



BB Coaster Design Challenge - Coordinator Instructions

This document provides some tips on setting up a fun and successful engineering design challenge.

BEFORE THE COMPETITION

1. Review the documents, presentation and scoring spreadsheets
 - Student Instructions describing the challenge that is given to students
 - Judging instructions, given to all the judges
 - PowerPoint to introduce EDC to students
 - Spreadsheet to calculate final scores
2. Divide students into teams of 5. Each team should be as diverse as possible having students from different grades, genders and ethnicities.
3. Determine where the challenge will be held. Provide a table for each team. For this challenge, a separate judging area is not required.
4. Determine how many judges you will need and recruit sufficient volunteers. Enthusiasm is key, not engineering expertise! Allocate enough time to ensure each team has an equal amount of judging time.
5. Have the scoring judge familiarize themselves with the scoring spreadsheet before so that they feel comfortable with it. They should have familiarity with Excel.
6. Prepare the materials for the students (make one bag for each team and a few extra):
 - a. Use 1 paperclip to hold the student instructions, student roles, and the sheet of card stock together.
 - b. Place the following in a Ziploc sandwich bag and seal:
 - i. 1 lump of clay
 - ii. 3 BBs
 - c. Place the following in a Ziploc gallon bag and seal:
 - i. Sandwich bag of clay and BBs
 - ii. All other supplies **except:** instruction packet, poster board, paper cup, and tape
7. Plan a training session for judges. Additional supplies have been provided for you to build a prototype for the judges to review and fully understand what they will be judging. Assign 'Special Prize/Celebrity Judges' who will be responsible for the Judges' Choice Awards.
8. Decide on the timer to use during the Engineering Design Challenge. If possible, it will need to be visible to all the students.

AT THE COMPETITION

1. Host the Judges' Training Session.
 - Describe the challenge briefly
 - Review all the materials and prototype you built.
 - Review the judging process including how to fill out the Scoring Sheet.
 - Divide the judges into teams of 2.
 - Assign each pair of judges a set of teams to observe and judge. Judges should spend the build time observing their assigned teams.
 - Make sure that each pair of judges has a piece of string and a measuring tape or yardstick.
 - Ensure that each pair of judges has a timer or cell phone to time the length of the bb run.
 - Finally, remind judges to be positive and enthusiastic as they interact with students.



2. Room setup: Set up one table per team, with the surface of the table large enough to hold the poster board and provide adequate design and building space.
3. Lay out one set of Engineering Design Challenge supplies on each table. For the tape, measure out approximately 2 feet of tape and stick it flat to the table surface. It's important that each team has the **same amount** of tape.
4. Gather all the students together to begin the Engineering Design Challenge.
5. Give the PowerPoint presentation to the students.
6. Set the timer to count down 45 minutes. Tell the students they may begin the Engineering Design Challenge, and start the countdown timer. If possible, notify students when they have one half-hour, ten minutes, five minutes, and one minute left on the timer.
7. When the timer has expired, all design and building modifications must stop. Students **may not** continue to work on their separation system.
8. Notify the judges to start judging the individual teams.
9. Scoring Process: Collect scoring sheets from the judges throughout judging (you may want to have a volunteer act as a runner to pick them up and bring them to you as the judges finish with each team). Enter them into the scoring spreadsheet. **Use Y or N for the Yes/No data entry to ensure the formulas work!** After all the data has been entered, you can sort by total score to determine winners quickly. Save the documentation from judges, do NOT throw them away! They are helpful in breaking ties and answering teams' questions, and in making sure that you've got an accurate list of which students were on each team.
10. Clean Up: Put together a clean up plan and communicate it to all participants and volunteers.
 - Have students take their judged BB coaster and supplies to a central trash can or distribute trash-bags for them to use at their tables.
 - Sweep for BBs!

Enjoy the competition!