**HW #1 – Chemical Bonding** Due:

Directions: Choose 3 of 5 options below for your homework.

Option #1 – Ionic Story Time

Write a short story of the meeting and bonding of 2 elements from the opposite sides of the Periodic Table. Describe how they encounter each other and how and why they bond. (Please keep it G-rated.)

Option #2 – Comic Strip

Choose at least 5 elements, compounds, or a combination of the two. Create cartoon characters out of their chemical symbols. Design a comic strip based on your characters and draw enough panels to describe an adventure based on your knowledge of chemistry. For example, your strip might show how the elements met and combined to form a compound. Or, how do they battle opposing forces in the natural world? Or, why are the Noble Gases all alone? The options for your cartoon are endless!

Option #3 – Molecular Models

Secure a bag of gumdrops that contains six different colors. Each gumdrop represents an atom. Assign a color to each of these elements: carbon, hydrogen, oxygen, chlorine, nitrogen, and sulfur. Using toothpicks as bonds, construct models of the following covalently bonded molecules: carbon dioxide, water, nitrogen dioxide, sulfur dioxide, and hydrochloric acid. Also, create a chart that identifies the chemical formula for each molecule and a legend that shows the colors associated with each element.

Option #4 – Chemical Rap

Identify 8 chemical compounds found in the average home. Using either their common names or their chemical formulas, create a rap naming them and explaining their importance to our lives. You will turn in your rap so make sure it is typed or written neatly in ink. (Keep it G-rated!) You will have to perform your rap for the class.

Option #5 – Type of Bond Testing (**Only done with parental permission!)**

Gather these chemicals: sugar, salt, and baking soda.

**Heat Test-** Covalent compounds have lower melting points than ionic compounds.

Turn your stove on low. In a pan, place a teaspoon each of sugar, salt, and baking soda in the pan so that they do not touch each other. Observe to see if each substance will liquefy as it is heated. Do not burn any of the substances!

|  |  |
| --- | --- |
| Salt |   |
| Sugar |   |
| Baking Soda |   |

**Solubility Test-** Both ionic and covalent compounds will dissolve in water. Only covalent compounds dissolve readily in isopropyl alcohol (rubbing alcohol).

Get 6 small glasses/cups: fill three with room temperature water from the sink and fill the other three with isopropyl (rubbing) alcohol. Place a half-teaspoon of each compound in the cups as shown below. Record your observations.

|  |  |  |
| --- | --- | --- |
|  | Compound | Observation |
| Water Cup 1 | Salt |   |
| Water Cup 2 | Sugar |   |
| Water Cup 3 | Baking Soda |   |
|  |  |  |
| Alcohol Cup 1 | Salt |   |
| Alcohol Cup 2 | Sugar |   |
| Alcohol Cup 3 | Baking Soda |   |

**After doing both the heat and the solubility tests, create a poster that shows your data and your analysis of which substance is ionic and which is covalent.**

**Parent/Guardian Permission**

I give my child, , permission to perform these tests at home.

Parent Name

Parent Signature

Date