

# Mapping Wind in the Classroom

## Objective

- Students will identify and record air movements in the classroom.

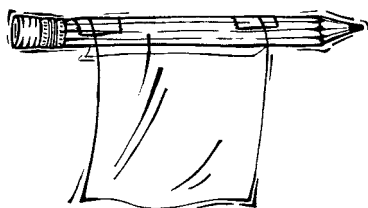
## Procedure

**1.** Now that students have measured wind outside the classroom, ask them if they think that wind can occur indoors. Ask for students' ideas about where wind occurs indoors and how it happens. Make sure students understand that rooms can experience wind through air currents or drafts. Tell students that they are going to investigate wind in their classroom.

**2.** Model how students should use these items to detect currents indoors, or ask students to provide suggestions.

- Drop the feathers, letting them fall to the ground, or gently blow the bubbles and watch where they go. Do they fall straight down or do they float in a certain direction?
- Drape a thin piece of plastic sheet lengthwise over a pencil (secure it with tape if necessary) and hold very still. Does the plastic move?

NOTE: To ensure results, demonstrate with a fan on low setting.



Ask students why the air moves the bubbles, feather, and plastic. Remind them that air is a force that can push or pull things. Ask students why the air in the classroom sometimes moves fast and sometimes moves slow. Help students figure out what causes the air to move in the classroom (fan, furnace, their movement, etc.). Point out that everything causing the air to move is driven by some form of energy.

**3.** Divide students into groups and assign each group to various stations around the room where students can research air currents and drafts (near windows and doors, over a heater, in the center). Each group should be equipped with feathers, bubbles, pencils, plastic sheets, and tape.

**4.** Provide each group with a piece of chalk or a paper arrow. Have them test for air currents and draw or place an arrow on the ground indicating the direction of the air flow. Have students record their observations at their stations in their **Energy Learning Logs** and share their findings with the class. The class should determine if the wind is from a heater, fan, or air conditioning, or if it is a current from a window or door (even if windows and doors are closed students can check for drafts).

**5.** Create an aerial diagram of your classroom. Show students the diagram and explain that it is a view from the top. Tell them to locate their stations on the diagram and to transfer the arrows they placed on the floor to the diagram to show air current flows in the classroom. This step might help them identify sources of drafts.

**6.** Discuss with students that the air movement in the classroom is an example of a "system." This particular system was designed by people to make their living space more comfortable.

## Assessment

- Have students describe where air currents and drafts come from.
- Have the class compose a classroom wind map and have students include it in their **Energy Learning Logs**. This map can be used to help construct the **Energy Flow Mural** at the end of the unit.

## Extensions

It is important to control drafts in the classroom (or at home) when trying to cut down on heating costs. To engage students in energy-saving ideas, have them create their own draft doorstops.

## Summary:

Students map air movements in their classroom by using simple tools to detect drafts.

**Grade Levels:** (K-2) 3-4

**Subject Areas:** Language Arts, Mathematics, Earth and Physical Science, Environmental Literacy & Sustainability, Art, Family Living and Consumer Education

**Setting:** Classroom

## Time:

Preparation: 5 minutes  
Activity: 50-minute period

**Vocabulary:** Air filtration, System, Temperature, Wind

## Standards Addressed:

CC ELA: L.K.1.A&D, L.K.2.A, L.K.4, L.K.5.A, L.1.1.A&G-H, L.1.2.A-B&D-E, L.1.5.A-B, L.K.1.6, L.2.1-3&6, L.3.1-2, L.3.2.E-F, L.4.1, L.4.1F, L.K.2.6, L.1.5.B, RI.2.3&10, RI.3.3-4&10, RI.4.3&10, SL.K.1.A, SL.K.3-4&6, SL.1-2.1.B-C, SL.2.2, SL.3.1.A-D, SL.3.6, SL.4.1.A-D, W.K.2&8

CC Math: MP5

NGSS:K-PS2-1, K-ESS2-2  
SEP: Planning and Carrying Out Investigations, Analyzing and Interpreting Data, Engaging in Argument from Evidence  
DCI: PS2.A: Forces and Motion, PS2.B: Types of Interactions, PS3.C: Relationship Between Energy and Forces, ESS2.E: Biogeology, ESS3.C: Human Impacts on Earth Systems  
CCC: Cause and Effect, Systems and System Models

EL&S: Connect: C1.A.i  
Explore: EX2.A.e, EX5.B.e, EX5.B.i  
Engage: EN6.A.i

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### Materials:

- Feathers
- Bubbles
- Pencil
- Strips of plastic wrap or strips from a plastic bag
- Tape
- Fan (optional)
- Pieces of chalk or paper arrows
- Diagram of classroom
- **Energy Learning Log** and writing implements

### Related KEEP Activities:

As an addition to this activity, “Be an Energy Saver,” a KEEP Energy Spark, introduces students to other ways to save energy and develop wise energy use habits. Available at [keepprogram.org](http://keepprogram.org).

To do this, take a large sock and stretch it. Use markers or fabric paints to design a pattern. Be sure to let fabric paint dry before continuing. Fill sock with sand, beans, or foam rubber, and have teacher securely sew or tie end together. On the closed end, squeeze some beans into the shape of a snake's (or another animal's) head. Twist pipe cleaner around back of head to form a neck. Cut black and white circles to form eyes, and cut a red tongue. Glue eyes and tongue on sock. Take snake doorstops home and place on floor up against door to keep out drafts.

Students can learn about basic window insulation techniques by using a medium-sized corrugated cardboard box to symbolize a house. Let students decorate the box if they wish. Cut four windows and install the regular windows by covering the holes

with plastic and sealing with tape on the inside of the house. To add the storm windows, tape another piece of plastic on the outside of the window. Explain to students that the air space between is what keeps the cold air from penetrating the house. This air space acts as a form of insulation. Discuss where other drafts might enter the house in the winter months (along the seams of the window) and how this can be prevented. Add another piece of plastic insulation to the inside of the house. Be sure this piece of plastic is larger than the regular window and covers the original window seams (tape) completely. Explain that this plastic insulation helps block drafts in the winter by keeping the cold air out and warm air in, which reduces heating bills.

