SAINT JOSEPH'S PREPARATORY SCHOOL
PHYSICS LAB EXERCISE October, 2010

NAME: _____   DATE: _____   PERIODS: ____

COLLABORATORS: _____

Newton's Second Law of Motion (Part One)

We will be attempting to verify that $\boxed{\mathbf{a} \propto \Sigma \mathbf{F}}$. This is one part of the second law of motion.

Each group will run **eight** trials with different accelerating forces and the same total mass.

Set up the equipment and add weights to the cart as instructed in the lab.

It is important that the total mass of the cart, weights on the cart, weight on the string and brick, if used, be a constant for all eight trials.

Record the total mass here: _____

Follow the instructions given in the lab to determine the acceleration for each trial. Each student should do this measurement at least twice. Share the work.

A graph of **acceleration vs. force** will reveal whether acceleration is proportional to force. In addition, if the graph is a straight line, determine how the slope is related to the mass of the object being accelerated.

Each student must do a separate lab report from the same data.

Remember that the conclusion in your lab report must be supported by the data.
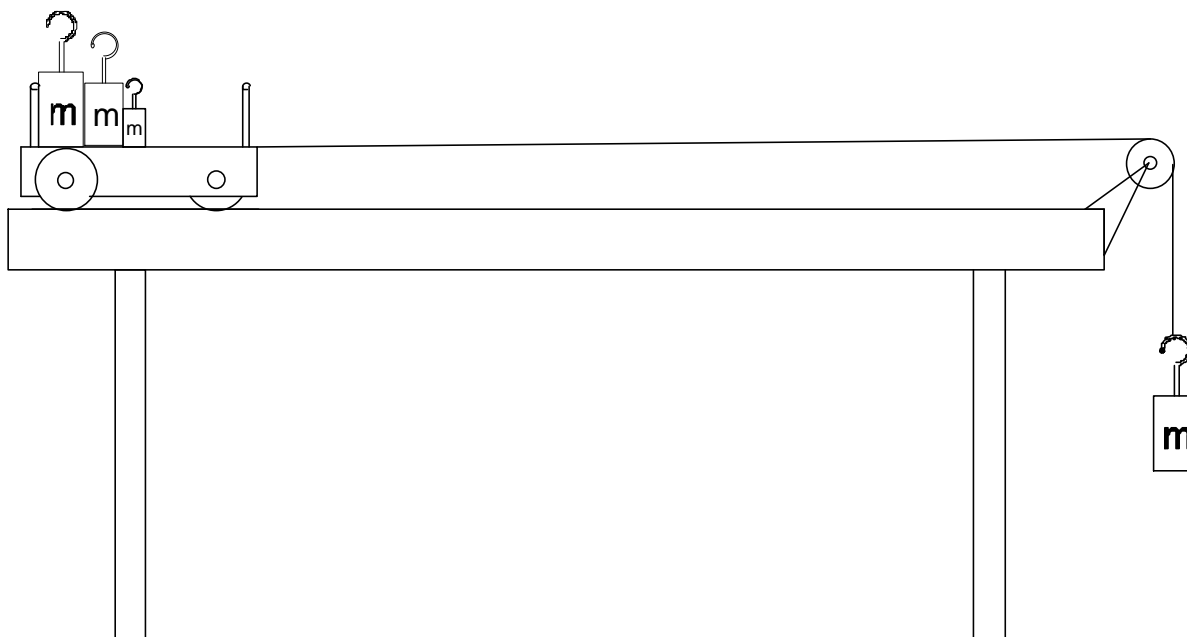
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PHYSICS LAB EXERCISE October, 2010

NAME: _____   DATE: _____   PERIODS (or Time): _____

COLLABORATORS: _____

Trial	Accelerating Mass (kg)	Accelerating Force (N)	Δx_1 (m)	Δx_2 (m)	Small Time Interval (s)	v_1 (m/s)	v_2 (m/s)	Δv (m/s)	Large Time Interval (s)	Acceleration (m/s^2)	Student Initials
1											
2											
3											
4											
5											
6											
7											
8											