

Motion Investigation – Newton's Second Law Experiment

STAWA Experiment 16.1 pp 151-152

Name:

Mark / 35

You will be given three class periods of access to the trolley containing the materials for this practical. It is in your interest to prepare for this assessment by reading through the experiment carefully beforehand. You need to construct a table of data and a graph as detailed below, and bring all of this to the in-class validation on **Tuesday 7th March**

Background: According to the 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. This method makes some assumptions and should be fully outlined in your **Evaluation** of the experiment.

NB: The example given on p.267 of Pearson Physics 11 has the assumption that there is no friction. This is unrealistic in the context of this investigation, and the formula they use to calculate the acceleration of the system is NOT appropriate for this investigation.

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.

Materials provided: (You may provide your own additional materials if desired)

Stop watch

Slotted masses and hanger

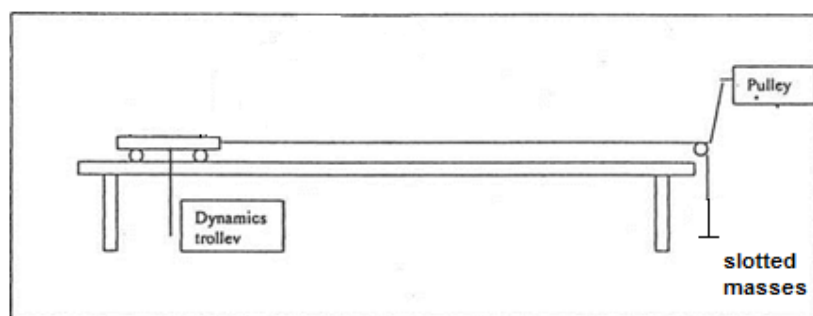
Pulley and clamp

String

Dynamics trolley

Tape measures

Vernier Motion Detector (logger software needs to be downloaded first)



Hypothesis: _____

(1 mark)

