

Module 9: States of Matter and Gas Laws

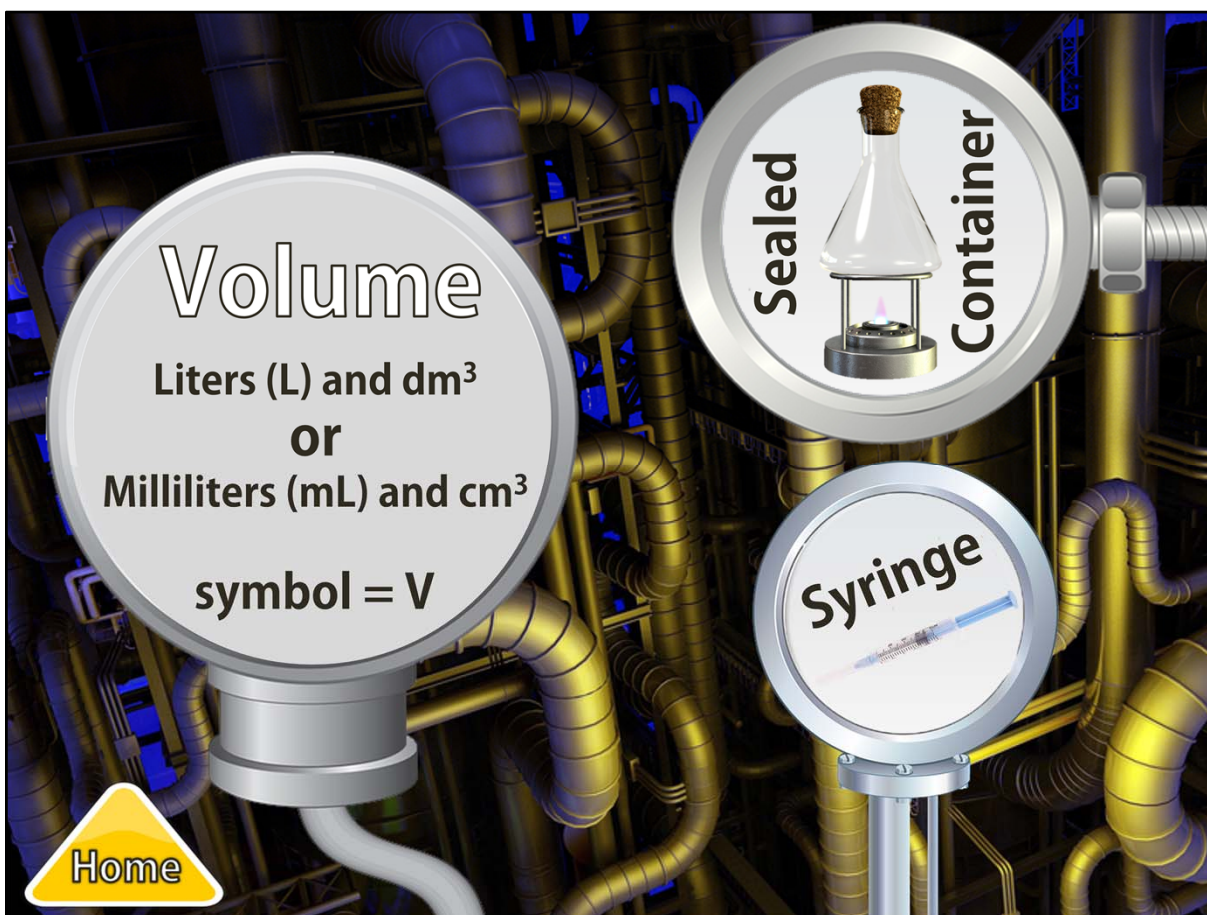
Topic 1 Content: Temperature, Pressure, Volume, and Amount of Gas Presentation Notes



Click on one of the gauges or the yellow gas to learn how pressure, volume, temperature, and amount of gas are measured. Make sure to visit all four sections.

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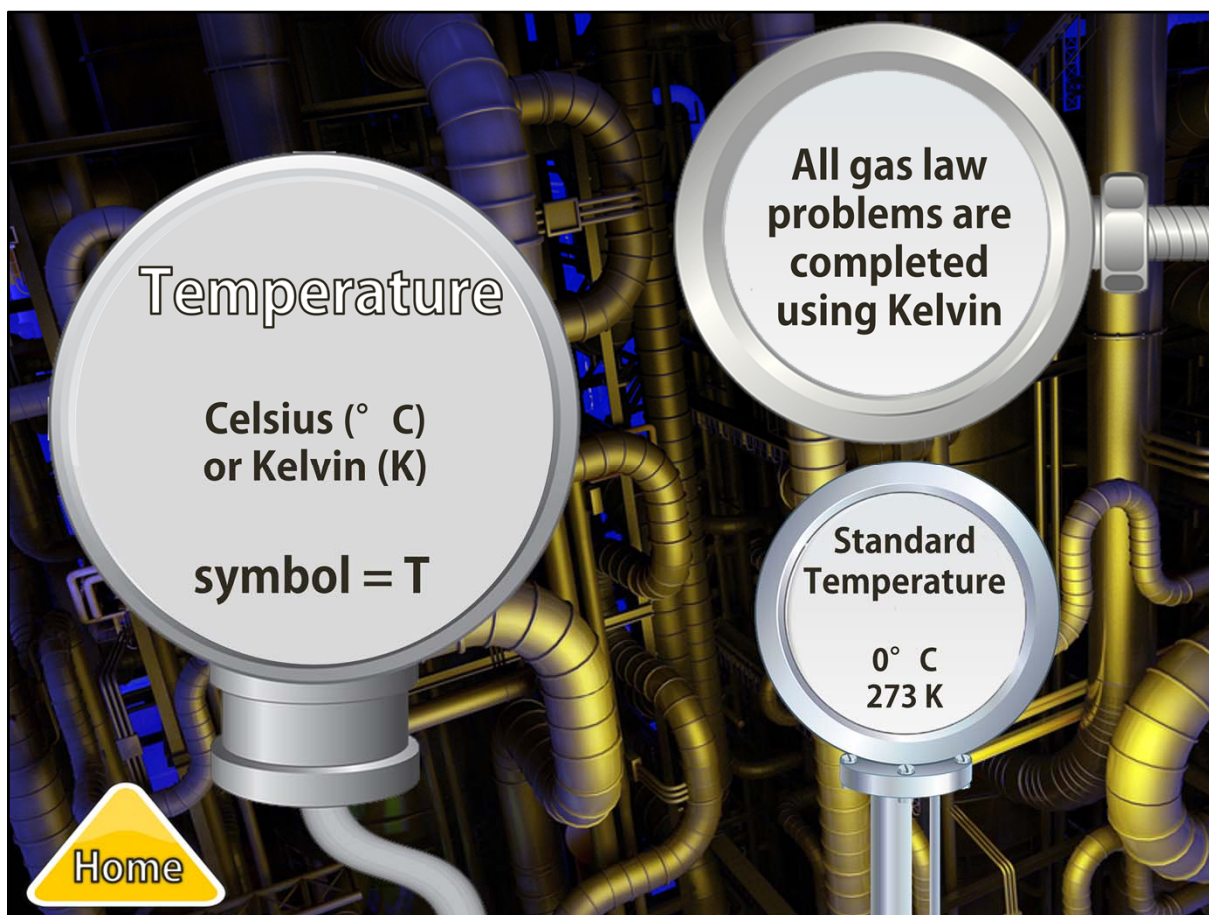
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To measure the volume of a gas, the gas needs to be enclosed in a container that is sealed. Volume in chemistry is usually measured in liters and decimeters cubed or milliliters and centimeters cubed. If volume is variable, that means the container involved in the experiment has a movable wall, like in a syringe, or the seal of a movable piston designed so that no gas escapes. If the volume is constant, then the container is made with thick, rigid walls that allow for no movement. The symbol for volume is (**V**). Click the **HOME** button to return to the menu.

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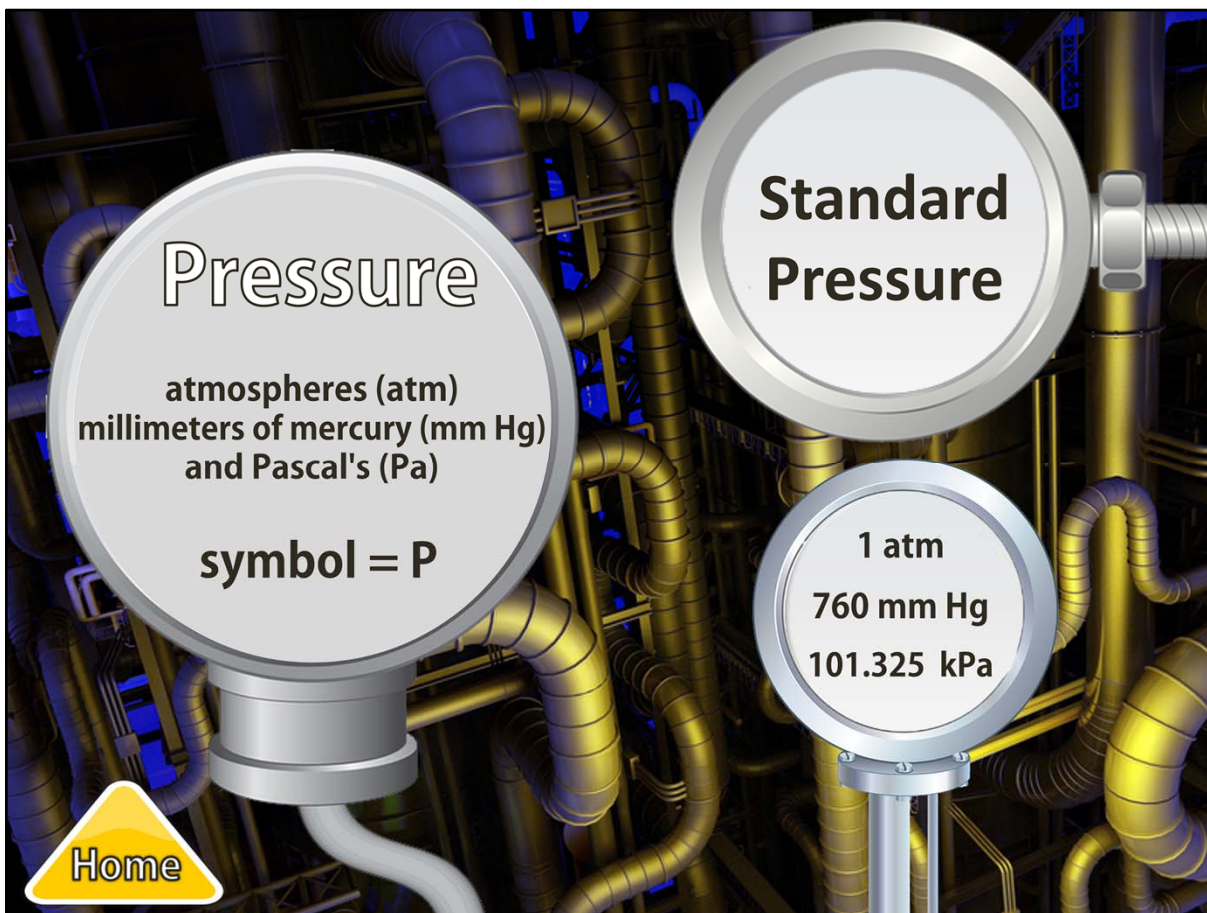
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All gases have a temperature, usually measured in degrees Celsius ($^{\circ}$ C) or Kelvin (K). All gas law problems are completed using Kelvin. Standard temperature is defined as a zero degrees Celsius or 273 K. The symbol for temperature is **T**. Click the **HOME** button to return to the menu.

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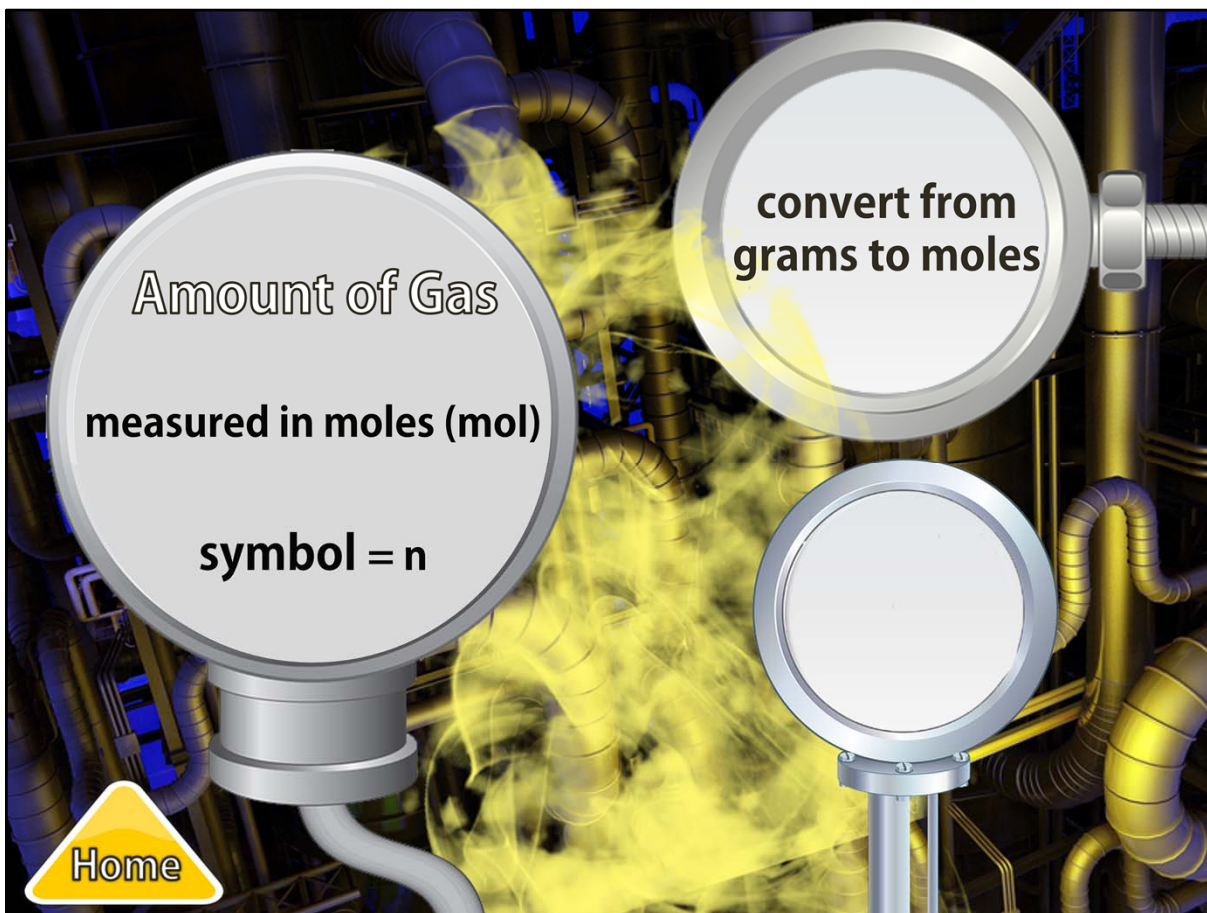
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Gas pressure is created by the molecules of gas hitting the walls of the container. There are **three different units of pressure** used in chemistry. You will use all three of the following symbols: atmospheres, abbreviated as **atm**, millimeters of mercury abbreviated as mm Hg, and Pascal's, or more commonly, kilopascals, abbreviated as kPa. Standard pressure is defined as one atm, 760.0 mm Hg, or 101.325 kPa. The symbol for temperature is P. Click the **HOME** button to return to the menu.

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The amount of gas present is measured in moles. If grams are used, you will need to convert to moles. The symbol for amount of gas is the letter **n**. Click the **HOME** button to return to the menu.