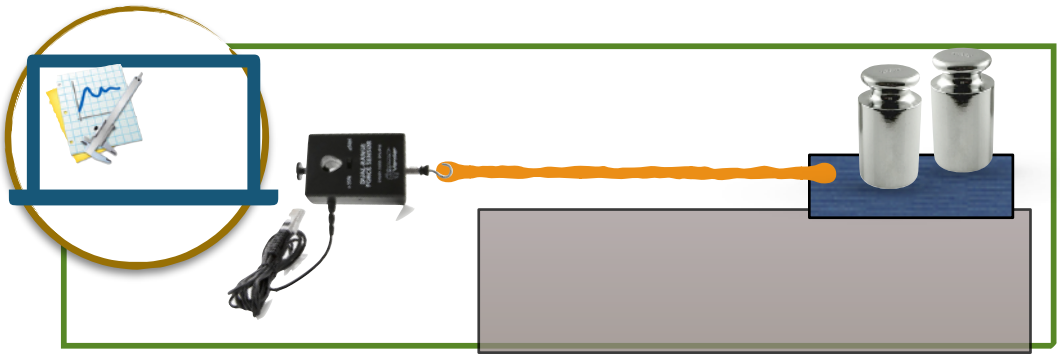
Friction

Name _____ Date _____



$$F = \mu N$$

Introduction

For this lab, it is very important that all speeds are constant, and that the line between the sensor and the block is always straight.

Mass of the block _____

Force of Friction (N) = coefficient of friction (no units) x Normal Force (N)

Part 1. Surfaces

Trial	Sliding Material	Surface Material	Measured Force of Friction	Calculated Coefficient
1				
2				
3				
4				

Questions

Did the results make sense to you? Why or why not.

Discuss one example of a “real world” reason for testing the friction between surfaces.

Friction

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2. Speed

Trial	Relative Speed	Measured Force of Friction
1	slow	
2	medium	
3	fast	

Questions

Did the results make sense or were you surprised by your answers?

Many students feel that this section could be improved. How would you change the procedure to make the results better?

3. Area

Trial	Area	Measured Force of Friction
1	The large “face”	
2	A side “edge”	
3	The small “end”	

Questions

Did the results make sense or were you surprised by your answers?

Many students feel that this section could be improved. How would you change the procedure to make the results better?

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4. Normal Force

Weight of the block _____

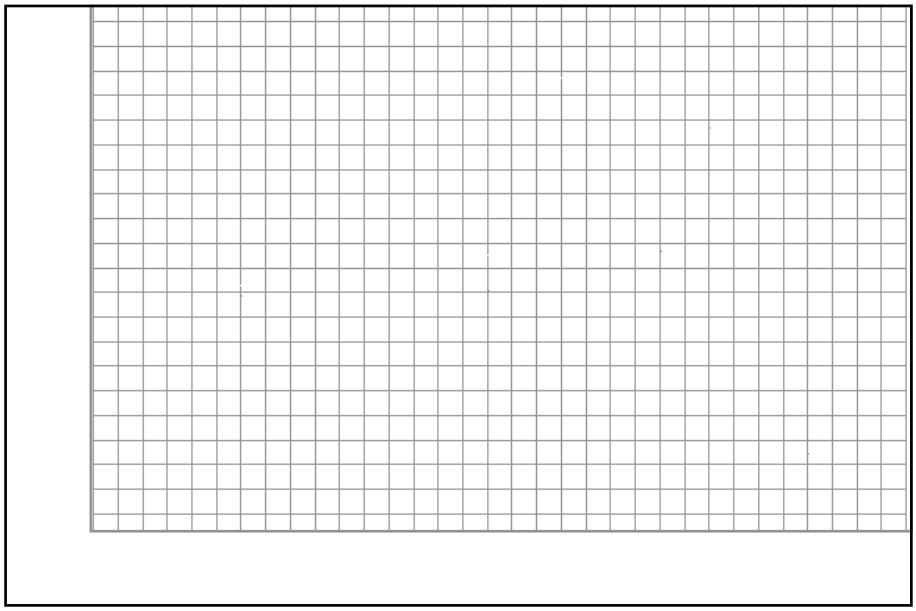
Trial	Additional Mass	Normal Force	Measured Force of Friction
1	_____ kg		
2	_____ kg		
3	_____ kg		
4	_____ kg		
5	_____ kg		
6	_____ kg		

Calculations

Create a graph including a straight line through the points you found.

Calculate the slope of the line by picking two new points.

(one near the top, and one near the bottom)



What does this slope define?