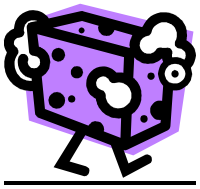
THE MYSTERIOUS DISAPPEARANCE



BENCHMARKS AND TASKS

SC.B.2.1.1 The student recognizes systems of matter and energy.
SC.D.1.1.3 The student recognizes patterns in weather.

- The student measures the effects of energy from the sun upon air, land, and water by using a thermometer.
- The student measures the effects of energy from the sun resulting in water disappearing (evaporating) into the atmosphere.

KEY QUESTION

Where does water go?

BACKGROUND INFORMATION

Evaporation is happening around us all the time. Water evaporates from the ocean, rivers, lakes, and puddles. Water evaporates from the bathtub after we bathe and from our skin as we sweat. Evaporation takes place when a liquid changes into a gas. When water is heated by the sun or other source, some of the water molecules vibrate fast enough to go into the air. The warmer the temperature, the faster the liquid will evaporate. Wind and surface area also speed up the process of evaporation.

Mass is a measure of the amount of matter in an object. Weight measures the pull of gravity on an object and changes when the gravitational pull changes. For example, your weight measurement on earth would not be the same measurement if you went to the moon. Your amount of matter remains the same so your mass would be the same.

MATERIALS

Per group

3 identical plastic plates
3 different colored sponges of the same size
water
balance
metric weights
graduated cylinder
The Puddle by David McPhail

Per student

Disappearing Water activity sheet
pencil

TEACHING TIPS

1. Do not do this activity on a rainy day.

2. 4" x 6" sponges cut in half work very well. 30 mL of water is an appropriate amount for each sponge.

ENGAGE

Read *The Puddle* and ask the students to tell why the puddle disappeared. They should use the term *evaporation*.

Tell the students they will be discovering what factors speed up or slow down evaporation.

EXPLORE

1. Give students a copy of the *Disappearing Water* activity sheet and the materials for each group.
2. Tell them to record the color of their three sponges on the chart. Then place one sponge and plate outside, one at the inside of a window, and one in a closet.
3. Take students outside to record the temperature and weather conditions on the *Disappearing Water* activity sheet.
4. Measure 30 mL of water and pour on one of the sponges. Repeat for the two other sponges.
5. Measure the mass of each of the wet sponges and plates and record on the activity sheet.
6. Tell the students to place the sponges and plates in the locations according to the colors they have written.
7. Check the plates after 24 hours.
8. Have students find the mass of the sponges and plates, find the difference between the beginning measurement and after 24 hours, and record on their sheet.

EXPLAIN

Ask:

Where did the water go?
From which sponge did the greatest amount of water evaporate?
Why do you think that happened?
From which sponge did the least amount of water evaporate?
Why do you think that happened?
What were the weather conditions in all three of the locations?
How does weather affect evaporation?

EXTEND/APPLY

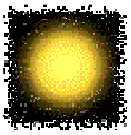
Tell students to picture themselves at a swimming pool or on the beach. They're diving in to enjoy the water for a while. After swimming, the students lie on a lounge chair and read a book. They notice after a short period of time that they are dry and their bathing suits are just a little damp.

Ask:

What happened to the water on your body and your bathing suit?
Where did the water go?

THE DISAPPEARING WATER

Weather observations
Temperature: _____

☐ Sunny 

☐ Partly cloudy 

☐ Windy 

Other observations: _____

_____

Data Collection Chart

Measurements	**Outside** Sponge color _____	**Near Window** Sponge Color _____	**Closet** Sponge color _____
Volume of water added			
Mass of wet sponge and plate			
Mass of sponge and plate after 24 hours			
Difference between beginning of experiment and after 24 hours			