

THE CASE OF THE DISAPPEARING WATER

BENCHMARK and TASK

SC.A.1.1.1 The student knows that objects can be described, classified, and compared by their composition (e.g., wood or metal) and their physical properties (e.g., color, size, and shape).

- The student demonstrates that water can be poured, evaporated, and absorbed.

KEY QUESTION

Where does water go?

BACKGROUND INFORMATION

Water is one of our most vital natural resources. All living things require water to survive. Although it is the second most abundant substance on earth, the amount of fresh water available for use is very limited. Most of the water on the earth is salt water, which is found in the oceans and the seas.

Water is a liquid and flows easily. All liquids are able to flow, but some liquids flow faster than others. Water also has other observable properties:

- Water is transparent.
- Water is “sticky,” causing water drops to combine when they meet.
- Water exerts pressure.
- Water can be poured.
- Water has mass.
- Water can dissolve some materials.
- Water can be absorbed.
- Water can evaporate.
- Water can act as a filter.

Evaporation is the process by which a liquid is converted to its vapor phase by heating the liquid.

MATERIALS

Teacher

paint brush or sponge
container of water
Water by Frank Asch



Per student

paint brush or sponge
construction paper

Per class

several containers filled with water
2 washcloths

TEACHING TIPS

1. Do this activity on a sunny day. Select an area outside where students will have a variety of surfaces to explore (sidewalk, walls, paved areas).
2. The Explore activity can be done in small or large groups.
3. Make sure paintbrushes are thoroughly clean.
4. Construction paper can be used if dark chalkboard is not available.
5. One cup of water works well for children working in pairs.

ENGAGE

1. Read and discuss the book, *Water* by Frank Asch.
2. Write teacher's name on the chalkboard with a paintbrush or sponge. Wait a few moments and ask the students what is happening to the teacher's name. (It is evaporating, but students will probably just say that it is "going away" or "disappearing". It is much more important for them to understand the concept than to memorize the vocabulary.)
3. Ask the following questions:
How do you know the water is gone?
Where do you think the water went?
Why do you think it went there?
After listening to their answers, tell students that the water went into the air. Introduce the term **evaporation**.

EXPLORE

1. Ask students if they think water will evaporate from any surfaces other than the chalkboard.
2. Give each student a brush or sponge.
3. Provide several containers of water for the class.
4. Take class outside to the selected area and encourage students to choose a surface to "paint" or draw on with water.

EXPLAIN

Ask: *Where did you draw your picture?*

What did you observe?

What happened to the water?

Did it evaporate slowly or quickly?

Did anyone have a drawing that did not disappear?

Where was that drawing located?

(Develop the concept that evaporation happens more quickly in a sunny location than in a shady location.)

EXTEND/APPLY

1. Ask: *How could you make water evaporate faster?* Relate the evaporation concept to drying clothes on a line or in a clothes dryer, using a hand dryer or hair dryer. Discuss how moving air affects evaporation time.
2. Soak two washcloths in a tub of water. Squeeze out the water from one, open it up, and put it in a place to dry. Ball up the second cloth but do not squeeze the water out and do not open it up. Place it in the same place as the open cloth to dry.
3. Allow time for the open cloth to dry. Have students check both cloths. Ask: *Which cloth dried faster?*
4. Have each student paint using water on construction paper. **Save these papers for assessment.**

ASSESSMENT

Use the "dried" paintings. Ask the students: *"What happened to the picture you painted with the water?"* Use the rubric to determine the following about the students:

- **Minimal:** student can only determine that the picture dried.
- **Basic:** student can determine that the water "went into the air."
- **Advanced:** student can appropriately use the term "evaporated" and can explain what it means.