



Mission: How can we build stronger boundaries between materials?

Age: 8+

Materials: \$9

Time: 45 min

(Set-up: 5 min | Activity: 30 min | Clean-up: 10 min)

NGSS Alignment of Building Boundaries Activity

The information below may not include every area that this activity can be linked to NGSS concepts

Disciplinary Core Ideas

PS1.A: Structure and Properties of Matter

- Grade 3-5
 - Measurements of a variety of properties can be used to identify materials.
 - Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties.
 - Different properties are suited to different purposes.
- Middle School
 - Each pure substance has characteristic physical and chemical properties (for any bulk quantity under given conditions) that can be used to identify it.

Performance Expectations

- 2-PS1-1: Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- 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.
- 5-PS1-3: Make observations and measurements to identify materials based on their properties.
- 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.



Crosscutting Concepts

Patterns

- Grade 3-5
 - Similarities and differences in patterns can be used to sort, classify, communicate and analyze simple rates of change for natural phenomena and designed products.
 - Patterns of change can be used to make predictions.
- Middle School
 - Macroscopic patterns are related to the nature of microscopic and atomic-level structure.

Cause and Effect

- Grade 3-5
 - Cause and effect relationships are routinely identified, tested, and used to explain change.
- Middle School
 - Cause and effect relationships may be used to predict phenomena in natural or designed systems.

Engineering and Science Practices

Analyzing and Interpreting Data

- Grade 3-5
 - Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, and/or computation.
- Middle School
 - Analyze and interpret data to provide evidence for phenomena.
 - Analyze and interpret data to determine similarities and differences in findings.

Planning and Carrying Out Investigations

- Grade 3-5
 - Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered.
 - Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution.
- Middle School
 - Conduct an investigation and/or evaluate and/or revise the experimental design to produce data to serve as the basis for evidence that meet the goals of the investigation.