

ENGINEERING - EXPLORATION for GRADES K-2



Bridge Builders

OVERVIEW

Students apply the Engineering Design Process (Ask, Imagine, Plan, Create, Improve) to solve the problem of building a bridge that can meet several engineering goals such as spanning a roadway and supporting weights. Teams of two experiment with the properties of the blocks and of bridges, share their best solutions, and then build their final bridge based on class recommendations.

LOGISTICS

Program Length: 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, tables for students, and access to water. It is best to try to leave program in a designated space rather than moving from room to room. Some water 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)

If you have further questions on bringing programming to your school, please contact our Outreach Registration Coordinator at (651) 221-4748 or schooloutreach@smm.org.