

Wah Yan College Kowloon
S.3 Chemistry Scheme of Work (2017-2018)

Textbook	1. New 21st Century Chemistry 1A Planet Earth (Compulsory Part) (2nd Edition) (WY) 2. New 21st Century Chemistry 1B Topic 2 Microscopic World I (Compulsory Part) (2nd Edition) (WY)
Other Resources	

◆ **Repertoire of Self-directed Learning Skills:** reading to learn, notes-taking, looking up words in the dictionary, pre-lesson preparation, group discussion, group presentation, initiative to ask questions, setting learning objectives and doing reflection, eLearning platform with instant feedback, flipped classroom, peer assessment, searching for information on the internet, project learning, training of higher-order thinking skills

School Term	Weeks/ Dates	Topics/ Extended Parts*	Learning Objectives/ Teaching Focus	Teaching and Learning Activities	Self-directed Learning Skills*	Values#/ Basic Law Education	Consolidation and Assessment
First Term (1/9/2017- 2/1/2018)		Topic 1 Planet Earth					
		Unit 1 Introducing Chemistry					
	1	1.1 What is chemistry?	◆ Introducing chemistry	◆ PowerPoint	◆ Notes-taking	I,II,III	
	1	1.2 Why study chemistry?	◆ Roles chemistry plays in our lives	◆ PowerPoint ◆ Discussion ◆ Video	◆ Notes-taking ◆ Pre-lesson preparation	I,II	
	1	1.3 Laboratory safety	◆ Laboratory safety rules	◆ PowerPoint ◆ Website	◆ Initiative to ask questions	II	◆ Practice 1.1
	1	1.4 Hazard warning labels	◆ Common hazard warning labels for chemicals ◆ The hazardous nature of household chemicals	◆ PowerPoint ◆ Website	◆ Notes-taking	II	◆ Worksheet - Find & Share — Safety precautions for handling

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							household products
	1	1.5 Common apparatus in the laboratory	<ul style="list-style-type: none"> ◆ Common apparatus ◆ Microscale apparatus 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Activity 1.1 — Introduction to practical work 	<ul style="list-style-type: none"> ◆ Notes-taking 	II	◆ Practice 1.2
		Unit 2 The atmosphere					
	2	2.1 The Earth	<ul style="list-style-type: none"> ◆ The Earth's crust, the ocean and the atmosphere as major sources of chemicals ◆ List of useful resources from the Earth 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Notes-taking ◆ Flipped classroom 	I,II	
	2	2.2 Classification of matter: pure substances and mixtures	<ul style="list-style-type: none"> ◆ Definitions ◆ Some everyday mixtures 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Discussion 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	I,II	◆ Practice 2.1
	2	2.3 Element and compounds	<ul style="list-style-type: none"> ◆ Definitions ◆ Constituent elements of some common 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Animation ◆ Website 	<ul style="list-style-type: none"> ◆ Notes-taking ◆ Pre-lesson preparation 	I,II	◆ Practice 2.2

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			compounds				
	2	2.4 Differences between a mixture and a compound	<ul style="list-style-type: none"> ◆ Differences between the properties of an iron- sulphur mixture and iron(II) sulphide ◆ Main differences between a mixture and a compound 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Video ◆ Activity 2.1 — Investigating the reaction between iron and sulphur 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,II	
	2	2.5 The atmosphere	<ul style="list-style-type: none"> ◆ Composition of gases in the air (percentage by volume) 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Notes-taking 	IV	
	2	2.6 Separation of mixture	<ul style="list-style-type: none"> ◆ Name of common techniques for separating components of mixtures 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Notes-taking ◆ Flipped classroom 	I,II	
	3	2.7 Separating oxygen and nitrogen from the air	<ul style="list-style-type: none"> ◆ Main stages in fractional distillation of liquid air 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Website 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	I,II	
	3	2.8 The particle theory of matter	<ul style="list-style-type: none"> ◆ Dissolving crystal in water ◆ Spreading of 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Notes-taking 	I	

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			bromine vapour				
	3	2.9 Physical and chemical changes	<ul style="list-style-type: none"> ◆ Definitions ◆ Changing the state of water ◆ Sublimation ◆ Words used to describe the changes of states of a substance 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Discussion ◆ Video ◆ Game 	<ul style="list-style-type: none"> ◆ Notes-taking ◆ Pre-lesson preparation 	I,II	
	3	2.10 Physical and chemical properties	<ul style="list-style-type: none"> ◆ Definitions ◆ Examples 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Searching for information on the internet 	I	◆ Practice 2.3
	3	2.11 Test for oxygen	<ul style="list-style-type: none"> ◆ Test for oxygen with a glowing splint 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Notes-taking ◆ Flipped classroom 	III,V	
		Unit 3 The ocean					
	4	3.1 Sea water: a vast solution	<ul style="list-style-type: none"> ◆ Percentage by mass of salts in a typical sea water sample ◆ Solute and solvent ◆ Dilute, concentrated and saturated solutions 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Notes-taking 	II,IV	
	4	3.2	<ul style="list-style-type: none"> ◆ Decantation 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Initiative to 	II,IV	

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		Obtaining common salt from sea water	<ul style="list-style-type: none"> ◆ Filtration ◆ Evaporation ◆ Crystallization 	<ul style="list-style-type: none"> ◆ Video ◆ Activity 3.1 — Obtaining common salt from muddy sea water ◆ Activity 3.2 — Growing crystals 	ask questions		
	5	3.3 Obtaining pure water from sea water	<ul style="list-style-type: none"> ◆ Distillation 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Video ◆ Activity 3.3 — Obtaining pure water from sea water 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	II	<ul style="list-style-type: none"> ◆ Worksheet - Problem Solving
	5	3.4 Showing what species common salt contains	<ul style="list-style-type: none"> ◆ Flame test ◆ Test for chlorides — silver nitrate test 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Video ◆ Activity 3.4 — Conducting flame tests on some metallic compounds ◆ Activity 3.5 — What does common salt 	<ul style="list-style-type: none"> ◆ Notes-taking ◆ Pre-lesson preparation 	I,II	

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				contain?			
	6	3.5 Test for the presence of water in a sample	<ul style="list-style-type: none"> ◆ Test for the presence of water in a sample using blue cobalt(II) chloride paper 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Discussion ◆ Video 	<ul style="list-style-type: none"> ◆ Searching for information on the internet 	I,III	
	6	3.6 Electrolysis of sea water*	<ul style="list-style-type: none"> ◆ Electrolysis of sea water to obtain hydrogen, chlorine and sodium hydroxide ◆ Common uses of hydrogen, chlorine and sodium hydroxide 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Video 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	II,IV	<ul style="list-style-type: none"> ◆ Chemistry Magazine — Fresh water from sea water
		Unit 4 Rocks and minerals					
	7	4.1 Metals in the Earth's crust	<ul style="list-style-type: none"> ◆ Minerals and ores 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Peer assessment ◆ Flipped classroom 	IV,V	
	7	4.2 Extracting metals from their ores	<ul style="list-style-type: none"> ◆ Physical methods ◆ Heating the ore alone ◆ Heating the ore with 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Video ◆ Activity 4.1 — Extracting iron 	<ul style="list-style-type: none"> ◆ Searching for information on the internet 	IV,V	

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			carbon ◆ Electrolysis of the molten ore	on a match head			
	8	4.3 Investigating calcium carbonate	◆ Action of heat, dilute acid and water on calcium carbonate ◆ Word equations	◆ PowerPoint ◆ Video ◆ Activity 4.2 — Investigating the action of heat, water and dilute acid on calcium carbonate ◆ Activity 4.3 — Showing the presence of calcium carbonate in a variety of minerals and building materials	◆ Notes-taking	I,II	◆ Practice 4.1
	8	4.4 Formation of chalk, limestone and marble	◆ The three main forms of calcium carbonate ◆ Their formation	◆ PowerPoint ◆ Discussion ◆ Animation	◆ Notes-taking	I,II	

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			<ul style="list-style-type: none"> from sea animals ◆ Uses of limestone 				
	8	4.5 Formation of limestone caves*	<ul style="list-style-type: none"> ◆ Weathering and erosion ◆ How limestone caves form ◆ Word equations 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Website 	<ul style="list-style-type: none"> ◆ Peer assessment ◆ Pre-lesson preparation 	I,II	
		Topic 2 Microscopic world I					
		Unit 5 Atomic structure					
	9	5.1 What is an element made of?	<ul style="list-style-type: none"> ◆ All elements are made of atoms ◆ Atoms of different elements are different 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Discussion 	<ul style="list-style-type: none"> ◆ Initiative to ask questions ◆ Flipped classroom 	I,II,III	
	9	5.2 Symbols for elements	<ul style="list-style-type: none"> ◆ Symbols for some common elements 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,II,III	◆ Practice 5.1
	10	5.3 How to classify elements?	<ul style="list-style-type: none"> ◆ General properties of metals and non-metals ◆ Metalloids 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Discussion ◆ Activity 5.1 — Investigating the physical properties of metals and 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,II	<ul style="list-style-type: none"> ◆ Practice 5.2 ◆ Worksheet

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				non-metals			
	10	5.4 Basic structure of an atom	<ul style="list-style-type: none"> ◆ Symbol, position, charge and mass of each subatomic particle 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Animation 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,III	
	11	5.5 Atomic number	<ul style="list-style-type: none"> ◆ Definition ◆ Examples 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	I,IV	
	11	5.6 Mass number	<ul style="list-style-type: none"> ◆ Definition ◆ Chemical shorthand ◆ Calculating the numbers of protons, neutrons and electrons from the mass number and atomic number of an atom 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Searching for information on the internet 	I,III	<ul style="list-style-type: none"> ◆ Practice 5.3
	12	5.7 Isotopes	<ul style="list-style-type: none"> ◆ Definition ◆ Examples 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Website 	<ul style="list-style-type: none"> ◆ Peer assessment 	I,III,V	<ul style="list-style-type: none"> ◆ Practice 5.4
	12	5.8 Relative masses of atoms and the carbon-12 scale*	<ul style="list-style-type: none"> ◆ Relative isotopic mass and relative atomic mass ◆ Calculating the relative atomic mass of an element from the percentage 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Discussion 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	I,III,V	<ul style="list-style-type: none"> ◆ Practice 5.5

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			abundance of isotopes and vice versa				
	12	5.9 The arrangement of electrons in atoms	<ul style="list-style-type: none"> ◆ What electronic arrangement is ◆ Electronic arrangements of atoms of the first 20 elements 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Website ◆ Animation 	<ul style="list-style-type: none"> ◆ Searching for information on the internet 	I,III,V	◆ Practice 5.6
	12	5.10 Electrons and orbitals*	<ul style="list-style-type: none"> ◆ What an orbital is 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Website ◆ Chemistry Magazine — How ideas of the atom developed 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,III,V	
	13	Revision Week					
	14-16	Mid-Year Examination					
	17-18	Christmas & New Year Holiday					
Second Term (3/1/2018-18/7/2018)		Topic 2 Microscopic world I (Cont.)					
		Unit 6 Periodic table					

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	19	6.1 How to group elements together?	◆ How are elements grouped?	◆ PowerPoint	◆ Searching for information on the internet	I,III	
	19	6.2 The periodic table	◆ Introduction to the periodic table ◆ Groups ◆ Periods	◆ PowerPoint ◆ Website ◆ Games ◆ Youtube ◆ Activity 6.1 — Inspecting species of elements in the periodic table	◆ Notes-taking ◆ Flipped classroom	I,III	
	20	6.3 States of elements	◆ States of common elements	◆ PowerPoint	◆ Initiative to ask questions	I,III	◆ Practice 6.1
	20	6.4 Position in the periodic table and electronic arrangement	◆ Relationship between group number of an element and the number of outermost shell electrons in an atom of the element ◆ Relationship between period number of an	◆ PowerPoint ◆ Discussion	◆ Peer assessment ◆ Pre-lesson preparation	I,II	◆ Worksheet

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			element and the number of occupied electron shells in an atom of the element				
	21	6.5 Patterns across the periodic table	<ul style="list-style-type: none"> ◆ Some properties of elements in Period 3 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Decision Making — Grouping the elements 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,II	<ul style="list-style-type: none"> ◆ Practice 6.2 ◆ Find & Share — Historical development of the periodic table
	21	6.6 Group I elements — alkali metals	<ul style="list-style-type: none"> ◆ Physical properties ◆ Similarities of the elements ◆ Differences in reactivity of the elements ◆ Predicting the chemical properties of unfamiliar elements 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Video ◆ Activity 6.2 — Investigating the properties of alkali metal 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,II,III	<ul style="list-style-type: none"> ◆ Practice 6.3
	21	6.7 Group II elements — alkaline earth metals	<ul style="list-style-type: none"> ◆ Physical properties ◆ Similarities of the elements ◆ Differences in 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Video 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	I,II,III	

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			reactivity of the elements				
	21	6.8 Group VII elements — halogens	<ul style="list-style-type: none"> ◆ Physical properties ◆ Similarities of the elements ◆ Differences in reactivity of the elements 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Video ◆ Activity 6.3 — Determining which unknown element belongs to Group VII 	<ul style="list-style-type: none"> ◆ Notes-taking ◆ Flipped classroom 	I,II,III	◆ Practice 6.4
	22	6.9 Group 0 elements — noble gases	<ul style="list-style-type: none"> ◆ Physical properties ◆ Similarities of the elements ◆ Stability of the elements ◆ Uses of the elements 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Game 	<ul style="list-style-type: none"> ◆ Searching for information on the internet 	I,II,III	
	22	6.10 From atoms to ions	<ul style="list-style-type: none"> ◆ How positive and negative ions are formed from atoms 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,II,III	
	23	6.11 Predicting the charge on an ion*	<ul style="list-style-type: none"> ◆ Common ions with stable electronic arrangements as those of atoms of noble gases 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Chemistry Magazine — Using argon to preserve 	<ul style="list-style-type: none"> ◆ Notes-taking ◆ Pre-lesson preparation 	I,II,III	◆ Practice 6.5

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				leftover wine in an unfinished bottle			
		Unit 7 Ionic and metallic bond					
	23	7.1 Conductors, electrolytes and non- conductors	<ul style="list-style-type: none"> ◆ Classification of substances according to how they conduct electricity 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Activity 7.1 — Finding out which compounds can conduct electricity 	<ul style="list-style-type: none"> ◆ Searching for information on the internet 	I,II	
	24-25	Lunar New Year Holiday					
	26	7.2 Evidence of ions from electrolysis of molten lead(II) bromide	<ul style="list-style-type: none"> ◆ Explaining what happens during the electrolysis of molten lead(II) bromide 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	II,III	
	26	7.3 Chemical bonds	<ul style="list-style-type: none"> ◆ Introduction to chemical bonds 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,III,V	
	27	7.4 Ionic bonds	<ul style="list-style-type: none"> ◆ Definition ◆ Ionic bond in sodium chloride ◆ Ionic bond in 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Website ◆ Animation ◆ Simulation 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,III,V	<ul style="list-style-type: none"> ◆ Practice 7.1

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			lithium oxide ◆ Ionic bond in magnesium nitride				
	27	7.5 Compounds containing polyatomic ions	◆ Names and chemical formulae of common polyatomic ions	◆ PowerPoint	◆ Peer assessment	I,III,V	
	27	7.6 Names of ions	◆ Names of positive ions ◆ Names of negative ions	◆ PowerPoint	◆ Peer assessment	I,II	
	28	7.7 Naming ionic compounds	◆ How to name ionic compounds	◆ PowerPoint	◆ Notes-taking ◆ Pre-lesson preparation	I,II	
	28	7.8 Colours of ionic compounds	◆ Colours of some ions in aqueous solutions ◆ Colours of gemstones ◆ Movement of coloured ions	◆ PowerPoint ◆ Video ◆ Activity 7.2 — Examining colours of aqueous solutions of ionic compounds ◆ Activity 7.3 — Observing the	◆ Notes-taking	I,II,V	◆ Practice 7.2

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				migration of ions			
	28	7.9 Chemical formulae of ionic compounds*	<ul style="list-style-type: none"> ◆ What a chemical formula is ◆ How to write the chemical formulae of ionic compounds 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Game 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,II	<ul style="list-style-type: none"> ◆ Practice 7.3
	28	7.10 Metallic bonds in metals	<ul style="list-style-type: none"> ◆ Bonding in metals 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Animation 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	I,II,IV	
	29	Uniform Test					
	30-31	Easter Holiday					
		Unit 8 Covalent bond					
	32	8.1 Covalent bonds	<ul style="list-style-type: none"> ◆ Definition ◆ The hydrogen molecule ◆ The chlorine molecule ◆ The hydrogen chloride molecule ◆ The tetrachloromethane molecule ◆ The ammonia molecule 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Website ◆ Animation 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,III,V	<ul style="list-style-type: none"> ◆ Practice 8.1

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	32	8.2 Covalent molecules with multiple covalent bonds	<ul style="list-style-type: none"> ◆ The oxygen molecule ◆ The nitrogen molecule ◆ The carbon dioxide molecule 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Peer assessment ◆ Flipped classroom 	I,II	<ul style="list-style-type: none"> ◆ Practice 8.2
	32	8.3 Molecular models	<ul style="list-style-type: none"> ◆ Ball-and-stick models ◆ Space-filling models 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Activity 8.1 — Building models of some covalent molecules 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	I,II	
	33	8.4 Writing chemical formulae of covalent compounds	<ul style="list-style-type: none"> ◆ How to write chemical formulae of covalent compounds 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Discussion 	<ul style="list-style-type: none"> ◆ Notes-taking 	II	
	33	8.5 Predicting the formation of ionic and covalent compounds	<ul style="list-style-type: none"> ◆ Predict whether the compound formed is ionic or covalent from information on the elements involved 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Website 	<ul style="list-style-type: none"> ◆ Notes-taking 	II	<ul style="list-style-type: none"> ◆ Practice 8.3
	33	8.6 Dative covalent bonding*	<ul style="list-style-type: none"> ◆ Definition ◆ Ammonium ion (NH_4^+) 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	I,II	<ul style="list-style-type: none"> ◆ Practice 8.4

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			<ul style="list-style-type: none"> ◆ Hydroxonium ion (H_3O^+) ◆ NH_3BF_3 molecule 				
	33	8.7 Relative molecular mass and formula mass	<ul style="list-style-type: none"> ◆ Definitions ◆ How to calculate relative molecular masses and formula masses 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Searching for information on the internet 	I,II	<ul style="list-style-type: none"> ◆ Practice 8.5
		Unit 9 Relating the properties of substances to structures and bonding					
	34	9.1 A look at the structures of some substances	<ul style="list-style-type: none"> ◆ A look at the melting points and electrical conductivities of four common solids: common salt, quartz, candle wax and copper ◆ Divide the solids into four groups according to their structures 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Activity 9.1 — Comparing the properties of substances with different structures 	<ul style="list-style-type: none"> ◆ Notes-taking ◆ Pre-lesson preparation 	II	
	34	9.2	<ul style="list-style-type: none"> ◆ Structures of 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Notes-taking 	II	

School Term	Weeks/ Dates	Topics/ Extended Parts*	Learning Objectives/ Teaching Focus	Teaching and Learning Activities	Self-directed Learning Skills*	Values#/ Basic Law Education	Consolidation and Assessment
		Giant ionic structures	sodium chloride and caesium chloride				
	34	9.3 Properties of ionic compounds	<ul style="list-style-type: none"> ◆ Hardness and brittleness ◆ Melting point and boiling point ◆ Solubility ◆ Electrical conductivity 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Animations 	<ul style="list-style-type: none"> ◆ Notes-taking 	II	<ul style="list-style-type: none"> ◆ Practice 9.1
	35	9.4 Giant covalent structures	<ul style="list-style-type: none"> ◆ Structures of diamond, graphite and quartz 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Animations 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	II	
	35	9.5 Properties of substances with giant covalent structures	<ul style="list-style-type: none"> ◆ Hardness ◆ Melting point ◆ Solubility ◆ Electrical conductivity 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Discussion 	<ul style="list-style-type: none"> ◆ Peer assessment 	II	
	35	9.6 Applications of graphite	<ul style="list-style-type: none"> ◆ As a lubricant ◆ Lead pencils ◆ Electrical applications 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Discussion 	<ul style="list-style-type: none"> ◆ Notes-taking 	I,II	<ul style="list-style-type: none"> ◆ Practice 9.2
	36	9.7 Simple molecular structures	<ul style="list-style-type: none"> ◆ Structures of iodine and dry ice 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Animations 	<ul style="list-style-type: none"> ◆ Searching for information on the internet 	I,II	
	36	9.8	<ul style="list-style-type: none"> ◆ Hardness 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Notes-taking 	II	<ul style="list-style-type: none"> ◆ Practice 9.3

School Term	Weeks/ Dates	Topics/ Extended Parts*	Learning Objectives/ Teaching Focus	Teaching and Learning Activities	Self-directed Learning Skills*	Values#/ Basic Law Education	Consolidation and Assessment
		Properties of substances with simple molecular structures	<ul style="list-style-type: none"> ◆ Melting point and boiling point ◆ Solubility ◆ Electrical conductivity 				
	37	9.9 Giant metallic structures	<ul style="list-style-type: none"> ◆ Packing of atoms in metals 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Animations 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	II	
	37	9.10 Properties of metals	<ul style="list-style-type: none"> ◆ Density ◆ Melting point ◆ Electrical and heat conductivities ◆ Malleability and ductility 	<ul style="list-style-type: none"> ◆ PowerPoint 	<ul style="list-style-type: none"> ◆ Peer assessment ◆ Pre-lesson preparation 	II	<ul style="list-style-type: none"> ◆ Practice 9.4
	38	9.11 Predicting the properties of a substance from its structure	<ul style="list-style-type: none"> ◆ Deduce the properties of substances from their structures and bonding 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Discussion 	<ul style="list-style-type: none"> ◆ Initiative to ask questions 	II	<ul style="list-style-type: none"> ◆ Practice 9.5
	38	9.12 Predicting the bonding and structures of a substance from its properties*	<ul style="list-style-type: none"> ◆ Bonding and electrical conductivity ◆ Structure and melting point 	<ul style="list-style-type: none"> ◆ PowerPoint ◆ Discussion 	<ul style="list-style-type: none"> ◆ Notes-taking 	II	<ul style="list-style-type: none"> ◆ Practice 9.6 ◆ Unit exercise ◆ Topic exercise ◆ Topic quiz
	39	Revision Week					
	40-42	Final Examination					

* The extended parts should be marked with asterisks. These parts should be more challenging and can be covered when the students can master the knowledge and skills covered in the conventional topics.

Core Values of Wah Yan College, Kowloon

- I. Love and care
- II. Strive for excellence
- III. Respect and Justice
- IV. Responsibility
- V. Faith

Sustaining values

	Life	Family	Love	Justice	Truth
I. Love and care	1. Accept & feel positive about himself 2. Appreciation & Gratitude 3. Empathy & Compassion 4. Positive and grateful 5. Kind and humble	6. Love your family 7. Loyalty and fidelity 8. Family as a basic unit of society; marriage is the foundation of a family	9. Forgiveness & Reconciliation 10. Care for the poor and the needy 11. Service to others		
II. Strive for excellence	12. Reflective 13. Strive for excellence (Magis & fighting spirit), 14. Reflection (Examen), 15. Discern right from wrong (Ignatian Spirituality), 16. Men of Human Excellence (Competence,				

	Commitment, Compassion, Conscience) 17. Perseverance 18. Curiosity & willingness to learn 19. Value imagination and creativity				
III. Respect and Justice	20. Life is valuable and respectable 21. Manners and etiquette 22. Openness to good in all things 23. Honesty and integrity 24. Faithfulness	25. Mutual respect between a man and a woman	26. Love your neighbours 27. Respect for himself & others	28. Respect the rights of others, equity, the common good, human dignity	
IV. Responsibility	29. Freedom & Self-discipline 30. Responsible with public property 31. Responsibility		32. Care for the environment	33. Social Identities: citizen identity, national identity and global citizen identity	
V. Faith					34. Appreciate religious liturgies 35. Explore & practise one's faith 36. Sacrifice 37. Experience of God 38. The meaning of

					life 39. Truth about God, 40. Evangelization
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