**Matter And Chemistry**

*Scientific Principles Continued*

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| **Density** |
| *Density is the measure of the amount of matter in a volume or a comparison of how much matter there is in a certain amount of space.* |
| Density determines whether something will sink or float:  When an object is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the surrounding gas or liquid it sinks downward.  When an object is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the surrounding gas or liquid it floats upward. |
| **Atoms** |
| *Atoms are the smallest possible unit into which matter can be divided, while still maintaining its properties (ex. gold bar and a gold atoms have the same properties)* |

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| Made of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (center of the atom) that contains \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (+) and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(0); \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(-) surround the nucleus in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  A close up of a logo  Description automatically generated |

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| **Elements and the Periodic Table** |
| * *Elements are specific types of atoms with characteristic physical and chemical properties use to identify them and can be found on the periodic table; defined by their subatomic particles (protons, neutrons, and electrons)* * *The periodic table organizes elements with similar chemical properties in columns called families (ex. alkali metals, alkaline earth metals, transition metals, halogens, noble gases)* |
| **Mac HD:Users:maranda:Desktop:cb5718ef4d43ad715b70a5c56737a4bc.jpg**Elements arranged by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (# of protons)  **Families:**   * ***Hydrogen:*** \_\_\_\_\_\_ electron; highly \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * ***Alkali metals:*** \_\_\_\_\_\_\_\_\_\_ electron; highly reactive (especially with water) * ***Alkaline Earth metals:*** \_\_\_\_\_\_\_\_\_\_\_\_ electrons; reactive * *Screen Shot 2014-03-22 at 8.36.26 PM.png****Halogens:*** \_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_ electron; highly reactive * ***Noble gases:*** do not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ electrons; non-reactive; colorless |
| **Classification of Matter** |
| * *Compounds are made from different types of atoms bonded together, which combine with one another in various ways.* * *Molecules are made of atoms. Atoms form molecules that range in size from two to thousands of atoms bonded together and all the substances in our world are made of very few types of atoms.* * *The number, type, and arrangement of atoms in the molecules of a substance determine its properties.* |
| Image result for molecules compounds and elements"***Element:*** \_\_\_\_\_\_\_\_\_\_\_\_\_ of atom  ***Molecule:*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atoms bonded together  ***Compound:*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atoms bonded together  ***Mixture:*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,  that can be taken apart \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Chemical Reactions** |
| * *In a chemical reaction, the atoms that make up the original substance(s) are regrouped and these new substances have different properties from the original substance(s).* * *The total number of each type of atom is conserved in the reaction, and thus the mass does not change.* |
| ***Chemical Reaction:*** Process in which matter *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*, causing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to form   * + Atomic\_\_\_\_\_\_\_\_\_\_\_ are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during a chemical reaction   ***Chemical Equations:*** used to show \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and how much of each \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are needed  **Law of Conservation of Matter:**   * The mass of the reactants is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the mass of the products in a chemical reaction * coefficient-subscript.jpg\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on both sides of the equation   **Evidence of Chemical Reactions**   * + A picture containing chair, stool      Description automatically generated**F**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (formation of a gas)   + **A**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (strong change in smell)   + **R**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (atoms rearrange)   + **T**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (really cold or really hot)   + ChemRxtn1.gifnew **S**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(products are different than reactants)   + and **Fireworks** (Production of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and/or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes) |