Weather and Seasons:
Learning Goals for Students and Teachers

Overview: Students consider the unit central questions, *Is weather the same everywhere all the time? How do you know?* The culminating learning goal is that weather is different from one place to another, and these differences can be measured and described. Before the module, students collect weather data over a period of months. In lesson 1, students discuss the measurement of weather data and look for patterns in the data they collected earlier in the year. In lesson 2, they study different weather patterns from one month to another. In lesson 3, students look at data to detect changes in weather during the day. In lesson 4, they compare weather in Pomona to weather in a place with very different weather. And in the final lesson of the unit, they use the weather patterns they analyzed in the data to find a mystery city.

Student and Teacher Learning Goals	Additional Teacher Learning Goals
1a. Weather is a description of the conditions outside, including temperature, sunlight, clouds, wind, snow, or rain. 1b. Weather can be observed and measured. 2a. When weather is measured over time, we can begin to notice patterns in a specific place. 2b. Weather patterns include the number of sunny and cloudy days, the amount of rain or snow a place gets, and changes in temperature. 3. Over time, people can observe weather patterns and how these patterns can change from one month to another and from morning to afternoon. 4. Different places have different weather patterns. 5. Weather varies by time and place, but there are weather patterns for specific locations and times of the year.	1Ta. *Weather* is a short-term condition of the atmosphere in a given place. 1Tb. Weather is dependent on geographic location, time of year, local heating and cooling processes, atmospheric moisture, and the movement of air masses. 1Tc. *Climate* is a long-term average of atmospheric conditions, including temperature, precipitation, humidity, air pressure, and wind. 1Td. Using a variety of instruments, scientists collect weather data to understand current conditions and short-term weather patterns. 2Ta. Weather data can be observed, collected, and analyzed in order to forecast weather and make predictions about long-term patterns in temperature and precipitation. 3Ta. Weather and climate are influenced by interactions involving sunlight, the ocean, the atmosphere, ice, landforms, and living things. These interactions vary with latitude, altitude, and local and regional geography, all of which can affect oceanic and atmospheric flow patterns. (MS-ESS2-6) 3Tb. The ocean exerts a major influence on weather and climate by absorbing energy from the Sun, releasing it over time, and globally redistributing it through ocean currents. (MS-ESS2-6) 3Tc. The atmosphere and oceans continually exchange heat energy, but the atmosphere is able to redistribute heat much more rapidly than oceans. 3Td. The complex pattern of phase transformations and movement of water and water vapor in the atmosphere is determined by air temperature, air

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Kindergarten Weather and Seasons Module

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	pressure, wind, the shape of landforms, and ocean water temperature and currents. These conditions are major determinants of local weather patterns.

3Te. Weather patterns are very complex, involving many variables, and therefore weather can only be forecast (a prediction based on probability). (MS-ESS2-5) |