



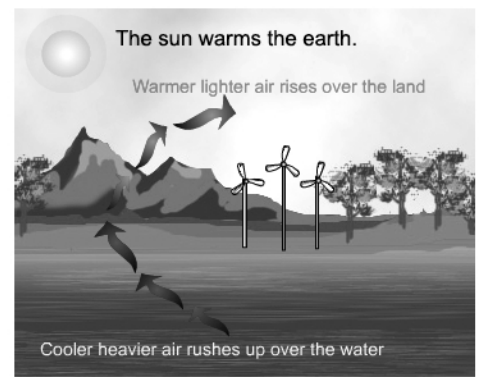
## Wind is *Air* in Motion

For thousands of years people have harnessed the wind's energy. People used the wind to sail their ships on the rivers and oceans. Later windmills were built and used to grind wheat, corn, and other grains and later to pump water from wells and to cut wood in sawmills. Today we use wind energy to generate electricity.

Wind is a renewable fuel because it uses the heat of the sun (solar energy) so there is no fossil fuel needed to make wind.

## Where does wind come from?

Wind is caused by the uneven heating of the earth's surface by the sun. During the day the air above the land heats up faster than the air above water like oceans and lakes. The air above the water is cooler and heavier. The uneven heating of the air is because the earth is made up of different surfaces and elevations, like the oceans, lakes and rivers, forests and jungles, deserts and mountains. The warm air over the land expands and rises and the cooler air over the water rushes in to take the place of the warmer air creating winds.



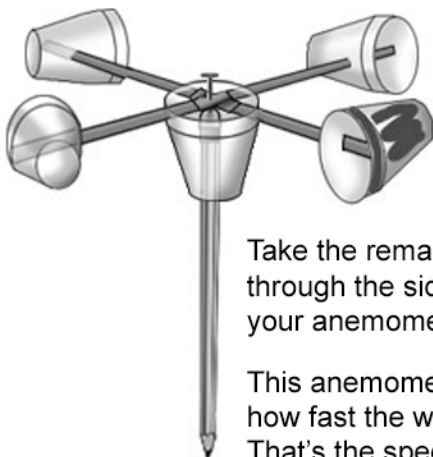
## Experiment with Wind Speed - Make an Anemometer

To measure wind speed, meteorologists use an instrument called an anemometer.

### Gather your materials:

- |                          |                  |
|--------------------------|------------------|
| 1 pencil with eraser end | 1 colored marker |
| 5 styrofoam cups         | Tape             |
| 1 straight pin           | A windy day      |
| 2 long plastic straws    |                  |

With the colored marker, color one of the styrofoam cups and set it aside so you can use it as your starting point when measuring the wind speed.



Take one cup for your center piece and poke the straws through making a cross "+" shape in the center and tape the cross section together to hold. Now take one of the pencils and poke it through the bottom of the cup so that the eraser end is up under the cross section of the straws. Place the straight pin through the straw center into the eraser to hold. Don't make the pin too tight as this is the axis on which your anemometer will turn.

Take the remaining 3 cups and the colored cup and poke the other ends of the straws through the sides of the cups. Make sure they are all facing the same direction. Now place your anemometer in the ground with the pencil end.

This anemometer cannot tell the wind speed in miles per hour, but it can give you an idea of how fast the wind is blowing. Try counting the number of times it spins around in one minute. That's the speed of the wind. For example, if the cup makes 10 complete revolutions in one minute, the wind speed is 10 mph.