

Phases and Gas Law Lab

Name: _____

<https://phet.colorado.edu/en/simulation/gas-properties>

Gas Properties Station

The little man changes volume, the heater changes temperature, and the lid top changes pressure. (Play for a little bit to get a grasp of the controls...use the reset button before you begin.)

1. If you were to decrease volume and maintain a constant temperature...what would happen to pressure?
2. If you were to increase volume and maintain a constant temperature...what would happen to pressure?
3. If you were to increase temperature and keep volume the same...what would happen to pressure?
4. If you were to decrease temperature and keep volume the same...what would happen to pressure?
5. If you were to increase pressure and maintain a constant volume...what would happen to temperature?
6. If you were to decrease pressure and maintain a constant volume...what would happen to temperature?

Which of the questions above represents Charles Law?

Which of the questions above represents Boyles Law?

In class we put a balloon in the fridge and it shrunk from its original size. Explain what is happening in regards to temperature, pressure and volume.

On your own...

If I were to heat up a balloon in class what would it do? Explain what is happening in regards to temperature, pressure and volume.

I applaud the all of my students as ASMS. What is happening to the temperature of the air between my hands when I clap? Explain what is happening in regards to temperature, pressure and volume.

<https://phet.colorado.edu/en/simulation/states-of-matter>

Phase Changes Station

Look at argon, neon, oxygen and water in their solid states...do any of them seem different in the way that they bond? Explain all differences.

If density is mass/volume...which of the solids would be more dense if the masses were all the same?

Would solid oxygen float on liquid oxygen? Why/why not? (Hint: Density)

Would solid water float on liquid water? Why/why not? (Hint: Density)

Would liquid water float in water vapor (gas)? Why/why not? (Hint: Density)