Gravity Force Lab

Go to <u>http://phet.colorado.edu/en/simulation/gravity-force-lab</u> And select RUN

Qualitative Observations

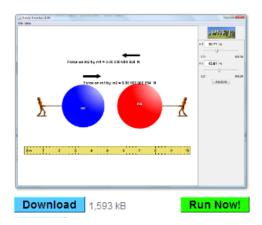
- 1. How does the separation of the masses affect the force between them?
- 2. What happens to the force between the objects when mass 1 is doubled?
- 3. What happens to the force between the objects if you Cut Mass 2 in half?
- 4. In any of the situations did the forces ever differ in magnitude? Which of Newton's Laws apply?
- 5. In any of the situations did the forces ever not point in opposing directions?

Quantitative

It is now time to build a model.

- 1. What THREE things can we change/vary?
- 2. Select an independent and dependent variable and constant
 - a. DV _____
 - b. IV _____
 - c. C _____
- 3. Collect 5 data points and fill in the table.

IV	DV



4. Create a qualitative graph on the grid provided.

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- 5. Select a new independent and dependent variable and constant
 - a. DV _____
 - b. IV _____
 - c. C _____
- 6. Collect 5 data points and fill in the table.

IV	DV

Image: Second Second

7. Create a qualitative graph on the grid provided.

Questions

1. How did varying the second mass affect your results?

2. What is the relationship between Mass and force?

3. What is the relationship between distance and the force of gravity?