AS and A-level Physics practicals: Equipment set up

Practical 8: Investigation of Boyle's (constant temperature) law and Charles's (constant pressure) law for a gas

Part 1: Boyle's Law

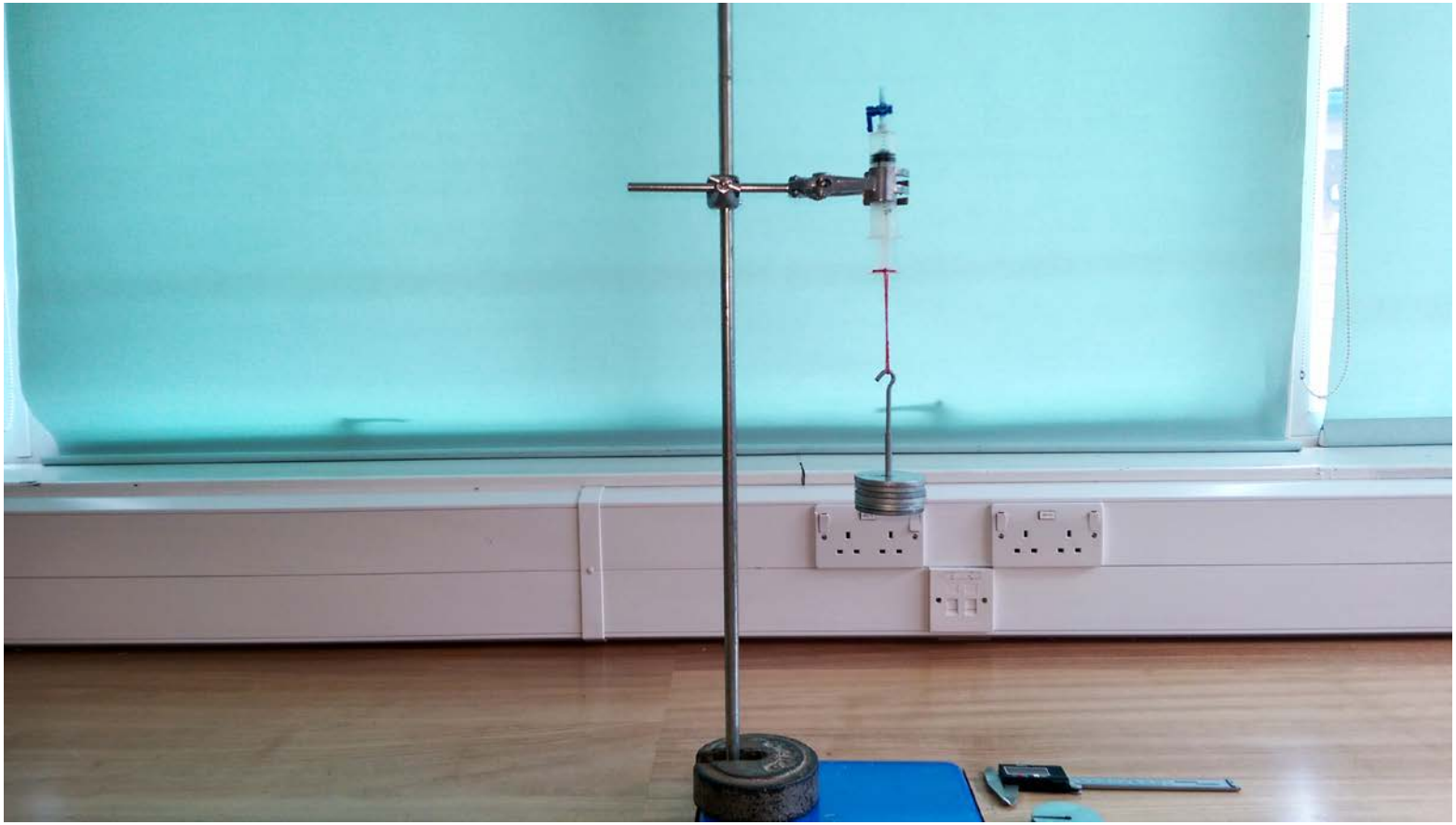
V1.0 – September 2016

Contribution from Marcin Poblocki, Senior Physics Technician at Manchester Grammar School

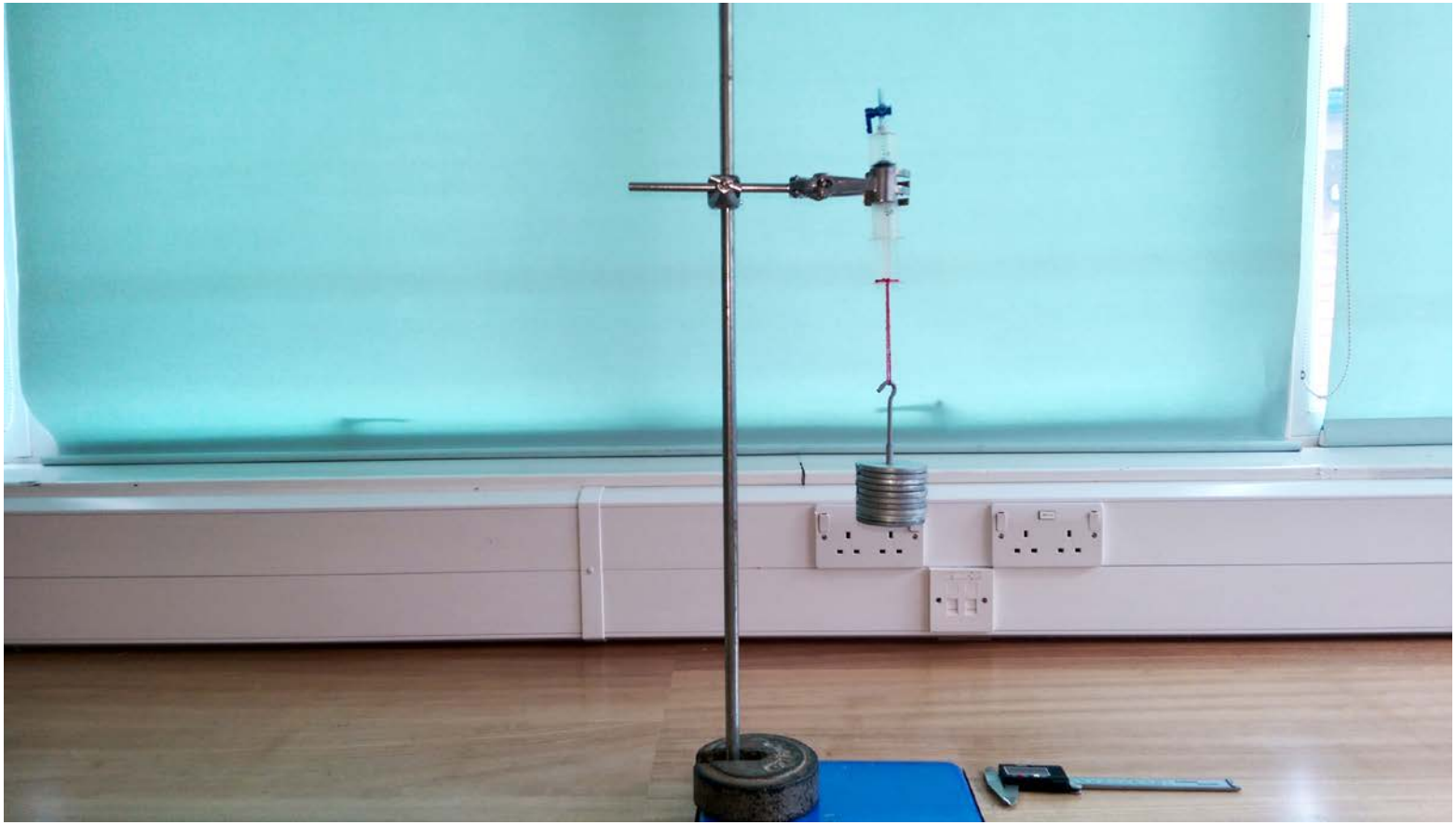
Measuring the diameter of the rubber seal using the micrometer

Replace the plunger, draw in 4.0 ml of air before setting up the apparatus as shown in the diagram

Adding masses encourages the plunger to move down...



...before the new volume on the syringe scale is read and more masses are added up to a total of 1000 g



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Practical 8 – Part 2: Charles Law

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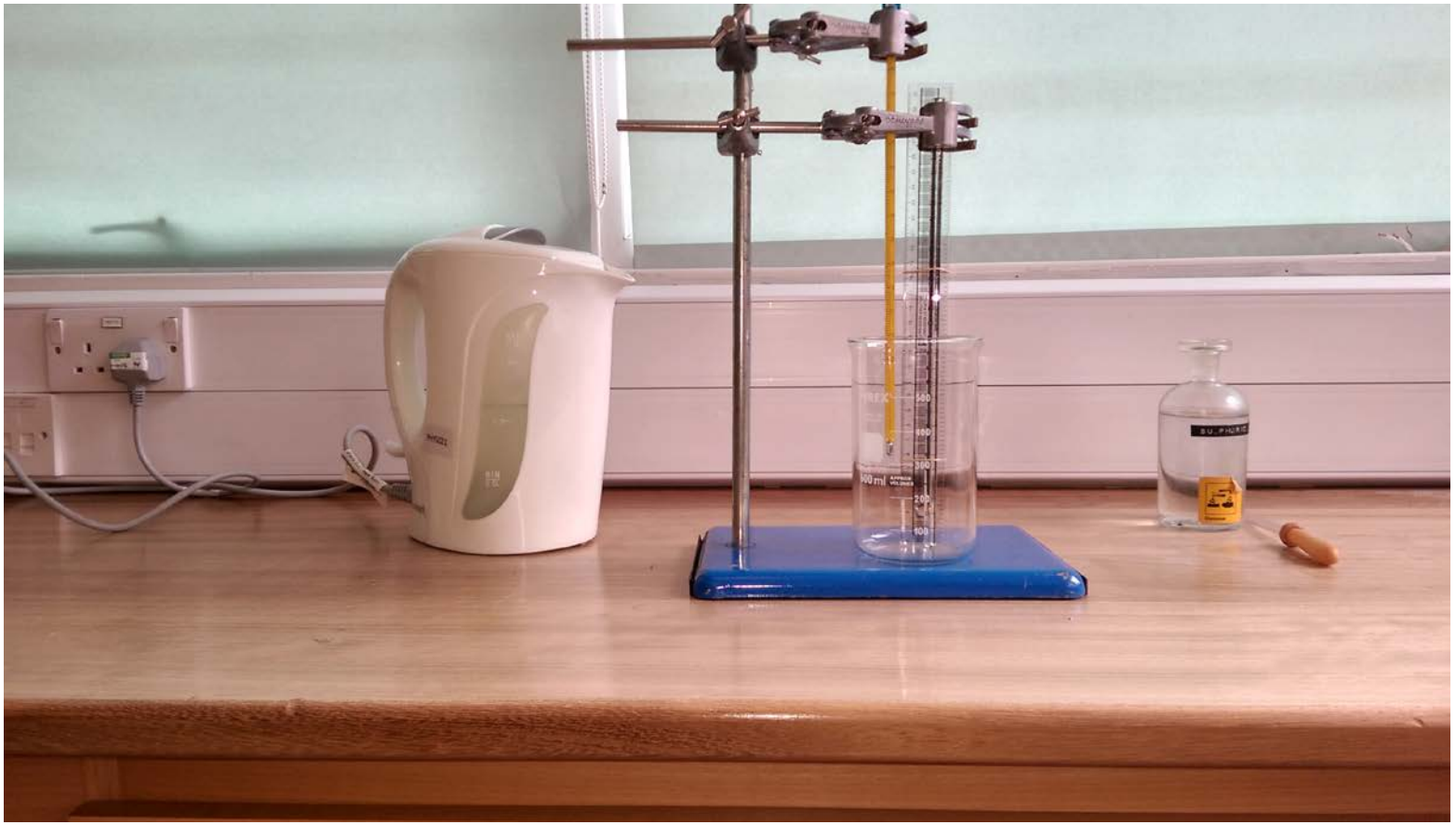
Contribution from Marcin Poblocki, Senior Physics Technician at Manchester Grammar School

Starting to gather the apparatus...

...before standing the capillary complete with drop of acid, attached to a ruler with elastic bands in a 2 litre beaker

Once the kettle is boiled allow the water to cool just a little...



...before covering the air sample with hot water poured into the beaker. Stir the water before reading the temperature on the thermometer and length of the air sample on the ruler.