

Name(s): \_\_\_\_\_ Per: \_\_\_\_\_ Date: \_\_\_\_\_

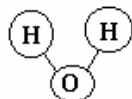
## Molecular Model Lab

In the following lab, you will construct molecules out of colored marshmallows and toothpicks. Each color represents the following elements:

Yellow-Carbon  
Pink-Oxygen

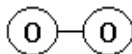
White-Hydrogen  
Orange-Nitrogen

Green-Chlorine



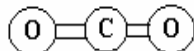
Part I. Construct a water molecule,

- A.) How many hydrogen atoms do you need? \_\_\_\_\_
- B.) How many oxygen atoms do you need? \_\_\_\_\_
- C.) Are the H-O bonds polar or nonpolar? \_\_\_\_\_



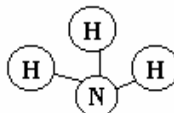
Part II. Construct an oxygen molecule,

- A.) Is this an ionic or covalent bond? \_\_\_\_\_
- B.) Is this an element or compound? \_\_\_\_\_



Part III. Construct a carbon dioxide molecule,

- A.) Is this an element or a compound? \_\_\_\_\_
- B.) Is C-O an ionic or covalent bond? \_\_\_\_\_

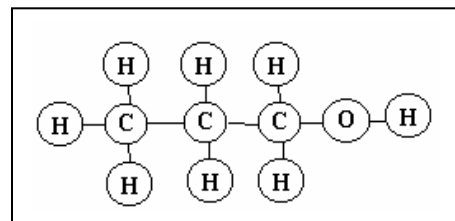


Part IV. Construct an Ammonia molecule,

- A.) If you wanted to build 4 ammonia molecules, how many white marshmallows would you need? \_\_\_\_\_ How many orange marshmallows? \_\_\_\_\_
- B.) Is the bond between N-H a covalent or ionic bond? \_\_\_\_\_

Part V. Construct a rubbing alcohol molecule:  $C_3H_7OH$

- A) Is the bond between C-H and ionic or covalent bond?
- B) Show the teacher this last model to get credit for your work



### Part VI. Conclusion:

- A) What type of bond do all these molecules have?
- B) Are the molecules made of just metals, nonmetals or a combination of both?
- C) How is this different from an ionic compound?