

NEATH PORT TALBOT COLLEGE COLEG CASTELL NEDD PORT TALBOT

School of Maths & Science Science Practical

Period of a Long Simple Pendulum

◆ Aim

To determine how the period of a long simple pendulum depends on its length

◆ Introduction

You will set up a long simple pendulum and determine its period. Without changing the point of suspension you will make the pendulum longer and determine the new period. From a suitable graph you can determine the value of the acceleration due to gravity, g .

◆ Safety

Control Measures

- You are reminded of the need of good laboratory practice in order to maintain a safe working environment.

Hazards



General danger

Ensure that the retort stand is firmly clamped to the bench using a G - clamp

◆ **Apparatus Required**

Simple pendulum (at least 2.5m long); stopwatch; metre rule; retort stand and clamp; G – clamp.

◆ **Procedure**

1. Suspend the pendulum from the retort stand and clamp.
2. Measure the length of the pendulum, as accurately as possible, from the point of suspension to the centre of the bob. Try to make this between 1.0 and 1.5 m to start.
3. Measure the period, T , of the pendulum using a stopwatch.
4. Repeat the above procedure for different values of length, l . Try to increase l in suitable intervals.

5. Plot a graph of T^2 against l .
6. Record the slope of the graph.

7. Look up the equation for the period of the simple pendulum. Use this equation, together with the gradient of your graph to determine the acceleration due to gravity, g .
