FLINN SCIENTIFIC

Name_____

Measuring Magnetic Force Worksheet

Data Table

Mass of small container and magnet: _____

Mass of PVC tube: _____

Total Mass (Magnetic Repelling Force)	Separation Distance	Log of Total Mass	Log of Separation Distance
100 g			
150 g			
200 g			
250 g			

Calculations and Post-Lab Questions *(Use a separate sheet of paper to answer the following questions.)*

1. Graph the Separation Distance versus Total Mass on normal graph paper. Draw a best-fit straight or curved line through the data points. Describe the shape of the best-fit line.
2. Calculate and graph the log of the Separation Distance versus the log of the Total Mass on graph paper. Record the calculations in the data table. Draw a best-fit line through the data points.
3. Calculate the slope of the best-fit line on the log–log graph plot.
4. What does the slope of the line indicate?
5. Calculate the value of n by taking the inverse of the magnitude of the slope determined in Question #3. Compare the relationship between the force due to a magnet and the separation distance, and the relationship between force due to gravity and the separation distance. Does this result make sense based on your experiences with magnets and gravitational force? Explain.