

How To Host a Prototyping Workshop



Beta

FTC Team 3550

West Des Moines, IA

www.team3550.org



On August 25th, Beta, FTC Team 3550 held a prototyping workshop. This was the first workshop where the team focused on the strategy of prototyping and where they shared the benefits of modeling a mechanism before building the final product. This was the team’s process that proved successful for their experience.

Space considerations:

- 4-6 teams or groups of 4-6 people**
- 24 participants is ideal**
- 1 large table/workspace per team**
- 1 table for registration**
- 1-2 tables for materials, supplies and tools**
- This workshop was held at Stilwell Jr. High in the Tech Ed lab.**

Timeframe for workshop planning:

Time:	Task:
2 months before	Determine location, reserve facility, contact presenters
1–2 mo. before	Determine agenda, design the challenge, promote event
3-4 weeks before	Set up online registration for teams
2-3 weeks before	Send confirmation to registered teams with list of items to bring, directions to venue and contact information
2 weeks before	Confirm with presenters
1 week before	Collect supplies and confirm with people who are bringing supplies or tools
Day before or morning of event	Set up registration tables and workshop area, set up projector or screen if needed
15 minutes before workshop	Teams check-in with FIRST e-registration and fill out name tags
After workshop	Document number of people attending & results of workshop, get feedback from participants & presenters, thank sponsors & presenters



Attending teams were asked to bring with them some simple supplies to practice this skill. These supplies as a whole were dubbed as the “community pile.” Here is the list:

- * **rubber bands**
- * **foam board**
- * **cardboard (corrugated or heavy poster board)**
- * **string**
- * **lightweight wire (that bends easily)**
- * **wire coat hangers**
- * **popsicle sticks**
- * **tape - masking/duct/electrical**
- * **syringes & plastic tubing (to simulate hydraulics)**
- * **assorted fasteners (nuts/bolts/machine screws)**

As the hosting team, Beta provided some other supplies for the attending teams.

- * **Registration table: nametags, pens/markers, tape for labeling items if needed or posting signs**
- * **Plain and/or graph paper**
- * **Pencils for each participant**
- * **Rulers – 1-2/group**
- * **Scissors**
- * **Box cutters/utility knife**
- * **Boards to cut on to protect table surface**
- * **Tape – masking, duct, electrical, gaffers**
- * **Hot glue guns & glue sticks**
- * **Sand paper**
- * **Hand saws – coping saw, hack saw**
- * **Pliers, vice-grips**
- * **Clamps**
- * **Vice**
- * **Drill**
- * **Wire cutters**
- * **Screwdrivers**



Prototyping Workshop

Sponsored by Beta, FTC Team 3550

Sat. Aug. 25, 2012

Stilwell Jr. High, WDM, IA

Agenda

8:50am - teams arrive, FIRST registration, and name tags

9:00 - Saketh (team member)- welcome & introduction activity

9:15 - Mr. Herzberg (mentor) - safety, bathrooms, definition of prototyping and what it means

Mr. Morman (Engineer) - show prototyping example used at John Deere

Annie (team member)- value of prototyping from rookie's perspective

Daniel (team member)- Beta's lift prototype

Tanvi (team member)- Beta's first bowling ball mechanism prototype

Jordan (team member)- Algodoo (2D physics simulator)

Saketh (team member)- PTC Creo – 3D CADD modeling software

09:50 Break

10:00 Mr. Herzberg (mentor) will introduce the challenge for the day

10:10 - participants get to "play in the sandbox" with various materials to design prototypes to meet the challenge.

12:00 - teams share their prototypes with the group

12:20 - Feedback from teams about their experience with this workshop and a quick clean-up!

12:30 – Lunch on your own. We are providing participants with a list of restaurants in the area.

Based on feedback from participants, and if we did another workshop again, the following would be included:

After announcing the problem/challenge, have each participant sketch out 2-3 ideas on paper. Then each team (or group of 4-6) shares all their ideas with their group, the group decides which idea they want to prototype

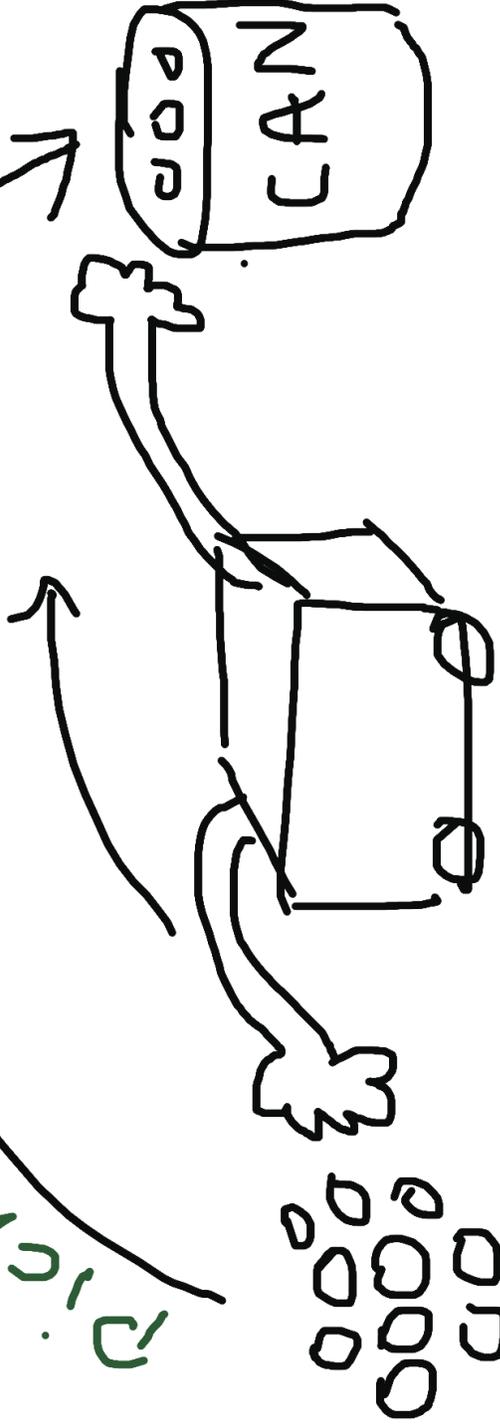
By the end of the prototyping session, each team (or group) should have a page that documents their idea and process of prototyping, just like they would write in an engineering notebook.



Prototype Workshop Problem

Ball and Place in

PICK UP



Ping Pong Balls

β Beta – Team 3550 Prototyping Workshop

Each team designs a prototype to solve “THE PROBLEM” and demonstrates how it works at the end of the workshop.

