

## **E Prep – Fling Machine**

Eleven EPrep students arrived at Benedictine this week and were given the following equipment and materials:

Paper, Pencil, Scissors, 2 cotton balls, 1 balloon, 1 rubber band, 2 paper clips, 1-piece of aluminum foil, 2 coffee stir sticks, 2 straws, and 2 pipe cleaners

We reviewed the design process and there was a focused effort by all to design and build a fling machine. As you know there are many ways to solve a problem. Sometimes it is as simple as applying a piece of duct tape. Other times it takes months or years for a product to progress from an idea into full-scale production. In this activity, each team was asked to quickly design and build a device that will send a cotton ball as far as possible through the air.

The rules were challenging for some: Using only the materials provided, design and build a device to launch a cotton ball and send it as far as possible.

Your team will have 15 minutes to devise a solution and document the solution both in writing and in graphical form with a drawing.

Your team will have 10 minutes to build your solution. Finally, your team will have 1 minute to demonstrate your solution. Use the design process!!! There are many possible correct solutions.

Prizes were awarded to students whose device launched the cotton ball more than 24 feet.

### **Engineering Connection**

This activity is a combination of planning, design, and teamwork which are all keys components to any field of engineering, especially civil engineering.

### **Learning Objectives**

After doing this activity, students should be able to:

- Utilize the design process to promote the development of good solutions to technical problems.
- Complete a design project utilizing all steps of a design process, and find a solution that meets specific design requirements.
- Construct a testable prototype of a problem solution.
- Analyze the performance of a design during testing and judge the solution as viable or non-viable with respect to meeting the design requirements.
- Generate multiple ideas or solution paths to a problem through brainstorming.

After the completion of the challenge the group reviewed the consistency of the design solutions and discussed repeatability.

