

Investigate: Pressure and Volume of a Gas

Purpose: What effect does changing the volume of a gas have on its pressure?

Design:



Materials:



Safety:



Procedure:



Data:

For this lab you will need both the data table and your graph. The graph can be printed off of your computer from the Vernier software. Use the following data table for your data:

	Pressure (atm)	Volume (mL)	$k_1 = (P * V)$	$k_2 = (P/V)$
Trial 1				
Trial 2				
Trial 3				
Trial 4				
Trial 5				

Post Lab:

1. What is the relationship between pressure and volume in this experiment?
2. Which of the k values (k_1 or k_2) appears to remain constant in this experiment?
3. Depending on which k value remains constant, write a mathematical relationship that equates the volume and pressures in Trial 1 and Trial 2.

****This is Boyle's Law! Know it and love it!**

4. Use the Kinetic Molecular Theory to explain Boyle's Law.
5. A container of nitrogen has a volume of 3.94 L at a pressure of 2.1 atm. What would be the pressure of the nitrogen if it's volume was compressed to 2.98 L but its temperature didn't change?