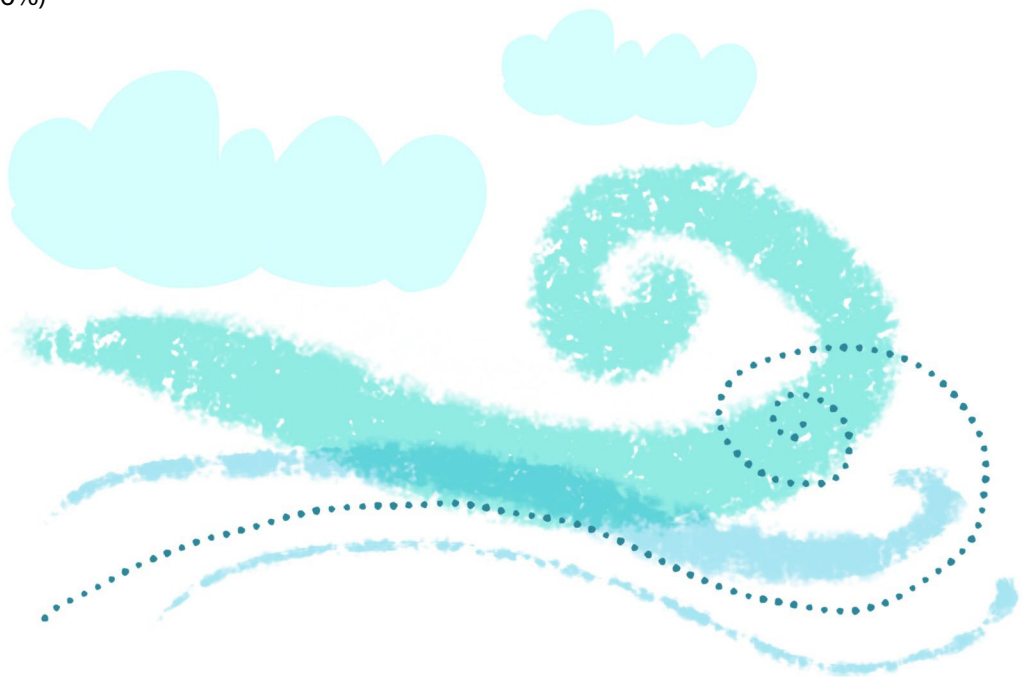
Freshwater lakes = 3.12 tsp (0.26%)

Soil Moisture = 0.6 tsp (0.05%)

Atmosphere = 0.48 tsp (0.04%)

Rivers = 0.072 tsp (0.006%)

Biological = 0.036 tsp (0.003%)



Freshwater Sources Cards

ATMOSPHERE

GROUNDWATER

RIVERS

FRESH WATER LAKES

SOIL MOISTURE

GLACIERS AND ICE

BIOLOGICAL