

Gas Properties Chemistry: Gas Laws

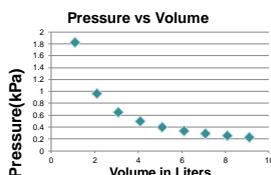
Learning Goals:

- Design experiments to measure the relationships between pressure, volume, and temperature.
- Create graphs based on predictions and observations.
- Make qualitative statements about the relationships between pressure, volume and temperature using molecular models.

Previous knowledge: Students are able to describe a molecular model of gas pressure.

By Trish Loeblein see [activity](#) for Lesson Plans and Lab

2. What variables were held constant?

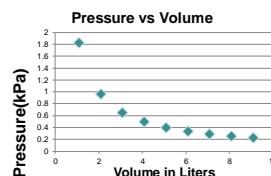


- Pressure and Volume
- Pressure, number of particles, and Volume
- Number of particles and temperature
- Volume, number of particles and temperature

4. Which explanation could be used to explain the relationship between temperature and pressure for gases?

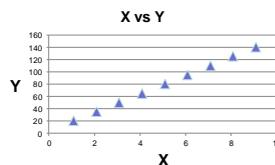
- Pressure depends on the number of collisions and if the temperature increases, the molecules increase speed, so they would hit the sides more and the pressure would go up.
- Pressure depends on the energy of collisions and if the temperature increases, the molecules increase speed, so they would hit the sides with more energy and the pressure would go up.
- Both help explain
- Neither help explain

1. What does this graph indicate?



- Pressure and Volume are indirectly related and $P_1V_1 = P_2V_2$
- Pressure and Volume are indirectly related and $\frac{P_1}{V_1} = \frac{P_2}{V_2}$
- Pressure and Volume are directly related and $P_1V_1 = P_2V_2$
- Pressure and Volume are directly related and $\frac{P_1}{V_1} = \frac{P_2}{V_2}$

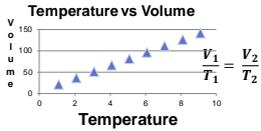
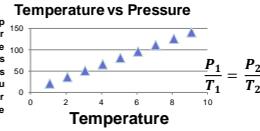
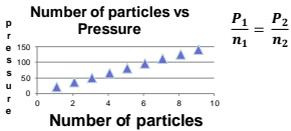
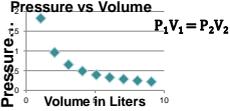
3. What does this graph indicate?



- X and Y are indirectly related and $X_1Y_1 = X_2Y_2$
- X and Y are indirectly related and $\frac{X_1}{Y_1} = \frac{X_2}{Y_2}$
- X and Y are directly related and $X_1Y_1 = X_2Y_2$
- X and Y are directly related and $\frac{X_1}{Y_1} = \frac{X_2}{Y_2}$

List the things that affect gas pressure and draw graphs and equations that shows the correct relationships.

Gas Laws with just 2 variables



Remember that the other variables must be held constant