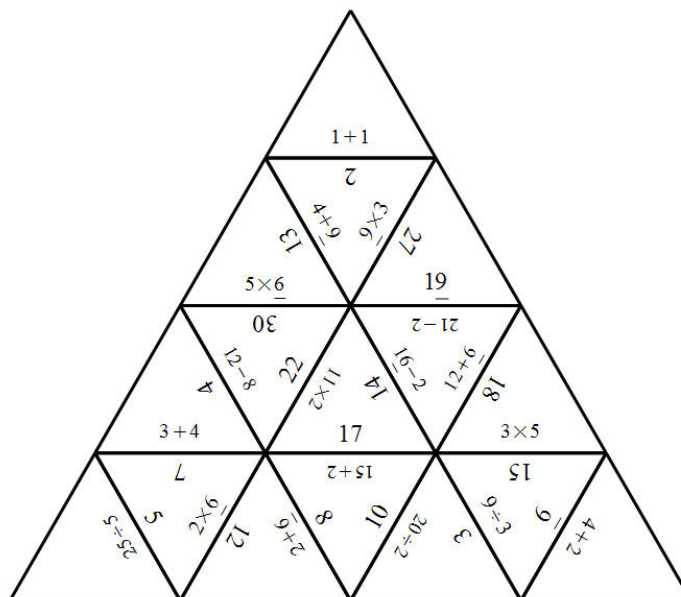


Functional Groups

Functional groups are a component of molecules that lead to a specific type of reactivity in a compound. Identifying functional groups allows us to understand the properties and predict the types of chemical reactions that a compound will have.

First, we need to learn the characteristic pattern for each functional group which you will do by solving the puzzle. You have 16 pieces with names or structures of functional groups on 1 or more edges. Arrange the pieces to form a triangle and correctly match the structure with its name. Notice in the example below that each problem is adjacent to its answer. For example, $1+1 = 2$ so the card with $1+1$ and the card with 2 are placed next to each other.



The letter R is used in molecular structures to represent the “**R**est of the molecule”. It

consists of a group of carbon and hydrogen atoms of any size. It is used as an abbreviation since a group of carbon and hydrogen atoms does not affect the functionality of the compound. In some molecules, you will see R, R', or R'' which indicates that the R groups in the molecule can be different from one another. For example, R might be $-\text{CH}_2\text{CH}_3$ while R' is $-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$.

1. Assemble your puzzle matching each structure with the corresponding name.
2. Write your names on a piece of paper to include in photo.
3. Take a photo of your completed puzzle and upload to Canvas under “Functional Groups”.
4. In your notebook,
 - a. make a list of the functional groups;
 - b. draw the structure for each one;
 - c. write a description for each one.

Example for your notebook

alkane	$\text{R}-\text{R}'$	contains only carbon-carbon single bonds
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You will be expected to describe and identify functional groups in molecules. Some questions will require you to recall the names (i.e. a list of functional groups will not be given).