Evaporation
2nd or 3rd Grade
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Benchmarks:

SLC 11: Students will demonstrate an understanding that the water cycle includes when matter evaporates and condenses.

Purpose:

This lesson is designed to help students through the scientific process in finding out what happens to water when it evaporates. In addition to learning what evaporation is, students will also learn how the amount of light shining on water affects the rate of evaporation.

Materials:

- Paper Towels
- Styrofoam/plastic plates
- Thin Slices of a sponge (1-2 cm thick)
- Slices of a dried sponge
- 1-2 Hot lights
- 1-2 Boxes
- Warm Water
- Teaspoons/tablespoons for each group

Pre-Demonstration:

Break the class up into groups of 4-5 students per group. Groups should be given a Styrofoam/plastic plate on which they are to write their group name on and 2 teaspoons of warm water each. Have the groups place their plate on a paper towel somewhere in the room and draw a circle around the puddle of water. Some groups should be given a hot light to shine on their plate, while others should be given a box to put over their plate. Have the students come back together as a group for the demonstration.

Initial Demonstration:

Demonstrator should take a wet paper towel (perhaps wet with warm water to speed up the effect) and wipe it on a chalkboard.

Target Observations:

- The dark streak disappeared
- The dark streak looked like it was moving

Target Model:

-*When water is wiped on something it disappears eventually.*

Procedure:

If the water is disappearing, where is it going? Is it being absorbed into the chalkboard like a sponge? Is it coming off of the chalkboard and going into the air? Is it disappearing altogether? We don't know from what we have seen.

Break the class up into their groups again. Give each group a paper towel, a thin piece of sponge, a tablespoon and some water in a container. Ask the students to place the sponge on the paper towel and pour four tablespoons of water on the sponge, one at a time, and make observations of the sponge and the paper towel.

Discussion:

Bring the class back together to talk about their observations. What did the groups observe about the paper towel and sponge? Ask the class what they think would happen if the sponge sat out like that all night. Would it "dry out"? Pass around examples of a dried out sponge. If the chalkboard absorbed the water like a sponge, wouldn't it "dry out" also? Where does the water go when something "dries out"? By the way, the scientific name for something like water drying out is called evaporation. Our question about where the water goes on the chalkboard is now the same as, "Where does the water go when something dries out? Or where does water go when it evaporates?"

Target Model:

-When water is wiped on something *it eventually dries up (Evaporates). The water:*

-Is absorbed into the thing underneath (like the paper towel)

-Goes into the air

-Disappears

Procedure:

Have the groups check their plates and the paper towels underneath to see if anything has happened. Have the students report back what they found.

Discussion:

Some of the groups should have found that some water disappeared from their plate. Those groups who had their plates under the light should have had the most gone, while those under the box should have had none gone at all. In all cases, the paper towels underneath should be dry.

What happened to the water, did it dry out for some groups? Was it absorbed into the plate? How can you tell? (hint: check the paper towel) What can we eliminate then about or observations of water when it dries up: It is absorbed, it goes into the air, or it disappears? Can anyone think of how to check to see if it is in the air? We will talk about how to test that with the next lesson, condensation.

Target Model:

-When water is wiped on something it eventually dries up (Evaporates). The water:

~~-Is absorbed into the thing underneath (like the paper towel)~~

-Goes into the air

-Disappears