



# WHO HAS SEEN THE WIND?

## Grade 2, Science and Technology

Source: Adapted from *Who Has Seen the Wind?*, *Teacher's Corner Lesson Plans*, Evergreen

### DESCRIPTION

Students will gain an understanding of how energy, in the form of wind, can act on other objects to cause motion. Students will learn that they can use this energy to move their own objects and that wind energy is harvested in large quantities to produce electricity for manufacturers and communities.

### CURRICULUM LINKS – SCIENCE AND TECHNOLOGY, GRADE 2

*Understanding Earth & Space Systems – Air & Water in the Environment*  
Overall Expectations: 2, 3  
Specific Expectations: 2.1, 2.2, 3.1, 3.3

*Understanding Structures & Mechanisms – Movement*  
Overall Expectations: 1, 2  
Specific Expectations: 1.1, 2.1, 2.2

### PLANNING NOTES

#### Materials

- Construction paper
- Crayons
- Markers
- Paint
- Pins/thumbtacks

#### Learning Skills & Work Habits

Initiative, critical thinking

#### Prior Learning

The sun is the source of wind and water energy. The sun heats the Earth's surface unevenly, creating air currents that make the wind blow. Energy from wind and air can be used to generate electricity, which is used by humans and is renewable. Renewable resources are healthier because they do not create as much pollution.

#### Recommended Class Time

- 1-2 periods

### TEACHING/LEARNING STRATEGIES

#### Making the Pinwheel

1. To make pinwheels, precut the construction paper into 13-centimetre squares.
2. Hand the paper squares out to the students and have them colour and decorate them as they like.
3. Using a ruler, draw lines connecting opposite corners of the square to create an 'x' on the square.
4. Trace a nickel or a button to create a small circle in the centre of the square.
5. Carefully cut to, but not through, the centre circle.
6. Curl the corners into the center; do not crease the triangular sections.
7. Secure the pinwheel corners to the eraser of an unsharpened pencil by pushing a pin or thumbtack through the four folded corners, through the centre circle of the pinwheel, and into the pencil eraser.

### Outdoor Pinwheel Experiment

1. On a windy day, take the students outside and experiment with various objects (leaves, stones) to see if they can be blown about by the wind.
2. Discuss why the wind moves some things and not others (shape, weight, material).
3. Observe the weight of the objects and the strength of the wind.
4. Let the students compare pairs of objects and how they react in the wind, such as a leaf and a tree, petals and flowers, sand and mud, low and high grasses, and water and ice.
5. Have the students hold their pinwheels and observe how they are moved by the wind.
6. Move to a sheltered area and observe the differences in the pinwheels' movements.
7. Have the students mark one of the four parts of the pinwheel and record how many times it rotates in a designated amount of time. Do this for both the windy and the sheltered areas and observe any differences.

### Discussion Questions

1. How can we tell which direction the prevailing winds are from by looking at the trees in our school ground?
2. How can wind energy be harvested by bigger windmills and be used to produce electrical energy?

### EXTENSION

Scientists and pilots measure the speed of the wind with an instrument called an anemometer. With simple materials, including straws and a dixie cup your class can construct an instrument to help observe the speed of the wind at different times. Observations can lead to a discussion of how the wind can produce energy for people's use.

Source: *Energy Quest Online*

