# Lesson 1: Feeling the Wind

## Objective:

This is an introductory lesson about wind, leading to more complex lessons that will associate the wind with severe weather. For this activity, students will be introduced to air and recognize moving air as wind. All activities are designed using universal design so that students with visual impairments can learn alongside their sighted peers with minimal adaptations.

## NGSS:

Kindergarten: Weather and Climate

K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.

*Note*. These are also pre-requisite skills to higher level science. For example, in order for older students to comprehend science standards such as 4-ESS3-1, where they will study earth and human activity, initial conceptual development skills (such as understanding the concept of wind, before understanding how it can be harnessed into sustainable energy sources) are essential.

## Essential Questions:

* What is air?
* Does air have mass?
* Does air take up space?
* What happens when air moves?
* How do hot and cold temperatures make wind?

## Materials:

* Air pump
* Balloons
* Book: *Feel the Wind* by Arthur Dorros
* Large fan
* Ideally, introduce this lesson on a windy day, so students can go outside and experience windy conditions.

## Directions:

This is a simple lesson in which students will participate in hands-on activities about air, with a goal to move the lesson to a discussion about wind. Begin the lesson by asking essential questions; students may respond verbally, in written form, using a drawing, or by acting out their responses.

1. Provide students with a deflated balloon. Using an air pump, allow the students to feel the air that comes out of the pump when the handle is pressed. What are they feeling?
2. Use the pump to inflate balloons. Have children observe deflating balloons. What happens when you let go of the balloon after inflating it?
3. Use the pump to inflate balloons again. Tie balloons. Allow children to play with the inflated balloons.
4. Ask students whether air has mass or weight. Test their answers using the balloons.
5. Use science curriculum materials to talk about air and the concepts they need to know about the subject.
6. Read the book *Feel the Wind* by Arthur Dorros. Allow students to actively participate in the reading through the use of dramatic inquiry; as the book moves from describing air to a description of wind, allow the students to act out how air can change to wind.
7. For students who require accessibility due to a visual impairment, a large print or braille copy of the book can be provided. Another universal adaptation for the book can include a story box that has tactile objects and/or activities that accompany the story; all students in the class can benefit from the story box.
8. Incorporate the use of a large fan to simulate the wind or, more ideally, conduct this lesson on a windy day and take the children outside to experience wind. Sometimes there are large fans in school gymnasium settings; consult with your P.E. teacher to explore this option.
9. Experiment with the fan or the outside conditions:

* What happens to your hair when you stand in the wind?
* What happens if you are holding a piece of paper and you let it go?
* What makes air move?
* Is all moving air considered wind? (Difference between blowing on an object versus wind.)

## Extension Activities:

* Hang a wind chime and note that sometimes you will hear it and other times you will not. Why?
* Fly a kite.
* Experience different weather days.
* When does wind indicate that there will be a storm or severe weather? Make a homemade weather vane headband with wind strips. Cut a strip of construction paper to be used as the headband. Next, cut four strips of newspaper, 1 inch wide and 22 inches long. Attach the strips to the construction paper headband using glue or staples. Put the headband on the student’s head and go outside. Explore how strong the wind is blowing based on the movement of the newspaper strips and from which direction it comes, using a compass with auditory output or tactile/large print markings that show north, east, south, and west to introduce the concept of cardinal directions. If there is no wind blowing outside, standing in front of the fan you used earlier will work as a second best choice!