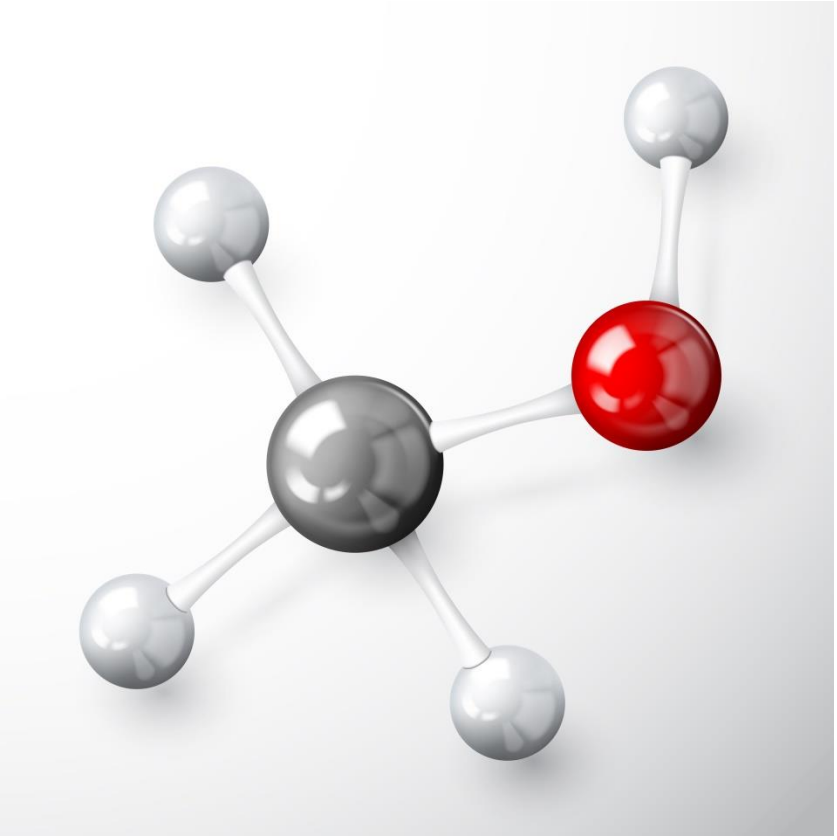
Inquiry Question
How can I use marshmallows to show what molecules look like?

Name: _____ **Date:** _____



This picture is a visual representation of a molecule of a compound called methanol. It has a chemical formula of CH_3OH. The picture shows three hydrogen atoms joined to a carbon atom as well as an oxygen atom joined to this carbon atom. There is another hydrogen atom also joined to the oxygen atom. Notice that the different colours are used to show different types of atoms. In this case, the light grey represents hydrogen atoms, the black represents carbon and the red represents oxygen. This is called a molecular model as it is a model of a molecule.

It is helpful to show models of what molecules look like in order to better visualize the many different compounds that exist. Some of the molecules that you may be more familiar with are water (H_2O), carbon dioxide (CO_2) and ammonia (NH_3).

In this project, you will make your own visual representation of molecules by using marshmallows and toothpicks.

General Instructions
The goal of this project is to gain a better understanding of what molecules look like.
Materials you'll need: • one bag of coloured mini-marshmallows (or coloured gumdrops) • toothpicks (pointed at both ends work better)
Ideas and Hints: Make your own molecules out of marshmallows by following the steps below. In this activity, each marshmallow represents an atom. Toothpicks are used to join the atoms. When atoms are joined they will form a molecule. Instructions: 1. Designate a colour for each type of atom that you'll be using in this activity: hydrogen, oxygen, carbon, and nitrogen. 2. Build a water molecule by using two different coloured marshmallows. Connect two hydrogen atoms to one oxygen atom. 3. Build a carbon dioxide molecule by joining two oxygen atoms to one carbon atom. 4. Build an ammonia molecule connecting three hydrogen atoms to one nitrogen atom. Challenge: Build two more molecules of your choice. Create a series of diagrams, photos, or videos of the techniques you used to create your molecules and of the final products. Include a legend showing which atoms the different colours represent.
Project Submission: If you can drop-in to the school, you can present your assignment to your teacher in person. Otherwise, upload it to the project submission folder at the end of the unit.