

Read pages 143-144 in the textbook and the provided additional reading page. Use what you learn from them to answer the following questions.

1. State Boyle's Law:
2. What factor must remain constant for Boyle's Law to hold true?
3. Explain how reducing the volume of a gas increases the pressure...what is actually happening to the particles/molecules of the gas?
4. State Charles's Law:
5. If you take a full helium balloon outside on a bitter cold winter day, the balloon will "shrink" and not float as well. When you go back inside, the balloon will "reinflate" and will again float high. Use Charles's Law to explain what's happening to the particles/molecules in the balloon. (First explain what happens when you take the balloon out in the cold and then explain what is happening when you take the balloon back into the warmer indoors.)
6. Use Charles's law to explain why your basketball needs to be pumped up after leaving it outside on a cold night.
7. State the G-L Gas Law (Gay-Lussac's Gas Law:)
8. What must remain constant for the G-L Gas Law to hold true?
9. When volume remains constant, why does heating gas particles increase pressure? What is actually happening to the particles/molecules as they are heated to cause the pressure to increase?

10. Boyle's law shows an **inverse relationship**, or an **inversely proportional** relationship between pressure and volume. What does this mean?

11. Charles's Law and the G-L gas law both show **directly proportional** relationships, or **proportional** relationships, between two factors that affect gasses. What does this mean?

12. Brainstorm your own real-life example of each of the 3 gas laws:

Boyle's Law-

Charle's Law-

G-L Gas Law-