

FACILITATION DURING YOUR VISIT

Your class's hands-on experience during your visit to the Inventor Center will be a 50 minute long exploration into the inventive process and the science of mechanical throwing machines, facilitated by a member of the Rochester Museum & Science Center's floor staff. There is a lot for the students to do within this time period so *please arrive promptly.*

What to Expect

Introduction:

The facilitator will first engage students in a short introduction to the hands-on experience, which will include:

- An overview of the build, experiment, learn and share stations, what students will be doing, and the timing.
- A demonstration of several prototype catapults and trebuchets and how to test them.
- A discussion of what kinds of variables students should be considering when they design their catapult or trebuchet.
- The importance of teamwork and safety.

Building Their Prototype:

Students will be divided up into teams of 3-6 students per build table. Each team will build only one catapult or trebuchet. As a team they should decide their design and choose materials from the junk pile. They will need to work very efficiently in order to have their own prototype built quickly.

Students should draw their design in their journal.

Experimenting with and Tweaking Their Prototype:

The team will obtain a ball from the facilitator and test their catapult or trebuchet at one of the castles. Based on their observations they will have a few minutes to make modifications to their design.

Students should record observations from their experiment and what modifications they made in their journal.

Testing Their Final Catapults or Trebuchets

(Class Attack of the Castle):

Students then clean up their work stations and come together for a concerted attack of the castle, each team taking a turn. Can your class make the castle surrender?

Students should record the results in their journals.

Wrap-Up:

The facilitator will then lead a short discussion of what was successful, what did not work, and how students would improve their designs if they had more time.

Students should record in their journals what they would try next if they had more time.

Student journals will be collected and handed to the teacher. We suggest using these for a wrap-up, especially an oral or written argument based on evidence (See Post Activities).

Notes: You may wish to bring a camera to take pictures of your students' inventions.

No materials or inventions may leave the Inventor Center. Before leaving, students will be asked to place their designs on the trophy case for other visitors to learn from their inventions.

Floor Plan

There are eight **build tables**; each can sit 3-6 students.

The “**junk piles**” house the building materials.

Two **experiment stations** have castles at one end surrounded by nets. Students place their catapults or trebuchets at the other end and launch balls into the castles.

