Date: 

Title: Pressure of a gas (Theme 2)

Aim: To find out the relationship between Pressure and Volume of a fixed mass of gas.

Apparatus: Data logger, pressure sensor (0-700kPa), syringe (20 ml)

Method:
1. Connect the pressure sensor to the data logger.
2. Set the syringe’s plunger on the 16cm$^3$ mark.
3. Connect the syringe to the pressure sensor.
4. Switch on the data logger and set it to measure pressure.
5. Note the Pressure reading from the data logger (in kPa) and record it in a table.
6. Repeat for the following volumes 12cm$^3$, 8cm$^3$, 4cm$^3$. Record your readings in the table.

Results:

<table>
<thead>
<tr>
<th>Volume (cm$^3$)</th>
<th>Pressure (kPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Graph: Plot a graph of Pressure (kPa) on the y-axis against Volume (cm$^3$) on the x-axis.

Precautions: List any suitable precautions you have taken.

Conclusion: Answer in full in your own words. (Do not write the question.)

1. What happened to the air pressure as the volume was reduced?
2. What were you assuming about the temperature?
3. What is the relationship between pressure and volume? (Are they directly or inversely proportional?)
4. Explain what was happening in terms of collisions of air particles.
1. Launch **Multilab**.

2. Click on **Logger, Setup, Rate, Every second, OK**.

3. Click 🛠️ on the main toolbar.

4. Click 🕒 on the lower toolbar.

5. Click 🕒 to start the experiment.