

Names _____

Date _____

Period _____

Lab: Building molecules

Objective: Students will synthesize molecules using marshmallows and skewers.

Prelab questions:

A. Draw the Lewis dot structures of following atoms

1. N

2. O

3. F

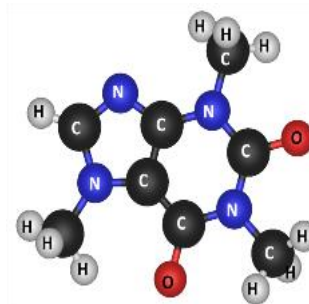
4. H

5. C

6. Cl

7. Na

8. Mg



B. What is the criteria for stability? Provide answer in complete sentence.

Lab: You will synthesize molecules by using Lewis models of atoms. For each question, use the key (below) to first create Lewis models of atoms and then bring the atoms together (while applying Octet rule) to make a molecule.

White marshmallows = represent valence electrons

Yellow marshmallows = represent hydrogen nuclei

green marshmallows = represent carbon nuclei

pink marshmallows = represent oxygen nuclei

peach marshmallows = represent nitrogen nuclei

Directions: For each question, do the following

- 1) Draw the Lewis dot diagram of given atoms
- 2) Create a Lewis model of given atoms using marshmallows and skewer. Skewers should be used to hold the valence electrons (white marshmallows) around the nucleus (colored marshmallows).
- 3) Now bring the Lewis models of atoms together by sharing electrons to create a molecule. You must satisfy criteria for stability (Octet rule) as you bring atoms together.
- 4) Draw the structures of molecules you created and determine their chemical formulas and chemical.

1. H and H

Chemical formula _____

Chemical name _____

2. O and O

Chemical formula _____

Chemical name _____

3. N and N

Chemical formula _____

Chemical name _____

4. F and F

Chemical formula _____

Chemical name _____

5. 2H and O

Chemical formula _____

Chemical name _____

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6. N and 3H

Chemical formula _____

Chemical name _____

7. C and 2O

Chemical formula _____

Chemical name _____

8. C and 4H

Chemical formula _____

Chemical name _____

9. Challenge molecule: 2C and 4H

Chemical formula _____

Chemical name _____

Lab Extension: Draw the Lewis structures of 5 molecules you created.