NEATH PORT TALBOT COLLEGE
COLEG CASTELL NEDD PORT TALBOT

School of Maths & Science
Science Practical

To investigate the behaviour of copper wire under increasing and decreasing load.

◆ Aim

To investigate the behaviour of copper wire under increasing and decreasing load. To determine whether Hooke's law is obeyed.

◆ Introduction

You will gradually load and unload a copper wire and note its corresponding extension. By plotting a graph of load against extension for loading and unloading it can be determined whether or not Hooke's law is obeyed. The behaviour of the copper wire can be analysed.

◆ Safety

Control Measures

- The wearing of **safety goggles** at all times will be sufficient to take account of most hazards and significant risks.
- You are reminded of the need of good laboratory practice in order to maintain a safe working environment.

Hazards

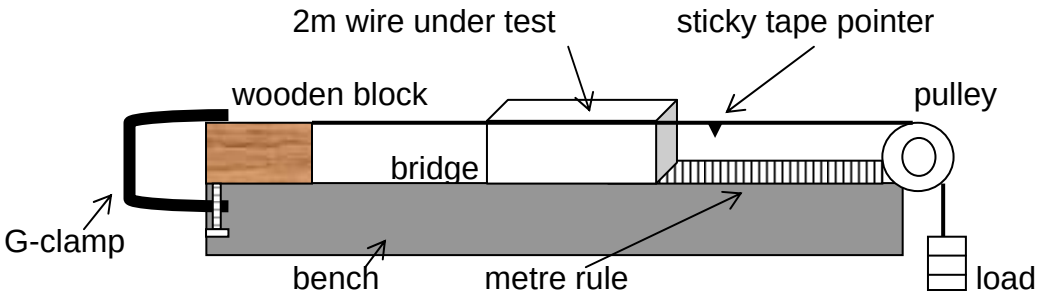
General Danger	Ensure that bridges are in place to prevent the wire from "whipping".

◆ Apparatus Required

Ruler marked in mm, copper wire 32 swg, G clamp, wooden blocks, pulley, suitable load, gummed paper, carpet, bridges.

◆ Procedure

1. Set up the apparatus as shown in the diagram. Use a small piece of gummed paper folded over to act as a marker.



2. Load the wire in steps and record the extensions produced by various loads.

3. Continue loading until the wire snaps.

4. Experiment, to find by what increment, you should increase the load, and then repeat to obtain a "useful" set of results.

5. This should be done for both loading and unloading.

6. Plot a graph of load (y – axis) against extension (x – axis). What can you conclude about the behaviour of copper wire?

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