



DAARUL QUR'AN INTERNATIONAL SCHOOL
SCHEME OF WORK SEMESTER I
CHEMISTRY GRADE 10 (SECONDARY 3/IGCSE)
ACADEMIC YEAR 2008/2009

Sem/Week	No. of Period	Content/Topic	Learning Objectives	Learning Activities	Learning Evaluation	Resources	Remarks
I/1-2	8	The particulate nature of matter	<ol style="list-style-type: none"> 1. describe the states of matter and explain their interconversion in terms of the kinetic particle theory 2. describe and explain diffusion 3. describe evidence for the movement of particles in gases and liquid 	<ul style="list-style-type: none"> • Explicit Teaching • Class discussion 	<ul style="list-style-type: none"> • Homework • Quiz 	<ul style="list-style-type: none"> • Chemistry insights chapter 3 	
I/3-5	12	Atoms, elements and Compounds : Atomic structure and the Periodic Table	<ol style="list-style-type: none"> 1. state the relative charges and approximate relative masses of protons, neutrons and electrons. 2. define proton number and nucleon number use proton number and the simple structure of atoms to explain the basis of the Periodic Table, with special reference to the elements of proton number 1 to 20 3. define isotopes 4. state the two types of isotopes as being radioactive and non-radioactive 5. state one medical and one industrial use of radioactive isotopes 6. describe the build-up of electrons in 'shells' and understand the significance of the noble gas electronic structures and of valency electrons 	<ul style="list-style-type: none"> • Explicit Teaching • Class discussion 	<ul style="list-style-type: none"> • worksheets • Quizzes 	<ul style="list-style-type: none"> • Chemistry insights chapter 4 • Chemistry insights chapter 5 	
I/6-8	10	Bonding: the structure of matter <ul style="list-style-type: none"> • Ions and ionic bonds • Molecules and covalent bonds 	<ol style="list-style-type: none"> 1. describe the differences between elements, mixtures and compounds, and between metals and non-metals 2. describe an alloy, such as brass, as a mixture of a metal with other elements <ol style="list-style-type: none"> 1. describe the formation of ions by electron loss or gain 2. describe the formation of ionic bonds between elements from Groups I and VII <ol style="list-style-type: none"> 1. describe the formation of single covalent bonds in H₂, Cl₂, H₂O, CH₄ and HCl as the sharing of pairs of electrons leading to the noble gas configuration 2. describe the differences in volatility, solubility and electrical conductivity between ionic and covalent compounds 	<ul style="list-style-type: none"> • Explicit Teaching • Class discussion 	<ul style="list-style-type: none"> • Homework • Group Project 	<ul style="list-style-type: none"> • Chemistry insights chapter 6 • Chemistry insights chapter 7 	

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		<ul style="list-style-type: none"> Macromolecules 	<ol style="list-style-type: none"> describe the giant covalent structures of graphite and diamond relate their structures to the use of graphite as a lubricant and of diamond in cutting 				
I/8-11	12	Stoichiometry	<ol style="list-style-type: none"> use the symbols of the elements and write the formulae of simple compounds deduce the formula of a simple compound from the relative numbers of atoms present deduce the formula of a simple compound from a model or a diagrammatic representation construct word equations and simple balanced chemical equations define relative atomic mass, Ar define relative molecular mass, Mr, as the sum of the relative atomic masses 	<ul style="list-style-type: none"> Explicit Teaching Class discussion 	<ul style="list-style-type: none"> Homework TEST 	<ul style="list-style-type: none"> Chemistry insights chapter 8 Chemistry insights chapter 9 	
1/11-13	12	The mole concept	<ul style="list-style-type: none"> § Define the mole and the avogadro constant § Calculate reacting masses in chemical equations including of mass of product formed from limited amount reactant, and mass of reactants required to obtain a given mass of product § Calculate the volume of gases in chemical equations using the molar gas volume § Calculate percentage purity and percentage yield § State that concentration of solution can be measured in mol dm⁻³ (molarity) or g dm⁻³ § Apply the concept of concentration of solution to solve simple problems from result of volumetric experiments 			<ul style="list-style-type: none"> Chemistry insights chapter 8 Chemistry insights chapter 9 	
I/14	INTEGRATED TEST AND SEMESTER EXAM PREPARATION						

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