EPrep Summary – Week 3 Fling Machine

The EPrep students arrived at Benedictine this week after braving the snow and cold and were given the following equipment and materials: Paper, Pencil, Scissors, 2 cotton balls, 1 balloon, 1 rubber band, 2 paper clip, 1 piece aluminum foil, 2 coffee stir sticks, 2 straws, and 2 pipe cleaners

We reviewed the design process and its iterative nature discussing the successes of the previous two challenges. There was a focused effort by all to design and build a fling machine. We discussed how 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 large 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.

1. Your team will have 15 minutes to devise a solution and document the solution both in writing and in graphical form with a drawing.
2. Your team will have 10 minutes to build your solution.
3. Finally, your team will have 1 minute to demonstrate your solution.
4. Use the design process!!! There are many possible correct solutions.

Prizes were awarded to Anthony, Khezian, Ramone and Jevion whose device launched the cotton ball in excess of 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:

- How does the design process 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 we discussed repeatability.