

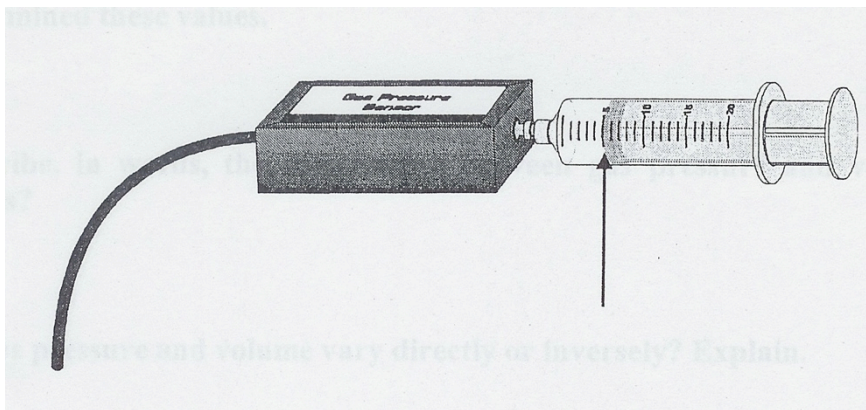
Gas Pressure and Volume

Experiment: You must use a calculator that has the **EasyData** application during the data collection phase of this experiment!

1. Prepare the **Gas Pressure Sensor** and an air sample for data collection.
 - a. Plug the **Gas Pressure Sensor** into **CH 1** of the **CBL2**, and use the **link cable** to connect one of your calculators to the **CBL2**.
 - b. Pull the syringe to the 10-mL mark and connect it to the **Gas Pressure Sensor**. Turn the syringe clockwise until it is secure.
2. Turn on the calculator and start **EasyData**. Respond to any prompts generated to get to the main screen. The **Gas Pressure Sensor** should automatically be detected and a current reading displayed.
 - a. Select the **Setup** tab.
 - b. From the menu options displayed select **1: CH1:PRESS**, then select the **Units** tab and select from the type of units you wish to measure pressure in. Now hit the **OK** tab to return to the main menu.
 - c. Again select the **Setup** tab and this time from the menu of options displayed select **3: Events with Entry**.

Check with your facilitator

3. Collect pressure and volume data.
 - a. Select the **Start** tab to begin data collection.
 - b. Move the syringe so the front edge of the inside black ring (see figure) is positioned at the 5.0-mL line on the syringe. Hold the syringe firmly in position until the pressure value stabilizes.



- c. Press the **Keep** tab and type in the **Enter Value** box displayed a **5**, the gas volume (mL). Then press the **OK** tab. The calculator will store the pressure value from the sensor and the entered volume value. The resulting data point is then displayed on a graph.

Gas Pressure and Volume

1. Collect data for the following Volumes:

Volume (mL)	Pressure (_____)
5	
7.5	
10	
12.5	
15	
17.5	
20	

- Select the **Stop** tab when you have finished collecting data.
- Select the **Main** tab return to the main screen and select the **Quit** tab to exit the **EasyData** application and analyze the data outside of the application. The calculator will tell you where your data has been stored record this and select the **OK** tab. Now link and share this data with your group members!
- Use your calculator to create a scatter plot of your data.

Processing the Data: Only use your calculator to view the lists & graph at this time!

1. Look at your lists of the data and note the gas pressure when the volume is 10.0-mL, and when the volume is 5.0-mL. What happened to the pressure when the volume was halved?
2. Look at your lists of the data and note the gas pressure when the volume is 10.0-mL, and when the volume is 20.0-mL. What happened to the pressure when the volume was doubled?
3. Estimate from your data and graph, what is the pressure when the volume is 16-mL? 8-mL? How do these values compare?

