

## Physics 112 - Exploring the concept of Newtons

**Purpose:** By completing this lab, students will gain an understanding of the connection between mass and weight.

### **Procedure/ Questions:**

1. Create a chart similar to the one below

Mass in grams (x-axis)	Magnitude of Force in newtons (y-axis)

2. By using the masses given to your group, weigh 10 different masses and record the amount of force (in newtons) applied to the scale. HINT: You may need to combine masses in order to come up with 10 different weights.

3. Plot a graph of mass versus force for your recorded values. Use graph paper and a ruler.

4. Draw a line of best fit through your data. Use a ruler.

5. By using your skills of interpolation and extrapolation, estimate the following values to determine either the mass or force for:

a) a 1000g = \_\_\_\_\_ N b) 2.5 N = \_\_\_\_\_ g c) 175 g = \_\_\_\_\_ N

6. Weigh 3 random objects with your scales and use your graph to estimate the masses. Record your estimates for each one. Use the balancing scale to verify your calculation.

### **Conclusion:**

What conclusions can you make about the relationship between the mass of an object and the force in newtons? Use your graph and your own observations to draw your conclusions.