

2nd Grade - Lesson 1.2

Testing Materials to Learn About Their Properties

NGSS Alignment

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.

Disciplinary Core Ideas

PS1.A: Structure and Properties of Matter

- Matter can be described and classified by its observable properties. (2-PS1-1)

Students investigate the characteristics of paper, plastic, and aluminum foil by conducting simple tests on the materials. Students discover that each material has its own characteristic properties.

- Different properties are suited to different purposes. (2-PS1-2)

Students conduct a Strength test on different materials and use the results in a future lesson to decide which materials to use to make a boat that will hold the most weight.

Students also see an interactive animation exploring the use of different materials for particular purposes.

Science and Engineering Practices

Planning and Carrying Out Investigations

- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. (2-PS1-1)

Engaging in Argument from Evidence

- Construct an argument from evidence to support a claim.

Students conduct an investigation on paper, plastic, and aluminum foil by doing a Fold, Tear, Crinkle, Stretch, and Strength test. The point is stressed that when comparing a certain property of different materials, all the materials need to be tested in the same way.

Crosscutting Concepts

Cause and Effect

- Simple tests can be designed to gather evidence to support or refute student ideas about causes. (2-PS1-2)

Students see that paper is the strongest material for holding up weight in their strength test. They see a magnified photograph of paper showing crisscrossed fibers which make the paper strong.