


# Daylight by Season

 <p>Field Based Investigations</p>	<p>Use this tool if you are interested in asking investigation questions like:</p> <ol style="list-style-type: none"> <li>1. How does the amount of daylight change throughout the year?</li> <li>2. How does the amount of daylight relate to other things I observe in my neighborhood, like species abundance and behaviors, bloom times, leaf fall, and temperatures.</li> </ol>	<p><b>We will gather data about:</b></p> <ol style="list-style-type: none"> <li>1. Sunrise and sunset times over time.</li> <li>2. The relationship between number of daylight hours, season and temperature.</li> </ol>
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**Why are changes in daylight important to socio-ecological systems?:** Daylight refers to the visible light we see from the sun each day. For most places around the Earth, the number of daylight hours changes according to latitude (how far north or south we are from the Equator) and season (how far our location is from the sun based on the tilt of the Earth's axis throughout the year). The number of daylight hours controls many ecosystem processes that we can observe throughout the year. For example, most plants need at least 10 hours of daylight to grow! This means that plant growth is most active in late spring through early fall so ecosystem productivity is greatest in these months. In addition, daylight hours is a cue for many species behaviors including bloom times, migration times, hibernation, and many others!

**Why do changes in daylight matter to my neighborhood--connecting to our "Should We" questions:** The number of daylight hours each day drives many of the ecological processes we observe in our own neighborhoods! Human activities and structures, especially the use of artificial light, can have a big impact on how species behave in our neighborhoods. For example, artificial lights can cause sea turtles to walk towards housing and streets instead of towards the ocean, it can change the nighttime hunting habits of nocturnal animals, and can change migration patterns and timing. "Should-we" questions such as "should we use blackout curtains at night?" or "Should we use spotlights and other nighttime lighting around our houses and neighborhood" or "Should we ask the city to install shields for streetlights so their light doesn't emit into the sky" all relate to the number and natural changes in daylight hours throughout the year.



**The investigation question we are asking is:**

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**The “Should We” question we are exploring is:**

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<b>Materials needed:</b>	<b>Directions:</b>
<ul style="list-style-type: none"><li><input type="checkbox"/> pencil</li><li><input type="checkbox"/> Computer or app to record sunrise and sunset times.</li></ul>	<p><b>Collect and record sunrise/sunset times.</b></p> <ul style="list-style-type: none"><li>❖ Observe when the sun rises and sets at least once per season.</li><li>❖ Use a computer or app to find sunrise/sunset time. This data is found on many weather apps because it is so closely related to the weather!</li><li>❖ You can time it with the summer/winter solstice or spring/fall equinox, or you can record sunrise/sunset times once per month.</li></ul> <p><b>Look for trends in your data over time to understand the relationships between daylight hours, seasons, and species behaviors in the places you visit!</b></p>

