Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

From Marshmallows to Molecules

**Objective:** Draw Marshmallow Molecules made during Marshmallow lab as Bohr and Lewis Dot Atoms. Understand types of bonds.

**Materials:** Marshmallow Molecule Lab, Notes, and pencils

**Procedure: Using the marshmallow molecules, your periodic table, and your notes, draw the molecules below as a marshmallow molecule, bohr molecule, and lewis dot molecule.**

Draw a model of the molecules formed. Be sure to label and or color

|  |  |  |
| --- | --- | --- |
| **Marshmallow Molecule**  **Ex) Water – H2O** | Image result for water bohr model**Bohr Molecule**  Image result for lewis dot water molecule | Image result for lewis dot water molecule**Lewis Dot Molecule**  Image result for water lewis structure  Image result for lewis dot water molecule |

Compare and contrast the marshmallow molecule to the Bohr and Lewis Dot Molecule: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How many electrons make a full first orbit (look at the Hydrogen atom): \_\_\_\_\_\_\_\_\_\_\_\_

How many electrons make a full second orbit (look at oxygen): \_\_\_\_\_\_\_\_\_\_\_\_\_

Do Hydrogen and Oxygen both have a full outer orbit? Why or why not? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

When Hydrogen and Oxygen bond and create a water molecule (H2O) are their outer orbits full? Why or why not?

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Complete the chart

|  |  |  |
| --- | --- | --- |
| **Marshmallow Molecule** | **Bohr Diagram** | **Lewis Dot** |
| **Hydrogen – H2 (covalent bond)** |  |  |
| **Ammonia – NH3** |  |  |
| **Carbon dioxide – CO2 (double bond)** |  |  |
| **Methane – CH4** |  |  |

**Draw the Bohr and Lewis Dot Molecules for the following.**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. H2O | Hydrogen-H2 | Nitrogen Gas-N2 | Carbon Monoxide- CO |
| 2. H2O2 | Oxygen- O2 | Ozone- O3 | Sodium Chloride -NaCl |
| 3.C12H22O11 (3 pts) | | Carbon Dioxide- CO2 | Hydrochloric Acid-HCl |
| Carbonic Acid- H2CO3 (2 pts) | |
| 4. CH2O | | Sodium Hydroxide- NaOH | |
| 5. CHNO (2 pts) | | Ammonia- NH3 | |