

ENGINEERING - EXPLORATION for GRADES K-2



Mitten Makers

OVERVIEW

Using a bucket of ice and a tricky-to-pick-up object, pairs of students test the warmth and flexibility of a variety of fabrics. They will evaluate the test results and consider the ideal combination of fabrics to meet a set of design goals. Finally, they design a “best” mitten that meets all criteria and share the decisions that led to their design.

LOGISTICS

Program Length: 30 or 50 minutes

Audience Size: Up to 30 students

Preparation: Science Museum Instructor brings all needed equipment and materials.

This program requires at least 1 table for instruction materials and tables for students. It is best to try to leave program in a designated space rather than moving from room to room. Some water and ice may spill onto floors and tables.

Please allow 1 hour each for initial setup and final teardown.

Please allow for at least 10 minutes to reset between classes.

SCIENCE EXPERIENCE GOALS

- Engineers use math, science, and creative thinking to design solutions to problems.
- Engineers repeatedly ask, imagine, plan, create and improve their solutions to problems.
- Engineers test and observe solutions to see how well they solve a given problem.

VOCABULARY INTRODUCED

- Engineering
- Technology

STANDARDS

MN Academic Standard Strand: The Nature of Science and Engineering (0.1.1.2.1, 1.1.1.1.1, 1.1.1.1.2)

NGSS Science and Engineering Practices: Analyzing and Interpreting Data (1-ESS1-1), Constructing Explanations and Designing Solutions (1-LS3-1)

NGSS Crosscutting Concepts: Structure and Function (2-LS2-2)