**Notes Unit 3 Matter #1**

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| What is Chemistry?  What is Matter?  What is Mass?  What is Weight?  How do we **identify** matter?  What are the properties of matter?  What is a **physical property** of matter?    What is a **physical change**?  What is a **chemical property**?  What is a **chemical change**?  What is the Law of Conservation of Matter?  What is a chemical reaction?  Notes: Unit 3 Matter #2  What are states of matter?  What is a **Solid**?  What is a **Liquid**?  What is a **Gas**?  What is **Plasma**? | The study of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and how it can change.  Anything that has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (takes up space). *Everything on Earth!*  Amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ contained in an object. (count the atoms!)  balance.jpg  The mass of something times the force of \_\_\_\_\_\_\_\_\_\_. Less gravity – weigh less!    The *moon* has less gravity than Earth – go there and you weigh less.  moon with bear.jpgEarth.jpg    EARTH MOON    *Mass* **60** Kg *(does not change)* **60** Kg  Gravity Greater Less  Weight **132** pounds *(does change!)* **23** pounds    Matter has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Properties are used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Ex. The color, shape or size of something.  Two main categories:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ properties and  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ properties      It can be observed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the chemical make-up of the substance.  Examples:  \_\_\_\_\_\_\_\_ Density (mass/volume)  Hardness \_\_\_\_\_\_\_\_\_\_\_(temperature it boils)  Odor Melting Point (temperature it melts)  Luster (Shine) Freezing Point (temperature it freezes)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Solubility(going into solution)  (solid, liquid, gas)  The substance can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, but the chemical make-up and properties are the same  Example: when you freeze water (H2O) it is still water (H2O)    Examples:   1. change in state: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   Still H2O   1. going into solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, still salt (NaCl) 2. change in size – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   A substance’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into ***something else***  Examples:  Being \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (combustion - ability to catch on fire)    Able to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ like acids or bases  The atoms of a substance rearrange to form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Example: Iron + Oxygen → Rust  Wood + Oxygen → Burning (combustion) → Carbon Dioxide + H2O  Matter is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in any process  Another name for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, showing the Law of Conservation of Mass – same number of atoms on both sides of arrow  Reactants → Products  4Fe + 3O2 → 2Fe2O3  A physical property in which the substance changes its form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Common “states” or form of matter:  Solid Liquid    Gas Plasma   |  |  |  | | --- | --- | --- | | **PROPERTIES** | **BEHAVIOR OF PARTICLES** | **DRAWING OF PARTICLES** | | Volume: | Motion: |  | | Shape: | Distance: | | Fluid? | Energy: |  |  |  |  | | --- | --- | --- | | **PROPERTIES** | **BEHAVIOR OF PARTICLES** | **DRAWING OF PARTICLES** | | Volume: | Motion: |  | | Shape: | Distance: | | Fluid? | Energy: |  |  |  |  | | --- | --- | --- | | **PROPERTIES** | **BEHAVIOR OF PARTICLES** | **DRAWING OF PARTICLES** | | Volume: | Motion: |  | | Shape: | Distance: | | Fluid? | Energy: |  |  |  |  | | --- | --- | --- | | **PROPERTIES** | **BEHAVIOR OF PARTICLES** | **DRAWING OF PARTICLES** | | Volume: | Motion: |  | | Shape: | Distance: | | Fluid? | Energy: |   ***Like a Gas, but with positive and negative charges particles***  Lightning is plasma!  **Changes in States of Matter -** |
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