

SCHEME OF WORK

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Name of School: **SHAMSIYE SECONDARY SCHOOL**

Year: **2016**

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 MATERIALS	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. - Wall charts & pictures of industrials, chemical hospital, pharmacy, domestic, kitchen, fertilizer, insecticides, hard drinks.		- 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.				

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Workin g safely in a chemist ry laborat ory.	Carryin g out chemist ry activitie s safely and efficient ly.	F E B R U A R Y	4 & 1	2. LABO RATO RY TECH NIQU ESE AND SAFET Y	1. Rules and safety precaution s 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) Chem istry for secon dary schoo ls, form 1&2, Oxfor d. ii) O-lev el CHE MIST RY Form 2, BEN. iii) O-lev el CHE MIST RY Form 2 Intera ctive CD, BEN. iv)Yo	– To mention and explain the safety measure needed to avoid accidents in chemistry laboratory.	
			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	– Wall chart pictures showing possible laboratory accidents. – First aid kit containin		● How many possible causes of accidents I a chemistry laboratory. ● Name all The items found in a first aid kit.	

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							demonstrate how each first aid kit item is used. iv) To use the first aid kit to provide first aid to an accident victim.	g all of its items.	u tube(for video clips)	● 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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Treatin g and purifyin g water with environ mental conside ration.	To purify and use water while conserv ing the environ ment.	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 ₂ O ₂ , – Irritant; H ₂ SO ₄ – Explosive – Corrosive ; H ₂ SO ₄	i) Che mistr y for seco ndar y scho ols, form 1&2, Oxfo rd. ii) O-lev el CHE MIST RY Form	Draw and label the basic chemistry warning signs.	
			2	3. HEAT SOURC ES AND	1. Heat sources	4	To discuss with students about how to use the following heat sources in a chemistry laboratory; – candle	i) To discuss with teacher about how to use the heat sources in a	– Candle – Spirit burner		– Identify different kind of heat sources that can be	

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				FLAME S			– spirit burner – corrosive burner (kibatari) – charcoal burner ii) To discuss with students about how Bunsen burner works.	chemistry laboratory. To explain how a Bunsen burner works.	– Kerosene burner (kibatari) – Charcoal burner – Bunsen burner	2, BEN. iii) O-level CHEMISTRY Form 2 Interactive CD, BEN. iv) YouTube (for video clips)	used in chemistry laboratory. • Explain the working function of a Bunsen burner.	
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Applying the scientific procedures in carrying out		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.	i) To produce luminous and non-luminous flames from different fuel burns. ii) To state the uses	– Spirit burner – Kerosene burner (kibatari) – Charcoal burner – Bunsen burner		– Produce luminous and non-luminous flames from different burners.	

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investigations in chemistry							- flame test of elements - production of light - production of heat	of different types of flames.	– Kerosene fuel			
			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;	– 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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							• 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.					
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Dealing with nature and	Explaining the nature and properti		1		3. Application of the scientific procedure s.	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,	Apply the scientific procedure in carrying out a project on	

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properties of matter.	es of matter.	A P R I L							form1&2, Oxford.	a chemistry investigation.		
			2	5.	1.	2	To guide students to discuss the meaning and definition of matter.	To explain the concept of matter.	Solid, liquid and gases.	ii) O-level CHEMISTRY Form 2, BEN.		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.		iii) O-level CHEMISTRY Form 2 Interactive CD, BEN. iv)You tube(for video clips)		Demonstrate how you can change one state of matter to another and explain their importance.
COMPETENCE	GENERAL OBJECTIVES	M O N T H	W E E K	MAI N T O P I C	SUB-TOPIC	P E R I O D S	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIALS	REFERENCES	ASSESSMENT	REMARKS

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Differentiate physical from chemical properties of matter.					2. Physical and chemical changes.	1	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 mortar –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. ●				
						2								
						3 rd	MIDTERM TESTS							
						4 th	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.	10	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	Wall charts showing energy change, voltaic cell, electric cell, bar magnets, iron fillings, water, source of heat, Cu foil, H ₂ SO ₄ (1M),		i) Ability to explain the law of conservation of energy. ii) Ability to performing experiments	

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								form to another and to discuss the results.	lamp bulb, beaker, Mg ribbon, Abrasive paper, Fe fillings.		on the conservation of energy from one form to another.	
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		APRIL	5				To guide students to demonstrate the changes of matter from one state to another.	To explain the importance of changing one state of matter to another.			Demonstrate 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.	12	- To discuss with students about the meaning and characteristics of physical change. - To guide student to carry out the	- To describe the characteristics of a physical change. - To carry out experiments on	- Sugar - Table salt - Heat source - Kettle - Chalk		Describe the characteristics of physical change.	

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							experiments on physical change and to include • Melting of ice • Boiling of water • Condensation of steem • Formation of ice.	physical changes of matter.	• Pesth and mortar • Magnet solid iodine			
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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(NO₃)so lution • Cuso₄ solution • Zu metal • CaCo₃ • Candle • Aluminui m foil • Magnesi u m ribbon • Acids.		• Des cribe the characteri stics of chemical change.	
1 – 06- 2013 – TERMINAL EXAMINATION												
		J U L	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	•		• Wit h example explain the meaning	

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		Y						- Mono atomic elements e.g Al, K, Na, Cu, pb etc. • Polyatomic elements e.g O₂, Cl₃, N₂, S₈, P₄ • Special elements K, Na, Fe, Ag, An, Hg, Pb, Sn, Sb, Cu which carry latin names			of element.	
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Applying a different methods to separate mixtures							• 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	• To differentiate between compounds and mixtures by referring to their	"		•	

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into pure components.							their characteristics properties.	characteristics properties.				
							To guide students to prepare binary compound such as iron II sulphide (FeS) from a mixture of solid iron fillings and powdered sulphur by heating.	To prepare a binary compound.				
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		AUGUST					To discuss with students about the properties of compounds in comparison to the properties of its constituent elements.	To compare the properties of a compound with those of its constituent elements.	"		Compare 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.				
							To discuss with students about properties of solutions suspension, and emulsions.	To classify mixtures into solutions, suspensions, and emulsions.			Clarify a mixtures into solutions, suspensions and emulsions.	

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		S E P T E M B E R	4 - 5 2 - 3		5. Separation of mixture	1 2	- 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												
		OCTO BER	2	AIR CO MB USTI ON, RUS TIN G	1. Compositi on of air.		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 compositio n of air.		Na mes the gases present in air and their proportion.	

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				AND FIRE FIG HTG ING		2	- 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.	
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			3	2. CO MB USTI ON		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?	

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							- 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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		N O V E M B E R	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.												