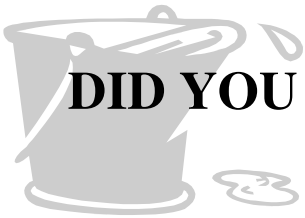


DID YOU EVER WONDER ABOUT WATER?

BENCHMARKS and TASK

SC.D.1.2.2 The student knows that 75 percent of the surface of the Earth is covered by water.
SC.D.2.2.1 The student knows that reusing, recycling, and reducing the use of natural resources improve and protect the quality of life.

- The student creates a graph to illustrate that less than one percent of the earth's water is fresh ground water and fresh water in lakes, rivers, and streams; two percent is fresh water frozen in glaciers and the polar ice caps; and 97 percent is salt water.

KEY QUESTIONS

About how much of the earth's water is fresh water?
Why is it so important to conserve fresh water?

BACKGROUND INFORMATION

The earth has been called the water planet. All the water that has ever been available to our planet is on or in the earth right now. About ¾ of the planet's surface is water. Oceans actually make up 97.2 percent of the water found on the earth's surface. Only three percent of the water on earth is fresh and most of that (about two percent) is frozen (in a solid state) in the polar ice caps. Less than one percent of all water on earth is available for use by humans and other creatures.

MATERIALS

Teacher

1 one-liter bottle
blue food coloring (optional)
water
4 large graduated cylinders
container/basin to hold discarded water

Per student

Water Wonders sheet
blue crayon
red crayon
yellow crayon

TEACHING TIP

Use the following measurements:
1000 mL = 100% of earth's water
970 mL = 97% salt water
20 mL = 2% fresh water frozen in glaciers and polar ice caps
10 mL = 1% fresh ground water or fresh water in streams, lakes, and rivers

ENGAGE

1. Talk about the circle graph from the *Water, Water Everywhere* activity.
2. Look at maps to find the locations of water on the earth's surface (e.g., lakes, rivers, oceans, glaciers).

EXPLORE

1. Pour 1000 mL of water from the one-liter bottle into a graduated cylinder. (Add blue food coloring for effect.)
2. Explain to students that the 1000 mL represents ALL the water on earth (fresh, frozen, and salty).
3. Tell students that you will remove the amount that represents earth's fresh water – which is not salt water. Pour out 30 mL into a second graduated cylinder. State that the 970 mL left in the first cylinder is ocean water. Ask: *Why can't we use this water for most purposes?*
4. Next, tell students that from the 30 mL (fresh water), you will now remove all of the earth's frozen water. Pour out 20 mL into a third graduated cylinder. Ask: *Why can't we use this water?*
5. Have students note how much water is left in the second cylinder (10 mL). Explain that this water represents all of earth's fresh water (rivers, streams, underground) available for use by humans and other animals.
6. Have students color in the grid on the activity sheet to illustrate the distribution of earth's water supply. Instruct students to:
    - color 10 squares yellow to represent all the fresh water available for use by humans and other animals.
    - color 20 squares red to represent all the frozen water.
    - color the remaining 970 squares blue to represent all the salt water.

EXPLAIN

1. Have students make observations about the activity.
2. Ask:
   What did you learn about the earth's water supply?
   Why should we conserve and not pollute our drinking water supply?

EXTEND/APPLY

1. Have students make a list of ways they can conserve water at home and at school.
2. Have student teams create posters showing various forms of water conservation.

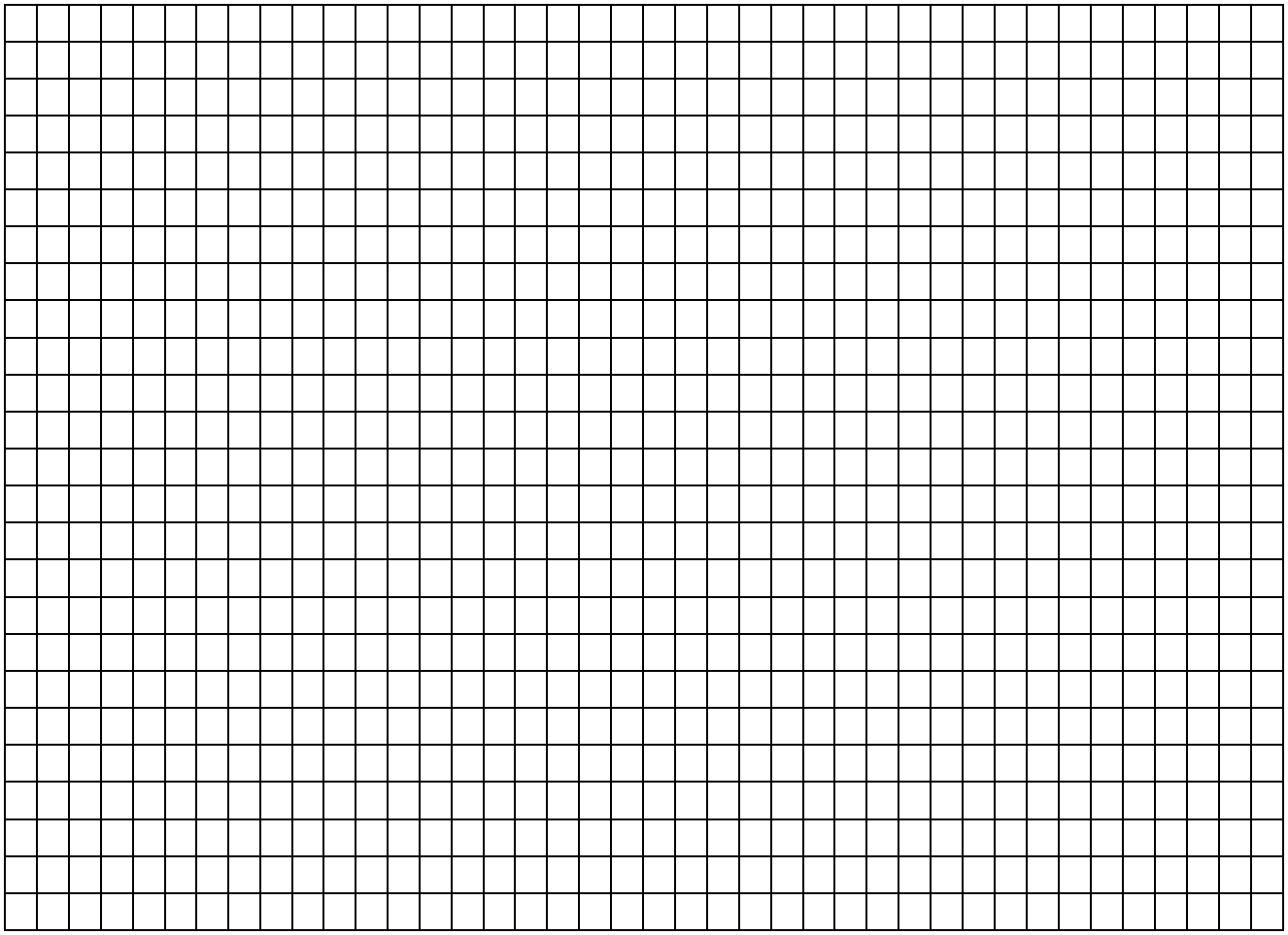
ASSESSMENT

Have students write statements on the back of the activity sheet about the need to conserve water (e.g., We should fix leaky faucets because there is only a small amount of water for us to use and we should not waste it.).

WATER WONDERS

There are three types of water available on earth:

- salt water
- fresh water frozen in glaciers and the polar ice caps
- fresh surface and ground water



KEY:

YELLOW Color 10 squares yellow to represent the fresh surface and ground water available for use by humans and other animals.

RED Color 20 squares red to represent the water frozen in glaciers and the polar ice caps.

BLUE Color the remaining 970 squares blue to represent salt water.