**Coefficient of Friction Lab**

**Name:**

**Group members**

**Date:**

**Objective:** To determine the coefficient of friction between a sled that you create and three different surfaces.

**Materials:** Piece of paper, assorted masses, force scales (At least one set of tests must be done with the PASCO sensors.

**Procedure: (Rewrite the procedure in 3rd Person form with the relevant information only)**

1. Create a sled. Make some attachment device to allow the sensor to be attached.
2. Load the sled with a mass, start with at least **1kg.**
3. Using a force scale, pull the loaded sled at a constant velocity. Record the force found on the table below.
4. Use the Force and the Mass (calculate weight) found to calculate the Coefficient of friction. Perform one sample calculations on bottom of back of page. Record the values on the table below.

 **Ff = µFn**

1. Add more mass to the sled and repeat steps 2-4. (Repeat for 10 trails)

**Results**

* Present your results in a table form along with an average coefficient of friction.
* Create a graph of Frictional force vs. Weight (Normal Force). Friction is on the y-axis and weight on the x-axis. (**be sure to add a title, scale, and units)**
* Determine the slope of the line of best fit from the graph.
* Don’t forget to include sample calculations

**Note : These are what I expect to see, not what you write in your lab report.**

**Sample Calculations:**

**Discussion**

**1.** Is there any relationship between the slope of the line of best fit and the average coefficient of friction? Should there be? Explain.

2. Are all your calculations close in range? Should they be? Why might they be different?

3. What are some possible sources of error in a lab experiment such as this.

**Conclusion:** (Write a concise conclusion from the above results and observations as they relate to the objective)