**Predict-Observe-Explain-Elaborate: The Simple Gas Laws**

<https://phet.colorado.edu/sims/html/gas-properties/latest/gas-properties_all.html>

**Predict:** How will the pressure change when the volume of the box is cut in half?

**Observe:** Record the initial pressure in the simulation, then record the new pressure after the size of the box has been changed. Record any differences that you notice about the movement of the particles. Did they speed up? Slow down?

**Explain:** How did the pressure change? Was your prediction correct? Use the movement of particles to explain why the pressure changed.

**Elaborate:** What type of relationship do pressure and volume have when the other variables remain the same?

**Predict:** How will the volume change when the temperature is doubled?

**Observe:** Record the initial volume and the volume after the temperature is doubled. Note any differences you see in particle motion.

**Explain:** How did the volume change? Was your prediction correct? Use the movement of particles to explain why the volume changed.

**Elaborate:** What type of relationship do volume and temperature have when the other variables remain the same?

**Predict:** How will volume change when the number of particles is doubled?

**Observe:** Record the initial and final volumes. Note any differences in particle motion.

**Explain:** How did the volume change? Was your prediction correct? Explain why the volume changes when the number of particles changes.

**Elaborate:** What type of relationship do the number of particles (moles of gas) and volume have when the other variables remain the same?

**Predict:** How will the pressure change when the temperature is cut in half?

**Observe:** Record the initial and final pressures, and note any differences in particle motion.

**Explain:** How did the pressure change? Was your prediction correct? Explain why pressure changes when the temperature changes.

**Elaborate:** What type of relationship do pressure and temperature have when the other variables are held constant?