

# Movers and Shakers



Topic: Energy  
Grade: 2  
Duration: 30 – 45 minutes

*Students will learn to look for wind tunnels and be able to avoid wind shadows.*

## **Curriculum Expectations**

- 2s49: Demonstrate an understanding of the movement of air and of water as sources of energy
- 2s51: Identify wind and moving water as renewable sources of energy and determine the advantages and disadvantages of using
- 2s57: Ask questions about and identify needs and problems related to the use of wind and moving water as energy sources, and explore possible answers and solutions
- 2s58: Plan investigations to answer some of these questions or solve some of these problems, and describe the steps involved
- 2s59: Use appropriate vocabulary in describing their investigations, explorations, and observations
- 2s93: Demonstrate an awareness of air as a substance that surrounds us and takes up space, and whose movement we feel as wind
- 2s94: Describe the movement of air relying on their observations of its effects
- 2e48: Ask listen to discussions on familiar topics and ask relevant questions
- 2a28: Produce two- and three-dimensional works of art that communicate ideas (thoughts, feelings, experiences) for specific purposes and to familiar audiences

## **Background Information**

Moving air is a renewable resource because there is always more air that can be used as a source of energy. As the sun warms up the ground, some areas get hotter than others. There is an uneven distribution of hot and cool places. As hot air pockets rise, cooler air rushes in to take its place. This movement to fill in the pockets of warmer rising air with cooler sinking air creates the wind cycle.

In most school yards there are wind tunnels and wind shadows. Wind tunnels are the areas of faster moving air that is not interrupted by objects like trees or buildings. A wind shadow is found in sheltered areas where wind is obstructed from being able to do its work. On really cold winter days in the recess yard, students hide in the wind shadows to keep warm.

## **Accountability**

Teachers and students need to be aware of where the wind tunnels and wind shadows are at the school. Students will become more aware of what can be done to reduce heating and air conditioning bills in both seasons.

## **Teacher Notes**

1. Materials: one small piece of tape per student, sticks or unsharpened pencils, long thin piece of light tissue paper.

2. Create a wind detector by taping a piece of tissue to the end of a pencil.
3. Discuss with students where they think outside they will find the most energy from the air/wind? Where will they find the least?
4. Using observation skills and their wind detectors, go around the schoolyard to measure the tissue's reactions to wind energy.
5. Back in the class discuss where the most and least wind was located on the property.
6. How could wind be reduced on the property, based on the class's observations? (For example, more trees and shrubs, more structures, etc.)
7. How could wind be used to cool the school on hot days? How could the wind be blocked to keep the school warmer in the winter?
8. Draw pictures of your suggestions and give them to the Principal and custodian.

### ***Home Extension***

Use the wind catcher around the home to figure out where the wind has the most energy. Create a solution for the house's wind problem. For example, planting trees and shrubs near the house, getting air tight windows to block wind from coming in, using heavy curtains to block wind, etc. Report on the creative solutions to use at home and school.

### ***Lesson Comments***

What did your students find?

Who did they tell?

What creative solutions did they come up with?