Mixtures- Are a combination of 2 or more different substances.

Pure substances- Are made up of only one type of substance.

Mixtures can be further broken down into two or more categories what are they? Describe them.

Heterogeneous

* These mixtures can also be called mechanical mixtures.
* You can see the separate substances in this mixture.
* These mixtures have particles that are not uniformly scattered.

(This means that they are not arranged in any specific pattern.)

**Homogeneous**

* **These mixtures can also be called solutions.**
* **You cannot see the separate parts of this mixture. Ex. Salt water**
* **These mixtures have particles that are uniformly scattered.**

**(This means that they are arranged in specific patterns.)**

Heterogeneous mixtures can still be broken down further into 3 sub categories:

1. Ordinary mechanical mixtures:
2. Suspensions: A suspension is a heterogeneous mixture made of large particles that are uniformly mixed but will settle if left undisturbed.
3. Colloids: Colloids are heterogeneous mixtures composed of fine particles that are evenly distributed throughout a second substance.

One way to tell the difference between a solution and colloid is to shine a light through them. A solution will NOT allow the light to scatter. A colloid will scatter the light because the particles are larger than those in solution. This light-scattering property of colloids is called the Tyndall effect. Colloids also have another form called Emulsions.

Emulsions are types of colloids in which liquids are dispersed in liquids. Ex. Milk, jelly and salad dressing are all form of emulsions.

Pure Substances

* Elements are pure substances made up of one type of particle, or atom. Each element has its own distinct properties and cannot be broken down into simpler substances by means of a chemical change.

Scientific History

Robert Boyle (1627-1691) Recognized that elements could be combined to form compounds.

Antoine Lavoisier (1743-1794) was a pioneer in the field. He defined elements has pure substances that cannot be decomposed.

Definitions

* Compounds are pure substances that contain two or more elements combined together in fixed (or definite) proportions. This definition is called the “Law of Definite Composition”.
* In compounds, atoms of 2 or more different elements combine in a specific proportion.
* Atoms are the smallest particles of elements.

Atomic Theory!

* All matter is made up of tiny particles called atoms.
* Atoms of any one element are like one another and are different from atoms of another element.
* Atoms may combine with other atoms to form larger particles called molecules.
* Atoms are not created or destroyed by any ordinary means.

All Matter

(Solids, Liquids, Gases)