Aims of Chemistry Curriculum

The broad aims of the Chemistry Curriculum are to enable students to :

- develop interest and maintain a sense of wonder and curiosity about chemistry ;
- construct and apply knowledge of chemistry, and appreciate the relationship between chemistry and other disciplines ;
- appreciate and understand the evolutionary nature of science ;
- develop skills for making scientific inquiries ;
- develop the ability to think scientifically, critically and creatively, and solve problems individually and collaboratively in chemistry-related contexts ;
- discuss science-related issues using the language of chemistry ;
- make informed decisions and judgements on chemistry-related issues ;
- develop open-mindedness, objectivity and pro-activeness ;
- show appropriate awareness of working safely;
- understand and evaluate the social, ethical, economic, environmental and technological implications of chemistry, and develop an attitude of responsible citizenship.

## Syllabus for Form 3 Estimated Time Allocation for the Chemistry Curriculum

	Topics		No. of hours
I.	Planet Earth	a. The Atmosphere	15
		b. The Ocean	
		c. Rocks and Minerals	
II.	Microscopic World I	a. Atomic Structure	13
		b. The Periodic Table	
	Fire Fighting	a. Chemical reactions	2
		and energy change	
		b. Different Types of	
		Fire Extinguisher	
		Total	30

## F.4 Chemistry Curriculum (Compulsory Part)

	Topics	Sub-topics	No. of hours
II.	Microscopic World I	a. Metallic Bond	24
		b. Structures and Properties	
		of Metals	
		c. Ionic and Covalent Bond	
		d. Structures and Properties	
		of Giant Ionic Substances	

e. Structures and Properties of Simple Molecular Substances       e. Structures and Properties of Simple Molecular Substances         III.       Metals       a. Occurrence and Extraction of Metals       22         III.       Metals       a. Occurrence and Extraction of Metals       22         IV.       Acids and Bases       a. Introduction to acids and alkalis       27         IV.       Acids and Bases       a. Introduction to acids and alkalis       27         VII.       Redox Reactions, Chemical Cells and Electrolysis       a. Chemical Cells in daily life       26         VII.       Redox Reactions, Chemical Cells and Electrolysis       a. Chemical Cells in daily life       26         III.       Redox reactions, Chemical Cells and Electrolysis       a. Corrosion of solutions       26         IV.       Redox Reactions, Chemical Cells and Electrolysis       a. Chemical Cells in daily life       26         III.       Redox reactions, Chemical Cells and Electrolysis       a. Chemical Cells in daily life       26				
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		l	Total	99 hours

## F.5 Chemistry Curriculum (Compulsory Part)

	Topics	Sub-Topics	No. of hours
VI.	Microscopic World II	a. Bond Polarity	8

		b. Intermolecular forces	
		c. Structures and Properties	
		of Molecular Crystals	
		d. Simple Molecular	
		substances with non-octet	
		structures	
		e. Shapes of Simple	
		molecules	
V.	Fossil Fuels and Carbon	a. Hydrocarbons from Fossil	20
	Compounds	Fuel	
		b. Homologous series,	
		structural formulae	
		c. Alkanes and Alkenes	
		d. Polymers	
XI.	Chemistry of Carbon	a. Introduction to selected	27
	Compounds	homologous series	
	-	b. Isomerism	
		c. Typical reactions of	
		various Functional	
		Groups	
		d. Inter-conversions of	
		Carbon Compounds	
		e. Important Organic	
		Substances	
VIII.	Chemical Reactions and	a. Energy Changes in	9
V 111.	Energy	Chemical Reactions	,
	Lifergy	b. Standard Enthalpy	
		Change of Reactions,	
		Neutralisation, Formation	
		and Combustion	
		c. Hess's Law	
IV	Pote of Pagation		0
IX.	Rate of Reaction	a. Rate of Chemical	9
		Reaction b. Eastern affecting Data of	
		b. Factors affecting Rate of	
		Reaction	
		c. Molar Volume of Gases	
		at room temperature and	
V	Chemical Equilibrium	pressure	10
X.	L Chemical Hauilibrium	a. Dynamic Equilibrium	10
1	Chemiear Equinorium		
	Chemical Equilibrium	b. Equilibrium Constant	
	Chemical Equinorium	<ul><li>b. Equilibrium Constant</li><li>c. The effect of changes in</li></ul>	
		<ul><li>b. Equilibrium Constant</li><li>c. The effect of changes in concentration and</li></ul>	
		<ul> <li>b. Equilibrium Constant</li> <li>c. The effect of changes in concentration and temperature on chemical</li> </ul>	
		<ul> <li>b. Equilibrium Constant</li> <li>c. The effect of changes in concentration and temperature on chemical equilibria</li> </ul>	
XI	Patterns in the Chemical World	<ul> <li>b. Equilibrium Constant</li> <li>c. The effect of changes in concentration and temperature on chemical</li> </ul>	8

elements b. Bonding, stoichiom composition and aci base properties of th oxides c. General properties of transition metals	id- ne	
	Total	91 hours

## Estimated Time Allocation for F.6 Chemistry Curriculum (Elective Part)

Elective Part(select any 2 out of 3)			
Topics		Sub-Topics	No. of hours
XIII.	Industrial Chemistry	a. Importance of Industrial	26
		Processes	
		b.Rate Equation	
		c. Activation Energy	
		d. Catalysis and Industrial	
		Processes	
		e. Industrial Processes	
		f. Green Chemistry	
XV.	Analytical Chemistry	a. Detecting the presences of	26
		chemical species	
		b. Separation and Purification	
		Methods	
		c. Quantitative Methods and	
		Analysis	
		d. Instrumental Analytical	
		Methods	
		e. Contribution of Analytical	
		Chemistry to our Society	
		Total	52 hours