Unit 2 so far....

Composition of Matter

Substance **(pure)**

1. **elements**

Example **H, C, O, N, K, Ca, Cl, Na, etc (anything on periodic table)**

2. **compounds (2+ elements chem. combined, fixed ratio)**

Example **H2O, CO2, NaCl, sugar (C6H12O6)**

Mixture **2+ substances physically combined, no set ratio**

1. ***homo*geneous (*same* throughout – can’t see different parts)**

Example **Kool-Aid, syrup, French dressing, milk**

2. ***hetero*geneous (CAN see the *different* parts)**

Example **Italian dressing, cookies and cream blizzard**

Types of mixtures **(mixture mart sheet)**

1. **solutions**

a. **solvent – does the dissolving – water *(AKA universal solvent)***

b. **solute – gets dissolved – kool aid powder and sugar**

Example **(Kool-Aid)**

2. **colloids – small particles too light to settle – light is scattered**

Example **fog**

3. **suspensions – visible particles that settle (shake to remix)**

Example **Italian dressing**

States of Matter

|  |  |  |
| --- | --- | --- |
|  | characteristics | particles |
| solid | **definite shape and volume** | **densely packed**  **vibrate –stuck in place** |
| liquid | **no definite shape**  **definite volume** | **close but can move freely**  **(reason liquid can pour)** |
| gas | **no definite shape**  **no definite volume** | **far apart** |
| plasma | **highly charged particles**  **stars and lightning** | **x** |

\*\* state of matter depends upon \_\_\_\_\_\_\_**temperature**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amorphous solids – don’t have a certain melting point, they soften as they heat up (butter)

Thermal expansion –**with exception of water, substances expand as they heat**



Describing Matter

Physical property – **can observe without changing it**

Example- **color, texture, mass, density, hardness**

Chemical property – **must change to observe**

Example- **ability to rust, ability to burn, ability to react**

Physical change – **no new substance**

Example- **phase changes, cutting, breaking**

Chemical change – **new substance with different properties**

Example- **rusting, burning, cooking, reacting with another chemical**

Law of Conservation of mass- **Mass (matter) is neither created nor destroyed in a chemical reaction**

Changes in States of Matter

Melting **S 🡪 L** Freezing **L 🡪 S**

Melting point **temperature at which a S 🡪 L**  Freezing point

**temperature at which a L 🡪 S**

Vaporization **L 🡪 G** Condensation **G 🡪 L**

Boiling point **temperature at which a L 🡪 G** Condensation point

\***evaporation vaporization at surface only temperature at which a G 🡪 L**

Sublimation **S 🡪 G**