

ENGINEERING - EXPLORATION for GRADES 3-5



Air Dancers

OVERVIEW

Students will experience the engineering process by using common household materials (some helpful, some not) to design a prototype for a new amusement park ride. Working in teams to meet the design challenges, students will test and improve their prototypes in wind tubes as they strive for a design that balances the forces of gravity and air.

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 electrical outlets. It is best to try to leave program in a designated space rather than moving from room to room.

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 are people who often work on teams, and who solve problems creatively using their knowledge and understanding of math and science.
- Engineers use a design process to develop and refine multiple solution options to a problem.
- Moving air can provide a force that can lift and support an object. Changing the object's shape, size weight and/or materials affects its motion.

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.