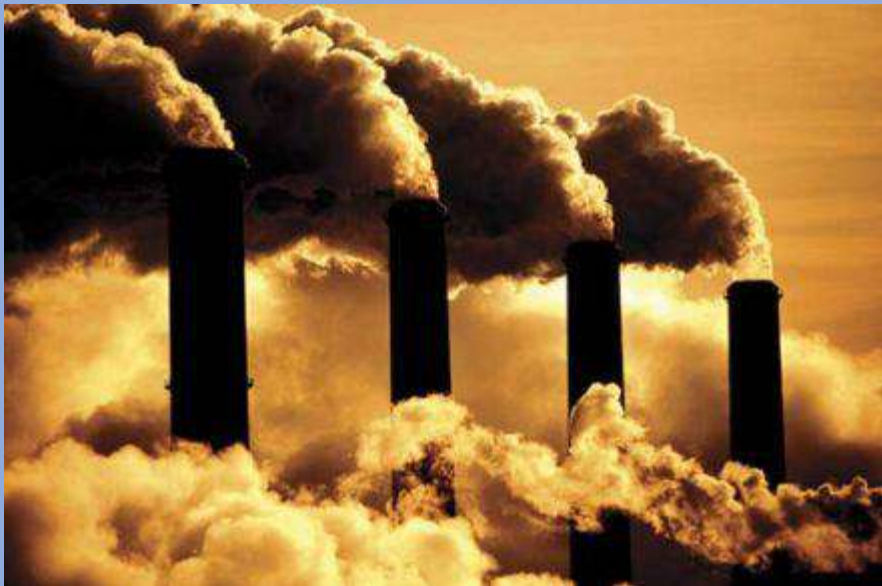


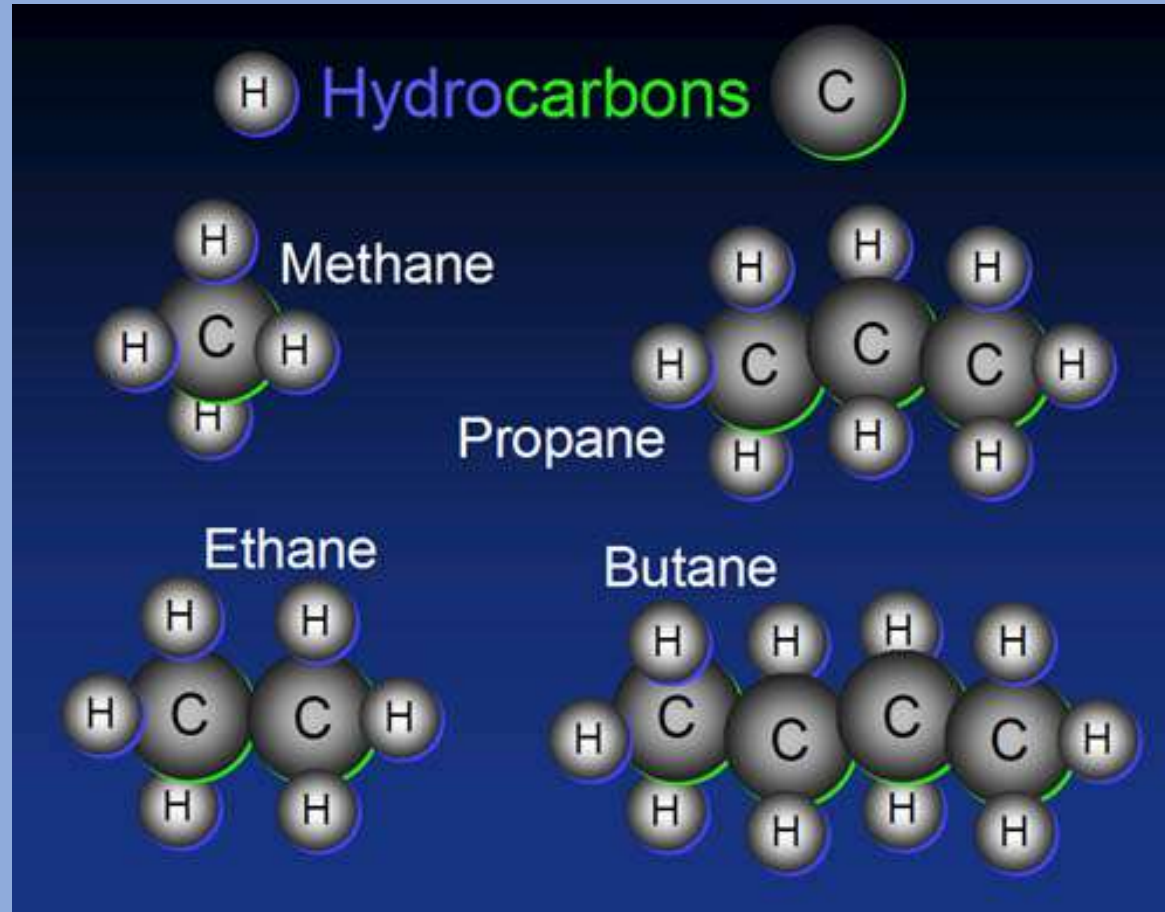
Chemistry

Hydrocarbons



Hydrocarbons

Write the Molecular Formula.

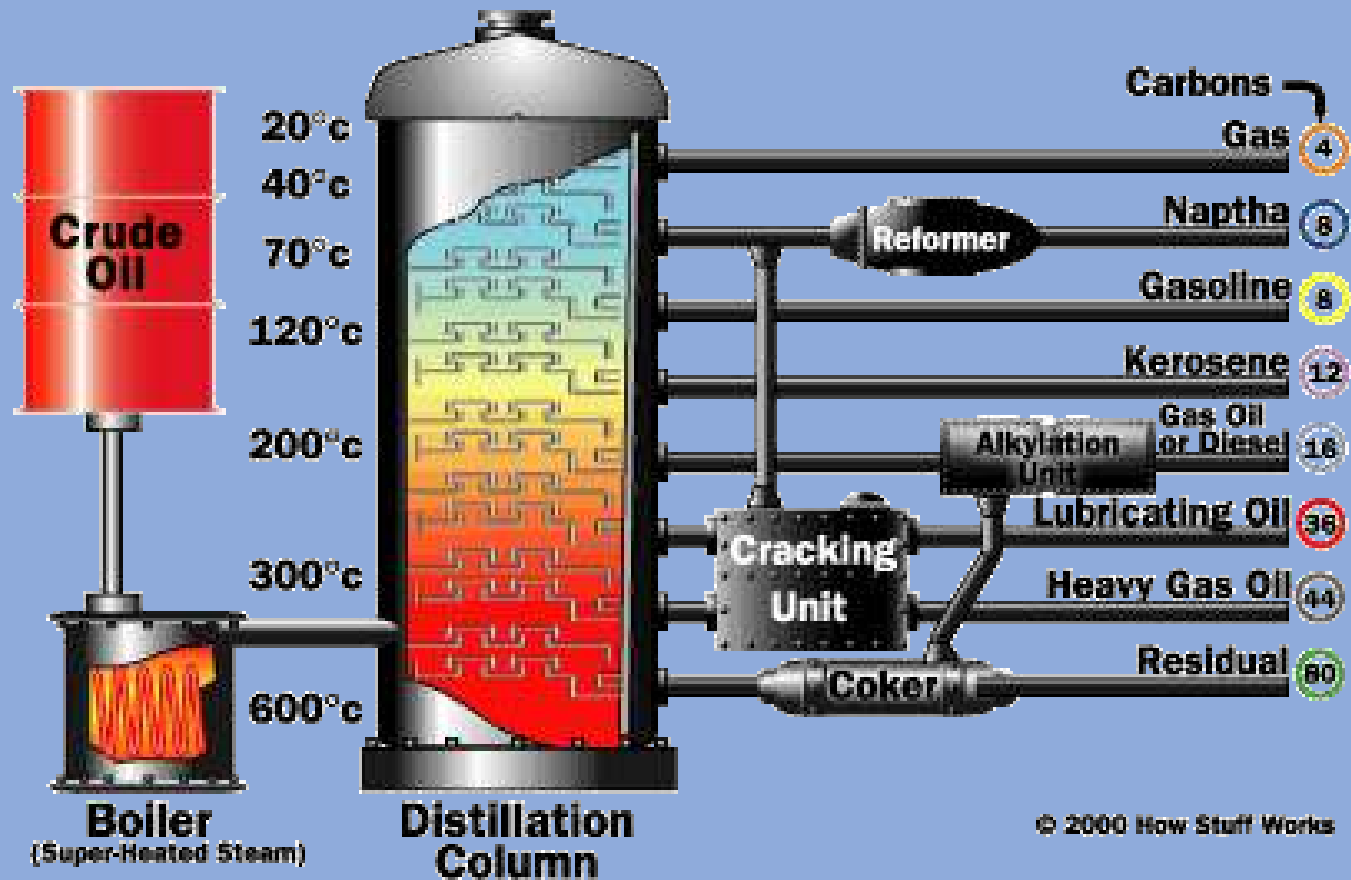


Petroleum – Crude Oil

- Coal Oil & Natural Gas are all forms of fossil fuels we use for energy.
- 500 million years ago, dead animals and plants were buried in sediment. Pressure, heat, & microbes converted the dead organisms into Fossil Fuels.
- Non renewable, only because we use it too fast, if we could just wait a few million years....?

Petroleum – Crude Oil

- We can not use it in its natural state, it has to be refined.
- In order to refine it, we must transport it, ship, rail, barrel etc.
- Refining entails separating out in to simpler mixes of fuel.



Uses of Petroleum in US

- Gasoline 89%
 - Power our vehicles and transportation systems
- Petroleum Based Products 7%
 - It is used as a raw material to make: CD's, sports equipment, clothing, automobile parts, plastic Credit Cards, carpeting, and even prescription drugs.
- Lubricants 4%
 - Road paving materials, vaseline

Petroleum Efficiency

- For every gallon of gas you pump into your car, only 20% is actually used to move your car.
 - The rest is used to move the engine parts, wasted as friction (tires on the road), lost as heat energy.
- Typical for the industry
 - 20% efficient, for every gallon of gas used to produce something, 5 gallons are burned.

Activity: Chemical Equations

Build these molecules with the atoms and bonds from the kit.

- $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O} + \text{Energy}$
- $2\text{C}_2\text{H}_6 + 7\text{O}_2 \rightarrow 4\text{CO}_2 + 6\text{H}_2\text{O} + \text{Energy}$

Activity – On line pHET

- Chemistry
 - Balancing Chemical Equations
 - Build a Molecule
 - Build an Atom
 - Molecular Shapes
 - Molecular Shapes: Basics

Current Event

- Keystone Pipeline
 - [CBS](#)
 - [FOX](#)
 - [Huffington Post](#)
 - [Fox derailment](#)
- Alaskan Pipeline

Adult Ed Project – Hydrocarbons

.5 credits

- Hydrocarbons such as Petroleum are a source of Nonrenewable Energy
- Write a 2 – 3 page paper on types of Fossil Fuels, provide possible solutions to our addiction to burning fossil fuels.
- Include in your paper why there are different viscosities of Motor oil used in cars around the world.

Works Cited

- Chemistry in the Community, p. 208 - 230, 2006, W.H. Freeman Co.
- Chemistry Matter & Change, p. 696 - 725 – 726, 2005, McGraw Hill, Glencoe