

Evaporation Exploration 1 OF 2

You're geared up and ready to play. Wait!

What are you wearing? Fabrics like cotton can soak up sweat and water, and they dry slowly. So as you sweat, cotton clothes can become wet and sticky, even heavy—they hold on to the water they soak up. The new high-tech fabrics in modern sports clothing are different. They have the ability to pull moisture away from the skin and carry it to the outer surface of the clothing, where it can evaporate more easily and cool you off. In the following activity, you will compare the rate of evaporation of water from cotton and a paper towel, which will act like a high-tech fabric.

Materials

Permanent marking pen
Small cup
Hot tap water
Roomtemperature water
4 zip-closing plastic bags, quart size
2 droppers
2 brown paper towels

2 pieces of 3" x 3" cotton fabric swatches

--Be sure to follow Milli's Safety Tips and do this activity with an adult! Do not eat or drink any of the materials used in this activity.

Procedure

1. Use a marking pen to label the cup "Water".
2. Use the marking pen to label 2 zip-closing bags with "Room Temp". Label the other 2 bags with "Hot Water".
3. Add about 1 cup of room-temperature water to each of the 2 zip-closing plastic bags labeled "Room Temp". Get as much air out as possible, and seal the bags securely. Lay the bags down flat.
4. Have your adult partner add about 1 cup of hot tap water to each of the 2 zip-closing plastic bags labeled "Hot Water". Get as much air out as possible, and seal the bag securely. Lay the bag down flat. This bag will serve as a heat source.
5. At the same time, use a dropper to place 1 drop of room-temperature water in the center of 2 separate pieces of brown paper towel.
6. Repeat step 3 with the cotton fabric swatches.
7. Allow the drops to spread for about 10-20 seconds until they don't seem to spread any more.
8. Place one paper towel on the bag labeled "Room Temp". Place the other paper towel on the bag

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labeled "Hot Water".

9. Repeat step 8 with the cotton swatches.

10. Observe every few minutes. Compare the amount of water on each paper towel in the "What Did You Observe?" section.

11. Thoroughly clean the work area and wash your hands.

What Did You Observe

Does adding heat to water increase the rate of evaporation?

Which sample of water evaporated faster, the cotton swatch or the paper towel?
