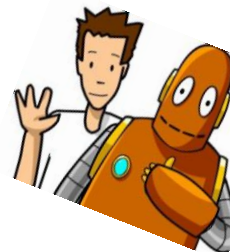


# Mixtures, Solutions, Elements, & Compounds NOTES

## I. CLASSES of Matter

- A. MIXTURES
- B. SOLUTIONS
- C. ELEMENTS
- D. COMPOUNDS



## II. Mixtures

- A. **Definition:** Matter that consists of 2 OR MORE substances mixed together but NOT chemically combined.

A COMBINATION of substances.

Ex: GRANITE, PAINT, FRUIT SALAD, ICE TEA

### B. Types of Mixtures

1. HETEROGENEOUS mixture: Substance that does **not** appear to be the same throughout. "LEAST mixed"

Ex: concrete, oil and vinegar, granite



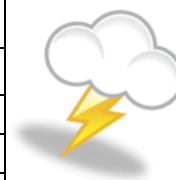
2. HOMOGENEOUS mixture: mixture that appears the same throughout. "WELL mixed"

Ex: PUDDING, MILK, SUGAR WATER, BLOOD, PERFUME

COLLOID: a type of HOMOGENEOUS mixture where particles are mixed together but NOT dissolved. Will NOT separate upon standing.



Types of Colloids	
Name	Example
Fog (liquid in a gas)	Clouds
Smoke (solid in a gas)	Smoke
Foam (gas in a liquid)	Whipped Cream
Emulsion (liquid in a liquid)	Mayonnaise
Sol (solid in a liquid)	Paint
Gel (liquid in a solid)	Butter



## III. SOLUTIONS

- A. **Definition:** a type of HOMOGENEOUS mixture formed when 1 substance DISSOLVED in another. "BEST mixed" of all mixtures.



Ex: Ocean, Antifreeze, Lemonade, Tea, Air ( $O_2$  + other gas in  $N_2$ )

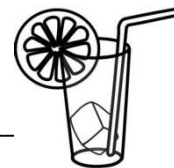
\*SOLUTE: the substance that is *dissolved*.

\*SOLVENT- the substance that does the *dissolving*.

\*\**universal solvent* = WATER



Lemonade = LEMONS + SUGAR dissolved by WATER



## B. Solubility

1. Definition: The **amount** of a SOLUTE that can be **completely dissolved** in a given amount of SOLVENT at a **specific temperature**.

\**solid solute* with *liquid solvent* →  $\uparrow$  temperature =  $\uparrow$  solubility (ex-HOT COCOA)

\**gaseous solutes* →  $\downarrow$  temperature =  $\uparrow$  solubility (ex- COLD WATER HOLDS MORE  $O_2$ )

2. SOLUBLE- can be dissolved in another substance; usually  $H_2O$

Ex: SALT & VINEGAR are soluble in  $H_2O$

3. INSOLUBLE- cannot be dissolved in another substance; usually  $H_2O$

Ex: a STONE in a glass of water.



C. ALLOY - metal solutions in which a METAL is dissolved into a METAL.

Ex: BRASS = copper + zinc

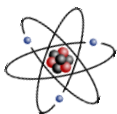
STERLING SILVER = copper + silver

GOLD JEWELRY = copper + gold

BRONZE = copper + tin



IV. ELEMENTS - the simplest type of pure substance made up of only **1** type of material with definite properties.



A. ATOMS - the \_\_\_\_\_ particle of an element; building block of elements.

B. CHEMICAL SYMBOLS are 1 or 2 letters used to abbreviate an element.

C. Some chemical symbols are not made from the English word, but from its LATIN origin.

Ex: Gold= Au = aurum

Silver= Ag = argentum

Tin= Sn = stannum

Iron= Fe = ferrum

Mercury= Hg = hydrargyrum



