

GUMDROP MOLECULE LAB

Purpose: Models are often used to show how atoms bond together to form molecules. In this activity, you will build molecules using gumdrops and toothpicks. The different colored gumdrops will represent different atoms and the toothpicks will represent the bonds formed between the atoms.

Materials: gumdrops
toothpicks
3 different colored pencils

Procedure:

- Listed below are the atoms you will be using. Complete the following chart by filling in the color of gumdrop you will be using to represent that atom and the number of bonds that atom can have.

Atom	Color	# of Bonds
Carbon		
Hydrogen		
Oxygen		

- Warm up:** Use the key in Step #1 and the gumdrop kit to make the following molecules (Show your teacher after you make each one. You will need to disassemble after molecules are checked.)

- CH₄
- C₂H₆
- C₄H₁₀
- C₂H₅OH

3. Making a Glucose Model

- Consider the formula of glucose, **C₆H₁₂O₆**. Glucose is one of the building block or subunits (Monosaccharide) for carbohydrates.
- To build the ring version of glucose, construct a closed ring formed by five carbon atoms and one oxygen atom.
- Add the sixth carbon atom. It is attached to the ring carbon that is immediately to the left of the oxygen atom.
- The remaining five oxygen atoms are part of hydroxyl (OH) groups. Use the structural formula of glucose to complete the model. Make sure all carbon atoms have four bonds. You must use all your gumdrops! **Draw a diagram of your glucose** molecule with color-coded elements below. Show your teacher your model.

