

Kirkcaldy High School



Chemistry

National 4

Unit 2 - Nature's Chemistry

TUTORIAL ANSWERS

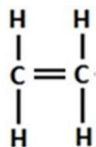
(a) Fuels

1. A fuel is any substance that has stored energy that can be released when the compound is burned
2. The combustion of fossil fuels impacts on the environment and contributes to the carbon cycle as they burn to produce carbon dioxide
3. Hydrogen is renewable, Hydrogen does not produce carbon dioxide
4. Combustion is the reaction of burning a compound in oxygen
5. Oxygen, Fuel, Heat
6. When the supply of oxygen is limited, hydrocarbons combust to produce carbon monoxide, carbon (soot) and water
7. Exothermic reactions release energy

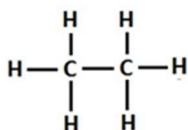
(b) Homologous Series

1. Hydrocarbons are molecules containing only hydrogen and carbon
2. Are saturated - they contain only single C-C bonds
3. Are unsaturated - they contain C=C double bonds

4.



5.



(c) Everyday Consumer Products

1. Carbohydrates are compounds which contain carbon hydrogen and oxygen.
2. Glucose turns Benedict's solution from blue to brick red
3. Starch turns iodine from brown to blue/black
4. Enzymes present in yeast can convert glucose into ethanol. This process is called fermentation.
5. Distillation is the process used for separating liquids by boiling point
6. Carbohydrates can be used for food or fuel
7. Barley is used to make beer. Apples are used to make cider. Grapes are used to make wine. Potatoes are used to make vodka.