

Kinetic Theory of Matter

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- What is Matter?
- What are the 3 States of Matter we have studied?

Class Discussion/Review

Review

- Matter is anything that has mass and takes up space.
- The three states of matter we studied are: Solids, Liquids, and Gases

Does Anyone Know What Kinetic Energy Is?

Class Discussion

Kinetic Energy

- **Kinetic energy – Energy of an object due to motion**
 - The faster the object moves, the higher its kinetic energy.
 - The Kinetic energy of an object is also affected by its mass**
(will revisit the relationship between mass and kinetic energy in later units)
 - ** Recall that mass is the amount of matter in an object.
- The word kinetic comes from Greek *kinētikos*, which means "of motion"

Kinetic Theory of Motion

- Kinetic Theory of Motion states that all particles of matter are in constant motion.
- There are *forces of attraction* between all particles of matter. In gases, because the particles are apart and move fast, the attraction forces are weak.

Why don't particles in a solid move as freely as particles in a gas at room temperature?

Why don't particles in a solid move as freely as particles in a gas at room temperature?

- Particles in a solid have strong attractive forces, so they can't move as much in comparison to a gas.
- The answer is **NOT** that the particles of gas have more kinetic energy than particles in liquid or solids (don't confuse an increase in ability to move in gas particles with an increase in speed of movement!).