

WEEK 6 Lesson 1

Science and Engineering:
Observing the Sky: Bubbles in the Wind

S & E Big Ideas	Wind is moving air. Bubbles are filled with air.
S & E Guiding Questions	What is wind? How can you measure wind speed and direction? How can bubbles be used to observe the wind?
Content Objective	I can use bubbles to determine the direction of the wind. (1-ESS1-1, Practice 3)
Language Objective	I can use data to support my ideas during a discussion. (SL.3.1.b)
Vocabulary	bubble: a pocket of air that forms when gas rises to the surface of a liquid direction: the course or line along which something moves, faces, lies, or points anemometer: a device that measures wind speed and direction.
Materials and Preparation	<ul style="list-style-type: none"> ● bubble solution with wands, one for each child ● paper towels, one for each child ● <u>Fun with Bubbles</u> (https://www.youtube.com/watch?v=XxU_QenIO54) ● Bubble Observation Tracker, one for each child ● anemometer image, optional, for support ● chart paper and markers <p style="margin-left: 40px;">On the chart, write: How can bubbles be used to observe the wind?</p> <p>Identify an open space for the bubble blowing experiment.</p> <p>Note: As the children work with bubbles to make observations about wind, they may ask, “Why does my bubble pop?” The most common reason is contact with a dry surface. When there is a strong wind or even</p>

	<p>a gentle breeze, bubbles are much more difficult to create and will inevitably pop due to the wind’s force. If you are in a dry climate or if a bubble touches a dry finger, blade of grass, or concrete, it will pop instantly.</p> <p>When children experiment with bubbles outside, the bubbles will evaporate quickly. It will be important that one partner blows the bubble while the other partner observes the path the bubble takes.</p>
<p>Opening 3 minutes</p>	<p><i>If you can’t see the wind, then how can you tell its speed or direction? Meteorologists depend on wind features in order to forecast the weather. They use tools such as weather vanes to determine wind direction and anemometers to measure wind speed.</i></p> <p>Show image of anemometer.</p> <p><i>While we cannot see wind, we might be able to observe what it does to things around us, such as how wind blows our hair, moves tree limbs, or crackles flags. Meteorologists use the Beaufort Wind Force Scale to estimate wind speed. Scientists designed this scale based on the movement of flags, trees, and smoke. In this activity, we will make observations using bubbles to measure and describe wind speed and direction.</i></p>
<p>Investigation 20 minutes</p>	<p>Show the Sci Show Fun with Bubbles video.</p> <p>Review the question, How can bubbles be used to observe the wind?</p> <p>Conduct the experiment outside. Have the children work in pairs. One child will blow bubbles using the wand and solution while the partner records the direction the bubbles drifted on the Bubble Observation Tracker (left, right, up, or down). Instruct the children to blow gently through the wand. If it is helpful, provide an example to support children’s gentle blowing such as blowing on a dandelion puff or a birthday candle.</p>
<p>Discussion 6 minutes</p>	<p>Discuss, how can bubbles be used to observe the wind? Record the responses on the chart paper.</p>
<p>Closing 1 minute</p>	<p><i>You have made many interesting observations. You’ll have a chance to write more about this experience in the Science Literacy Station, when you respond to the question, “How can bubbles be used to observe the wind?”</i></p>
<p>Standards</p>	<p>1-ESS1-1. Use observations of the Sun, Moon and stars to describe that each appears to rise in one part of the sky, appears to move across the sky,</p>

	<p>and appears to set.</p> <p>1-ESS1-2. Analyze provided data to identify relationships among seasonal patterns of change, including relative sunrise and sunset time changes, seasonal temperature and rainfall or snowfall patterns, and seasonal changes in the environment.</p> <p>Practice 3. Planning and carrying out investigations</p> <p>SL.3.1.b Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.</p>
Ongoing assessment	Listen in and take notes as children make observations of bubbles. Identify their questions and record their observations.

Notes

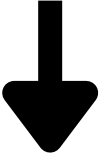
Use the symbols to track the direction of the bubble.



Up



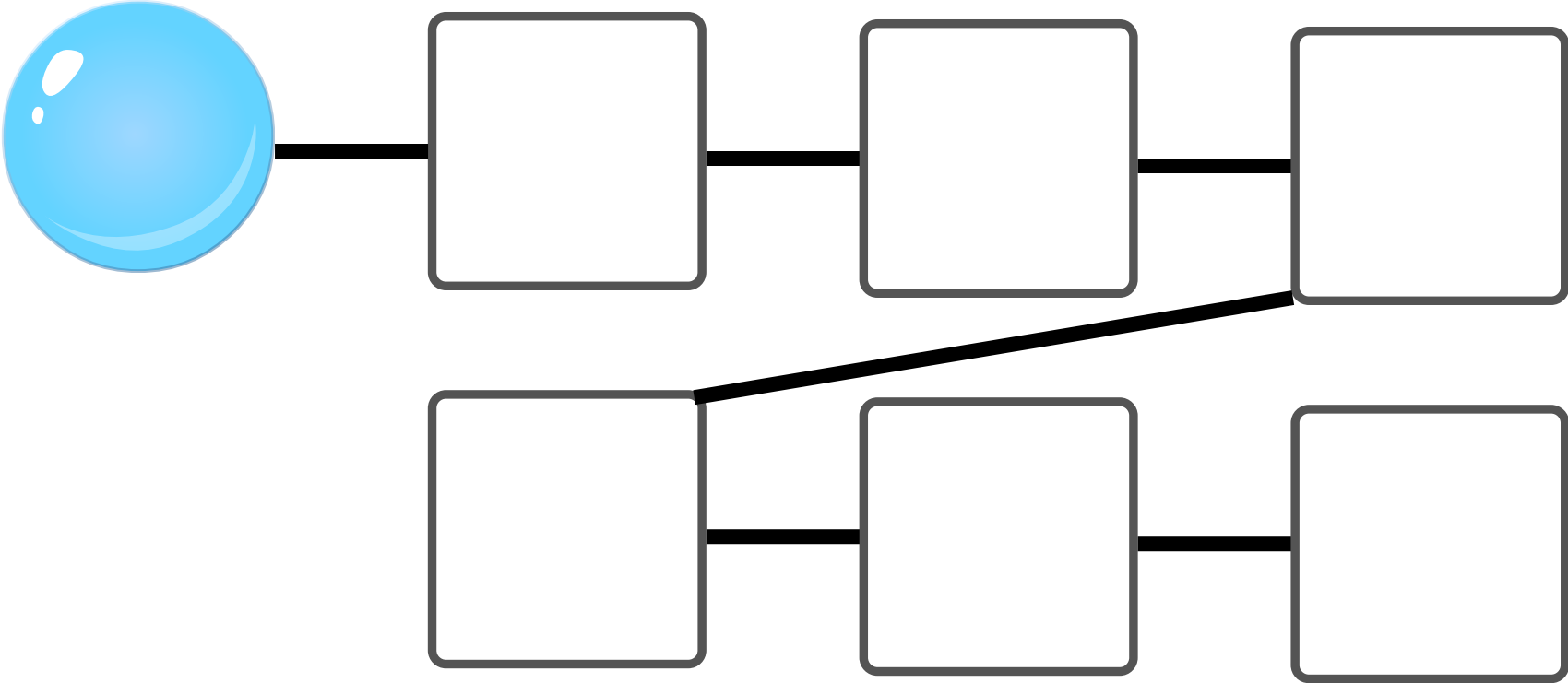
Right



Down



Left



Anemometer



A weather device that measures wind speed and wind direction.