

# Functional Groups

Sept 9, 2019

## Learning Targets:

10. Identify the following functional groups:  
phosphate, C-N ring, amino acid, carboxyl group, hydroxyl group  
why?

Organic molecules - molecules that contain C and  
at least 1 other element

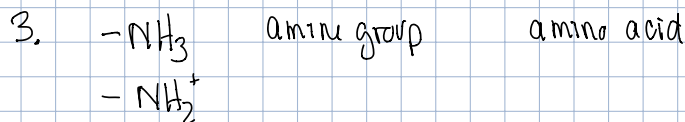
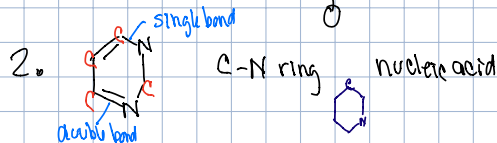
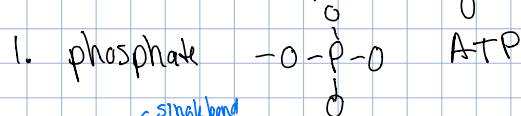
↳ usually O, H, N, P, S

Really large organic molecules are called biological molecules  
or biomolecules.

Living things are made of, or use, 5 biomolecules:

- 1) Adenosine triphosphate (ATP) used in energy transfer
- 2) Nucleic acid (DNA)
- 3) amino acids (protein - muscle, enzymes, cytoskeleton in cells)
- 4) lipid (fat, oil, wax - cell membranes) - energy
- 5) carbohydrates (sugar, starch, fiber - source of energy)

We can ID each molecule by its functional group.



4.  $\begin{array}{c} \text{O} \\ \parallel \\ \text{C} \\ | \\ \text{OH} \end{array}$  <sup>-COOH</sup> Carboxyl group lipids

5. -OH hydroxyl group carbohydrates