 SCILLSS Classroom Science Assessment Workshop

# 5-ESS1-2 Task Specifications Tool

| Element | Description |
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| Performance Expectation   * Indicate the PE from the instructional sequence to be assessed. | **5-ESS1-2.** Represent data in graphical displays to reveal patterns of daily changes in the length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. |
| Knowledge, Skills, & Abilities (KSAs)   * Develop statements which specify what is expected of students to demonstrate (i.e., knowledge, skills, and abilities) to provide evidence that they have learned one or more aspects of a PE. | * **KSA1:** Represent data in graphical displays to reveal patterns of daily changes in the length and direction of shadows. * **KSA2:** Represent data in graphical displays to reveal patterns of daily changes in the length of day and night. * **KSA3:** Represent data in graphical displays to reveal patterns of the seasonal appearance of some stars in the night sky. * **KSA4:** Use organized data to find and describe relationships between the datasets (i.e., orbits of Earth around the sun and of the moon around Earth, the rotation of Earth about an axis between its North and South poles). |
| Student Demonstration of Learning   * List what students should be able to do to demonstrate that they have met the KSA(s).   Define qualities of student performance that constitute student evidence. | * Use graphical displays to organize data pertaining to daily and seasonal changes caused by the Earth’s rotation and orbit around the sun. * Use organized data to find and describe relationships within the datasets (e.g., the length of the day gradually changes throughout the year as Earth orbits the sun, with more daylight hours in the summer and fewer daylight hours in the winter). * Use organized data to find and describe relationships between datasets (e.g., similarities and differences in the timing of observable changes in shadows, daylight, and the appearance of stars show that events occur at different rates). |
| Work Product   * Determine the “vehicles” (i.e., work products) that are intended to contain observable evidence (e.g., a model, an argument, a description, a graph, a chart). | * Record observations * Organize data in a table and/or graphical display (e.g., chart, graph) * Summarize data to identify relationships between datasets * Compare and/or contrast data |
| Task Features   * List the task features from which the task writer selects to develop an assessment task. * Reference the “Clarification Statement” in the NGSS for the PE as appropriate. * Note: A single question/task may not represent all the features listed. | * All tasks must prompt students to describe relationships between observed phenomenon or evidence and reasoning underlying the observation/evidence. * Students use scientific reasoning and process skills. * All tasks must elicit core ideas as defined in the PE. * All tasks must include elements from at least two dimensions of the Nebraska College and Career Ready Standards for Science. |
| Aspects of an assessment task that can be varied to shift complexity or focus   * Allows for a range of tasks to be developed of varying complexity. * Allows for development of tasks that focus on various skills related to the PE. * Allows the task developer to match features of the task with the characteristics of students such as their interests, familiarity, and provided instruction. | * Complexity of scientific concept(s) to be modeled. * Data may include graphical displays of:   + hours of daylight;   + length and/or direction of shadows;   + presence or absence of stars and/or constellations; and   + phases of the moon. * Patterns in day and/or night may include:   + seasonal patterns in duration of daylight;   + daily patterns of change in the length and/or direction of shadows;   + patterns of sunrise and/or sunset; and   + patterns of appearance for stars and/or constellations. * Graphic organizers presented may be diagrams, graphs, data tables, and/or drawings. |
| Assessment Boundaries   * List information that is NOT assessed (i.e., related above grade-level ideas and skills). * Reference the “Assessment Boundary” in the NGSS for the PE as appropriate. | * Students are not expected to explain the causes of seasons. * Items do not include the term “elliptical”. * Students’ descriptions should be limited to a written response. |

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