**Matter and its Properties**

**What is matter? Sort the following into the appropriate category**

**Matter Not Matter**

**Complete the Web by writing the terms in the appropriate box**

**Matter compounds homogeneous pure substances
mixtures atoms elements heterogeneous**

 **Has volume and mass**

 **Definite composition**

 **Composition Varies**

**118 known**

**Building blocks of Matter**

**Matter is anything that takes up \_\_\_\_\_\_\_\_\_\_\_\_and has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **-made up of smaller particles with distinct characteristics**

**Sketch and Label Diagram Explaining make up of Matter:**

**Matter can divided into two main groups

Mixtures and Pure \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Mixtures – two or more substances mixed together in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ proportions

There are two basic types of mixtures:**

* **In heterogeneous mixtures, you can see the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that make up the mixture and they can be separated (think of a salad).**
* **In a homogenous mixture, components tend to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ together and you are \_\_\_\_\_\_\_\_\_ to see the different components (think about dissolving sugar in water)**

**Sort the following into the correct type of mixture: honey, blood, assortment of dried fruit, steel, soil, medicine, chicken noodle soup, milk, oil and vinegar dressing, granola**

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**Pure Substances –a substance made up of only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with the same properties throughout.**

**Element – An element is a substance that consists entirely of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atom. An atom is the smallest amount of an element that retains the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the element.**

 **Name 2 elements**

**Compound – Is a substance composed of at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ elements chemically

combined in specific \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

 **Name 2 compounds**

**Try This: Identify substance as either a pure substance (pure) or a mixture (Mix – Hetero/Homo). If you know type of pure substance indicate this as well!**

**a. table salt b. baking soda c. copper**

**d. soup e. gasoline f. water**

**g. nitrogen gas h. whipped cream i. fluorine**

**Describing Matter – elements that make up matter have both chemical and physical properties**

* **Chemical Property-** the ability of a substance to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_with another \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_to form one or more new substances with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_properties.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and flammability are two chemical properties.

For example:

**Physical Properties – characteristics of matter that can be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. For Example: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**What are the four physical states of matter?**

**What causes substances to change Physical State?**

**What two things happen to particles in a substance when the substance changes state?**

**1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Draw a diagram of the particle appearance and behaviour in each of the four states of matter:**

**Some other physical properties of matter are density, colour, malleability, ductility, crystallinity, magnetism, solubility, conductivity, viscosity, melting/freezing point and boiling/condensing point.**

**Match these terms with the appropriate description and complete the table!**

|  |  |
| --- | --- |
| **Physical Property** | **Description** |
|  | **Appearance of reflected light** |
|  | **Ability to dissolve in water** |
|  | **Resistance to flow of a liquid** |
|  | **Temperature of melting/freezing** |
|  | **Ability to be beaten into sheets** |
|  | **Ratio of a material’s mass to its volume** |
|  | **Tendency to be attracted to a magnet** |
|  | **Ability to be drawn into wires** |
|  | **Temperature of boiling/condensing** |
|  | **Ability to conduct electricity** |
|  | **Shape or appearance of crystals** |

***Use the internet to learn about the reactivity and some physical properties of the following substances.***

***Complete the table below.***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Properties to Research*** | ***Silver*** | ***Iron*** | ***Sodium*** | ***Bromine*** |
| ***How Reactive am I?*** *(very, mildly, rarely) –Name two compounds formed with element listed.* |  |  |  |  |
| ***Are compounds easily formed with Oxygen?****Yes, No or Sometimes – Give an example!* |  |  |  |  |
| ***Electrical conductivity****Poor, Good, Excellent* |  |  |  |  |
| ***Density (units)*** |  |  |  |  |
| ***Melting point/Freezing point (°C)*** |  |  |  |  |
| ***State at room temperature (25°C)****Solid, Liquid or Gas* |  |  |  |  |