

Names _____

Date _____

Per _____

Static and Kinetic Frictional Forces

Purpose: Students will be able to measure the force required to overcome inertia and the force required to continue in motion

Materials: Block of wood, plank of wood, Force scale, varying masses

Background: Define Static Frictional Force and Kinetic Frictional Force

Hypothesize how much force will be required to overcome inertia compared to the force required to continue in motion. Explain

Directions: Measure the mass of your block. (1) Attach the force scale to the end of the block. (2) Begin to pull the force scale and record the maximum force measured prior to the block moving (Static Frictional Force). (3) Then pull the block (still attached to the force scale) and record this as the Kinetic Frictional Force (while it is moving). (4) Add 500 grams to the block and repeat steps 2-3. Add an additional 500 grams to the block (totaling 1000 grams) and repeat steps 2-3.

Results: Construct a Data Table for your results on the back of this paper.

Conclusion: Using Newton's 1st and 2nd Laws of Motion and results from your data collection, explain what happens to the force as more mass is added to the block. Explain which force is greater using Newton's 1st and 2nd Laws of Motion.
