Chapter 02 Nomenclature Rules

1. Find the longest continuous carbon chain and make it the parent chain by counting the carbons.
    a. Circle the parent chain, and write out its name.
        i. If two different chains of equal length are possible, choose the one with the most substituents as the parent.

2. Number the parent chain to give the substituents the lowest possible set of numbers. (Use first point of difference rule)

3. Identify and number each substituent.
    a. Write the name of the substituents with the number of the carbon they are attached to, underneath the parent name.

4. Write the name as a **single** word.
    a. Use hyphens to separate substituents from numbers.
    b. Use commas to separate numbers.
    c. Use Greek prefixes (di, tri, tetra, etc.) to indicate the number when more than one substituent of the same type is present.
        i. Replace the two identical substituents names, with one name.
            1. ex: 2-methyl
               3-methyl replace with: 2,3-dimethyl
        ii. Do not use spaces.
    d. Write the substituents in alphabetical order
        i. (ignore di, tri, etc. and sec, tert, but **iso and neo count)**
        ii. Do not use spaces.

5. Naming a complex substituent:

    a. If it has an accepted common name, use it.
        i. (Ex: isopentyl, neopentyl, isobutyl, t-butyl)

    b. Otherwise, name it according to the previous rules.
        i. Find the longest chain for the parent name of the substituent.
        ii. Number that chain beginning from the closest carbon attached to the main chain, **always**.
        iii. Name and number the substituents.
        iv. Place complex substituent name in parentheses.
        v. For alphabetical purposes compare the part of the complex substituent in bold to other substituents.
            1. (Ex: 2,3-dimethyl-6-(2,2-dimethyl**propyl**)decane