

## Mouse Trap Catapult Design and Competition

Using the following criteria, you are to design and build a mouse trap Catapult. Your Catapult should be designed for the two competitions. 1. How far can you shoot a ping pong ball. 2. Make a shot into a small garbage can.

### Criteria

- Only one mouse trap can be used (supplied)
- The mouse trap is the only source of energy that can be used for shoot the ball
- No motors or electrical items are allowed, all mechanical
- You will be shooting a supplied ping pong ball, no modifications
- You cannot use a spoon, you can design and make one
- The Catapult must be mobile (on wheels)
- It should be sturdy (no flipping over when you shoot the ball)
- Groups of 2 will be used

### Step 1: Concepts and ideas

In this step you should be making sketches and ideas. You can make as many as you need. Make sure you are keeping in mind all the criteria and the competition. Your sketches must be neat and clear to read. I want to be able to tell what you are building from the sketch. Date and sign all sketches.

### Step 2: Finalize solution

You should complete a full sketch of your idea and decide on the materials you will need to produce your Model or Prototype.

### Step 3: Build Prototype

After you collect the materials it is time to build. You should be basing you Model off of your sketches. This does not mean you will not have any engineering changes during this stage, but you should update your sketch and date it. Do not wait until the last day to update your sketch. It should be a work in progress day to day. It will be one of the items to be checked so keep it up to date.

### Step 4: Testing Day

We will set aside a day so you can test your catapult before the final competition. Everyone will get a chance to tryout your catapult.

### Step 5: Modifications

Make any modifications you wish before the competition.

## Step 6: Catapult Reverse Engineering

Measure the parts on your catapult. Write down these dimensions on your sketch. You need to measure all elements so you can technically draw parts to the actual size in AutoCAD. Refer to the Reverse Engineering Drawing Steps sheet if needed.

Download the AutoCAD file “**Blank Drawing Template-Inches.dwg**” from Schoology, [dossin.weebly.com](http://dossin.weebly.com), or from your previously saved file.

Rename the file “**CATAPULT- FIRST NAME LAST NAME**” save it in **your** Drafting class folder.

This will be plotted on a B-size sheet. Therefore if you plot this at 1:1 scale, label and dimension all your parts using the 1-1 Text and Dimension size. If you need to use a different scale, then be sure to use the appropriate Text and Dimension size settings.

Your drawings will require:

- 1) A minimum of three views
- 2) All necessary dimensions
- 3) Notes as needed (Materials used)
- 4) Completed title block on a B-sized sheet.

Plot your drawing once you are complete and turn in along with your sketches.

