Lesson Plans: Winds

Objective

The objective of this activity is to investigate how pressure differences create wind.

Materials

Each student or group of students will need the following:

- Balloon (long balloons or round ones)
- Bicycle pump to blow up the balloons (or blow them up yourself)

Important Points to Understand

- Wind results from pressure gradients, (i.e., pressure differences from place to place).
- Air generally moves from an area of high pressure to an area of low pressure. Over large distances, the earth's rotation deflects these winds to their right in the northern hemisphere and to their left in the southern hemisphere. This is known as the Coriolis effect. This effect has zero value at the equator at all.
- Wind continues until air pressure is equalized.

Preparation

Students often have misconceptions about wind and where it comes from. Before the lesson begins, discuss wind with your class. The main point of the discussion is to reveal students' ideas of wind and its origins. Be sure that all materials are either centrally located or already distributed to the student groups.

Procedure

1. Blow up the balloons by pump or mouth.
2. Do not tie them.
3. Hold the blown-up balloon in one hand and release the air very slowly.
4. As the air is released, the students can observe that air is moving out of the balloon by holding the other hand next to the opening. The force of the air on their hand is evidence that the air is escaping. In addition, the air escaping the balloon feels like wind.
5. Repeat the process a few more times with different sized balloons; record your observations each time.

Questions

1. Describe what happened to the air in the balloon when it was released. Why did this happen? Did you find any difference if the balloon was bigger? Why?