Eco Ed with Ellie

Thirsty Trees:

Softwoods vs. Hardwoods

Activity Instructions

You will need:

- Measuring cup
- Cup you drink with
- Straw
- Food coloring
- Paper towel
- Stopwatch (phone)

This activity is a demonstration on a difference in water transport in the two major types of trees: softwoods (pines, spruces, and firs) and hardwoods (maples, oaks, and beeches). These instructions follow along with the ones given in the activity video, please use them as a reference. Have fun, and happy learning!!

Step 1:

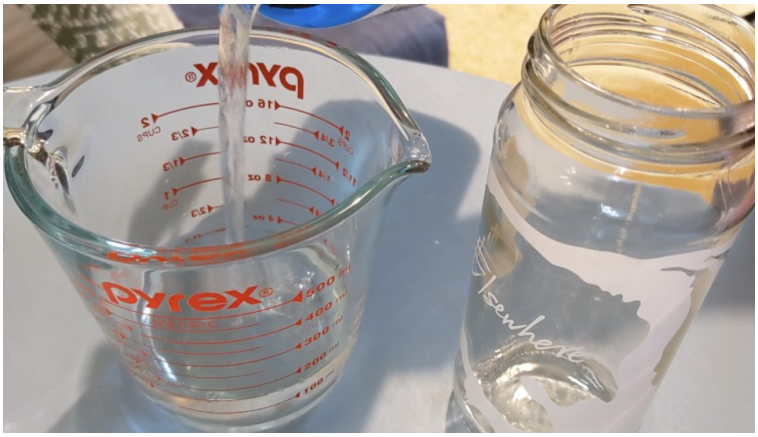
Collect the materials listed in the top right. I used the stopwatch that's on my phone (found within the Clock settings) and everything else came from my kitchen cupboards.

CHALLENGE: Can you use a straw or appropriate substitute made from reusable materials? My roommate and I have a few metal ones in our drawers.

Step 2:

Measure out 1/2 cup of water with the measuring cup and pour it into your drinking cup. Measure out a second 1/2 cup of water and leave it in the measuring cup.

RESEARCH: How do trees absorb water? How much water do trees pull from the ground in a day? In a year? In their lifetime??



Step 3:

Roll up either two large or four small sections of paper towel nice and tight. This is our hardwood tree.

Add some food coloring to the water in the measuring cup. This step is just to help you observe the passive water transport as the water is absorbed by our hardwood tree, the paper towel roll.

OBSERVE: Do you have any hardwood trees in your yard? If you do, see if you can identify the species of one of them, and have that be your hardwood tree for this activity.

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Step 4:

Now you're all set to conduct the demonstration! Grab a friend, sibling, or grown-up to play the role of either the hardwood tree (paper towel) or the softwood tree (straw). Whoever is the hardwood is also in charge of the stopwatch, and whoever is the softwood tree is hopefully thirsty!

HYPOTHESIZE: Which tree do you think will pull up the water the fastest? Defend your answer!

Step 5:

On the stopwatch holders mark, both trees will begin absorbing water. The hardwood will simply place the rolled up paper towel into the dyed water and the softwood will drink with the straw. The stopwatch holder is responsible for announcing both trees' finish times for completely absorbing their water.

TEST: The best science findings are ones that are able to be replicated. Try this demonstration three times, and record the times in a chart similar to the one below. Afterward, use the three measurements to find an average absorption time for each tree.

	TRIAL 1	TRIAL 2	TRIAL 3	Calculated Average
Hardwood				
Softwood				