

**Yan Oi Tong Tin Ka Ping Secondary School**  
**NSS2 Chemistry Teaching Schedule**

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**NSS2**

Topic	Number of lessons	Cycle(s)
<u>Chemical Reactions and Energy [Chapters 35 – 37]</u> ♦ Endothermic and exothermic reactions ♦ Standard enthalpy changes of combustion, neutralization, solution and formation ♦ Hess's law	10	2 – 3
<u>Rate of Reaction [Chapters 38 – 39]</u> ♦ Instantaneous and average rates ♦ Factors affecting rate of reaction ♦ Methods to follow the progress of a chemical reaction	10	4 – 5
<u>Instrumental Analytical Chemistry [Chapter 66]</u> ♦ Colorimetry		
<u>Mole Concept (III) [Chapter 40]</u> ♦ Molar volume of gas	5	6
<u>Rate of Reaction [Chapters 53 – 55]</u> ♦ Rate equation ♦ Activation energy	10	7 – 8
<u>Rate of Reaction [Chapters 53 – 55]</u> ♦ Energy profile ♦ Arrhenius equation ♦ Catalysis	10	9 – 10
<u>Chemical Equilibrium [Chapters 41 – 43]</u> ♦ Reversible reactions and dynamic equilibrium ♦ Factors affecting chemical equilibria ♦ Equilibrium constants	15	11 – 13
First Examination		

Topic	Number of lessons	Cycle(s)
<u>Industrial Processes [Chapters 52 and 56]</u> <ul style="list-style-type: none"> <li>◆ Importance of industrial processes</li> <li>◆ Production of fertilizers</li> <li>◆ Social, economic and environmental considerations of industrial processes</li> </ul>	10	14 – 15
<u>Chemical Cells [Chapters 32 and 34]</u> <ul style="list-style-type: none"> <li>◆ Zinc-carbon cell</li> <li>◆ Fuel cell</li> <li>◆ Lead-acid accumulator</li> <li>◆ Rechargeable lithium cell</li> </ul>	25	15 – 19
<u>Electrolysis [Chapter 33]</u> <ul style="list-style-type: none"> <li>◆ Anodic and cathodic reactions</li> <li>◆ Preferential discharge of ions</li> <li>◆ Electroplating and purification of impure copper</li> </ul>		
<u>Industrial Processes [Chapter 56]</u> <ul style="list-style-type: none"> <li>◆ Chloroalkali industry</li> </ul>		
<u>Fossil Fuels and Carbon Compounds [Chapter 20]</u> <ul style="list-style-type: none"> <li>◆ Fossil fuels</li> <li>◆ Fractional distillation of crude oil</li> <li>◆ Petroleum fractions and their uses</li> </ul>	10	20 – 21
<u>Microscopic World II [Chapter 27]</u> <ul style="list-style-type: none"> <li>◆ Intermolecular forces – van der Waals' forces</li> </ul>		
<u>Fossil Fuels and Carbon Compounds [Chapters 20, 22 and 23]</u> <ul style="list-style-type: none"> <li>◆ Hydrocarbons</li> <li>◆ Homologous series and naming of carbon compounds</li> <li>◆ Alkanes and alkenes</li> <li>◆ Cracking</li> <li>◆ Reactions of alkanes and alkenes</li> <li>◆ Consequences of using fossil fuels</li> </ul>	20	22 – 25
Yearly Examination		

Topic	Number of lessons	Cycle(s)
<u>Chemistry of Carbon Compounds [Chapters 46 – 47]</u> <ul style="list-style-type: none"><li>◆ Typical reactions of various functional groups</li><li>◆ Inter-conversion of carbon compounds</li></ul>	25	Summer break
<u>Separation and Purification Methods [Chapter 64]</u> <ul style="list-style-type: none"><li>◆ Crystallization</li><li>◆ Distillation and fractional distillation</li><li>◆ Liquid-liquid extraction</li><li>◆ Paper, column or thin-layer chromatography</li><li>◆ Test for purity</li></ul>		

NSS3

Topic	Number of lessons	Cycle(s)
<u>Chemistry of Carbon Compounds [Chapters 46 – 47]</u> <ul style="list-style-type: none"> <li>◆ Physical properties of organic compounds</li> <li>◆ Typical reactions of various functional groups</li> <li>◆ Inter-conversion of carbon compounds</li> </ul>	20	1 – 4
<u>Separation and Purification Methods [Chapter 64]</u> <ul style="list-style-type: none"> <li>◆ Crystallization</li> <li>◆ Distillation and fractional distillation</li> <li>◆ Liquid-liquid extraction</li> <li>◆ Paper, column or thin-layer chromatography</li> <li>◆ Test for purity</li> </ul>		
<u>Instrumental Analytical Chemistry [Chapter 66]</u> <ul style="list-style-type: none"> <li>◆ Mass spectrometry</li> <li>◆ Infra-red spectroscopy</li> </ul>		
<u>Fossil Fuels and Carbon Compounds [Chapter 24]</u> <ul style="list-style-type: none"> <li>◆ Addition polymer</li> </ul>		
<u>Chemistry of Carbon Compounds [Chapter 45]</u> <ul style="list-style-type: none"> <li>◆ Isomerism</li> </ul>		
<u>Industrial Processes [Chapter 56]</u> <ul style="list-style-type: none"> <li>◆ Manufacture of vitamin C</li> <li>◆ Production of methanol</li> </ul>	20	5 – 8
<u>Chemistry of Carbon Compounds [Chapters 24 and 48]</u> <ul style="list-style-type: none"> <li>◆ Aspirin</li> <li>◆ Detergents</li> <li>◆ Addition polymers</li> <li>◆ Condensation polymers – nylon and polyesters</li> <li>◆ Carbohydrates, lipids and proteins</li> </ul>		
<u>Green Chemistry [Chapter 57]</u> <ul style="list-style-type: none"> <li>◆ Principles of green chemistry</li> <li>◆ Practices of green chemistry</li> </ul>		
<u>Microscopic World II [Chapters 25, 26 and 27]</u> <ul style="list-style-type: none"> <li>◆ Shape of simple molecules</li> <li>◆ Dipole moments</li> <li>◆ Intermolecular forces – hydrogen bonding</li> </ul>		

Topic	Number of lessons	Cycle(s)
<u>Qualitative Analysis of Analytical Chemistry [Chapter 63]</u> ♦ Chemical tests for molecules, cations, anions and functional groups	5	10
<u>Quantitative Analysis of Analytical Chemistry [Chapter 65]</u> ♦ Gravimetric analysis	5	11
<u>Importance of Chemistry in the Modern Way of Living [Chapters 34 and 67]</u> ♦ Redox reactions ♦ Analytical chemistry	5	12
Mock Examination		
Revision		