Science 9 Lab

FRICTION

PURPOSE: to identify factors that affect how much friction there is between two surfaces.

MATERIALS: wooden block, string, spring scale, round sticks, surface board, small and large masses

PROCEDURE A:

1. Attach one end of the string to the block of wood, the other end to the scale.

2. Place the wooden block on one of the surfaces of the surface board with the larger side (side A) down. Place the 500g mass on the block.

3. Read the spring scale as you slide the block along the surface. **Keep the string and spring scale level when pulling.** Next, record the reading under Trial 1 for that surface on the table below.

4. Repeat steps 2 and 3 twice. Calculate the average.

5. Repeat steps 2-4 for the other surfaces on the surface board.

6. Now place the block and mass on several round sticks on the counter/desktop. Measure the force needed to slide the block and enter your data on the table. Repeat twice.

7. Make a bar graph of the Data Table. **INCLUDE THE BAR GRAPH WITH YOUR LAB REPORT**

DATA TABLE

	TRIAL 1	TRIAL 2	TRIAL 3	AVERAGE
SANDPAPER				
FOAM RUBBER				
CORK				
CARDBOARD				
ROUND STICKS				

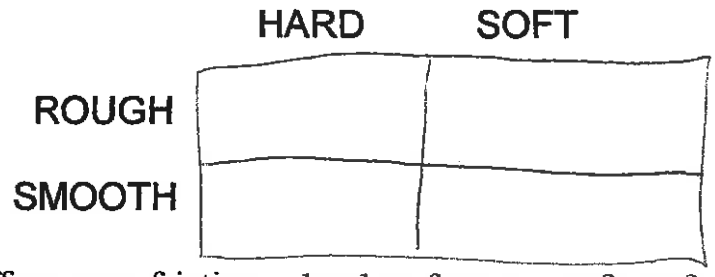
PROCEDURE B:

1. Place the small mass on the block of wood. Record the sliding force as you move it on any surface. Add the large mass and repeat.

Force needed to pull block and: one mass _____ two masses_____

LAB REPORT QUESTIONS

1. Write the name of the surface (cardboard, sandpaper, rubber, cork) in the appropriate square on the table below. Copy this table on your report.



2. Which offers more friction, a hard surface or a soft one?

3. Which offers more friction, a rough surface or a smooth one?

Of the four combinations: hard/smooth; hard/ rough; soft/smooth; soft/rough;

4. which offers the most friction?

5. which offers the least friction?

6. How do rollers (and wheels) make our work easier?

7. List three situations in which friction is not wanted.

8. List three situations in which friction is wanted.

9. List three ways of reducing friction.

10. Looking at Procedure B, describe the relationship between weight and friction.