Educational Resources from *Phenomenon Science Education*

Student Proficiency Goals for **NGSS 1-ESS1-2**

Information about 1-ESS1-2
NGSS Performance Expectation 1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year. **Clarification Statement.** *Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.* **Assessment Limits.** *Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.* **Science and Engineering Practice (Planning and Carrying Out Investigations)** • Make observations (firsthand or from media) to collect data that can be used to make comparisons. **Disciplinary Core Idea (ESS1.B: Earth and the Solar System)** • Seasonal patterns of sunrise and sunset can be observed, described, and predicted. **Crosscutting Concept (Patterns)** • Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.

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Student Proficiency Goals for **NGSS 1-ESS1-2**

<table>
<tr><th colspan="2">Student Proficiency Goals</th></tr>
<tr><td colspan="2">SEP (Planning and Carrying Out Investigations):

• Students observe and record local sunrise and/or sunset times, either firsthand or from grade-level appropriate media, over the course of several months or at intervals over several different seasons.
• Students record the relative amounts of daylight at similar times during the day, either firsthand or from grade-level appropriate media, over the course of several months or at intervals over several different seasons.
• Students organize their observations of changes over time in local sunrise and/or sunset times, including in graphical displays.
• Students study the pattern of changes in local sunrise and/or sunset times and compare it to the pattern of relative amounts of daylight at similar times during days occurring in different seasons.</td></tr>
<tr><td>DCI (ESS1.B Earth and the Solar System):

• Students know that locally the Sun can be directly observed during the day but not at night.
• Students know that local times when the Sun appears to rise and set change with the seasons over the course of a year.
• Students know that the seasonal pattern of local changes in sunrise and sunset times can be described.
• Students know that predictions can be made about future changes in local sunrise and sunset times.</td><td>CCC (Patterns):

• Students consider that there is less daylight at times that are before sunrise and after sunset than there is at times that are near the middle of the day.
• Students notice that the changing times of local sunrise and sunset result in an observable pattern over the course of a year which can be described.</td></tr>
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