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| **UNIT PLANNER** |
| **Subject:** | CHEMISTRY | **Year Level** | 11 |
| **Term:** | 3 /  |
| **Unit Title:**  | Simple organic chemistry and energy |
| **Assessment:** | Supervised Assessment (Stimulus Response) |
| **Key Resource:**  | Chemistry in Use 1 |
| C:\Users\mgill66\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\86X6NNDO\MC900186164[1].wmf | **Key ideas from curriculum documents*** In compounds containing carbon-hydrogen bonds (known as organic compounds), the carbon atoms bind to one another through single, double or triple covalent bonds to form chains or rings.
 |
| * All chemical reactions involve energy transformations.
* Every chemical reaction can be represented by a balanced equation, whose

 coefficients indicate both the number of reacting particles and the reacting quantities in moles. |
| * Qualitative and quantitative testing may be used to determine the composition

 or type of material. |
| **KEY REQUIREMENTS** |
| **LITERACY** • Comprehending text through listening, viewing and reading• Composing texts through speaking, writing and creating• Text knowledge• Word knowledge• Visual knowledge |
| **NUMERACY**• Calculating and estimating• Recognising and using patterns and relationships• Using fractions, decimals, percentages• Interpreting and drawing conclusions from statistical information• Using measurement |
| **ICTs** Inquiring with ICT Operating ICT |
| **CRITICAL & CREATIVE THINKING**• Inquiring - identifying, exploring and clarifying information• Generating innovative ideas and possibilities• Reflecting on thinking, actions and processes• Analysing, evaluating and synthesising information |
| **DIFFERENTIATION** |
| ***Students requiring support can…***The learning experiences within this unit can be differentiated by increasing:• the frequency of exposure for some students• the intensity of teaching by adjusting the group size• the duration needed to complete tasks and assessment.For guided and/or independent practice tasks:• student groupings will offer tasks with a range of complexities to cater for individual learning needs• rotational groupings allow for more or less scaffolding of student learning. |
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| ***Students requiring extension can…***The learning experiences within this unit can be differentiated by increasing:• the frequency of exposure for some students• the intensity of teaching by adjusting the group size• the duration needed to complete tasks and assessment.For guided and/or independent practice tasks:• student groupings will offer tasks with a range of complexities to cater for individual learning needs• rotational groupings allow for more or less scaffolding of student learning. |

Year 11 Chemistry TERM PLANNER Term 3

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| Section | **GOALS and SUCCESS CRITERIA** |
| 16 lessons | * Know how to draw electron dot diagrams for single, double and triple bonds
* Know the names of the first 10 alkanes
* Draw the structure of the first 10 alkanes (structural and condensed)
* List the chemical properties of the first 10 alkanes (boiling points, density, volatility )
* Draw and name branched chained alkanes
* Draw and name isomers of alkanes
* Justify why the boiling points of the first 10 alkanes are different
* Predict the products of chemical reactions of alkanes (combustion, substitution)

**Know the name, structure and properties of alkanes** |
| 22 lessons | * Know the terms saturated and unsaturated hydrocarbons
* Know how to name the first 10 alkenes and alkynes
* Know how to draw the first 10 alkenes and alkynes
* Know the physical properties of alkenes and alkynes (boiling points, polarity)
* Predict the products from addition reactions of alkenes

 **Know the name, structure and properties of alkenes and alkynes** |
| 32 lessons | * Know the names of the first 10 alcohols
* Know the structure of the first 10 alcohols
* Know how the physical properties of alcohols( polarity, type of IMF, solubility )

change as the alcohol molecule gets larger.* Predict the products of reactions of alcohols (combustion, dehydration, reaction with sodium)

**Know the name, structure and properties of alcohols** |
| 45 lessons | * Know the process of fermentation to produce ethanol (reactions, conditions)
* Plan and perform fermentation of grape juice with varying sugar levels
* Perform distillation of fermentation experiment
* Know how the body metabolises alcohol
* Define a standard drink with regards to alcohol (beer, wine, spirits)
* Describe the effect of alcohol on the body ( brain, heart, liver, foetus)

 **Know how alcohols are produced and their effect on the body** |
| 56 lessons | * Know the terms exothermic and endothermic (energy diagrams, heat gain/loss)
* Define the term “change in enthalpy” and know when it has positive/negative values
* Can perform calculations to determine change in enthalpy using stoichiometry
* Can experimentally determine change in enthalpy for a given reaction
* Can calculate change in enthalpy using Hess’s Law data
* Can calculate change in enthalpy using bond energy data
* Justify the level of accuracy in calculating change in enthalpy by the three methods ( experimentally, Hess’s law, bond energy)

 **Understand enthalpy and the three main ways it can be calculated** |
| 63 lessons | * Know the term “molar heat of combustion” and compare these values for different fuels
* Can calculate amount of energy produced by combusting common fuels
* Justify what the best fuel is in terms of energy produced, environmental impact, availability etc

 **Compare the combustion of common organic fuels.** |
| **Key Words** |
| Hydrocarbon | Alkane | Alkene | Alkyne | Isomers |
| Combustion | Substitution | Dehydration | Solubility | Alcohol |
| Fermentation | Solubility | Exothermic | Endothermic | Enthalpy |
| Bond energy | Calorimetry | Hess’s law | Stoichiometry | Compare |
| Justify | Saturated | Unsaturated |  |  |