**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 #2What 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.jpgThe 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 basesThe atoms of a substance rearrange to form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Example: Iron + Oxygen → Rust Wood + Oxygen → Burning (combustion) → Carbon Dioxide + H2OMatter is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in any processAnother name for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, showing the Law of Conservation of Mass – same number of atoms on both sides of arrow Reactants → Products 4Fe + 3O2 → 2Fe2O3A physical property in which the substance changes its form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Common “states” or form of matter: Solid Liquid  Gas Plasma

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| **PROPERTIES** | **BEHAVIOR OF PARTICLES** | **DRAWING OF PARTICLES** |
| Volume: | Motion: |  |
| Shape: | Distance: |
| Fluid? | Energy: |

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***Like a Gas, but with positive and negative charges particles***Lightning is plasma!**Changes in States of Matter -** |
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