Daily Time and Temperature Observations

	Use this tool if you are interested in asking investigation questions like:	We will gather data about:
Field Based Investigations	1. How does temperature change throughout the day? 2. How do species (plants and animals) and kinds (water and soil) respond to daily changes in temperature?	1. Temperature at multiple times during the day and week.

Why are times and temperature important to socio-ecological systems?: Temperature varies across space and over time. For example, temperatures tend to increase throughout the daylight hours, and then decrease again after sunset. Shady areas tend to have cooler temperatures than open, un-shaded areas even when they are right next to each other! These small changes in temperature impact how species and kinds behave throughout the day. For example, water evaporation increases along with temperature, so soil and the plants that depend on soil moisture can become parched as temperatures warm. Human activities, such as burning fossil fuels, are changing the way daily temperatures fluctuate over time due to climate change. Climate change is not only increasing average temperatures around the world, but limits the Earth's ability to cool each night, which has huge impacts on daily temperature cycles!

Why do time and temperature matter to my neighborhood--connecting to our "Should We" questions: Species and kinds respond to changes in temperature throughout the day! "Should-we" questions such as "Should we water our garden or lawn in the morning, afternoon or evening" or "Should we use a fan to bring outside air in or push inside air out" are all related to changes in temperature over time! As you record temperature data throughout the day, also note how it relates to other variables, such as how dry the soil is in your neighborhood, how water evaporates from puddles, or how insects behave with changing temperatures.

The investigation question we are asking is:

_____

The "Should We" question we are exploring is:

_____

Materials needed:	Directions:
❏ pencil ❏ colored pencils ❏ Wall thermometer or device to track time and temperature	**Collect temperature at multiple times per day during the week.** ❖ You can use a weather app or an air thermometer to record the temperature. ➢ If you use an air thermometer, make sure that you record temperatures in the same place throughout the day (i.e. sunny vs shady) ➢ Compare your temperature recordings over time - what patterns do you notice? **Shade each time and temperature observation according to the temperatures scale at the top of the chart. (i.e. shade the square red if the temperature rereading is over 90°F.** **Optional: Collect data from more than one place to see how temperatures change across spaces.** ❖ You can use a weather app or website to compare your neighborhood temperatures to temperatures closer or farther from a major body of water, or to compare to other places of interest!

Place:_____ Month::_____ Season: :_____

Hot: above 90°F	Warm: between 70 and 90°F	Cool: between 50-70°F	Cold: between 32 - 50°F	Freezing: below 32°F

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date: _____ Time: _____ Temp: _____	Date: _____ Time: _____ Temp: _____	Date: _____ Time: _____ Temp: _____	Date: _____ Time: _____ Temp: _____	Date: _____ Time: _____ Temp: _____	Date: _____ Time: _____ Temp: _____	Date: _____ Time: _____ Temp: _____
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