 SCILLSS Classroom Science Assessment Workshop

# MS-PS3-1 Task Specifications Tool

| Element | Description |
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| Performance Expectation   * Indicate the PE from the instructional sequence to be assessed. | **MS-PS3-1.** Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object. |
| 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:** Construct and/or interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object. * **KSA2:** Construct and/or interpret graphical displays of data to describe the relationships of kinetic energy to the speed of an object. * **KSA3:** Construct and/or interpret graphical displays of data to describe the relationships between the kinetic energy of an object and the mass and/or speed of that object. |
| 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 data to construct and/or interpret graphical displays pertaining to the relationships of kinetic energy to the mass of an object. * Use data to construct and/or interpret graphical displays pertaining to the relationships of kinetic energy to the speed of an object. * Use data to identify patterns in data to distinguish between causal and/or correlational relationships and/or to draw conclusions based on data. |
| 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 data sets * Draw conclusions based on 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 interpreted. * Data may include graphical displays of:   + observations;   + measurements;   + tables;   + graphs;   + diagrams;   + models; and   + statistical information (e.g., mean, median, mode, variability). * Proportional relationships between the kinetic energy of an object and the mass and/or speed of that object. * 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. | * An assessment boundary is not provided for this PE. |

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