

Title: Friction Lab

Purpose:

- To determine the relation surface type to friction force
- to determine the relation of mass to friction force
- to determine the relation of surface area to friction force

Hypothesis 1: Friction force is _____ related to mass.

Hypothesis 2: Friction force is _____ on smooth surfaces than on rough surfaces.

Hypothesis 3: Friction force is _____ related to surface area.

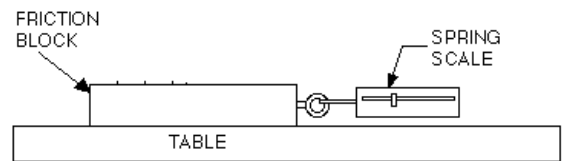
Materials

- wood blocks
- spring scale
- surfaces (table, linoleum floor, lab table, rug)
- balance

Procedure:

Part A: Relation of Mass and Friction

1. Determine the mass of each block.
2. Attach a spring scale to the block and pull.
3. Read the scale to determine the friction force between each surface and each type of block.
(remember that the friction force between a block and a surface equals the force you need to exert to move the block at constant velocity)
4. Record your data in a data chart!
5. Put one block on top of the other (doesn't matter which types) and add the masses.
6. Determine the friction force again for the different surfaces.
7. Record your data in a data chart.
8. Repeat with 3 blocks



Part B: Relation of Surface Area and Friction

1. Select one surface (table, rug, linoleum, or lab table).
2. Select the largest block.
3. Determine the friction force when the
 - a. block is flat
 - b. block is on its edge.
4. Record the data in a data table

General

1. Construct appropriate graphs with your data.

Discussion:

1. Summarize what you did.
2. Discuss your results.....remember to include data to support your statements.
3. Describe sources of error.
4. Suggest improvements.

Conclusion: You should have separate conclusions for each hypothesis. Also indicate whether or not your hypotheses were correct.

Reflection: Personal Statement