

# Unit Summary

## Cluster 1: Weather Conditions (Lessons 1-5)

<b>Overview</b>	<p>Children look at pictures and talk about their perceptions of weather, then listen to and write poems about the weather. They learn symbols and descriptive terms used by meteorologists so they can record daily weather observations on a class weather calendar. They use a thermometer to record the outdoor temperature and then turn their attention to the sun.</p>
<b>Science Content</b>	<ul style="list-style-type: none"> <li>• The main parts of weather are temperature, sunlight, wind, clouds, and moisture.</li> <li>• Meteorologists—people who study weather—use symbols and descriptive terms to communicate about weather.</li> <li>• Weather is measurable.</li> <li>• Thermometers measure temperature.</li> <li>• Sunlight both illuminates and warms.</li> </ul>
<b>Science Center</b>	<ul style="list-style-type: none"> <li>• Examine and experiment with a variety of thermometers.</li> <li>• Use lamps or flashlights to create shadow patterns.</li> </ul>
<b>Family Links</b>	<ul style="list-style-type: none"> <li>• Children use an example of weather news on TV, the radio, the Internet, or in a newspaper to find new or interesting weather words.</li> <li>• Children learn about thermometers in their homes and elsewhere.</li> </ul>
<b>Further Science Explorations</b>	<ul style="list-style-type: none"> <li>• Invite a professional meteorologist to talk with the class about weather forecasting.</li> <li>• Conduct a science talk about what makes the weather.</li> <li>• Use a balloon to show how a thermometer works.</li> <li>• Practice using a thermometer to monitor water temperature and locate warm and cool places in the classroom.</li> <li>• Compare rainfall reports.</li> <li>• Make extra rain gauges.</li> <li>• Compare air and ground temperatures in sun and shade.</li> <li>• Explore shadows.</li> </ul>
<b>Cross-Curricular Extensions</b>	<p><b>Mathematics:</b> Read and compare numbers on the Celsius and Fahrenheit scales.</p> <p><b>Art:</b> Make a class collage using pictures and photographs of different kinds of weather. Trace shadow silhouettes.</p>

## Cluster 2: Weather Patterns (Lessons 6, 11, 16, 19-21, and 26-29)

<p>Each month children record and analyze daily weather observations compiled from a class weather calendar. They use sky observations and temperature data to make bar graphs. In addition, children record and analyze precipitation data and track windy days. At year's end, they compile their monthly weather data to reflect on overall patterns over the months and seasons.</p>	<p><b>Overview</b></p>
<ul style="list-style-type: none"> <li>• A weather pattern is weather that repeats or follows an order.</li> <li>• Simple graphs can help scientists communicate their observations.</li> <li>• Data is a fact about something observed.</li> </ul>	<p><b>Science Content</b></p>
<ul style="list-style-type: none"> <li>• Have opportunities to practice graphing independently.</li> <li>• Display a weather map from your local newspaper.</li> <li>• Write questions about weather events or observations.</li> <li>• Practice reading number scales on a thermometer.</li> </ul>	<p><b>Science Center</b></p>
	<p><b>Family Links</b></p>
<ul style="list-style-type: none"> <li>• Children pick one interesting weather pattern or trend from the year or from a particular season. They pretend that they are meteorologists in the local area and “report” about the weather pattern and tell why other scientists or people might be interested in this pattern.</li> </ul>	<p><b>Further Science Explorations</b></p>
<p><b>Mathematics:</b> Give children practice collecting and graphing data. Children “build” a three dimensional representation of their graphs using Unifix® cubes or other connecting blocks. Post a completed bar graph with a few simple questions about reading the graph.</p>	<p><b>Cross-Curricular Extensions</b></p>

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## Cluster 3: Water (Lessons 7-10, 12-15, 17, and 18)

<b>Overview</b>	<p>Children think about the role of water in weather and learn how to measure rainfall using a rain gauge. They consider how clouds are made and make models of the three basic cloud shapes. They notice what happens when they freeze and melt water, watch liquid water disappear into the air as it evaporates, and then observe water condense out of the air. Children take a morning dew walk, then build and monitor “dew catchers.” They explore frost and then turn their attention to snowflakes.</p>
<b>Science Content</b>	<ul style="list-style-type: none"> <li>• Understanding how water changes—from liquid to a vapor or a solid—is essential to understanding weather.</li> <li>• Three basic cloud shapes are cumulus, cirrus, and stratus.</li> <li>• Water can be a part of the air, an invisible gas called water vapor.</li> <li>• Water can condense out of the air onto cold surfaces, a phenomena called dew.</li> <li>• Frost is water that comes out of the air and forms as ice crystals.</li> <li>• Snowflakes form in six-sided or six pointed patterns.</li> </ul>
<b>Science Center</b>	<ul style="list-style-type: none"> <li>• Practice reading a rain gauge.</li> <li>• Post the cloud chart and cloud models for children to examine.</li> <li>• Wipe water onto a slate or chalkboard, and paint water pictures to explore evaporation.</li> <li>• Look at a poster of the water cycle.</li> </ul>
<b>Family Links</b>	<ul style="list-style-type: none"> <li>• Set up a cup of water for freezing and melting.</li> <li>• Find out how cold it is by seeing whether they make frost or dew on a cold car window.</li> </ul>
<b>Further Science Explorations</b>	<ul style="list-style-type: none"> <li>• Compare reports of rainfall from the official weather station with the rainfall measured by the class.</li> <li>• Construct extra rain gauges to use in the Science Center and to put up at their homes.</li> <li>• Expose colored paper to rain to observe and measure rain drops.</li> <li>• Examine water drops indoors.</li> <li>• See what range of icy cold temperatures they find outdoors.</li> <li>• Try melting ice in different outside locations.</li> <li>• Demonstrate how water condenses on the cold metal surface of a can.</li> <li>• Look for connections between sky conditions and dew formation.</li> <li>• Learn about the dew point by making dew indoors.</li> <li>• Watch frost form indoors.</li> </ul>
<b>Cross-Curricular Extensions</b>	<p><b>Language Arts:</b> Write acrostics using the names of primary cloud shapes. Start a word bank of water words. Read stories about ice skating, ice fishing, or animals in winter.</p> <p>Write class books about water freezing, melting, evaporating and condensing. Read aloud about the water cycle. Write about real or imaginary experiences with frost and snow. Make maple syrup snow candy like the characters in <i>Little House in the Big Woods</i>.</p> <p><b>Art:</b> Make watercolor paintings. Draw pictures of dew-covered spider webs. Paint snow.</p> <p><b>Mathematics:</b> Observe various geometric shapes in frost. Compare the change in volume of melting snow.</p>

## Cluster 4: Air and Wind (Lessons 22-25)

<p>Children investigate some of air's properties. They observe and experiment with air trapped inside objects. Children experience wind and observe its direction, while being introduced to the four cardinal directions. They make tools to measure wind strength, speed, and direction.</p>	<b>Overview</b>
<ul style="list-style-type: none"><li>• Air is all around us.</li><li>• Wind is moving air.</li><li>• Scientists and meteorologists use various tools to measure wind's strength, speed, and direction.</li></ul>	<b>Science Content</b>
<ul style="list-style-type: none"><li>• Make bubbles at a tub and water work station.</li><li>• Try to blow up balloons inside of bottles.</li><li>• Experiment with a weather vane.</li><li>• Practice using wind measurement tools.</li></ul>	<b>Science Center</b>
<ul style="list-style-type: none"><li>• Children experiment at home with the windsocks, pinwheels, and bubble wands they made at school.</li></ul>	<b>Family Links</b>
<ul style="list-style-type: none"><li>• Use balloons to demonstrate that air has weight.</li><li>• Make a child wall to block the wind.</li><li>• Study severe wind storms.</li></ul>	<b>Further Science Explorations</b>
<p><b>Language Arts:</b> Write wind poems.</p>	<b>Cross-Curricular Extensions</b>