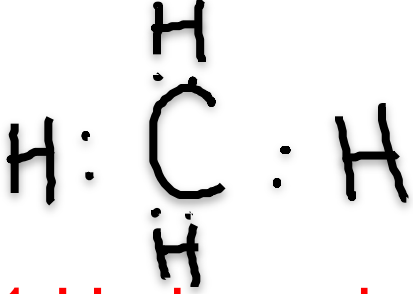
Unit 12
Class Work



NAME
5/21/14

12.1 Hydrocarbons

4+4=8

bonding e⁻

SPARK

Draw the Lewis Dot diagram for CH_4

VE = last # of electron (on fig)

All elements in group have same VE

Objective

SWBAT name and draw hydrocarbons

Organic compounds

- Contain carbon!
- (~8 million, compared to 100,000 inorganic)
- Each carbon has 4 bonds
- Carbon can make single, double, or triple bonds with itself.

C-C

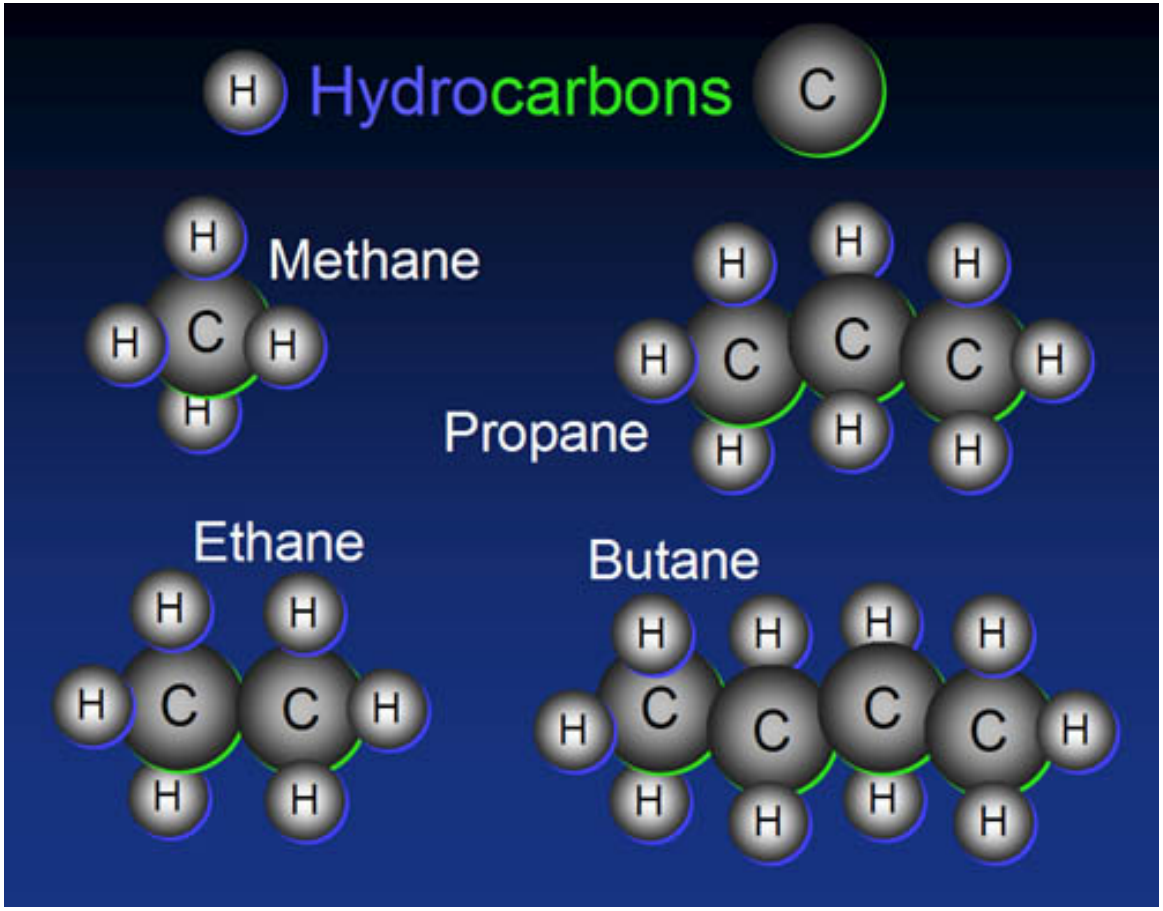
C=C

C≡C

Objective: SWBAT name and draw hydrocarbons

Hydrocarbons

- Compound containing only C and H

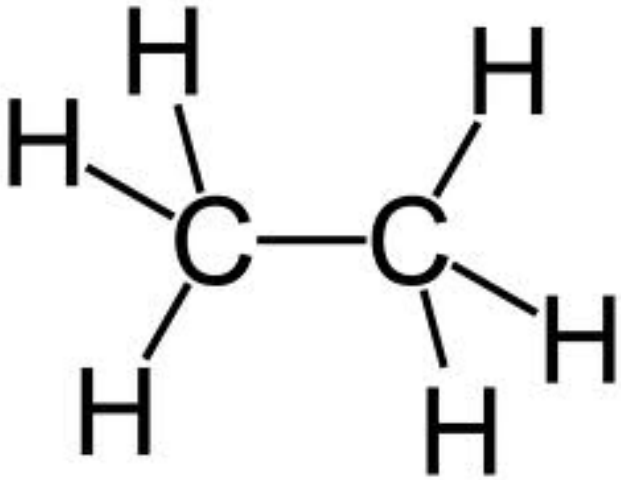


Objective: SWBAT name and draw hydrocarbons

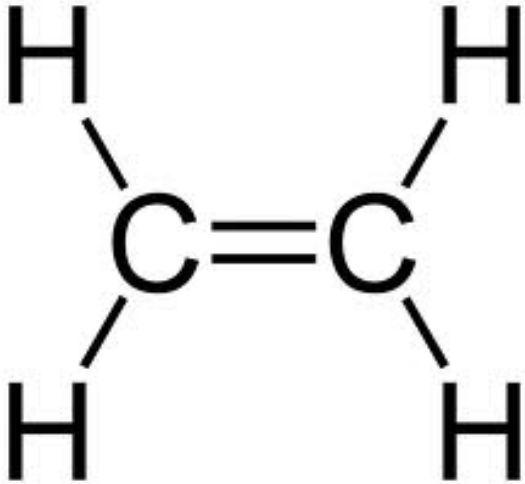
Types of Bonds

C≡C

- **<u>Saturated hydrocarbons</u>** contain only single carbon-carbon bonds.



- **<u>Unsaturated hydrocarbons</u>** contain at least one *multiple* carbon-carbon bond.



Objective: SWBAT name and draw hydrocarbons

Types of Organic Compounds

Alkanes:

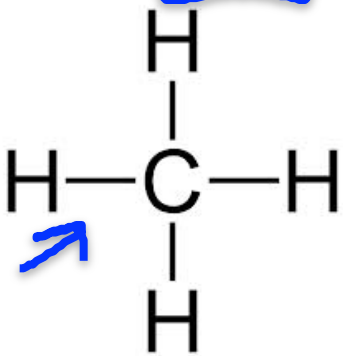
- All single bonds
- Name ends with –ane
- General formula is C_nH_{2n+2}
- Differs by CH_2 unit
- Saturated, all single bonds

$C_1H_{2(1)+2} = CH_4$

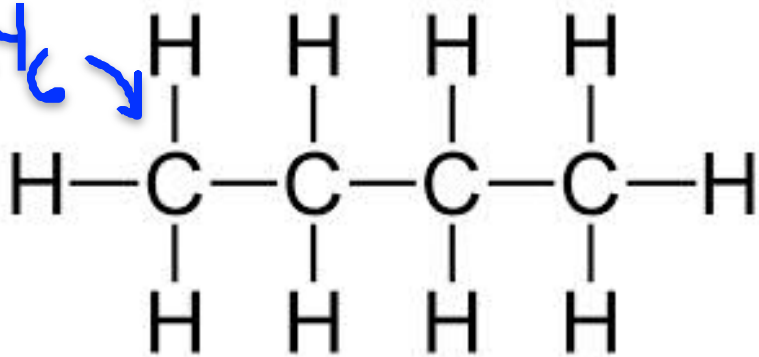
$C_2H_{2(2)+2} = C_2H_6$

- Turn to TABLE P

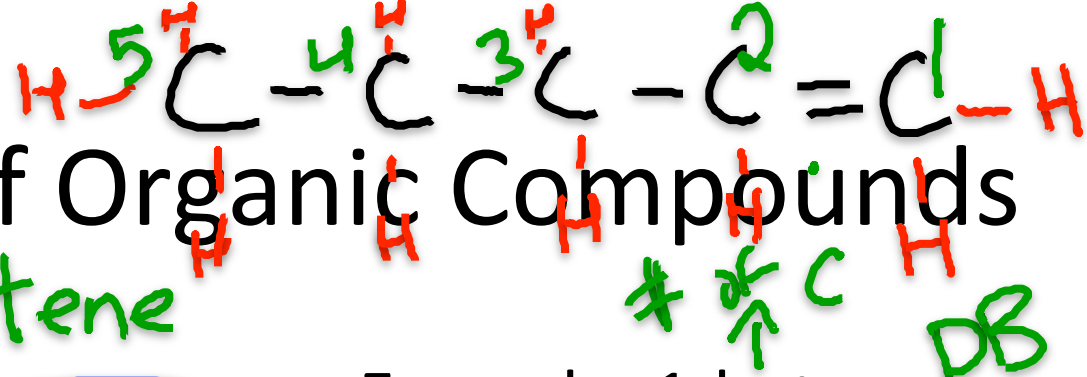
Example: Methane



Butane



Objective: SWBAT name and draw hydrocarbons



Types of Organic Compounds

1 – pentene

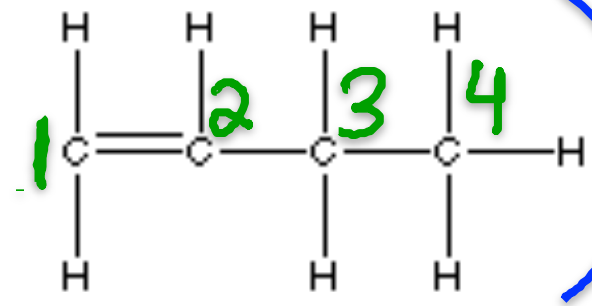
\# of C

DB

Alkenes:

- Contains a double bond
- Name ends with –ene.
- General formula is C_nH_{2n}
- Differs by CH_2 unit
- Unsaturated, contains multiple bond

Example: 1-butene



$C_4H_{2(4)} = C_4H_8$

butene

Objective: SWBAT name and draw hydrocarbons

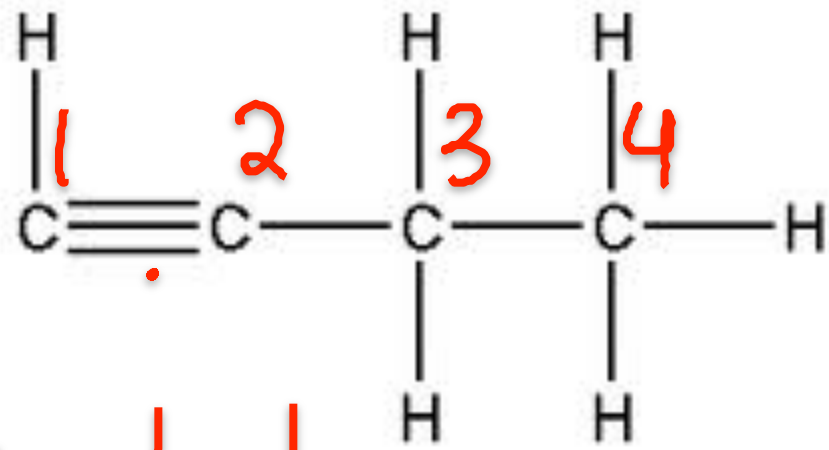
2-hexyne

Types of Organic Compounds

Alkynes:

- Contains a triple bond
- Name ends with –yne
- General formula C_nH_{2n-2}
- Differs by a CH_2 unit
- Unsaturated, contains a multiple bond

Example: 1-butyne



1-butyne

Objective: SWBAT name and draw hydrocarbons

Practice

but

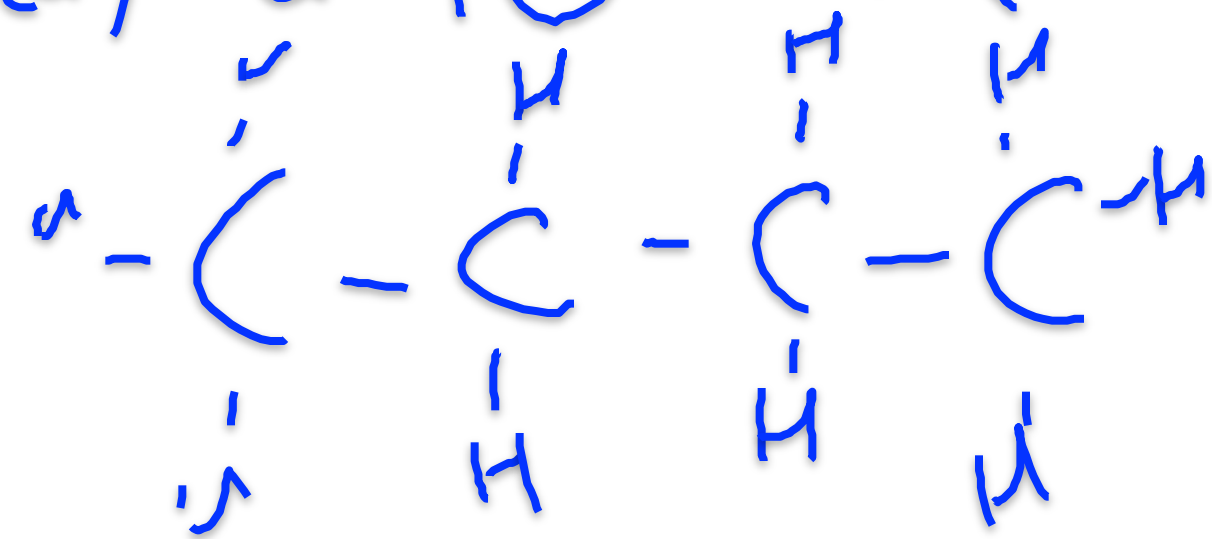
- Draw the straight chain structure for C_4H_{10}

n = 4

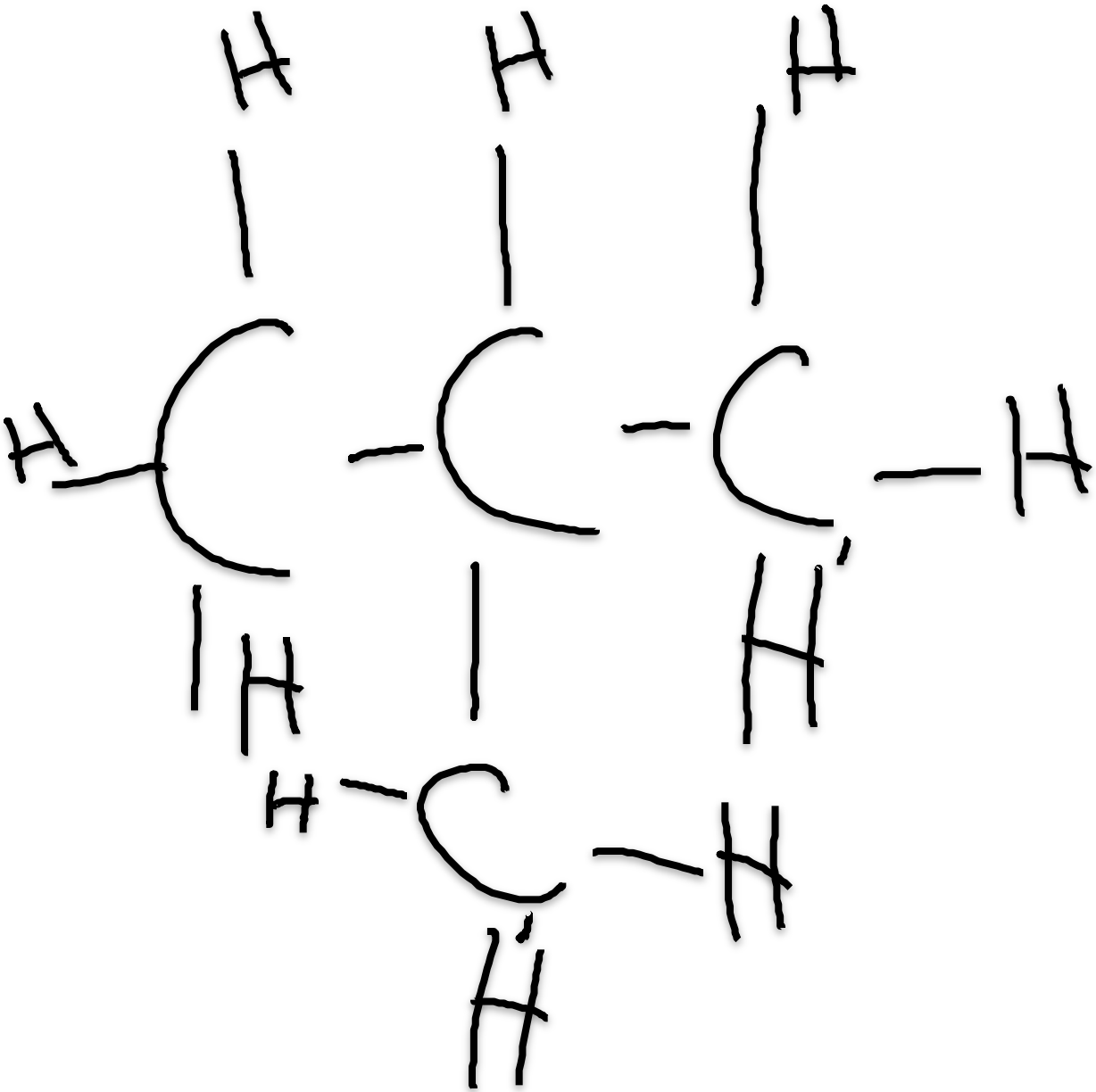
butane

4(2) + 2 = 10

alkane



Objective: SWBAT name and draw hydrocarbons

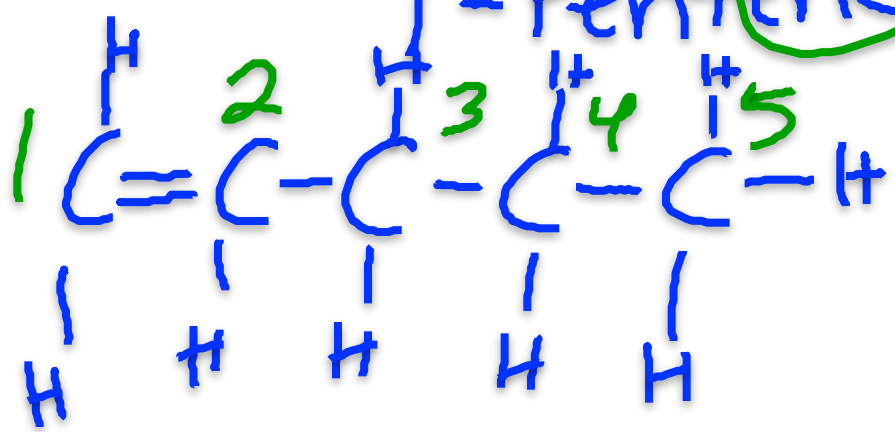


Practice

C_nH_{2n}

- Draw ~~the~~ All of the straight chain structure for C_5H_{10}, C_6H_{10}, and then name each compound.

1-Pentene



Objective: SWBAT name and draw hydrocarbons

Homework

- Complete the rest of the 12.1 HW