3RD GRADE 4-H

WEATHER AND RESILIENCE

Studying Weather and Building Stronger Homes

Materials Needed: Large Graph Paper, Large paper cups, straws, pins, pencil with eraser, cardboard, glue, scissors, clear tape, fan

Procedure:

Have students pick "United States," "Indiana," and the nearest city listed to their location from www.usclimatedata.com . At this time you can explain how the data tables work, and have the students tell you what some of the average highs and lows are for each month. Have the students make a graph with temperatures from 0 to 100 (in tens) on the Y axis, and the months (numbered 1-12) on the X axis. Have them put dots representing the average lows for each month on the graph and "connect the dots." On the same graph, have them graph the average high temperatures. Ask a few comprehension questions, Which month tends to be the warmest? Which tends to be the coolest? etc.)

Discuss that we often want to know what direction the wind is coming from. For instance, if wind is coming from the north, the temperature will tend to be cooler than average. If the wind is coming from the south, the temperature will tend to be warmer and rain will be more likely. But, how can we tell the wind direction? We usually use a windvane. Split the students into groups of two. Build the windvane from the 4-H "Make a Wind Vane" handout. Having the cups pre-marked "N" "E" "S" and "W" will save time. Try to align "N" to north in the classroom and have the students experiment (blow air at the wind vane---or use a fan) to show how the wind vane would look if air was blowing from the North verses how it would look with air blowing from the south.

"So, what kind of damage can happen when we have too much wind?" Students should talk about trees coming down, roofs coming off of houses, and buildings being destroyed, etc. Straight-line winds have been measured at over 200 mph and at least one tornado broke 300 mph. Break the students into groups of two. Tell the students that they have a challenge. They have 30 minutes to build a sturdy house from cardboard (at least four walls and a roof...and it must measure at least 6 inches in width and length and stand at least 4-inches tall. Each group will only have 4 pieces of tape (about 1-in long). Any other support/connections they use will need to be made by cutting/folding their cardboard in creative ways...no glue or pins. After 30 minutes, test each "house" by using a fan. Before testing each house, ask students if they predict the design will stay together in the winds. Because the house has no foundation, students are allowed to place their hand on any one wall (not roof) to keep the house from blowing across the room.

Indiana Standards:

3-ESS2-1: Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

3-ESS23-1: Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.

4-H Project: Weather

PURDUE UNIVERSITY
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EA/EOU

4-H at HOME

To discover a wide selection of 4-H activities and experiences, visit 4-H.org/4HatHome

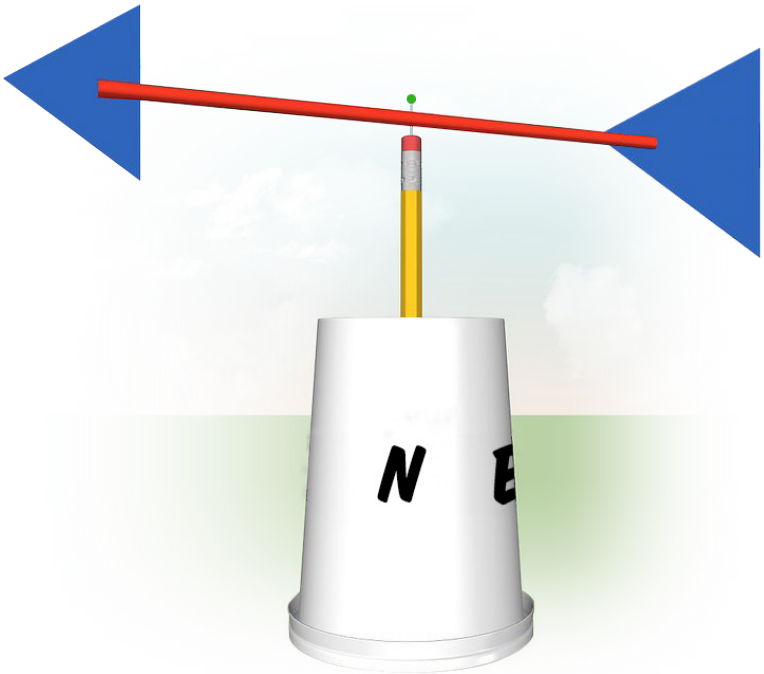
Make a Wind Vane

Description

Make your very own wind vane to teach kids how wind is "made" and check the wind's direction with this super simple and fun craft.

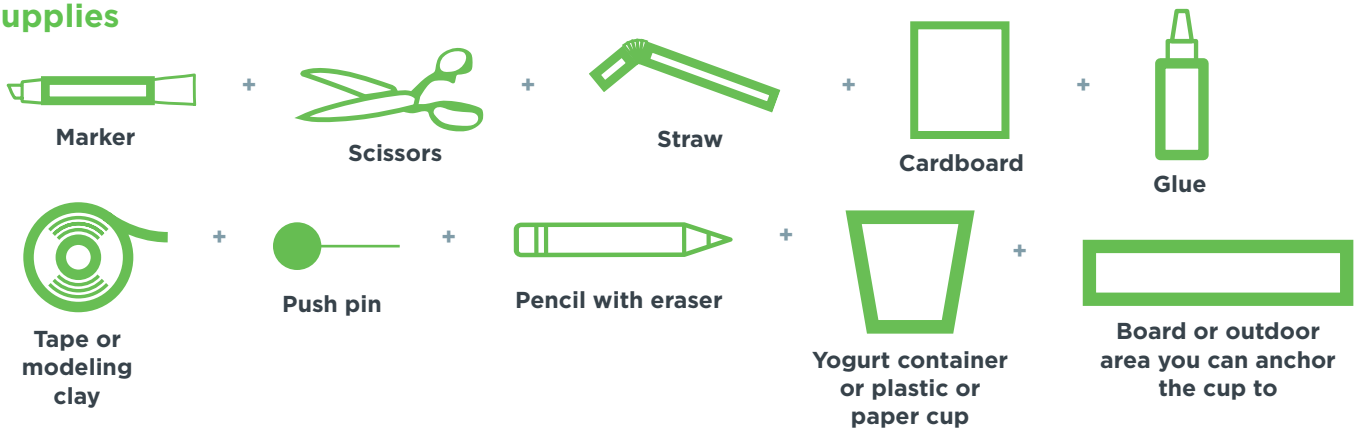
Did you know that the sun is responsible for creating winds? As the air is warmed by the sun, it rises, and colder, denser air moves in to replace it. This is wind! Geographical features, such as mountains, bodies of water and deserts, help determine the nature of wind-its speed and direction.

The direction of wind (where it is blowing *from*) often affects the weather. For roughly two-thirds of the continental United States good weather is brought by northwest, west and southwest winds; bad weather is generally blown in by winds from the northeast, east and southeast. You can make your own wind vane to check wind direction



Make an indicator with a straw and two triangles cut from thin cardboard (see the diagram). Cut slits in the straw ends and glue the triangles in place. Stick a pin right through the middle of the straw into a pencil eraser. Make sure it swings freely. Support the pencil in a yogurt container that is anchored to a board with some modeling clay. Place the vane on a flat surface outdoors and mark N, E, S, and W on the container. The arrow will point to the direction the wind is blowing from. Can you predict what weather the winds will bring?

Supplies



To go deeper, find the full curriculum at Shop4-H.org/AfterschoolAg

Afterschool AGRICULTURE