



## Weather Station

<b>Lesson Concept</b>	Scientists use tools to measure weather.
<b>Link</b>	In this pre-unit lesson, students identify weather tools, and begin to collect weather data that will be analyzed at the end of the unit.
<b>Time</b>	30 minutes + 5 minutes per day for 10 days of data collection
<b>Materials</b>	<p><u>Whole class</u></p> <p>Weather station that consists of one of each of the following</p> <ul style="list-style-type: none"><li>Rain gauge</li><li>Thermometer</li><li>Barometer</li><li>Anemometer</li><li>Wind vane</li><li>Hygrometer (or a sling psychrometer)</li></ul> <p><u>Table Group</u></p> <p>R1 Weather Instrument Cards</p> <p><u>Individual</u></p> <p>Data Collection Book (pages at the end of the lesson)</p>
<b>Advance preparation</b>	<ol style="list-style-type: none"><li>1. Gather all weather tools.</li><li>2. Duplicate <b>R1</b> Weather Instrument Cards. Cut and make a set for each table group.</li><li>3. Copy data collection pages for each student.</li><li>4. Determine whether to use the pages as a book (data collection book) or as individual sheets that students glue into their science notebook. Assemble book if that is how students will use the pages; leave pages unassembled if students will glue them into their notebooks.</li></ol>

**Procedure:**

**Engage** (5 minutes) *Scientists use specific tools to measure and predict weather.*

1. Pose the question: what types of tools do scientists use to measure the weather?
2. Ask students to pair/share about this question. Chart and discuss their ideas.

**Explore #1** (15 minutes) *Weather tools are used for different purposes.*

3. Place one of the measuring devices at each table. Ask students to observe each device.
4. Distribute instrument cards. Ask students to try to match the device with the instrument card.

**Explain** (20 minutes) *Scientists use data from weather tools to analyze weather patterns*

5. Ask students to share their matches. What information did they use to make their match? Correct any if necessary.
6. Model for students how to use each measuring device.
7. Allow each table group to try each instrument and show that they now know how to use the tool to measure the weather condition.
8. Explain to students that they will use these weather-measuring devices to record data about the weather over time. They will collect data daily and keep record of their observations in their Weather Data Collection Journal. At the end of the unit, they will analyze this data to better understand how meteorologists make forecasts.
9. Distribute the weather journal to each student and assign each group a different weather station to collect data on a daily basis. Ask the group to find the correct recording sheet for their station in their journal.

*Teacher Note: Set up devices in a permanent location outside of the classroom. Based on weather in your area, you may choose to collect data 2-3 times a week. If there is any type of severe weather, be sure to collect data daily*

10. Ask groups to make their first measurement. Then have each group share out their data and have all students enter the data in their journal.

*Teacher Note: Have students continue to measure and share their measurement with each other for 10 days. Allow 5 minutes of class time for the measurement and sharing. The students will need this data for lessons 5.10 and 5.17.*

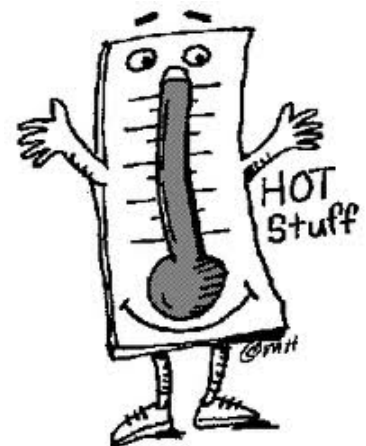
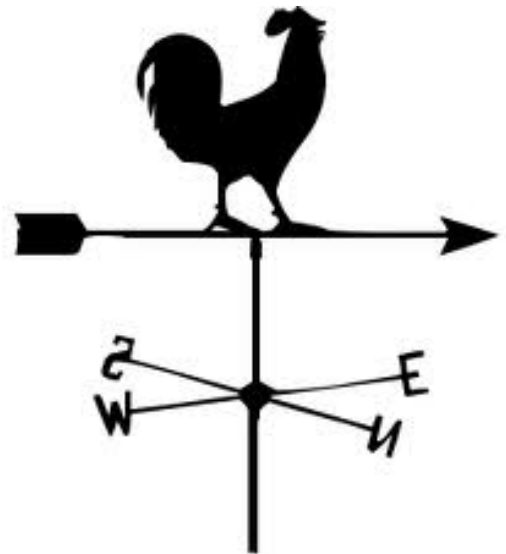
## Weather Instrument Cards

<p><b>Weather Vane</b></p> <p>This instrument is used to measure the direction of the wind. It tells which direction the wind is coming from, not which direction it is going to.</p>	<p><b>Anemometer</b></p> <p>This instrument is used to measure the speed of wind. As the wind moves over it, it spins. How fast it spins depends on the speed of the wind.</p>
<p><b>Thermometer</b></p> <p>This instrument measures the temperature of the air. In the US the temperature is measured in degrees Fahrenheit. In other countries it is measured in degrees Celsius.</p>	<p><b>Hygrometer (Sling Psychrometer)</b></p> <p>This instrument measures humidity (the amount of moisture in the air). A special type of hygrometer is called a sling psychrometer. It measures the relative humidity (the amount of moisture in the air relative to the maximum amount the air can hold at a given temperature).</p>
<p><b>Rain Gauge</b></p> <p>This instrument collects rainfall. It can be used to measure how much precipitation there was over a certain period of time.</p>	<p><b>Barometer</b></p> <p>This instrument measures air pressure. High pressure means that the air is dense, cooler and falling bringing clear skies. Low pressure means that the air is less dense, warmer, and rising bringing moisture .</p>

# Weather Data Collection Journal



www.shutterstock.com · 1048032



By \_\_\_\_\_

# Rain Gauge Data Collection

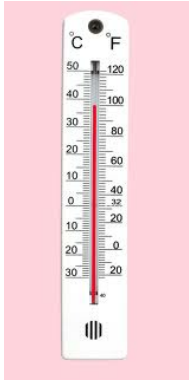


<b>Date</b>	<b>Inches of rain</b>

# Barometer Data Collection



<b>Date</b>	<b>Barometric pressure</b>



# Temperature Data Collection

<b>Date</b>	<b>Temperature</b>

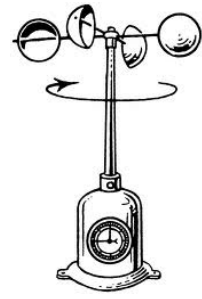
# Wind Vane Data Collection



<b>Date</b>	<b>Direction of wind</b>

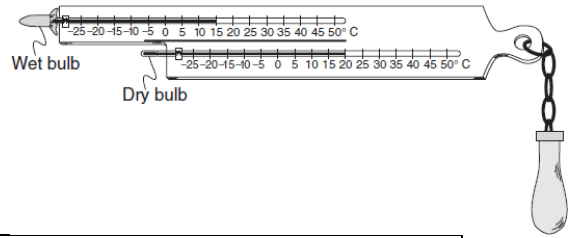


# Anemometer Data Collection



<b>Date</b>	<b>Speed</b>

# Hygrometer Data Collection



Date	% Humidity