02-03 Friction Lab ***Name: _____***

Objectives

- Determine which properties effect friction.

Materials

- Wooden block
- Spring scale
- Mass (book)

Procedure

1. You will pull the wooden block horizontally with your spring scale. Make sure the spring scale is horizontal. Draw a freebody diagram of the wooden block as the scale pulls it at a constant velocity.
2. Is there a force going against the motion of the block? If so, what is it called? _____
3. What happens to the vertical forces? _____
4. Pull the block horizontally across your desk at a constant velocity. What is the force reading on the scale? _____
5. Put a book or some other mass on the block and pull it across the desk at a constant velocity. What is the force reading on the scale? _____
6. Pull the block horizontally across the carpet at a constant velocity. What is the force reading on the scale? _____
7. Put a book or some other mass on the block and pull it across the carpet at a constant velocity. What is the force reading on the scale? _____
8. Which had more friction, the desktop or the carpet? _____ Why? _____
9. Which had more friction, the wooden block or the block with the extra mass? _____
10. How is friction reduced in car engines? _____ hovercraft? _____
11. Pull the block with extra mass horizontally across the carpet again. This time pay attention to the force reading before, during, and after it starts to move.
12. What happens to the force reading as you start to pull on the scale before the block moves? _____ (This is static friction.)
13. What happens to the force reading as the block goes from not moving to moving? _____ (This is kinetic friction.)
14. Which is larger, static or kinetic friction? _____