2-PS1-2   Matter and Its Interactions

Students who demonstrate understanding can:

2-PS1-2.   **Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.*** [Clarification Statement: Examples of properties could include, strength, flexibility, hardness, texture, and absorbency.] [*Assessment Boundary: Assessment of quantitative measurements is limited to length.*]

The performance expectation above was developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Analyzing and Interpreting Data Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. • Analyze data from tests of an object or tool to determine if it works as intended.	**PS1.A: Structure and Properties of Matter** • Different properties are suited to different purposes.	**Cause and Effect** • Simple tests can be designed to gather evidence to support or refute student ideas about causes. - ***Connections to Engineering, Technology, and Applications of Science*** **Influence of Engineering, Technology, and Science, on Society and the Natural World** • Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.

	Observable features of the student performance by the end of the grade:	
1	Organizing data	
	a	Using graphical displays (e.g., pictures, charts, grade-appropriate graphs), students use the given data from tests of different materials to organize those materials by their properties (e.g., strength, flexibility, hardness, texture, ability to absorb).
2	Identifying relationships	
	a	Students describe* relationships between materials and their properties (e.g., metal is strong, paper is absorbent, rocks are hard, sandpaper is rough).
	b	Students identify and describe* relationships between properties of materials and some potential uses purpose (e.g., hardness is good for breaking objects or supporting objects; roughness is good for keeping objects in place; flexibility is good to keep a materials from breaking, but not good for keeping materials rigidly in place).
3	Interpreting data	
	a	Students describe* which properties allow a material to be well suited for a given intended use (e.g., ability to absorb for cleaning up spills, strength for building material, hardness for breaking a nut).
	b	Students use their organized data to support or refute their ideas about which properties of materials allow the object or tool to be best suited for the given intended purpose relative to the other given objects/tools (e.g., students could support the idea that hardness allows a wooden shelf to be better suited for supporting materials placed on it than a sponge would be, based on the patterns relating property to a purpose; students could refute an idea that a thin piece of glass is better suited to be a shelf than a wooden plank would be because it is harder than the wood by using data from tests of hardness and strength to give evidence that the glass is less strong than the wood) .
	c	Students describe* how the given data from the test provided evidence of the suitability of different materials for the intended purpose.