

Masses and Springs: Determine the Unknowns

Go to the PhET site(<http://phet.colorado.edu>), launch *Masses and Springs*

Learning Goals: Students will be able to

- explain how the mass of an object is determined using spring balances.
- use the spring balance to determine the mass of an unknown object
- find the gravity on Planet X and describe their experiment

Directions: Investigate how the simulation works by “mousing around.” Then, use the tools to determine the masses of the three unmarked cylinders. You will turn in a paper that has 3 parts.

1. Make a data table that includes information that you used to determine the mass of the unknowns. Record the determined masses in the table as well.
2. Write a procedure that another student could follow to verify your results. The procedure should be in paragraph form.
3. Write a paragraph that explains your reasoning for the procedure design.
4. Find the gravity on Planet X and describe how you determined it.

Simulation helpful tips: All the springs have the same characteristics by default. The stiffness of spring number three can be varied; put the slider in the middle to reset.