



Design It **Pre-Visit Information**

Program Information

Description

Students learn about the design process and take on the role of engineers, designing roller coasters, cars, bridges, or basic electrical systems. With an emphasis on teamwork and problem solving skills, students plan, build, and test their designs to accomplish specific goals. Teachers must select one of the following *Design It* programs when registering the school group: Balls and Tracks, Balloon Powered Cars, Paper Airplanes, Paper Bridges, or Wiring a House.

Objective

Students will gain an understanding of engineering skills and the importance of teamwork in practical projects. While testing and revising their designs, students will also have the opportunity to practice the scientific method.

At the end of the program, students will be able to:

- Recognize the importance of planning before they build
- Perform controlled tests and improve their designs accordingly
- Understand basic forces, building principles, and resource management
- Appreciate the importance of teamwork in the design process

Preparing for Your Visit

Before taking part in *Design It*, it is good to spend some time talking with your students about what they can expect at the Museum and discussing the kinds of information that will be covered during the field trip.

Classroom Discussion: Pre-Visit

1. What does it mean to design something?
2. What are engineers?
3. What skills do engineers use to design buildings, cars, bridges, and other projects?
4. What kinds of questions will engineers ask themselves before they are ready to build something?

5. Do you know someone who is an engineer? If so, what kind of engineer are they?

Classroom Resources: Pre-Visit

1. [Virtual walk-through program](#): check out the museum's virtual space in advance to give your students an idea of what to expect.
2. [Student Youtube Playlist](#): introduce your students to a few of the industries in advance of the tour.

Important Words & Concepts

Industry: another word for work

Design: to create something while following a set plan

Engineers: people who design things in order to solve problems

Freestanding: structure is not supported by hands, standing by itself

Trip Tips

To ensure a successful field trip to the Baltimore Museum of Industry, students should:

- Stay with their chaperones at all times
- Use their inside voices
- Walk at all times
- Raise their hands when they have a question or comment
- Treat teachers, chaperones and peers with respect
- Follow the lead of the museum teacher throughout the program