

Name: _____

Number: _____

Date: ___/___/___

Unit 6: Newtonian Mechanics –Circular and Rotational Motion

LAB: Rotational Equilibrium

Learning Objective 3.F.1.4: The student is able to **design an experiment** and analyze data testing a question about torques in a balanced rigid system.

What is your hypothesis?

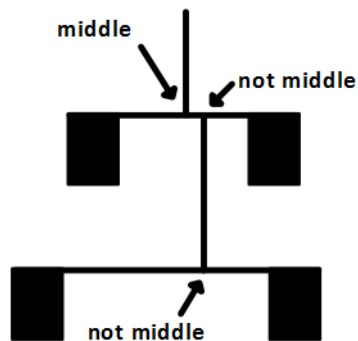
Equipment:

- Available options: dowel rods of varying lengths, masses, string, tape, meterstick

Safety: Take care that masses do not fall on people, the floor, or equipment.

Hints & Requirements:

- You may not tie the masses to the rods until you are all done with the calculations. You're an engineer today.
- The strings must be attached as shown below:



- If you think carefully about what you can measure and what you need to find, there is only one unknown variable for each rod.
- Start by calculating how to balance the bottom rod. Then calculate where to attach it to the top rod.

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Background: (In this case, the background should include definitions of the concepts (torque and rotational equilibrium) and the calculations made prior to experimentation.)

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Procedure: State where you are attaching each component.

Observations: Did it work? Did you have to tweak it? If so, where/how?

Conclusion: