

GAS LAWS

Experiment 1 – Boyle's Law

Experimental Procedure

1. The experimental setup includes a closed cylinder with a moveable piston containing a sample of gas (air), some 1-kg weights to place on the piston, and a pressure gauge and ruler to measure the pressure (in torr) and height of the piston (in cm) in the cylinder. (We will assume that the gas in the cylinder is at room temperature.)
2. Open the worksheet for Experiment 1. Enter the data within the Excel table so that the graph can be created. After completing the experiment, print out the results or copy to your report sheet.
3. Move the cursor over the apparatus until the "lighted area" appears. Click on this to start the experiment.
4. The piston itself has a mass of 1 kg. Click on the pressure gauge to see a close-up of the measuring devices. Record the pressure and height of the piston in the appropriate cells in the worksheet. Excel will calculate the volume as you enter each height value.
5. Click on the stack of weights to move one onto the piston.
6. Record the values in the next row of the worksheet.
7. Repeat steps 5 and 6 to record the pressure and height of the piston with increasing numbers of weights. You may click on either the stack of weights on the bench to move one up to the piston, or the stack on the piston to return one to the bench.

