Lesson Plan 16

Earth and space sciences (The changing Earth)

Year Level: 3/4

Key learning area: Science

Measuring Wind Speed

Objectives

By the end of this lesson the student will:

- have measured wind speed using a protractor and a ping-pong ball.

Background

Heat from the sun warms air and makes it rise. This occurs mainly in tropical regions, near the equator, where the sun's energy is most intense. As warm air rises, cool air rushes in to take its place. We feel this movement of air as wind.

During the day in summer, land is generally warmer than the sea. This temperature difference can set up cooling daytime sea breezes, which can penetrate many kilometres inland. At night, breezes may blow in the opposite direction, from the land to the sea.

Similar daily changes in temperature occur over irregular terrain and cause mountain and valley breezes. Other winds induced by local phenomena include whirlwinds and winds associated with thunderstorms.

Fact File

The strongest wind ever reliably measured on the surface of the Earth was 362 km/hr, recorded on Mt. Washington in the United States on 12 April, 1934. Much stronger winds, however, occur near the center of tropical cyclones.

Resources and actions

Carry out this activity in a windy part of the school.

An interesting activity could be to have students blow the ping-pong ball to get a reading.

Print off the student's worksheet and photocopy one for each student: http://www.bom.gov.au/lam/Students_Teachers/Worksheet16.shtml.

Ask students to carry out the worksheet then go over their results at the end of the class.

Questions and solutions

1. What is wind?
Heat from the sun warms air and makes it rise. This occurs mainly in tropical regions, near the equator, where the sun's energy is most intense. As warm air rises, cool air rushes in to take its place We feel this movement of air as wind.

2. Can wind be useful to us?
Winds can be useful to us. They can help us:

Generate electricity.
Dry clothes.

Cool off, by bringing in cooler winds on a hot day etc.

3. What damage can wind do?
Wind can damage crops.
Destroy houses (cyclones).
Uproot trees etc.

4. Does your instrument give a measurement of wind speed that agrees with the measurement using your observations and the Beaufort wind scale? Can you suggest any improvements to the instrument?

Extension activity
Can you devise another simple instrument for measuring wind speed?

Time

60 minutes

Assessment Task

Q1 & 4