

*GOAL: Successfully build a 3D printer with the kits provided and the information on appropedia.*  
Dead line date: December 19, 2014

Day 1 December, 1 2014:

*I can apply  $F=ma$  to clear 3D printer parts made of PLA*

A visitor from Michigan Tech came and explained the basics and told us a little about the program. After we got the kits, we cleaned all of our parts made of the PLA plastic. Using the concept of physics we deduced that the material was soft enough to cut with a precision knife. We applied the formula  $F=ma$  to see what acceleration is needed to apply a sufficient amount of force to remove excess plastic. We were introduced to the site [appropedia](#), this is when we split into person one(Nina) and person two(Ylana). (link to appropedia on printphysics)

Day 2 December 2, 2014

Assembled one end of tie rods. Assembled the base of the motor end.

Day 3 December 3, 2014

Assembled other end of tie rods. Assembled the idler end.

Day 4 December 4, 2014

Assembled the motors and inserted them into the motor end.

Day 5 December 5, 2014

Assigned Screw lab and collected data. Break from construction.

Day 6 December 8, 2014

Reassembled the Idler end, because one idler head was attached backwards. Epoxied magnets to the printed end effector and the printed carriage. Began to mount bases.

Day 7 December 9, 2014

We soldered the x, y, and z switches and attached to the Idler end. Almost completely finished the frame.

Day 8 December 10, 2014

We soldered the fan extensions and epoxied the switches to the base.

Day 9 December 11, 2014

Finished the hot end, but the wires snapped when trying to insert it in the end extruder.

Day 10 December 12, 2014

Rebuilt hot end, and assembled extruder.

Day 11 December 15, 2014

Attached the circuit board to the frame along with the extruder drive.

Day 12 December 16, 2014

Focused on press release. Break from construction

Day 13 December 17, 2014

Worked with wiring. Stripped and tinned the wires then attached them to the circuit board.

Day 14 December 18, 2014

Continued wiring and finished with construction!

Day 15 December 19, 2014

Adjusted extruder alignment. Construction due.

Reflection

Day 15 was the last day before winter break. Vicky took our printer home to program it. When it came back we got it up and running! It functioned on more than one laptop and had very accurate prints.