



It's the Humidity

Hands-On Activity

Background Information

You can tell how humid it is by looking at pinecones. In dry air, pinecones open their scales to disperse seeds. In dampness and rain, they close them to protect the seeds. In this activity, you will use pinecones to create a hygrometer, a device that measures the moisture content of the air.

What You Need

- ◆ Spray bottles
- ◆ Water
- ◆ Masking tape
- ◆ Box of toothpicks
- ◆ Small lumps of plasticine
- ◆ Pinecones (4 per group); preferably with scales that are open, long, and relatively lightweight (These cones are more sensitive to humidity than heavy, closed, and woody cones.)
- ◆ Wide-mouth jars with lids (4 per group); the jars must be taller than the pinecones.

What to Do

1. Divide your lump of plasticine into four pieces; put one piece in each jar. Attach the base of a pinecone to the plasticine at the bottom of the jar.
2. Use the spray bottle to mist the pinecones inside the jars. Screw the lids on tight, and turn the jars upside down. Monitor the pinecones for the next several hours, writing your observations on the worksheet.
3. Once the cone has closed, open the jar. Leave all the jars open over night. The next morning, record your findings on the worksheet.
4. When the cones are dry, fill one jar cap with water. Turn the jar upside down and screw it onto the lid. Be sure the cone does not touch the water. Leaving the other jar cap dry, screw it on the jar. Seal both with tape. These two jars serve as the control. Place them in a cool, dark place.
5. Repeat Step 4 with the remaining cones, but place both jars in a sunny window. Observe and compare them to the controls for the next four hours, recording your observations on the worksheet.
6. Can you find any other plants that respond clearly to changes in humidity? List them on the worksheet.

It's the Humidity Worksheet

Name _____

1. Monitor the pinecones in the jars, noting below how long it took for the pinecones to open their scales fully, and then close them again.

Jar #	Number of minutes to open pinecone scales	Number of minutes to close pinecone scales
1		
2		
3		
4		

2. What happened to the pinecones in each jar after you left them open all night? Did the scales stay closed or reopen? What does that tell you about the humidity in your classroom?

3. What difference, if any, do you see between the control jars and the jars in the sunny window after one, two, three, and four hours? Is condensation on the sides of any of the jars?

Time	Comparisons and Observations
After 1 hour	
After 2 hours	
After 3 hours	
After 4 hours	

4. Can you find any other plants that respond clearly to changes in humidity? List them below.
