THE CURIOUS CASE OF CLIMBING WATER

How are paper, plants, and the concept of “climbing water” connected to one another? Find out in this simple science demonstration!

SUPPLIES

- **2 clear cups (the shorter, the better)**
- **1/2 cup of water**
- **1 thin paper towel strip**
- **2-3 thick books or magazines**
- **Food coloring**

INSTRUCTIONS

1. Pour 1/2 cup of water into the first cup. Next, add 2-3 drops of food coloring to the water (this will make the “climbing water” easier to see).
2. Stack 2-3 books or magazines on top of one another. Place the first cup on top of the stack and the second cup on the table below it.
3. Place one end of a paper towel strip into the cup filled with water. Gently take the other end and place it inside of the empty cup.
4. Observe the water and the paper towel strip over the next hour or two - what appears to be happening?
5. Keep the cups and paper towel strip in place until all of the water from the first cup has climbed up the paper towel and back down into the second cup.

WHAT HAPPENED?

Capillary Action = the ability of a liquid to flow upward in narrow spaces, in resistance to gravity.

This phenomenon explains how the water was able to **“climb” up the paper towel** and also explains how water is able to “climb” to the tops of plants and trees as it is absorbed.

Did you know that paper products are made from a fiber found in plants, called **cellulose**? In this demonstration, the water traveled upward by flowing into the pockets of space surrounding the cellulose fibers in the paper towel.

The areas around the fibers helped **draw the water in** as it made its way up the strip and out of the first cup and back down into the empty cup.

This is one reason why “quilted” paper products are often **more absorbent**; the quilted shapes offer more pockets of space for water to flow into around the fibers.

TRY THIS

Turn the above demonstration into an experiment by trying it with **three different brands** of paper towels.

Make a note of any **patterns** on your paper towel strips before starting and hypothesize which brand you think the water will be able to “climb” the fastest.

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