Practical 7 The pendulum

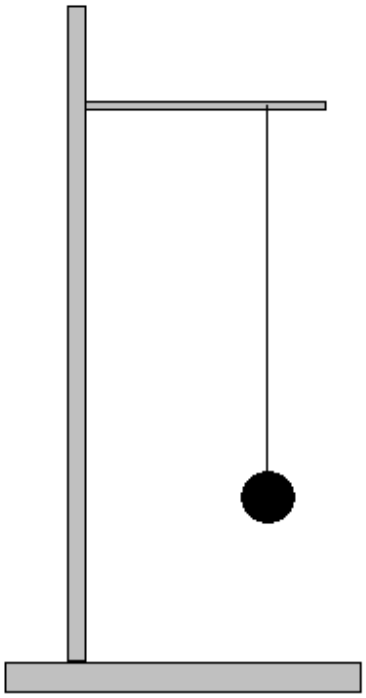
Introduction

In this investigation the relationship between the time period and the length of a simple pendulum will be investigated.

Method

There are many different ways to measure the time period of a pendulum. Using one of the following devices:

Photogate
Motion sensor
Rotational motion sensor
Force sensor



Design a method to measure the time period and carry out an experiment to measure the time period for at least 5 different lengths of pendulum. Enter your results into a suitable table.

Theory

The time period, T is related to the length, l by the equation

$$T = 2\pi\sqrt{\frac{l}{g}}$$

where
g= acceleration due to gravity

Use a graphical method to show that T is proportional to $\sqrt{l}$ and use your graph to find the acceleration due to gravity.