

Motion Investigation – Newton's Second Law Experiment

Background: According to Newton's second law of motion an object will experience an acceleration proportional to the net force acting on it.

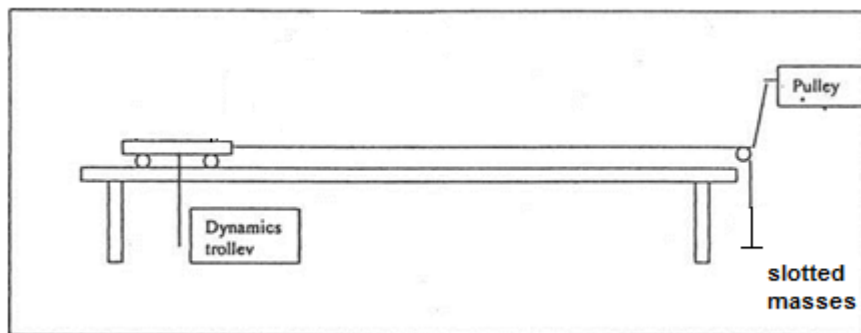
In this Investigation, acceleration is measured by recording the time it takes a loaded trolley to travel along a straight track.

Aim: To investigate the relationship between the **acceleration** of a system (in this case slotted masses and trolley) and the external force acting on the system.

Equipment provided:

(You may provide your own additional equipment if desired).

Stop watch	Slotted masses and hanger (10 x 50 g)
Pulley and clamp	String
Dynamics trolley	Tape measures



Your investigation is subject to validation in week 7. Your time with the equipment is your opportunity to gather data and think about what is happening. While you are not required to submit a report, this is the context (scientific experimental report) in which you may be required to complete sections of a report under the following headings.

Hypothesis.

Method.

Results.

Analysis (including uncertainty considerations and analysis and graphing).

Conclusion.

Evaluation.

Reference: STAWA Experiment 16.1 pp. 151-152