SCHEME OF WORK

Name of teacher: ..... Name of School: **.....**

Year: **2023** TERM: **1 & 2**

Class/Stream: **FORM ONE** Subject: **CHEMISTRY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS
Using chemistry skills and knowledge in daily life.	To explain the concept of chemistry in daily life.	JANUARY	3	1. INTRODUCTION TO CHEMISTRY	1. The concept of Chemistry	2	● To guide students to discuss the meaning of chemistry. ● To guide students to discuss how materials and objects are made by application of chemistry e.g. soap, petrol, ethanol etc.	●To explain the concept of chemistry. ●To name the substance made by applying chemical methods.	● Wall charts & pictures showing different chemical activities & industrial chemical process. Detergents, soft, drinks medicine etc.		● To give the meaning of chemistry. ● To mention any other four objects made by application of chemistry. ● In groups to mention area where chemistry is applied.	

					2. The importance of chemistry in life.	2	● To guide students to discuss how chemistry is applied in industrial and at home. ● To guide students to discuss the importance of chemistry in daily life by giving examples on production of drugs and medicine, soap fertilizer and alcohol.	●To mention area where chemistry is applied. ●To state the importance of chemistry in daily life, by giving examples.	● Wall charts & pictures of industrials, chemical hospital, pharmacy, domestic, kitchen, fertilizer, insect sides, hard drinks.			
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Working safely in a chemistry laboratory.	Carrying out chemistry activities safely and efficiently.	FEBRUARY	4 & 1	2. LABORATORY TECHNIQUESE AND SAFETY	1. Rules and safety precautions in chemistry laboratory.	4	i) To guide students to discuss every laboratory rule and establish its importance. ii) To guide students to discuss the laboratory safety measures.	i) To prepare a list of ten safety rules in chemistry laboratory. ii) To explain the safety measure to a chemistry laboratory.	– Chemistry laboratory manual. – Wall charts of written laboratory rules. – Wall charts showing safety measure for a chemistry laboratory.	i) Chemistry for secondary schools, form 1&2, Oxford. ii) O-level CHEMISTRY Form 2, BEN. iii) O-level CHEMISTRY Form 2 Interactive CD, BEN. iv) You tube(for video clips)	– To mention and explain the safety measure needed to avoid accidents in chemistry laboratory.	

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			1		2. First aid and first aid kit.	4	i) To guide students to discuss activities which are likely to accidents in a chemistry laboratory. ii) To guide students to name every item found in a first aid kit. iii) To guide students to stimulate a mock use of each item in a first aid kit.	i) To identify possible causes of accidents in chemistry laboratory. ii) To name the items found in a first aid kit. iii) To demonstrate how each first aid kit item is used. iv) To use the first aid kit to provide first aid to an accident victim.	– Wall chart pictures showing possible laboratory accidents. – First aid kit containing all of its items.		● How many possible causes of accidents I a chemistry laboratory. ● Name all The items found in a first aid kit. ● Demonstrate how you can provide First aid.	
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					3. Basic chemistry laboratory apparatus with their uses.	6	i) To guide students to names of different pieces of apparatuses used in chemistry laboratory. ii) To summarize the names of pieces apparatuses used in chemistry laboratory. iii) To guide students to categorize laboratory apparatus into apparatus for; ● holding ● taking measurements; volume and temperature ● heating purposes iv) To guide students to practice the uses of apparatus for measuring; ▪ volume of liquids ▪ volume of gases ▪ masses of solids ▪ temperature	i) To name the different ii) pieces of apparatuses used in chemistry laboratory. iii) To copy the summary. iv) To categorize chemistry laboratory apparatus according to their uses. v) To use apparatus to measure volume, mass and temperature.			– List names of apparatuses used in a chemistry laboratory. – Categorize chemistry apparatus according to their uses.	

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Treating and purifying water with environmental consideration.	To purify and use water while conserving the environment.	F E B R U A R Y	2		4. Warning signs	6	i) To guide students to draw a simple diagram of the following warning signs; ▪ Toxic ▪ Harmful ▪ Irritant ▪ Explosive ▪ Corrosive ▪ Oxidant ii) To guide students to discuss the meaning of different warning signs.	i) To draw and label the basic chemistry warning signs. ii) To explain the meaning of different warning signs.	– Oxidant $KMnO_4$, H_2O_2, – Irritant; H_2SO_4 – Explosive – Corrosive ; H_2SO_4	i) Chemistry for secondary schools, form 1&2, Oxford. ii) O-level CHEMISTRY Form 2, BEN.	Draw and label the basic chemistry warning signs.	
			2	3. HEAT SOURCES AND FLAMES	1. Heat sources	4	To discuss with students about how to use the following heat sources in a chemistry laboratory; – candle – spirit burner – corrosive burner (kibatari) – charcoal burner ii) To discuss with students about how Bunsen burner works.	i) To discuss with teacher about how to use the heat sources in a chemistry laboratory. To explain how a Bunsen burner works.	– Candle – Spirit burner – Kerosene burner (kibatari) – Charcoal burner – Bunsen burner		– Identify different kind of heat sources that can be used in chemistry laboratory. ● Explain the working function of a Bunsen burner.	

										ìíì) O-level CHEMISTRY Form 2 Interactive CD, BEN. iv)Youtube (for video clips)		
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Applying the scientific procedures in carrying out investigations in chemistry		FEBRUARY	3		2. Types of flames	04	i) To guide students to use different types of burners to produce luminous and non-luminous flames. ii) To guide students to discuss how different flames are used. ▪ flame test of elements ▪ production of light ▪ production of heat	i) To produce luminous and non-luminous flames from different fuel burns. ii) To state the uses of different types of flames.	– Spirit burner – Kerosene burner (kibatari) – Charcoal burner – Bunsen burner – Kerosene fuel		– Produce luminous and non-luminous flames from different burners.	
			4	4. THE SCIENTIFIC PROCEDURES	1. Significance of the scientific procedures.	02	i) To guide students to discuss about the measuring of the scientific procedures. ii) To discuss with students about how the scientific procedures are used in carrying out systematic investigations.	To explain the concept of scientific procedure.	– Wall charts showing the steps of scientific procedures. – Picture of chemists working in laboratory		– Explain the concept of chemists. – Explain the importance of scientific procedures.	

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					2. The main steps of scientific procedures.	01	i) To discuss with students about the following steps of scientific procedures; ● Observation of the scientific phenomena. ● Statement of the problem. ● Formation of hypothesis. ● Observation and collection of data. ● Data analysis and interpretation. ● Making inference and conclusion.	– To describe each step of scientific procedures.	- Wall charts showing the steps of scientific procedures.		– Describe each step of scientific procedures.	

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Dealing with nature and properties of matter.	Explaining the nature and properties of matter.	APRIL	1		3. Application of the scientific procedures.	4	To supervise the students' projects.	To apply the scientific procedure in carrying out a project on a chemistry problem.		i) Chemistry for secondary schools, form1& 2, Oxford. ii) O-level CHEMISTRY Form 2, BEN. İİİ) O-level CHEMISTRY Form 2 Interactive CD, BEN. iv)You tube(for video clips)	Apply the scientific procedure in carrying out a project on a chemistry investigation.	
			2-5	5. MATTER	1. Concept of matter.	2	To guide students to discuss the meaning and definition of matter.	To explain the concept of matter.	Solid, liquid and gases.		Explain the meaning of matter with examples.	

					2. States of matter.		i) To guide students to apply the kinetic nature of matter to explain the existence of matter in three states; solids, liquids and gases. ii) To guide students to demonstrate the change of matter from one state to another. iii) To discuss with students the advantages of changing one state of matter to another. Distillation to form pure components of a mixture. ▪ Evaporation of dry things. formation of ice in refrigerator iv) Melting of metal to form alloy.	i) To describe the three states of matter. ii) To explain the importance of changing one state of matter to another.			Demonstrate how you can change one state of matter to another and explain their importance.	
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Differentiate physical from chemical properties of matter.					2. Physical and chemical changes.	12	i) To discuss with students about the meaning and characteristics of physical change. ii) To guide students to carry out experiments on physical change, to include; ▪ melting of ice ▪ boiling of water ▪ condensation of steam ▪ formation of ice ▪ magnetization of iron ▪ sublimation of solid iodine ▪ grinding of chalk ▪ dissolving sugar or salt in water ▪ evaporation iii) To guide students to carry out the following chemical changes; ▪ decomposition of solid carbonate ● burning of any fuel	i) To describe the characteristics of physical change. ii) To carry out experiments on physical changes of matter. iii) To describe the characteristics of chemical changes. iv) To carry out experiments on chemical changes.	–sugar –table salt –heat source –kettle –chalk –pestle and mortal –magnet –solid iodine –water –ice –Pb(NO3) solution, CuSO4 solution, Zn metal, CuCO3, –Acids –candle –Aluminium foil –Magnesium ribbon		– Describe characteristics of physical change. – Describe the characteristics of chemical changes. ●	
				3rd	**MIDTERM TESTS**							

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				4th	**MIDTERM BREAK**							
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		APRIL	1		4. Elements and symbols.	6	i) To guide students to discuss the meaning of an element as compared to other substances. ii) To discuss with students on how to use alphabetical letters and their combinations to form the symbols of elements. iii) To guide students on how to use the periodic table to differentiate metals from non-metals.	i) To explain the meaning of element. ii) To assign names and symbols to; – Monoatomic elements. eg: Al, K, etc. – Polyatomic elements; O_2, Cl_2, N_2. – Special elements which carry Latin names; Na, Fe, Ag, etc iii) To assign names and symbols to chemical compounds. iv) To differentiate metals elements from non-metals.	– Copper – sodium – zinc – Aluminium – iron – sulphur – hydrogen – periodic table.		– With examples explain the meaning of element. - Assign names and symbols to different elements.	

			2		5. Compounds and mixtures.	09	i) Leading students to discuss the impossibility of destroying or creating energy. ii) Guiding students to perform experiments on the conservation of energy from one form to another and to discuss the results obtained.	i) Discussing the impossibility of destroying or creating energy.(law of conservation of energy) ii) Performing experiments on the conservation of energy from one form to another and to discuss the results.	Wall charts showing energy change, voltaic cell, electric cell, bar magnets, iron fillings, water, source of heat, Cu foil, H_2SO_4(1M), lamp bulb, beaker, Mg ribbon, Abrasive paper, Fe fillings.		i) Ability to explain the law of conservation of energy. ii) Ability to performing experiments on the conservation of energy from one form to another.	
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		APRIL	5				● To guide students to demonstrate the changes of mater from one state to another.	●To explain the importance of changing one state of matter to another.	●		● De monstrate how you can change one state to another and their importance.	

	Differentiate physical from chemical properties of matter.	MAY	2				● To discuss with students the advantage of changing one states of matter to another. ● E.g - Distillation of form pure components of mixtures. - Evaporation of dry things - Formation of ice in refrigerators. - Melting metal to form alloys.					
			3		3. Physical and chemical changes.	1 2	● To discuss with students about the meaning and characteristics of physical change. ● To guide student to carry out the experiments on physical change and to include ● Melting of ice ● Boiling of water ● Condensation of steem ● Formation of ice.	●To describe the characteristics of a physical change. ●To carry out experiments on physical changes of matter.	● Sugar ● Table salt ● Heat source ● Kettle ● Chalk ● Pesth and mortar ● Magnet solid iodine		● Describe the characteristics of physical change.	
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							● Magnetization of iron ● Sublimation of solid iodine ● Grinding of chalk ● Dissolving sugar or salt in water ● Evaporation ● To guide students to carry out the following chemical changes -Decomposition of solid carbonate -Burning of and fuel	●To describe the characteristics of chemical change. ●To carry out experiments on chemical change.	● Water ● Ice ● $Pb(No_3)$solution ● $Cuso_4$ solution ● Zu metal ● $CaCo_3$ ● Candle ● Aluminium foil ● Magnesium ribbon ● Acids.		● Describe the characteristics of chemical change.	
1 – 06- 2013 – TERMINAL EXAMINATION												
		J U L Y	4 - 5		4. Elements and Symbols	6	● To guide students to discuss the meaning of an element as compared to other substances.	●To explain the meaning of elements. ●To assign names and symbols to - Mono atomic elements e.g Al, K, Na, Cu, pb etc. ●Polyatomic elements e.g O_2, Cl_3, N_2, S_8, P_4 ●Special elements K, Na, Fe, Ag, An, Hg, Pb, Sn, Sb, Cu which carry latin names	●		● With example explain the meaning of element.	

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Applying a different methods to separate mixtures into pure components.							● To discuss with students on how to use alpha be trial letters and their combinations to form the symbols of elements.	●To assign names had symbols to chemical elements.	‘’		● Assign names and symbols to differentiate element.	
							● To guide students on how to use the periodic table to differentiate metals elements from non-metals elements.	●To differentiate metals elements and non-metals elements.	‘’		● Explain the meaning and give example of compounds and mixtures.	
		AUGUST	1-3		5. Compounds and mixtures.	9	● To guide students to discuss the differences between compounds and mixtures by referring to their characteristics properties.	●To differentiate between compounds and mixtures by referring to their characteristics properties.	‘’		●	

							● To guide students to prepare binary compound such as iron II sulphide (Fes) from a mixture of solid iron fillings and awarded sulphur by heating.	●To prepare a binary compound.	‘’		● Pre pare bring using Fe and Sulphur powder.	
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							● To discuss with students about the properties of compounds in compassion to the properties of its constitute elements.	●To compare the properties of a compound with those of its constituents elements.	"		● Co mpare the properties of compound with those of its constituent element.	
							● To discuss with students the meaning of mixtures and its examples.	●To explain the meaning of mixture with example.				
		AUGUST	4-5 2-3				● To discuss with students about properties of solutions suspension, and emulsions.	●To classify mixtures into solutions, suspensions, and emulsions.	"		● Clar ify a mixtures into solutions, suspensions an emulsions.	
		SEPTEMBER			5. Separation of mixture	12	● To discuss with students about the procedures for carrying out the following separation ● Decantation ● Filtration ● Evaporation ● Simple distillation ● Fractural distillation ● sublimation ● Chromatography ● Layer separation ● Solvent extractric	●To carry out the different methods used to separate mixture.	● Colour flower ● Kerosene ● Water ● Black ink ● Ethanol ● iodine ● Crystal sugar ● clay soil ● Toluene ● Filter paper ● Heat ● Source ● Funnel;		●	

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							● To guide students to discuss the importance of obtaining separate components of the mixtures.	●To explain the significance of separating different mixtures.	●		● To explain common methods of separating mixture.	
MID – TERM EXAMINATION												
		OCTOBER	2	AIR COMBUSTION, RUSTING AND FIRE FIGHTING	1. Composition of air.	2	● To guide students to discuss the proportions of different gases in air.	●To name the gases present in air and their proportions.	● Walls /Charts showing composition of air.		● Names the gases present in air and their proportion.	

							● To facilitate students to demonstrate the presence of the following gases in air. - Carbon dioxide -Oxygen	●To demonstrate the presence of different gases in air.	● Line write ● Phosphorus ● Bell jar ● Water ● Trough ● Candle		● Carry out experiment to demonstrate the presence of oxygen in air. ● Determining a proportion of oxygen in air.	
							● To facilitate student to carry out an experiment to determine the percentage of oxygen in air.	●To determine the percentage of oxygen in air experimentally.	●			
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			3	2. COMBUSTION		3	● To discuss with students the meaning and significance of combustion in real life.	●To explain the meaning of combustion and their significance in real life.	Piece Of Paper Candle Charcoal Kerosene Spirit.		● Explain the meaning of combustion?	

							● To guide students to determine the product of complete combustion of the following substance in air. ● Kerosene, charcoal, paper ● Candle, spirit	●To demonstrate the combustion of different substances in air and analyse the products.	●		● Analyse the product obtained when different substance burned in air.	
							● To discuss with student the application of combustion in real life for explain to mobile ● Burners to get heat and light.	●To describe of application of combustion if real life.	●		● Describe the application of combustion in real life.	
			4 - 5		3. Fire fighting	6	● To discuss with students about the fire caused by ● Petroleum products ● Electricity ● Wood and charcoal ● Paper.	●To classify the types of fires according to their causes.	● Kerosene ● Spirit ● Paper ● Charcoal ● Match box ● Sand bucket ● Waterless ● Foam fire extinguisher ● Soda acid ● Fire extinguisher.		● Classify types of fire according to their sources.	
							● To discuss with students about the reasons why specific types of fires should be extinguished by specific types of fire extinguisher.	●To identify different types of fire extinguishers used different types of fire.				
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							● To lead discussion about the parts played by fuel and oxygen in a fire.	●To state the components needed to start fire.				
							● To discuss with students about the classification of fire extinguishers into: Soda – acid type Foam type Water types Blanket types.	●To classify extinguishers according to the chemicals they contain.	● Asbestos ● Blanket ● Soda-acid ● Fire extinguisher ● Foam fire Extinguisher. Sand bucket.		● Sta te the chemical present in different extinguisher.	
							● To guide students to prepare a small fire carefully e.g. Burning a small paper or a candle, and extinguish it.	●To prepare a small fire extinguisher of the soda-acid types and use to extinguish a small fire.				

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		NOVEMBER	1 & 2		4. Rusting	6	● To discuss with students about the meaning of rusting and economic importance.	●To explain the concept of rusting.	● Iron filing ● Steel/wool ● water ● cotton ● mol ● Grease ● Petroleum ● Jelly ● Heat ● Source ● Mg ribbon ● HCl solution		● Explain with example the meaning of rusting. ● Carry out Experiment to demonstrate condition necessary for rusting.	
							● To guide students to design an experiment to demonstrate the eruditions necessary for iron to rust.	●To demonstrate the erudition necessary for iron to rust.				
							● Summarize and discuss the experimental findings.	●To carry out experiments on different methods of preventing iron from rusting.				
ANNUAL EXAMINATIONS.												