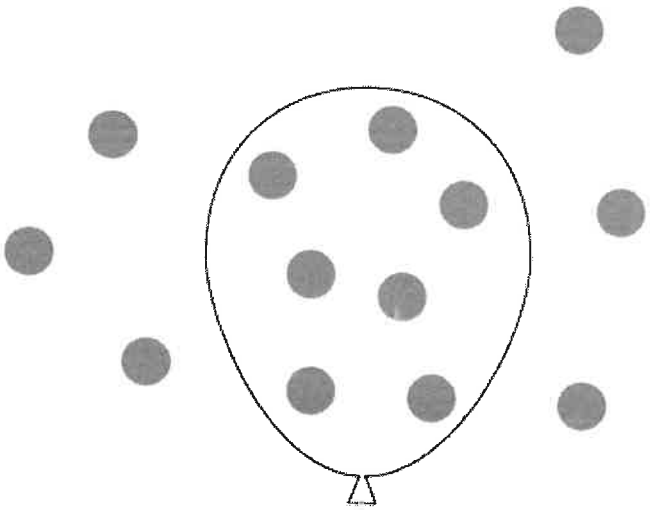
Unit 3 - Heat and Phases of Matter

Target 3: I can explain the relationship between pressure, volume and temperature of a gas.

Pressure: The force resulting from collisions of particles.

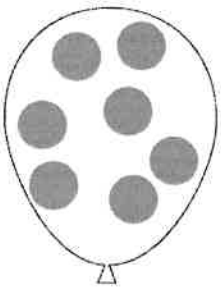


Particles in the air exert pressure on the outer surface of the balloon, while particles inside the balloon exert pressure on the inside wall of the balloon.

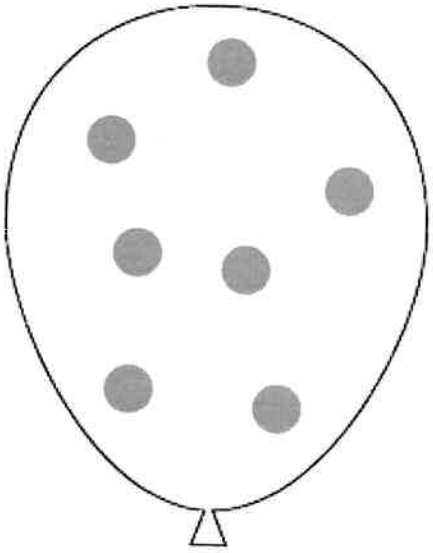
GAS LAWS

Charles's Law: As the ***temperature*** of a gas increases, the ***volume*** increases. Likewise, as the temperature of a gas decreases, the volume decreases (as long as pressure remains constant).

T ↓ V ↓



T ↑ V ↑



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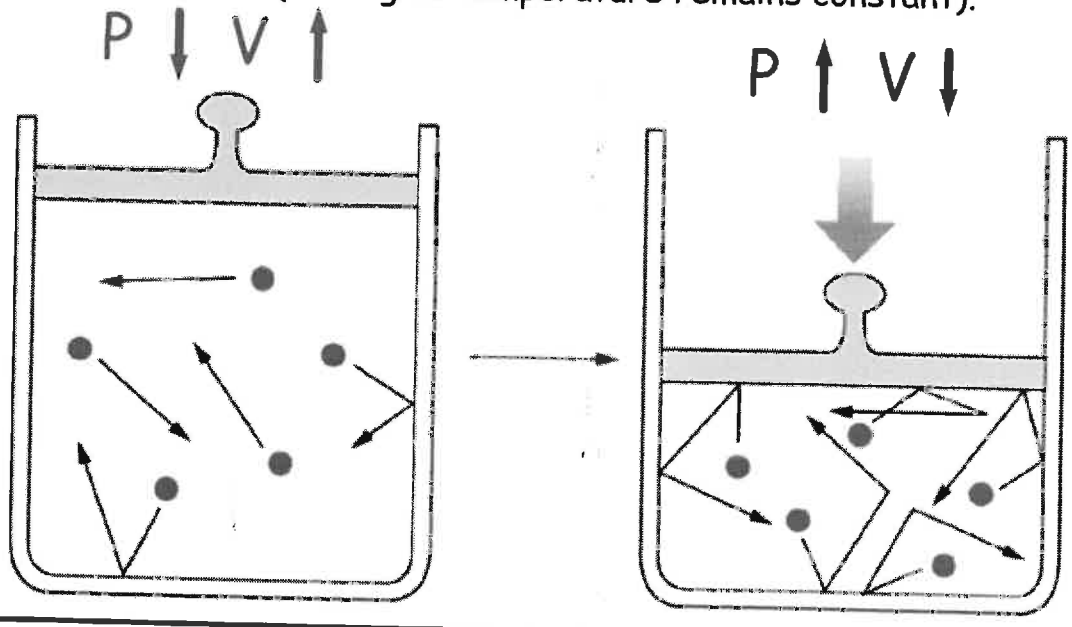
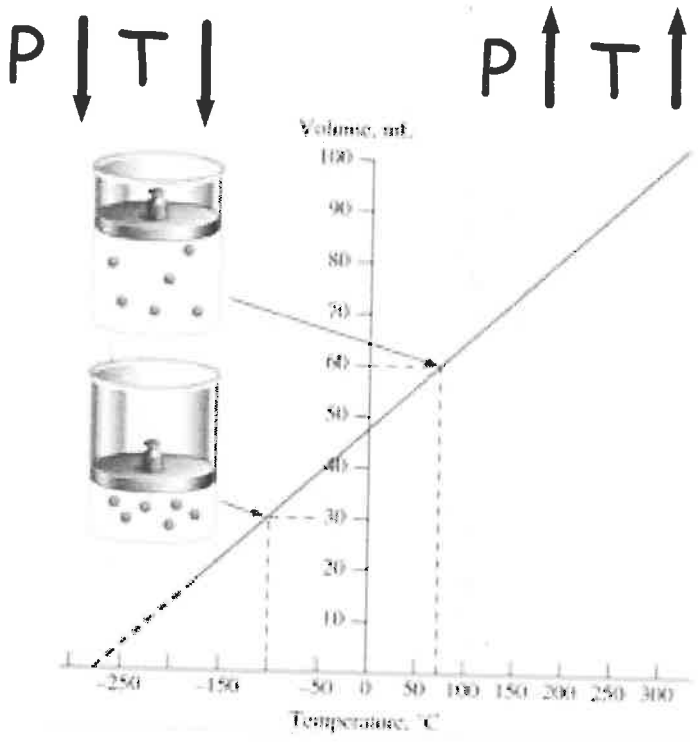
Target 3: I can explain the relationship between pressure, volume and temperature of a gas.

Boyle's Law: As the ***pressure*** of a gas increases, the ***volume*** decreases. Likewise, as the pressure of a gas decreases, the volume increases (as long as temperature remains constant).



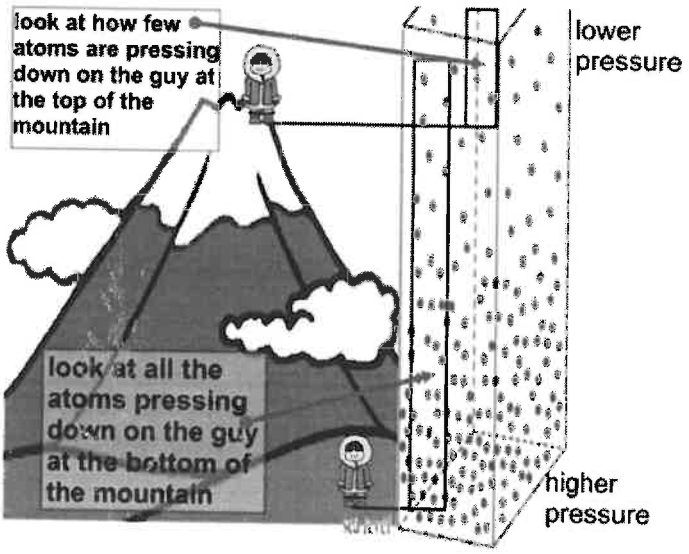
G-L Gas Law: As the pressure goes up, the temperature also goes up, and vice-versa (as long as volume remains constant).

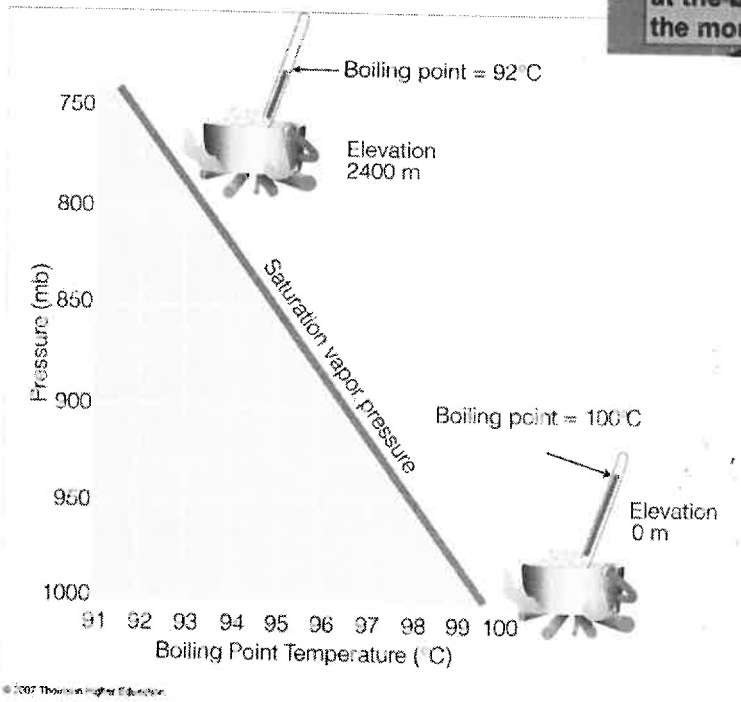


Target 3: I can explain the relationship between pressure, volume and temperature of a gas.

The effect of *pressure* on *phase changes*

When pressure increases, more thermal energy is needed for particles to change from a liquid to a gas.





When pressure decreases, less thermal energy is needed for particles to change from a liquid to a gas.