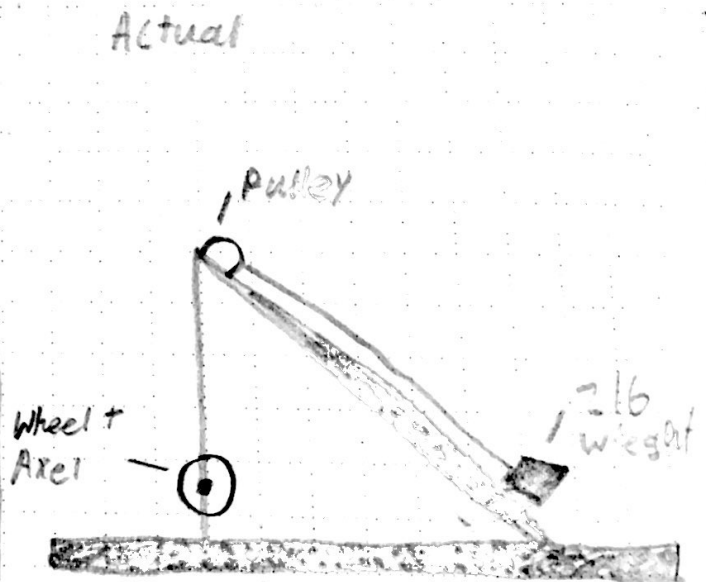
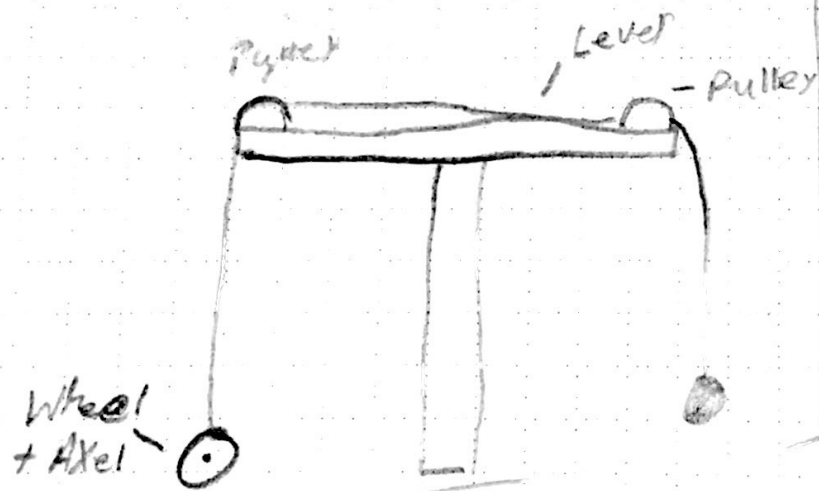
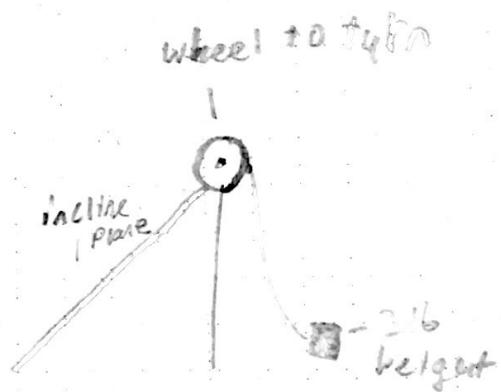
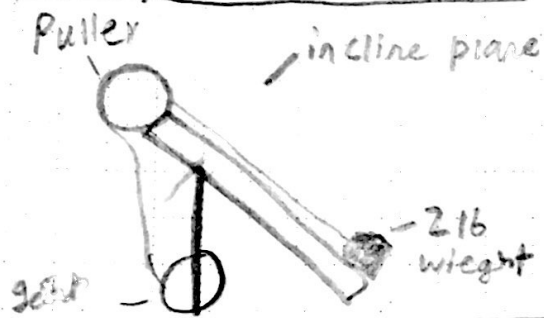


- build and test a compound machine to move a 2lb weight 3 inches
- At least 3 different simple machines
- 1 base plate
- MA has to be more than 1



Incline Plane:  $12\frac{3}{4}$  inches

$$IMA = \frac{\text{Slope}}{H} = \frac{12\frac{3}{4} \text{ inches}}{5\frac{1}{2} \text{ inches}} = 2.318:1$$

$$F_R = 216 - 407g$$

$$F_e = .716s \quad \text{Efficiency: } \frac{2.86}{2.318} = 123\%$$

$$\frac{216s}{.716s} = 2.86:1 = AMA$$

Pulley-fixed Pulley

$$1:1 = AMA$$

100% efficiency

Wheel + Axel

$$r = 3.75 \text{ in} = \text{Wheel}$$

$$D = \frac{1}{8} \text{ inch} = \text{Axel}$$

$$IMA_{\text{Wheel}} = \frac{3.75}{\frac{1}{8}} = 30:1$$

$$\text{Efficiency} = \frac{AMA}{IMA} = \left(\frac{57}{30}\right) 100 = 190\%$$

$$AMA = \frac{F}{.035} = 57:1$$

Total

$$AMA = (AMA_1)(AMA_2)(AMA_3)$$

$$(2.86)(1)(57) =$$

$$163.48:1$$

$$\frac{163.48}{69.54} = 235\%$$

$$IMA = (IMA_1)(IMA_2)(IMA_3)$$

$$1 \cdot 30 \cdot 2.318 = 69.54:1$$

1) The Pulley, because the pulleys are always the easiest.

2.) Wheel and Axle, it took the longest with the math.

3.) We didn't estimate, we use the machine to find it out.

4.) Nothing.



