E5 First Design

Your goal is to get a tennis ball to travel as far as possible when released from rest from the Hicks roof; the distance will be measured from release point. One team member, and only one, will release the device. Design must contain only what is supplied to you, but you may use other tools in the construction. Creativity counts (take risks). Test of devices will be on September 11th (before department picnic – roughly 3:30-4:30).

Brainstorming Session

Quickly select one person as recorder, and one as moderator.

- The recorder will keep track of all of the ideas suggested. S/he will record on a blackboard during the class time, but save a record of the notes for your report.
- The moderator will keep things flowing and attempt to enforce the rules.

The rules*:

- Get everybody's name and email address.
- Try not to pass judgment on ideas during the brainstorming session itself. Don't point out why something won't work, or is not as good as another idea. All ideas are potentially good so do not judge them until after the session. Avoid discussing ideas at this stage, which includes not criticizing and not complimenting ideas.
- Write down all of the ideas. At this point of the process, there are no bad ideas. The more ideas there are at the end of a session, the greater the probability of one of them being a really good idea, or leading to one.
- Try to build and expand on the ideas of others to see where it might take you. Let other people's ideas be an inspiration for your own.
- Encourage everybody to participate. Every person has a valid view point and a unique perspective on the situation and solution. In a brainstorming session you can always put forward ideas purely to spark off other people and not just as a final solution.
- Each idea presented belongs to the group, not to the person stating it. You are not in competition with each other. It is the group's responsibility and an indication of its ability to brainstorm if all participants feel able to contribute freely and confidently.

Construction

After the Brainstorming Session:

1. Find a time this weekend when everybody in your group can get together for a couple of hours. Not everybody has to be present the whole time.
2. When you get together spend about 15-30 minutes deciding on an apparatus to build. Use one of the ideas from your brainstorming session. Creativity counts; go for the creative solution rather than the safe one (note that this is not generally the best engineering approach).
3. Spend the rest of the time building a prototype of your design. Note that a design usually goes through iterations to improve it – in the interest of time we will be largely skipping this step.

Testing

We will test your designs by dropping them off of the roof of Hicks on Friday, September 11th. The engineering department will host a picnic immediately afterwards to which you are all invited.

Report

This exercise has a simple report. The report must be posted on your team's wiki page (more about that on Thursday). Each member of the team will have a link to the report from their own wiki page after the first lab.

1. The page must include a list of everybody in the group, and a link to their individual wiki page.
2. Include a description of the brainstorming session including the ideas recorded at that time.
3. Describe how you chose your final design.
4. Describe your construction process. You should include a drawing of your apparatus; Hicks 213 has a scanner.
5. Include your final drop time (the time it takes to hit the ground).
6. Any comments? Things you would change?

This document is condensed and adapted from: http://www.brainstorming.co.uk/tutorials/brainstormingrules.html