

Boyle's Law Lab Simulation

Question: How do volume and pressure relate to one another and how does this relate to the function of the lungs?

Background Information (tell me about how pressure affects inhaling and exhaling in the body):

Variables:

Independent:

Dependent:

Controlled:

Hypothesis: If volume increases, then pressure _____.

Procedure:

1. Start with the volume set at 800 L. Record the pressure in atm.
2. Keeping temperature constant, move the volume down by intervals of 100 L. Record the volume and corresponding pressure.
3. Have 200 L be your last data point. Graph the data as a line graph with volume (L) on the x axis and pressure (atm) on the y axis.

Data Table:

Graph:

Conclusion (What is the relationship between pressure and volume? Do you accept or reject your hypothesis and why? Is there a formula you could use to express the relationship between pressure and volume? Look up Boyle's Law and explain how it relates to this lab and to how lungs function.):