Name: Date: Period:

**Organic Compounds**

*They put the “O” in Outstanding!*

**Organic Compounds** are any **CARBON** - based molecules.

The element **Carbon** is the backbone of life because it has  **4** electrons in its outermost electron shell.

**Carbon** can make **4**  covalent bonds because of its amount of electrons in its outermost electron shell.

**Hydrocarbons** are compounds composed of only **CARBON** and **HYDROGEN**

**Isomers** are compounds with the ***SAME* MOLECULAR FORMULA**, but ***DIFFERENT***  **STRUCTURAL ARRANGEMENT**.

**Formula for Hydrocarbons:**

|  |  |  |
| --- | --- | --- |
| **Type of Bonds** | **How Bonds Are Shown** | **Name Ending with Specific Bonds** |
| Single Bond |  | * ane   http://gatorchem.files.wordpress.com/2014/06/640px-butane-2d-flat.png  *Ex) Butane* |
| Double Bond |  | * ene   http://www.bbc.co.uk/schools/gcsebitesize/science/images/butene_chem_struc.gif  *Ex) Butene* |
| Triple Bond |  | * yne   http://www.ivy-rose.co.uk/Chemistry/Organic/molecules/alkynes/Butyne.gif  *Ex) Butyne* |



***HYDROCARBONS***

|  |  |  |  |
| --- | --- | --- | --- |
| **Hydrocarbon** | **Number of Carbons** | **Molecular Formula** | **Structural Formula** |
| **Methane** | 1 | **CH4** |  |
| **Ethane** | 2 | **C2H6** |  |
| **Propane** | 3 | **C3H8** |  |
| **Butane** | 4 | **C4H10** |  |
| **Pentane** | 5 | **C5H12** |  |
| **Hexane** | 6 | **C6H14** |  |
| **Heptane** | 7 |  |  |
| **Octane** | 8 |  |  |
| **Nonane** | 9 |  |  |
| **Decane** | 10 |  |  |

***Functional Groups***

The unique properties of an organic compound depend NOT ONLY on the size and shape of its **CARBON** **SKELETON** but also on the groups of **ATOMS** that are attached to the carbon skeleton.

There are **5** **functional groups** that are essential to the chemistry of life.

**Functional Groups** are polar because **OXYGEN** and

**NITROGEN** atoms exert a strong pull on the shared electrons.

|  |  |  |  |
| --- | --- | --- | --- |
| **Functional Group** | **Category** | **Structural Formula** | **Example** |
| Hydroxyl Group |  |  |  |
| Carbonyl Group |  |  |  |
| Carbonyl Group |  |  |  |
| Carboxyl Group |  |  |  |
| Amino Group |  |  |  |
| Phosphate Group |  |  |  |