**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Homologs**

Guiding Questions: Are all hydrocarbons structured similarly? How are functional groups structured?

Pre-Lab Questions:

1. How many valence electrons does carbon have? \_\_\_\_\_ How many times does it bond? \_\_\_\_\_
2. How many valence electrons does oxygen have? \_\_\_\_\_ How many times can it bond? \_\_\_\_\_
3. How many valence electrons does hydrogen have? \_\_\_\_\_ How many times does it bond? \_\_\_\_\_

Procedure:

* **Part One: Single Bonds**

1. Make a model of CH4 using the model kit.
2. Replace one hydrogen atom with a carbon atom and add additional hydrogen atoms until every bond of each carbon atom is filled. Draw and name this molecule with reference to tables P and Q.
3. Repeat step two until you have created 5 molecules.





* **Part Two: Double Bonds**

1. Make a model of C2H4 using the model kit.
2. Replace one hydrogen atom with a carbon atom and add additional hydrogen atoms until every bond of each carbon atom is filled. Draw and name this molecule with reference to tables P and Q.
3. Repeat step two until you have created 5 molecules.



* **Part Three: Triple Bonds**

1. Make a model of C2H2 using the model kit.
2. Replace one hydrogen atom with a carbon atom and add additional hydrogen atoms until every bond of each carbon atom is filled. Draw and name this molecule with reference to tables P and Q.
3. Repeat step two until you have created 5 molecules.





* **Part Four: Functional Groups**

1. Using your model kit construct the following molecules, draw them, name them and identify their functional group (use table R).





















