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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** | | | | |
| 1  6 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** | | | | |
| 2  2 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** | | | | |
| 3  2 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** | | | | |
| 4  5 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** | | | | |
| 5  6 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** | | | | |
| 6  3 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 |  |  | |