CHEMISTRY FORM 1 SCHEMES OF WORK – TERM 1

WEEK	LESSON	TOPIC	SUB - TOPIC	OBJECTIVES	LEARNING/TEACHING ACTIVITIES	LEARNING/TEACHING RESOURCES	REFERENCES	REMARKS
5	**1-2**	Introduction to chemistry	Chemistry as a subject	By the end of the lesson, the leaner should be able to (i) Recall subjects and topics taught in primary level science (ii) Name the branches of science	• Discussion on primary science topics relation to chemistry • Identifying the branches of science	• Flow chart on branches of science • Pictures on the applications of chemistry • Charts on chemical processes in the home	• Comprehensive secondary chemistry students book 1 pages 15-18 • Comprehensive chemistry teachers book 1 pages 12-13 • Longhorn secondary chemistry book 1 pages 1-2 • Secondary chemistry-KLB students book page 1	
	3-4	Introduction to chemistry	Definition of chemistry and its role in the society	By the end of the lesson, the learner should be able to (a) Define chemistry (b) Explain its role in society, name the career, choices (after studying chemistry)	• Writing of definitions of chemistry • Explaining the role of chemistry in society • Explaining careers related to chemistry	• Use of Photograph of area relevant to chemistry • Chart on careers requiring chemistry as a subject	• Comprehensive secondary chemistry students book 1 pages 15-18 • Comprehensive chemistry teachers book 1 pages 12-13 • Longhorn secondary chemistry book 1 pages 9 • Secondary chemistry-KLB students book page 5	
6	**1**	Introduction to chemistry	Chemistry laboratory	By the end of the lesson, the learner should be able to (i) Define the terms chemistry laboratory	• Discussion on meaning of laboratory • Demonstration of some laboratory apparatus	• School chemistry laboratory • Common laboratory chemical apparatus	• Comprehensive secondary chemistry students book 1 pages 15-18 • Comprehensive chemistry teachers book 1 pages 12-13 • Longhorn secondary chemistry book 1 pages 9	

							• Secondary chemistry-KLB students book page 5	
	2	Introduction to chemistry	The Bunsen burners	By the end of the lesson, the learner should be able to (i) Name the parts of the Bunsen burner (ii) Name the parts of luminous flame	• Explaining the parts of the Bunsen burner • Drawing parts of a luminous and non-luminous flames	• The Bunsen burner • Chart on parts of a Bunsen burner and burner flame	• Comprehensive secondary chemistry students book 1 pages 15-18 • Comprehensive chemistry teachers book 1 pages 2-3 • Longhorn secondary chemistry book 1 pages 22 • Secondary chemistry-KLB students book page 10	
	3-4	Introduction to chemistry	Apparatus used for studying chemistry	By the end of the lesson, the learner should be able to (i) Name some laboratory apparatus (ii) Draw some laboratory apparatus	• Discussion on chemistry • Laboratory apparatus • Drawing the apparatus	• Chemistry laboratory apparatus	• Comprehensive secondary chemistry students book 1 pages 8-11 • Comprehensive chemistry teachers book 1 pages 2-3 • Longhorn secondary chemistry book 1 pages 14 • Secondary chemistry-KLB students book page 6	
7	**1-2**	Introduction to chemistry	Chemistry laboratory and safety rules	By the end of the lesson, the learner should be able to (i) State at least 10 laboratory safety rules (ii) Explain any 10 laboratory safety rules	• Discussion on the importance of selected laboratory rules	• School laboratory • Laboratory equipment • Chart on laboratory safety rules	• Comprehensive secondary chemistry students book 1 pages 10-12 • Comprehensive chemistry teachers book 1 pages 2-4 • Longhorn secondary chemistry book 1	

							pages 12 • Secondary chemistry-KLB students book page 15	
	3-4	Introduction to chemistry	Other heating apparatus	By the end of the lesson, the learner should be able to (i) Name other heating apparatus apart from the Bunsen burner (ii) Explain how each apparatus functions	• Discussion of how each apparatus works • Discussion on functions of each named apparatus	• Spirit lamp • Candle • Store electric heater	• Comprehensive secondary chemistry students book 1 pages 3-8 • Comprehensive chemistry teachers book 1 pages 4-5 • Longhorn secondary chemistry book 1 pages 22 • Secondary chemistry-KLB students book page 10	
8	**1-2**	Simple classification of substances	Separation of mixtures	By the end of the lesson, the learner should be able to (i) Define the term mixtures (ii) Classify mixtures into miscible and immiscible liquids (iii) List several methods of separating mixtures	• Demonstration of separation of several mixtures • Observation and discussions • Listing several methods of separating mixtures	• Sugar/sand • Chalk/sand • Water/paraffin • Flow chart on mixtures and separation methods	• Comprehensive secondary chemistry students book 1 pages 3-15 • Comprehensive chemistry teachers book 1 pages 6-11 • Longhorn secondary chemistry book 1 pages 36 • Secondary chemistry-KLB students book page 18	
	3-4	Simple classification of substances	Separation of mixtures soluble and insoluble	By the end of the lesson, the learner should be able to (i) Define soluble, insoluble solids. Solutions,	• Defining key terms • Class experiments • Discussion on procedure for separation of mixture	• Sand/salt mixture • Beaker • Conical flask • Filter paper • Evaporating dish • Separating	• Comprehensive secondary chemistry students book 1 pages 13-15 • Comprehensive chemistry teachers	

				solute and solvent (ii) Explain how a soluble solid can be separated from an insoluble solid		funnel	book 1 pages 6-11 • Longhorn secondary chemistry book 1 pages 36 • Secondary chemistry-KLB students book page 10	
9	**1-2**	Simple classification of substances	Decantation simple distillation	By the end of the lesson, the learner should be able to (a) Separate immiscible liquids (b) Name the parts and the functions of distillation apparatus (c) Assemble the distillation apparatus	• Carrying out experiments to separate mixtures • Class discussions • Supervised practice • Drawing of diagrams of distillation apparatus	• Liebig condenser • Thermometer • Flask • Tap water • Sea water • Paraffin	• Comprehensive secondary chemistry students book 1 pages 15-18 • Comprehensive chemistry teachers book 1 pages 12-13 • Longhorn secondary chemistry book 1 pages 36 • Secondary chemistry-KLB students book page 22	
	3-4	Simple classification of substances	Fractional distillation	By the end of the lesson, the learner should be able to (i) Explain the stages of fractional distillation (ii) Differentiate between simple distillation and fractional distillation	• Discussion on the stages of fractional distillation • Demonstration of distillation experiment • Drawing of diagrams on fractional distillation • Differentiating between simple and fractional distillation	• Round-bottom flask • Condenser • Burner • Thermometer • Ethanol • water	• Comprehensive secondary chemistry students book 1 pages 17-18 • Comprehensive chemistry teachers book 1 pages 13-14 • Longhorn secondary chemistry book 1 pages 43 • Secondary chemistry-KLB students book page 27	
10	**1-2**	Simple classification of substances	Fractional distillation	By the end of the lesson, the learner should be able to: (i) Explain at	• Discussion on application of fractional distillation	• Fractional distillation apparatus • Fractionating	• Comprehensive secondary chemistry students book 1 pages 38	

				least two industrial applications of fractional distillation		column • Chart on fractional distillation	• Comprehensive chemistry teachers book 1 pages 14-15 • Longhorn secondary chemistry book 1 pages 45 • Secondary chemistry-KLB students book page 28	
	3-4	Simple classification of substances	Chromatography and solvent extraction	By the end of the lesson, the learner should be able to (i) Define chromatography (ii) Demonstrate the process of chromatography (iii) Explain how different(tours move on a filter paper) (iv) Explain how chromatography is used	• Defining chromatography • Carrying out experiments to show chromatography • Explaining chromatography • Stating uses of chromatography	• Filter paper • Funnel • Ethanol • Flowers • Dropper • Ink • Charts showing chromatograph y	• Comprehensive secondary chemistry students book 1 pages 19-22 • Comprehensive chemistry teachers book 1 pages 15-19 • Longhorn secondary chemistry book 1 pages 51 • Secondary chemistry-KLB students book page 33	
11	**1-4**	Simple classification of substances	Application of chromatography and solvent extraction	By the end of the lesson, the learner should be able to (i) Give one application of chromatogra phy (ii) Explain how oil can be extracted from nuts	• Discussion on application of chromatography • Explaining oil extraction from nuts	• Pestle • Mortar • Nut seeds • Propanone • White paper	• Comprehensive secondary chemistry students book 1 pages 38-40 • Comprehensive chemistry teachers book 1 pages 19 • Longhorn secondary chemistry book 1 pages 55 • Secondary chemistry-KLB students book page 34	
12	**1-2**	Simple classification of	Removal of stains	By the end of the lesson, the learner should be able	• Demonstration on stain removal from	• Stains of blood, fat, paint	• Comprehensive secondary chemistry	

		substances		to (i) Explain how stains can be removed from fabrics	fabrics	• Trashing soda • Paraffin • ammonia	students book 1 pages 40-41 • Comprehensive chemistry teachers book 1 pages 19 • Longhorn secondary chemistry book 1 pages 59 • Secondary chemistry- KLB students book page 33	
	3-4	Simple classification of substances	Revision	By the of lesson, the learner should be able to identify and explain concepts learnt	• Answering questions • Doing assignment • Discussion topics already covered	• Quiz • Assignment • Review questions	• Objectives in schemes of work	
REVISION AND EXAMINATION								
CHEMISTRY FORM 1 SCHEMES OF WORK – TERM 2								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	
1	**1-4**	Revision	Revision of last terms work	By the end of the lesson, the learner should be able to (i) Identify and explain concepts learnt in term I	• Answering questions • Doing assignments • Discussion on topics previously covered	• Assignments • Quiz • Revision questions	• Comprehensive secondary chemistry students book 1 pages 1-20 • Objectives of the scheme of work • Longhorn secondary chemistry book 1 pages 1-58 • Secondary chemistry- KLB students book	

							page 1-39	
2	**1-2**	Simple classification of substances	Crystallization	By the end of the lesson, the learner should be able to (i) Define the term crystallization (ii) Prepare copper (ii) sulphate crystals or sodium chloride	• Carrying out experiments to show crystallization • Discussion on preparation of copper • Sulphate and sodium chloride	• Beaker • Sodium chloride • Stirring rod • Water • Copper (ii) Sulphate	• Comprehensive secondary chemistry students book 1 pages 23-24 • Comprehensive chemistry teachers book 1 pages 20-21 • Longhorn secondary chemistry book 1 pages 57 • Secondary chemistry-KLB students book page 39	
	3-4	Simple classification of substances	Application of crystallization	By the end of the lesson, the learner should be able to (i) Define a supersaturated solution and a saturated solution (ii) Explain how salt is formed in lake Magadi	• Discussion of types of solutions • Explaining salt formation in lake Magadi	• Salt • Stirring rod • Beaker • Water • Burner • Chart on salt formation process at lake Magadi	• Comprehensive secondary chemistry students book 1 pages 23-24 • Comprehensive chemistry teachers book 1 pages 21-22 • Longhorn secondary chemistry book 1 pages 58 • Secondary chemistry-KLB students book page	
3	**1-2**	Simple classification of substances	Sublimation	By the end of the lesson, the leaner should be able to (i) Define sublimation (ii) Give examples of salts that sublimes (iii) Explain how one can	• Defining sublimation • Describing separation by sublimation • Demonstration on sublimation	• Ammonium chloride • Nacl • Burner • Sand • Bathing tubes • Test tube holders	• Comprehensive secondary chemistry students book 1 pages 24-25 • Comprehensive chemistry teachers book 1 pages 22-23 • Longhorn secondary chemistry book 1	

				separate salt that sublimes from salt which do not sublime			pages 48 • Secondary chemistry-KLB students book page 20	
	3-4	Simple classification of substances	Revision on separation of mixtures	By the end of the lesson, the learner should be able to (i) Identify appropriate methods of separating named mixtures	• Discussion on separation of mixtures	• Revision questions • Marking scheme	• Comprehensive secondary chemistry students book 1 pages 13-24 • Comprehensive chemistry teachers book 1 pages 6-24 • Longhorn secondary chemistry book 1 pages 30-58 • Secondary chemistry-KLB students book page 20	
4	**1-2**	Simple classification of substances	Criteria of purity	By the end of the lesson, the learner should be able to (i) Determine the melting point of ice (ii) Determine the boiling point of water (iii) State the criteria for identifying a pure substance (iv) Define melting and boiling points of substances	• Discussion on melting point and boiling point • Carrying out experiments to show melting and boiling points • Discussion on criteria of purity	• Thermometer • Solid ice • Water • Burner • beaker	• Comprehensive secondary chemistry students book 1 pages 25-26 • Comprehensive chemistry teachers book 1 pages 24 • Longhorn secondary chemistry book 1 pages 59 • Secondary chemistry-KLB students book page 20	
	3-4	Simple classification of substances	Effects of heat on substances	By the end of the lesson, the learner should be able to (i) Explain the	• Discussing and observing demonstration on effects of impurities	• Thermometer • Solid ice • Water • Burner	• Comprehensive secondary chemistry students book 1 pages 26-27	

				effects of impurities on boiling and melting points	on boiling point and melting point	• beaker	• Comprehensive chemistry teachers book 1 pages 24-27 • Longhorn secondary chemistry book 1 pages 77 • Secondary chemistry-KLB students book page 35	
5	**1-2**	Simple classification of substances	Effect of heat on substances	By the end of the lesson, the learner should be able to (i) Name the 3 states of matter (ii) State the kinetic theory of matter (iii) Explain the properties of the three states of matter	• Naming the three states of matter • Discussion on the kinetic theory of matter • Explaining the properties of state of matter	• Chart showing properties of the state of matter	• Comprehensive secondary chemistry students book 1 pages 28-30 • Comprehensive chemistry teachers book 1 pages 27-29 • Longhorn secondary chemistry book 1 pages 77 • Secondary chemistry-KLB students book page 35	
	3-4	Simple classification of substances	Effects of heat on substances	By the end of the lesson, the learner should be able to (i) Investigate what happens when ice is heated to boiling point (ii) Use a graph to illustrate changes of states of matter and temperature	• Carrying out experiments to investigate the effects of heat on ice • Observing a demonstration • Discussion on observations of experiments	• Beaker • Thermometer • Tripod stand • Wire gauze • Burner • Ice cubes	• Comprehensive secondary chemistry students book 1 pages 30-31 • Comprehensive chemistry teachers book 1 pages 27-29 • Longhorn secondary chemistry book 1 pages 77 • Secondary chemistry-KLB students book page 35	
6	**1-2**	Simple classification of	Effects of heat on substances	By the end of the lesson, the learner should be able	• Discussion on melting and boiling	• Chart on particles of	• Comprehensive secondary chemistry	

		substances		to (i) Explain the melting point and the boiling point interns of kinetic theory	points with reference to kinetic theory	matter in each state • Illustrate graph on melting point and boiling points	students book 1 pages 30-31 • Comprehensive chemistry teachers book 1 pages 27-29 • Longhorn secondary chemistry book 1 pages 77 • Secondary chemistry-KLB students book page 35	
	3-4	Simple classification of substances	Permanent and non-permanent changes	By the end of the lesson, the learner should be able to (i) Define permanent changes (ii) Define non-permanent changes	• Defining permanent and non-permanent changes • Carrying out experiments to show permanent and temporary changes	• Burner • Ice • NH_4CL • MG metal • Carbon	• Comprehensive secondary chemistry students book 1 pages 31-33 • Comprehensive chemistry teachers book 1 pages 30-35 • Longhorn secondary chemistry book 1 pages 87-89 • Secondary chemistry-KLB students book page 43	
7	**1-2**	Simple classification of substances	Elements, atoms, molecules and compounds	By the end of the lesson, the learner should be able to: (i) Define an element, a molecule, an atom and a compound	• Discussion on meaning of element, atom, molecule and compound	• Chart on definition of atom, molecule, compound and element	• Comprehensive secondary chemistry students book 1 pages 31-33 • Comprehensive chemistry teachers book 1 pages 30-35 • Longhorn secondary chemistry book 1 pages 87-89 • Secondary chemistry-KLB students book page 48	

	3-4	Simple classification of substance	Elements, compounds and symbols of elements	By the end of the lesson, the learner should be able to: (i) Give examples of at least 3 elements and 3 compounds (ii) State the symbols of common elements	• Identifying and writing chemical symbols of common elements • Listing examples of elements and compounds	• Chart on symbol of elements	• Comprehensive secondary chemistry students book 1 pages 35-36 • Comprehensive chemistry teachers book 1 pages 39-40 • Longhorn secondary chemistry book 1 pages 97-98 • Secondary chemistry-KLB students book page 48	
8	**1-2**	Simple classification of substances	Symbols of elements	By the end of the lesson, the learner should be able to (i) Name atleast 4 elements (ii) Give the symbols of atleast 5 elements using latin or English names	Naming and writing correct symbols of elements	• Chart of symbols of elements • The periodic table	• Comprehensive secondary chemistry students book 1 pages 35-36 • Comprehensive chemistry teachers book 1 pages 39-40 • Longhorn secondary chemistry book 1 pages 97-98 • Secondary chemistry-KLB students book page 49	
	3-4	Simple classification of substances	Word equation	By the end of the lesson, the learner should be able to (i) Give simple word equation of chemical reaction	• Writing a variety of simple word equations	• Chart on word equations	• Comprehensive secondary chemistry students book 1 pages 36 • Comprehensive chemistry teachers book 1 pages 36-40 • Longhorn secondary chemistry book 1 pages 105 • Secondary chemistry-KLB students book	

							page 51	
9	**1-2**	Acids and bases	Indicators	By the end of the lesson, the learner should be able to (i) Define acids, organic acids and inorganic acids (ii) Give atleast 3 examples of indicators (iii) Make simple acid-base indicators from flowers	• Defining indicators • Naming types of indicators • Carrying out experiments to prepare flower base of indicators	• Indicators • Litmus paper • Phenolphalein • Methyl orange • Universal indicator • Plastic mortar • Flower petals	• Comprehensive secondary chemistry students book 1 pages 48-49 • Comprehensive chemistry teachers book 1 pages 41-47 • Longhorn secondary chemistry book 1 pages 112 • Secondary chemistry-KLB students book page 54	
	3-4	Acid and bases	Acids	By the end of the lesson, the learner should be able to (i) Define acids, organic acids and inorganic acids (ii) Name atleast 3 organic acids and inorganic acids (iii) Give atleast 3 properties of acids	• Naming organic and inorganic acids • Listing examples of organic and inorganic • Demonstrating properties of acids • Defining the terms acid, organic and inorganic acids	• Lemon • Orange • Milk • Tea • Cheese • Stomach juice • Car batteries • Hydrochloric acid • Sulphuric acid • Vinegar	• Comprehensive secondary chemistry students book 1 pages 48-49 • Comprehensive chemistry teachers book 1 pages 41-47 • Longhorn secondary chemistry book 1 pages 110 • Secondary chemistry-KLB students book page 59	
10	**1-2**	Acid and bases	Bases and alkalis	By the end of the lesson, the learner should be able to (i) Define a base (ii) Cover atleast 3 examples of bases (iii) Give atleast 3	• Defining bases • Listing examples of bases • Carrying out experiments to show properties of bases	• Soap • Anti-acid tablets • JIK • Chart on properties of bases	• Comprehensive secondary chemistry students book 1 pages 50-57 • Comprehensive chemistry teachers book 1 pages 41-47 • Longhorn secondary	

				properties of bases			chemistry book 1 pages 111 • Secondary chemistry-KLB students book page 63	
	3-4	Acid and bases	Colour changes of indicators in acid and bases	By the end of the lesson, the learner should be able to (i) Give colour of each indicator in acidic and basic media as well as in neutral solutions	• Carrying out experiments on colur changes of indicators • Discussion on color changes of indicators and basic media	• Indicators • Acid solutions • Basic solutions • Droppers	• Comprehensive secondary chemistry students book 1 pages 44-47 • Comprehensive chemistry teachers book 1 pages 46 • Longhorn secondary chemistry book 1 pages 115-118 • Secondary chemistry-KLB students book page 55	
11	**1-2**	Acid and bases	Universal indicator and PH scale	By the end of the lesson, the learner should be able to (i) Give reasons why the universal indicator is commonly used (ii) Define a PH scale and give the PH acids, bases and neutral solutions in the scale (iii) Measure the PH of given solutions	• Discussion on the universal indicator • Carrying out experiments on the universal indicator • Discussion on the ph scale	• PH scale • PH indicators • Solutions of acids, bases and neutral solutions	• Comprehensive secondary chemistry students book 1 pages 44-47 • Comprehensive chemistry teachers book 1 pages 46-47 • Longhorn secondary chemistry book 1 pages 116 • Secondary chemistry-KLB students book page 58	
	3-4	Acid and bases	Importance of acid-base neutralization	By the end of the lesson, the learner should be able to	• Discussions on application of acids and bases	• Antacids tablets • Decayed path • Acidic salts	• Comprehensive secondary chemistry students book 1	

				(i) Explain 3 applications of acid-base neutralization reactions in real lits (ii) Give the disadvantages of acids and bases	• Identifying advantages and disadvantages of acids and bases	• Corroded metals	pages 50-57 • Comprehensive chemistry teachers book 1 pages 47-48 • Longhorn secondary chemistry book 1 pages 117 • Secondary chemistry-KLB students book page 63	
12	**1-2**	Air and combustion	Combustion of Air	By the end of the lesson, the learner should be able to (i) Give the percentage composition of constituents of air (ii) Demonstrate that air has no main active parts	• Discussion on composition of air • Demonstration on a burning candle in limited air • Observation and discussion • Recording the composition of air	• Trough • Gas jar • Bee hive shelf • Candle • Pie-chart on composition of air	• Comprehensive secondary chemistry students book 1 pages 56-57 • Comprehensive chemistry teachers book 1 pages 48-50 • Longhorn secondary chemistry book 1 pages 126 • Secondary chemistry-KLB students book page 68	
	3-4	Air and combustion	Percentage composition of oxygen in air	By the end of the lesson, the learner should be able to (i) Calculate the percentage composition of oxygen in air	• Carrying out experiment to determine the percentage of oxygen in the air • Observation and calculation of percentage of oxygen in air	Chart on how to determine the percentage composition of oxygen in air	• Comprehensive secondary chemistry students book 1 pages 54-57 • Comprehensive chemistry teachers book 1 pages 48-50 • Longhorn secondary chemistry book 1 pages 126 • Secondary chemistry-KLB students book page 78	

REVISION AND END OF TERM EXAMINATION

CHEMISTRY FORM 1 SCHEMES OF WORK – TERM 3

WEEK	LESSON	TOPIC	SUB - TOPIC	OBJECTIVES	LEARNING/TEACHING ACTIVITIES	LEARNING/TEACHING RESOURCES	REFERENCES	
1	**1-4**	REVISION	Revision of term two's work	By the end of the lesson, the learner should be able to (i) Identify and explain concepts learnt in term 2	• Answering questions • Quiz • Discussion with teachers on topics previously covered	• Assignment • Quiz • Review questions	• Comprehensive secondary chemistry students book 1 pages 22-55 • Objective in the schemes of work • Longhorn secondary chemistry book 1 pages 1-126 • Secondary chemistry-KLB students book page 1-78	
2	**1-2**	Air and combustion	Quantitative determination of oxygen in air	By the end of the lesson, the learner should be able to (i) Calculate quantatively the percentage of oxygen in air (ii) Determine the proportion of air used when copper turnings is heated in a fixed volume of air (iii) Calculate the percentage of oxygen in the air using alkaline pyrogallol	• Carrying our experiment to investigate percentage of oxygen in air • Discussion on the observation made • Calculating the percentage of air using alkaline pyrogallol	• Gas syringes • Glass tube • Copper turnings • Liquid pyrogallol • NoOH • Measuring cylinders • Bunsen burner • Pair of tongs	• Comprehensive secondary chemistry students book 1 pages 54-57 • Comprehensive chemistry teachers book 1 pages 51-54 • Longhorn secondary chemistry book 1 pages 128 • Secondary chemistry-KLB students book page 70	

	3-4	Air combustion	Rusting	By the end of the lesson, the learner, should be able to (i) Give the uses of oxygen (ii) Determine the conditions necessary for rusting (iii) List three ways of preventing rusting	• Discussion on the uses of oxygen • Carrying out of experiment to determine conditions for rusting	• Discussion on the uses of oxygen • Carrying out an experiment to determine conditions • Discussion on conditions for rusting	• Comprehensive secondary chemistry students book 1 pages 54-57 • Comprehensive chemistry teachers book 1 pages 51-54 • Longhorn secondary chemistry book 1 pages 128 • Secondary chemistry-KLB students book page 76	
3	**1-2**	Air and combustion	Burning substances in air	By the end of the lesson, the learner should be able to (i) Determine the change in mass when substances burn in air and note the acidity or alkalinity of the gas produced (ii) Write word equations and define acids and basic oxides	• Carrying out experiments of burning substances in air • Discussion on observations • Writing relevant word equations	• Mg, na,C,S,P, Co, ca • Crucible • Weighing • Burners • Litmus paper	• Comprehensive secondary chemistry students book 1 pages 62-65 • Comprehensive chemistry teachers book 1 pages 56-59 • Longhorn secondary chemistry book 1 pages 131 • Secondary chemistry-KLB students book page 79	
	3-4	Air and combustion	Laboratory: Preparation and properties of oxygen	By the end of the lesson, the learner should be able to (i) Assemble the apparatus used to prepare oxygen (ii) give the physical and chemical	• carrying out experiments to prepare oxygen • observing demonstration • discussion on properties of oxygen • defining oxidation and reduction	• flat-bottomed flask • thistle funnel with clip • trought • gas jar • delivery tube • hydrogen peroxide • c,s,mg,co	• Comprehensive secondary chemistry students book 1 pages 61-64 • Comprehensive chemistry teachers book 1 pages 55-56 • Longhorn secondary chemistry book 1 pages 147	

				properties of oxygen (iii) give a confirmatory test for oxygen gas		• two-holed tuber tongs	• Secondary chemistry-KLB students book page 78	
4	**1-2**	Air and combustion	Atmosphere and pollution	By the end of the lesson, the learner should be able to (i) Define atmospheric pollution (ii) Explain the causes of air pollution (iii) Explain the efforts being made to reduce air pollution	• Discussions on causes and control of air pollution	• Chart showing causes and control of air pollution	• Comprehensive secondary chemistry students book 1 pages 68-69 • Comprehensive chemistry teachers book 1 pages 57-60 • Longhorn secondary chemistry book 1 pages 135 • Secondary chemistry-KLB students book page 88	
	3-4	Air and combustion	Preparation, drying and collection of gases	By the end of the lesson, the learner should be able to (i) List the stages of gas preparation and collection (ii) Explain how gases can be generated, dried and collected (iii) Give the characteristics if gas collected by each method	• Discussion on method of gas preparation and collection • Carrying out experiments to show gas preparations and collections • Discussion on gas collected by each method	• Thistles funnel • Flask • U-tube • Gas jar • Delivery tube • Charts on methods of generation, drying and collection of gases	• Comprehensive secondary chemistry students book 1 pages 78-89 • Comprehensive chemistry teachers book 1 pages 61 • Longhorn secondary chemistry book 1 pages 144 • Secondary chemistry-KLB students book page 75	
5	**1-2**	Air and combustion	Industrial preparation of oxygen	By the end of the lesson, the learner should be able to (i) Explain how	• Discussion on preparation of oxygen by fractional distillation of liquids	• Chart showing fractional distillation in liquid air	• Comprehensive secondary chemistry students book 1 pages 57-58	

				oxygen can be distilled from liquid air by fractional distillation	air		• Comprehensive chemistry teachers book 1 pages 61 • Longhorn secondary chemistry book 1 pages 158 • Secondary chemistry-KLB students book page 75	
	3-4	Air and combustion	Activity series and uses of oxygen gas	By the end of the lesson, the learner should be able to (i) Arrange elements in order of reactivity with oxygen from most to least reactive (ii) Give atleast 3 uses of oxygen gas	• Discussion on reactivity series • Explaining uses of oxygen	• Writing relevant equation • Chart showing reactivity series	• Comprehensive secondary chemistry students book 1 pages 66 • Comprehensive chemistry teachers book 1 pages 56-61 • Longhorn secondary chemistry book 1 pages 159 • Secondary chemistry-KLB students book page 83,87-89	
6	**1-2**	Water and hydrogen	Sources of water	By the end of the lesson, the learner should be able to (i) State sources of water (ii) Explain the importance of water	• Discussion on the sources of water • Explaining the importance of water	• Chart on sources of water • Photographs • Magazines and scientific journals	• Comprehensive secondary chemistry students book 1 pages 70-71 • Comprehensive chemistry teachers book 1 pages 62-71 • Longhorn secondary chemistry book 1 pages 174 • Secondary chemistry-KLB students book page 91	
	3-4	Water and hydrogen	Water is a product of	By the end of the lesson, learner should be able to	• Carrying out an experiment to show	• Candle ice cold water	• Comprehensive secondary chemistry	

			bringing organic matter	(i) Assemble apparatus to show the products of burning candle and test for water	water is a product of burning organic matter • Observation and discussion of results of experiment	• Funnel • CuSo4 • Wash bottle • Two test tubes with side arms • Lime water	students book 1 pages 71 • Comprehensive chemistry teachers book 1 pages 62-64 • Longhorn secondary chemistry book 1 pages 176 • Secondary chemistry-KLB students book page 92	
7	**1-2**	Water and hydrogen	Water as an oxide hydrogen	By the end of the lesson, the learner should be able to (i) Assemble apparatus to show that water is an oxide of hydrogen (ii) Test for the presence of water	• Carrying out an experiment to show water is an oxide of hydrogen • Observation and discussion on results from experiment	• Hydrogen generator • Cold surface • CuSo4 • Cobalt chloride	• Comprehensive secondary chemistry students book 1 pages 71, 80-82 • Comprehensive chemistry teachers book 1 pages 62-71 • Longhorn secondary chemistry book 1 pages 194 • Secondary chemistry-KLB students book page 91	
	3-4	Water and hydrogen	Reaction of metals with water	By the end of the lesson, the learner should be able to (i) Explain the observations when metals react with water (ii) Write word equation when metals react with water	• Carrying out experiment to show reactions of water with metals • Observations and discussion on the results of experiments writing word equation for the reactions	• Water • Sodium magnesium • Calcium potassium • Iron, zinc • Litmus • Splint • Trough • Gas jar	• Comprehensive secondary chemistry students book 1 pages 73-75 • Comprehensive chemistry teachers book 1 pages 65-66 • Longhorn secondary chemistry book 1 pages 182 • Secondary chemistry-KLB students book page 92	

8	**1-2**	Water and hydrogen	Reaction of metals with steam	By the end of the lesson, the learner should be able to (i) Explain the observations when the magnesium react with cold water (ii) Write word equation for the reaction between metals and steam	• Carrying our experiments to show the reaction of magnesium with steam • Observation and discussion on results obtained • Writing a word equation for the reaction	• Steam • Mg • Boiling tube • Trough • Gas jar • Delivery tube	• Comprehensive secondary chemistry students book 1 pages 75-76 • Comprehensive chemistry teachers book 1 pages 67-69 • Longhorn secondary chemistry book 1 pages 182 • Secondary chemistry-KLB students book page 94	
	3-4	Water and hydrogen	Reactivity series of water with metals	By the end of the lesson, the learner should be able to (i) Arrange metals in order of their reactivity with water from most to least reactive	• Discussion on reactivity of metals with water and steam • Drawing summary tube • Showing reactivity	• Chart on reactivity series	• Comprehensive secondary chemistry students book 1 pages 77 • Comprehensive chemistry teachers book 1 pages 69-71 • Longhorn secondary chemistry book 1 pages 182 • Secondary chemistry-KLB students book page 96	
9	**1-2**	Water and hydrogen	Laboratory preparation of hydrogen	By the end of the lesson, the learner should be able to (i) Assemble the apparatus used to prepare hydrogen gas in the laboratory (ii) Give the physical and the chemical	• Discussion on preparation, properties and test of hydrogen gas • Carrying out experiments to prepare hydrogen • Observation and discussion on results objectives • Carrying out the felt for hydrogen	• Flat bottomed flask • Thistle funnel • Cork • Delivery tube • Trough • Gas jar • Splint • Water • Zinc granules • Dilute sulphuric acid	• Comprehensive secondary chemistry students book 1 pages 78-82 • Comprehensive chemistry teachers book 1 pages 62-67 • Longhorn secondary chemistry book 1 pages 189 • Secondary chemistry-KLB students book	

				properties of hydrogen gas (iii) Give the general test for hydrogen gas			page 96	
	3-4	Water and hydrogen	Oxidation and reduction	By the end of the lesson, the learner should be able to (i) Explain using word equations how hydrogen is a good reducing agent (ii) Define oxidation reduction and redox reactions in terms of hydrogen (iii) Use word equations to explain redox	• Defining oxidation and reduction • Discussion on hydrogen as a reducing agent • Using word equations to explain redox	• Hydrogen generator • Burner • Cuo, Copper (ii) sulphate • Calcium II chloride • tube	• Comprehensive secondary chemistry students book 1 pages 80-82 • Comprehensive chemistry teachers book 1 pages 67-69 • Longhorn secondary chemistry book 1 pages 193 • Secondary chemistry-KLB students book page 100	
10	**1-2**	Water and hydrogen	Uses of hydrogen	By the end of the lesson, the learner should be able to (i) Explain atleast 3 uses of hydrogen	• Discussion on the uses of hydrogen	Chart on uses of hydrogen	• Comprehensive secondary chemistry students book 1 pages 82-83 • Comprehensive chemistry teachers book 1 pages 68-69 • Longhorn secondary chemistry book 1 pages 196 • Secondary chemistry-KLB students book page 102	

	3-4	Water and hydrogen	Summary of the topics	By the end of the lesson, the learner should be able to (i) Explain using word equation how hydrogen is a good reducing agent (ii) Define oxidation, reduction and redox reactions, in terms of hydrogen (iii) Use word equations to explain redox	• Defining oxidation and reduction • Discussion on hydrogen and reducing agent • Using word equation to explain redox	• Hydrogen generator • Burner • Cuo, Copper (ii) sulphate, calcium (ii) chloride • U-Tube	• Comprehensive secondary chemistry students book 1 pages 80-82 • Comprehensive chemistry teachers book 1 pages 67-69 • Longhorn secondary chemistry book 1 pages 201 • Secondary chemistry-KLB students book page 103	
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