

Pyramid Hope

The Workshop

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Project 1

This project is intended to produce a simple small item (5-10 cm tall) that can be produced in quantity and distributed to the people involved and possibly others. It will require the input of students of graphic arts, engineering, purchasing (business finance), CAD (Computer Aided Design), and Electronics.

My idea would a 3D printed ornament, maybe a small statue or holiday item. I would like to incorporate simple electronics like a blinking LED in order to introduce basic electricity concepts.

The first thing needed will be concept drawings from everyone who wants to submit something. Then we can hold a vote to see what we're building.

After that we'll need a graphic artist to make a preliminary 3 dimensional drawing of the item. Then we need to evaluate what changes may need to make to improve the "manufactureability". This is the words *manufacture* and *ability* combined, everything made has restrictions based on the ability of the tools and workers, materials available, cost, and time to build.

Next will be the creation of a more precise 3D drawing incorporating all changes needed. This can be done on paper or with any graphics program but will need to be copied into a mechanical CAD system in order to be sent to the 3D printer. If any engineering students have access to a CAD system, this would be a great exercise in making a real product. I will import the drawing or CAD file into our mechanical CAD system here in order to adjust it for the 3D printer. Space also has to be allowed for the electronics.

Also, the electronic part needs to be designed at the same time as the above drawings are being made. The initial design will be on paper, then this will be converted by Sharon into an electronic CAD schematic. Once we all review this for errors, functionality and other things. If it's needed, she will then create a PC Board (Printed Circuit Board) design which can be sent off for fabrication of the blank boards.

The drawings are becoming real items!

Several 3D printed prototypes will probably have to be made, it is rare that you like the first try making any new item on a 3D printer, you normally have to make small changes to get a better item.

Any parts required (plastic, electronic items) should have all been ordered by now and when they arrive a test item will be made with some or all of the parts.

If it works as desired, then GREAT! We start building these. Otherwise, fix any problems and repeat the test.

SHIP ITEMS TO PARTICIPENTS!

So, lets get started. No journey can be completed if you don't start on it.