Catapult Design Challenge

Your Introduction to STEM class introduced you to using tools and materials to effectively create and make using the processes of measuring, sanding, squaring, gluing, clamping, cutting, drilling. This challenge will provide you with the opportunity to refine these making skills and improve a basic catapult design.

Design Challenge:
Working collaboratively, you will individually construct a basic catapult using the provided drawings. Additionally, you will design a trigger and aiming system that will allow your catapult to fire consistently and be adjusted to fire from various distances.

Tools:

- Saw and Miter Box
- Drills
- Clamps
- Sand Paper/Sanding Sponge
- Clamps

Materials:

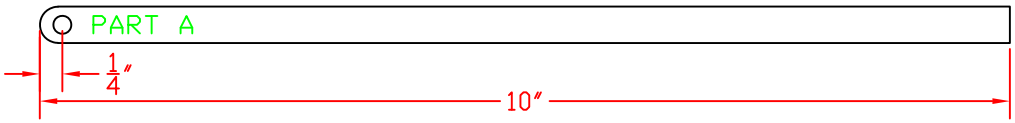
- Glue
- Dimensional Wood
- Dowel Rods
- Notecards/Cardstock
- Slide-Stop Material (Rubber Tubing)
- Cup Hooks
- *Additional materials necessary for trigger and aiming design such as push-pins, plastic spoons, small paper/plastic cups, bottle caps, etc.

Evaluation:

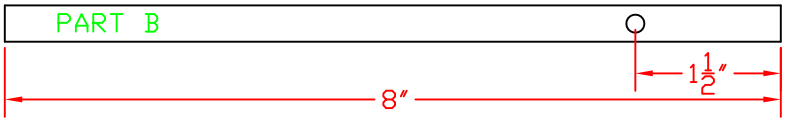
Category	Up to 25 pts.	Up to 50 pts.	Up to 75 pts.	Up to 25 pts.	Score
Timeline	No (or limited) attempt made	Did not finish product schedule on time	Finished product schedule on due date	Finished product schedule before due	
Quality of Product	No (or limited) attempt made	Product design is below quality standards	Product design meets quality standards	Product design exceeds quality standards based on the processes of sanding, squaring, gluing, clamping, cutting, drilling.	
Measurements	No (or limited) attempt made	Measurements meets some requirements	Model or prototype met most necessary requirements	Model or prototype met all necessary requirements	
Model/ Prototype	No (or limited) attempt made to develop firing system. Additional refinement is needed to accurately fire and aim the device(trigger design or launching system)	Model or prototype meets some, but not all requirements	Model or prototype met all necessary requirements	Model or prototype exceeds requirements including a system a to accurately fire and aim the device. Exceptional use of creativity in trigger design	
Comments:			**Total Points:**	**/100**	

CATAPULT DESIGN PROJECT

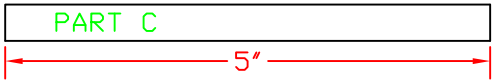
-CUT EACH OF THE FOLLOWING PARTS



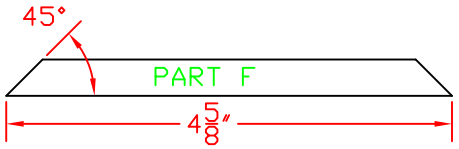
X 1 - CATAPULT ARM



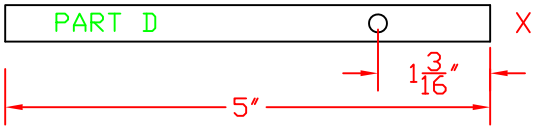
X 2 - LONG BASE PIECES



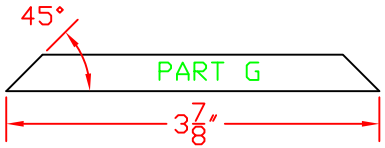
X 1 - SHORT BASE PIECE



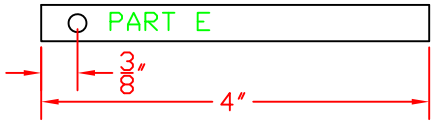
X 2 - LONG UPRIGHT BRACES



X 1 - SHORT BASE PIECE WITH HOLE



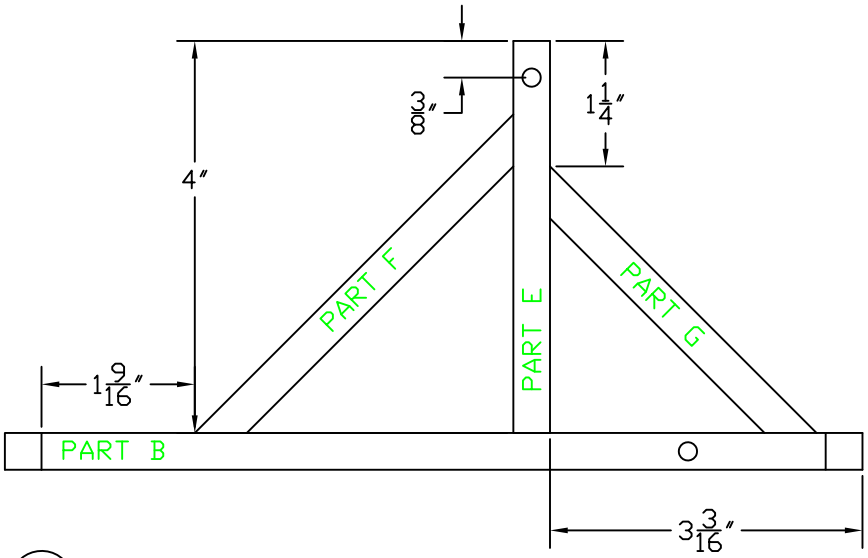
X 2 - SHORT UPRIGHT BRACES



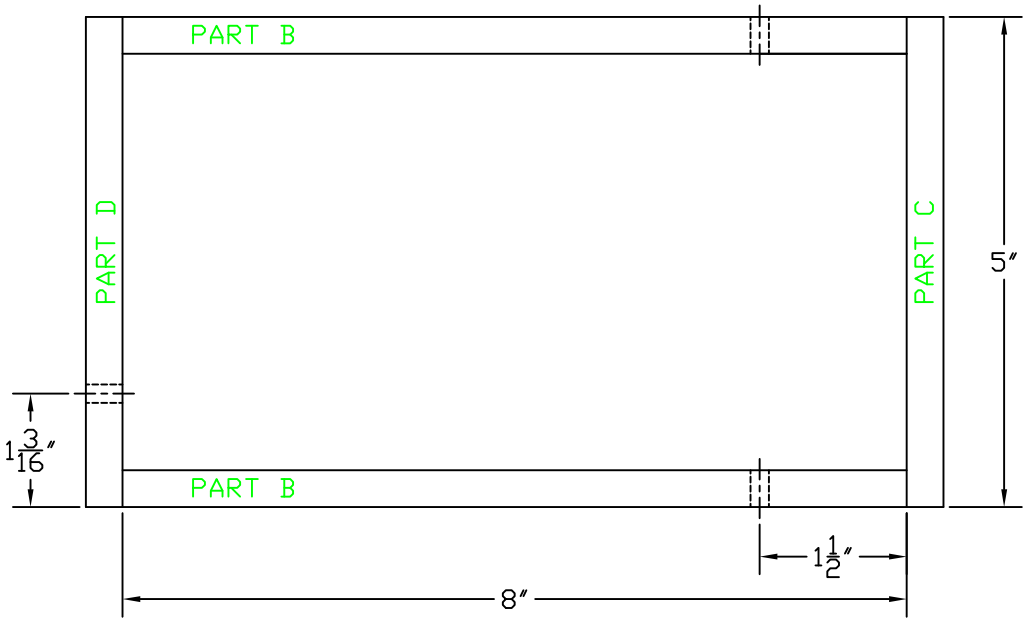
X 2 - UPRIGHT PIECES

NOTE:
-All MATERIAL IS 3/8"X3/8"
-ALL HOLES ARE 3/16"
-ADDITIONALLY, YOU WILL NEED TO CUT 2 - 5" DOWEL RODS (PART G)

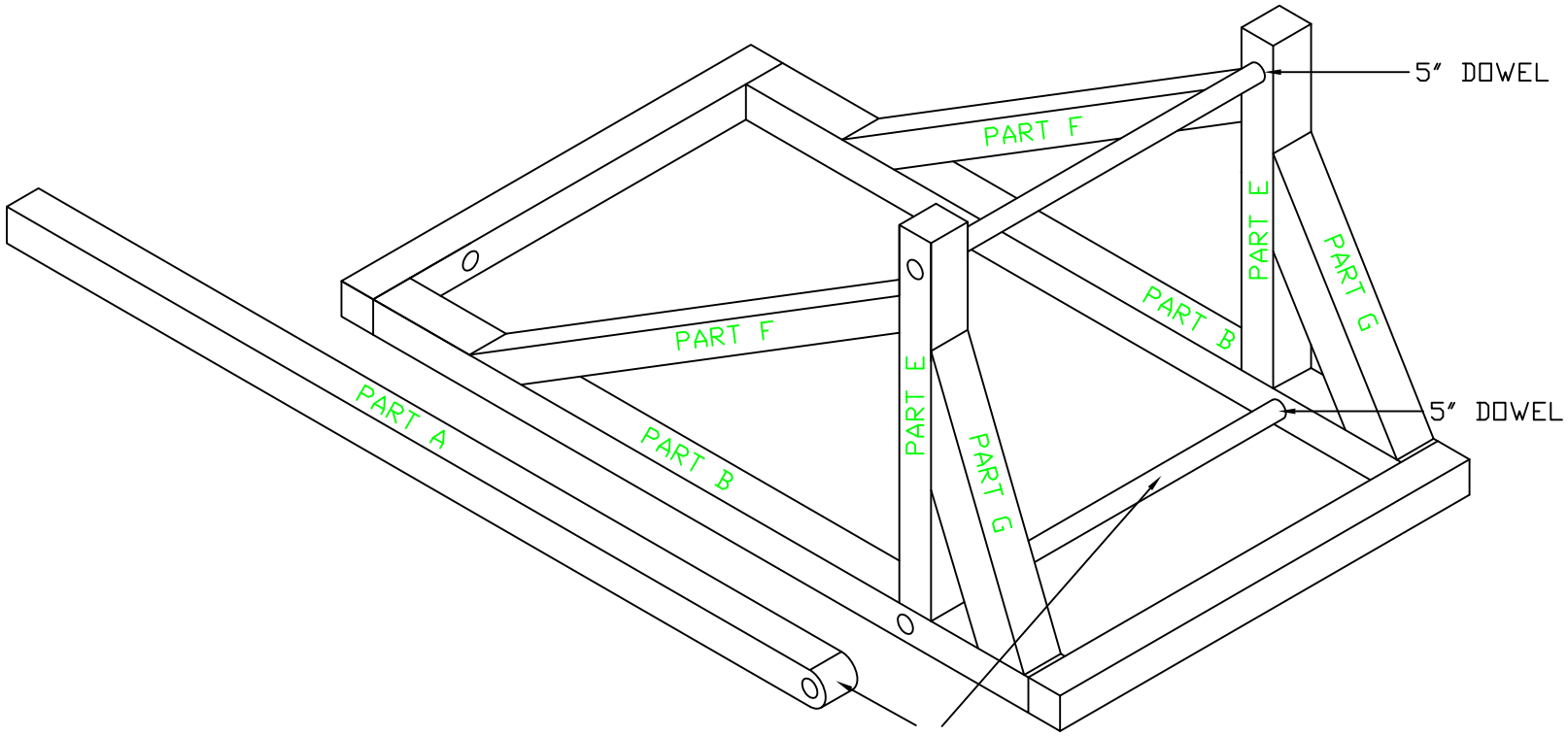
*OPTIONAL - YOU COULD CUT THE 5" DOWELS AT 6" TO MAKE THEM REMOVABLE.



2 SIDE VIEW - BASE INCLUDING UPRIGHTS



1 CATAPULT BASE (TOP VIEW - BASE ONLY)



*OPTIONAL - YOU COULD CUT THE 5" DOWELS AT 6" TO MAKE THEM REMOVABLE.