Properties of Matter

1. Matter is anything that has mass and occupies space.

2. Three main forms of matter are

A. Solids

B. Liquids

C. Gases

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| Solids | Liquids | Gases |
| * Definite shape * Definite volume * Particles close together, fixed * Particles move very slowly | * Indefinite shape, definite volume * Take the shape of container * Particles are close together, but mobile * Particles move slowly | * Indefinite shape * Indefinite volume * Take the shape and volume of container * Particles are far apart * Particles move |

3. Properties of matter are used to identify, describe, and classify matter.

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| Physical Properties  Identify, describe and classify matter without changing the substance into something else. | Chemical Properties  Identify, describe and classify matter when substances are changed or interact with another substance to become something new. |
| Types of Physical Properties   * + *Color*   + *Malleable*   + *Density*   + *Ductile*   + *Shape*   + *Solubility*   + *Boiling Point*   + *Weight*   + *Mass* | Types of Chemical Properties  *Flammability: Able to burn –*  *Corrosive: determinate, or erode -*  *Rusting: Combining with oxygen to form rust*  *Explosive - reacts with water -* |
| Examples of Physical Changes  & Reactions   * chopping wood * bending wire * molding clay * Change state of matter form solid to a liquid, or a liquid to a gas | Examples of Chemical Changes  & Reactions   * + Bubbles of Gas   + Heat given off   + Light given off   + Smell or odor   + A precipitate is formed from the solutions. (clumpy globs) |

4. Basic kinds of matter interact to form everything around us.

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| **Elements** | **Mixtures** | **Compounds** |
| Substances that cannot be broken down into other substances chemically or physically | Combination of two or more substances that can be separated into its different parts. | Substances made of two or more elements combined chemically  Compounds have properties different from those of the original elements |
| **Examples**   * Sodium * Oxygen * Carbon * Aluminum | **Examples**   * Salad * Paper clips and thumb tacks * Sea Shells and Sand * Sweet Tea | **Examples**   * *water:*   *H*ydrogen and Oxygen   * *salt:*   Sodium and Chlorine |