WEEK 4 Lesson 2

Science and Engineering: Matter and Its Interactions

Properties of Materials: Strength and Flexibility

Big Ideas	Materials have observable properties. The properties of materials impact how they are used for specific purposes.
Guiding Questions	How do different materials react when we apply weight on them?
Content Objective	I can analyze the results of an experiment to test the strength of different Materials. (MS-PS1-2)
Language Objectives	I can talk with classmates about my conclusions. I can ask questions about materials to further my understanding.
Vocabulary	**flexibility:** the capacity to bend without breaking **least:** the smallest amount **most:** the greatest amount **strength:** how much force is needed to break a material
Materials and Preparation	● Science and Engineering packets ● chart paper and marker Title the chart paper Questions about Materials.
Opening 6 minutes	*Today we will look at and talk about what happened during your strength and flexibility experiments. First, you'll look at the data you recorded and think with your partner about what you noticed. This will get you ready to talk about it all together.* *Let's read the questions in your packets.* Have children turn to the appropriate page, and read the questions chorally. *Look at the data in your notebooks to help you answer them.*
Investigation 22 minutes	Gather the children in the whole group, with their packets. Facilitate a discussion, asking children to share their conclusions and the evidence that supports them. *Which material is the most flexible? What evidence do you have to support that?*

	Which material is the least flexible? What evidence do you have to support that? *What material is the strongest? What evidence do you have to support that?* *What else did you notice?* *What other answers did anyone find?* *Based on your findings about strength and flexibility, what do you think would be a good use for each of these materials? Turn and talk to your partner.* Harvest several ideas. *What questions do you have now that you'd like to investigate? You can begin with, "I'd like to know more about _____," or "I would like to investigate if _____."* Write children's questions on the Questions about Materials chart. After the lesson, post the chart at the Discovery Studio to provoke further exploration.
Closing 2 minutes	Give children ample time to clean up their work spaces and store their materials, including the templates, in the materials bags.
Standards	**MS-PS1-2** Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.
Assessment	Pay attention to the ways children report findings, cite evidence, and formulate questions. Ask children to use the self-assessment questions at the end of the lesson's page in the Science and Engineering packet. Listen in to conversations between pairs or engage children in individual conversations about these practice standards.

Notes