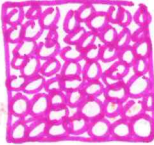




## Conduction, Convection and Radiation Review

What are the 5 statements in the Particle Theory of Matter?

1. Made up of tiny particles called atoms + molecules.
2. Every substance has unique particles that are different than in other substances.
3. Particles of matter are in constant motion.
4. Higher temperature particles move faster than at a lower temperature.
5. Particles are held together with strong attractive forces.

In the space below, draw what the particles of a solid liquid and gas look like, and then fill out the rest of the table.

Solid	Liquid	Gas
		
The shape is: <u>fixed</u> The volume is: <u>fixed</u>	The shape is: <u>the container</u> The volume is: <u>fixed</u>	The shape is: <u>the container</u> The volume is: <u>same as the container</u>
What are the particles doing? <u>-vibrate -doesn't flow</u> <u>-not easily compressible</u>	What are the particles doing? <u>-vibrates + slides past each other</u> <u>-flows</u> <u>-not easily compressible</u>	What are the particles doing? <u>-vibrates + moves at high speeds</u> <u>-flows</u> <u>-easily compressible</u>

What is thermal energy?

- The energy found in an object/system due to the movement of particles.
- Heat is the transfer of thermal energy.

What is thermal expansion? Provide an example of thermal expansion in a solid, liquid and gas.

Particles heat up, and move faster causing the space between them to expand.

Solids - sidewalk buckling from heat 

Liquids - sea levels rising

Gases - car tires increasing in size, hot air

Conduction	Convection	Radiation
<p>What is it?</p> <p>Heat transfer caused by collision of particles. No movement of material</p>	<p>What is it?</p> <p>Heat transfer caused by the flow of a fluid's particles - Constant cycle</p>	<p>What is it?</p> <p>Transmission of radiant energy in the form of electromagnetic waves.</p>
<p>What is an example of it?</p> <p>Ex: spoon becomes hot after sitting in hot coffee</p>	<p>What is an example of it?</p> <p>Ex: heating up soup, hot particles rise, cold particles sink.</p>	<p>What is an example of it?</p> <p>Ex: the heat you feel from the sun, or a candle</p>

When thinking of a lava lamp. All three forms of heat transfer are present. Please explain (in detail) how each of them are represented when a lava lamp is on and heated up.

Conduction - transfer of heat through direct contact. - metal coil in contact with glass.

Convection - lava rising in lamp and replacing the cooler lava to make a constant cycle.

Radiation - light bulb radiating heat through the glass.