Physics Name _____

Period ____ Date _____

Friction is our Friend

Purpose

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Materials

Physics Concepts

Diagram **FBD** **Sum of Forces**

Procedure

1. Find the average **coefficient of static and kinetic friction** between the paper and the woodblock. To get a more accurate average place increasing weight on top of the wood block. Make sure your Spring Scale is set on zero before you begin.

1. Pull the woodblock with a Spring Scale at 0° wrt the horizontal and record the force required to get the block to begin to move. Look closely at your scale as you begin to pull the block and weight and record your applied force after 3 to 4 trials.

2. Pull the woodblock with a Spring Scale at 0° wrt the horizontal at a constant velocity and record this applied force. Look closely at your scale as you begin to pull the block and weight. Pull the scale at a constant rate across the paper and record your applied force after 3 to 4 trials.

3. Repeat a and b with increasing weight.

4. Record your numbers and make the required calculations. Please read the table and try to figure out what it is that you need to do before you ask any questions.

Data Acquisition and Analysis

Mass (kg) (woodblock + weight)		Total Mass (kg)	$F_n = m_T g$ (woodblock + weight)	F_A (N) (scale reading) = F_f (N) *to get it mto move*	Coefficient of Static Friction μ_s	F_A (N) (scale reading) = F_f (N) *to keep it moving*	Coefficient of Kinetic Friction μ_k
	+ .200						
	+ .300						
	+.400						
	+ .500						
				Average Coefficient of Friction			

2. Using the procedure above, find the mass of your Physics Book using the **coefficient of kinetic friction** between the blue paper and your wood block (don't use the heavy weight).

Diagram **FBD** **Sum of Force**

Calculations

Applied Force _____

Mass of Physics Book _____

Conclusion

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