

Revisit the Concept of Wind

Reflecting on Air

1. Immediately following the investigations above, ask your students to review what they have done and what they have learned.
2. Begin with the wind speed investigation. What observations helped them to gauge the speed of the wind? How could they tell the differences between different wind strengths? What devices could be used to measure wind speed?
3. Have your students reflect on wind direction. What is important to know to determine where the wind is coming from? What devices work well to show wind direction? Can one device measure both wind speed and direction?
4. Finally, ask your students to consider how wind speed and direction play a part in weather conditions and weather patterns.

Linking to Weather

As a result of their observations and experiences, students should be ready to understand that wind is air "on the move" and that this air movement is a key component of weather. It is the movement of air masses that both causes and distributes weather conditions. That is why scientists measure and track wind as part of atmospheric conditions.

In further experiments, your students will make other measurements and atmospheric observations similar to those used by scientists to make predictions about everyday weather.

Digging Deeper

The wind blows because air pressure is higher in one place than in another place. The air moves from areas of higher pressure to areas of lower pressure. Objects like buildings, trees, and hills affect the direction of the wind near the surface. To get the best idea of the wind direction, try to stand far away from such objects. A park or a playing field is the best place to observe the wind.

Wind speed is measured with an anemometer. Most anemometers have four horizontal shafts arranged like the spokes of a wheel. The end of each shaft is cup-shaped. The wind pushes the concave side of the cup more than the convex side, so the anemometer spins in the wind. The faster the anemometer is spinning, the stronger the wind.

You do not need an anemometer to estimate the wind speed. You can use a verbal scale, called the Beaufort scale, which describes the effect of the wind on everyday things like trees.

Wind direction is measured with a wind vane. One end of the vane has a small, heavy object, and the other end has a flat object with a large area. The wind pushes the flat object more than the small, heavy objects, so the vane swings around to be parallel to the wind. You can estimate the wind direction by yourself just by using your face as a "sensor." Face into the wind, and then record the direction you are facing, relative to north.

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