SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

Group of organisms according to their similarities and differences.	Classify organisms in their respective kingdoms phylum/ division and class.	**JANUARY**	3	CLASSIFICATION	Kingdom Plantae. Division Canifero Phyla	4	●Grouping students to observe the collected plants. ●Leading of a class discussion on general and distinctive features of the division canifero phyla. ●Leading a class discussion on the structure of pine. ●Leading a class discussion on the advantages and disadvantages of plants under division coniferophyla.	●Observing the collected and displayed plants and record the observable features. ●Discussing general and distinctive features of the division. ●Discussing the structure of pine drawing and labelling it. ● Outlining advantages and disadvantages of plants under division coniferophyla.	● A variety of conifers ● Pictures of conifers e.g. Pine, cypress, spruce, cedar. ●Cones (fresh or preserved)	Biology Form 3 & 4 (TIE) & Fundamentals of Biology Book 3 J.M Mwaniki & G.G Geoffrey & Human Biology Zambek Publ		

SCHEME OF WORK

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

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Class/Stream: **FORM THREE** Subject: **BIOLOGY**

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COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

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TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

Group of organisms according to their similarities and differences.	Classify organisms in their respective kingdoms phylum/ division and class.	**JANUARY**	**4**	CLASSIFICATION OF LIVING THINGS.	**DIVISION ANGIOSPERMOPHYTA (Flowering Plants)**		●Grouping students and guiding them on observing variety of flowering plants. ●Leading a class discussion on general and declarative features of division Angiospermophyta. ●Leading a class discussion on the structure of representative of representative plants of class Monocotyledon and Dicotyledon.	●Students in their groups to observe a variety of flowering plants and record their observable features. ●Discussing the general and distinctive features of division Angiospermophyta. ●Discussing the structure of representative plants of the two classes. ●Drew and label the representative plants under each class.	● Flowers from dicots and monocots. ● Fruits and seeds of flowering plants. ●A variety of flowering plants.	-//-	Students should be able to explain general and distinctive features of division Angiospermophyta.	

SCHEME OF WORK

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

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

Year: **.....**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

-do-	-do-	JANUARY	4	CLASSIFICATION OF LIVING THINGS.	DIVISION ANGIOSPERMOPHYTA (Flowering Plant	4	Grouping students and guiding them in observing variety of flowering plants. -Leading a class discussion on:- General and distinctive features of division Angiospermophyta. The classes and general and distinctive features of class Monocotyledoneae and Dicotyledoneae. The structure of representative plants of class Monocotyledoneae and Dicotyledoneae.	Students in their groups to observe a variety of flowering plants and record the observed features. Discussing the general and distinactive features of division Angiospermophyta. Discussing the general and distinactive features of the class of division Angiospermophyta. Discussing the structure of representative plants of the two classes and then draw and label the representative plants.	●Flowers from dicots and monocots ●Fruits and seeds of flowering plants. ●A variety of flowering plants. ● A variety of monocotyledonous and dicotyledonous plants. Grains (maize, wheat, rice, millet) Mature young bean and maize plants. Charts showing characteristics of classes of the division	-//-	-The students should be able to Explain general and distinctive features of division Angiospermophyta. Outline the distinctive features of each class of the division Angiospermophyta.	

SCHEME OF WORK

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

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

Year: **.....**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

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COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

							● Organizing a brainstorming session on advantages and disadvantages of kingdom Plantae division Angiospermophyta. ● To clarify students responses.	● Brainstorm on the advantages and disadvantage of Kingdom Plantae, division Angiospermophyta.	● A charts on the representative plants under the division Angiospermophyta.	-//-	Students should be able to explain advantages and disadvantages Angiospermophyta.	
Demonstrate approximate use of biological knowledge, concepts, principles and skills in evaluating the roles of various physiological processes in plants and animals.	Acquire basic knowledge, principles, concepts and skills in evaluating the roles of physiological processes in plants and animals.	**F** **E** **B** **R** **U** **A** **R** **Y**	1	M O V E M E N T	Concept of Movement and Locomotion.	4	● Guiding students to brainstorm on the meaning of movement and locomotion. ● Leading a class discussion on differences between the two concepts. ● Organizing students in groups to discuss the importance of movement in plants and animals. ● Design activity for students to demonstrate movement and locomotion.	● Brainstorming on meaning of movement and locomotion. ● Discuss the differences between movement and locomotion. ● In groups to discuss the importance of movement in plants and animals. ● In groups, to perform various actions depicting movement and locomotion.	● Variety of Organisms such as insects fish and mouse. ● Charts on locomotion/movement of different organisms. ● Pictures/ drawings of various organisms depicting movement and locomotion.	-//-	Giving quiz to observe how accurate can the student explain the concepts of movement and locomotion. Observing of the student can be able to demonstrate movement locomotion actions.	

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS
-do-	-do-	FEBRUARYY	2				Guiding students through questions and answers to give differences between movement and locomotion.	Pointing the differences between movement and locomotion.	Variety of organisms such as insects, fish and mouse.	-//-	Give out quick to check if students can accurately explain the concept of movement and locomotion.	

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

				MOVEMENT	Movement of the human body.	2	● Guiding students in groups in examining the model of human skeleton. ● Leading a class discussion on the structure of the human skeleton and its major components. ● Guiding students in groups to discuss the adaptation of the major components of the human skeleton	● In groups, examining the picture /model of human skeleton and identify its major parts. ● Discussing structure of the human skeleton and draw a well labelled diagram of it. ● In groups discuss the adaptations of the major components of the human skeleton.	● Model of Human skeleton. ● Diagram/ drawing of the major components of human skeleton.	-//-		

SCHEME OF WORK

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

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

Year: **.....**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

					The Human skeletal system.							
COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

	FEBRUARY	2 & 3	MOVEMENT	Muscles and Movement			● Organizing a brainstorming session on machining of muscles ● Leading a class discussion on types of muscles.	● Brainstorm on meaning of muscles. ● Observing in groups charts/models pictures of different muscles and identity their differences.	● Charts/diagrams/picture of different types of muscles.	-//-	Administer quiz to see the ability of a student to explain how muscles facilitate movement. To check if the student is able to describe the structure of muscles by asking question.	
-do-					6		● Design an activity for students to demonstrate the role of muscles in movement. ● To lead a class discussion on the structure of muscles.	● In pairs to perform various actions depicting the role of muscles in movement. ● In groups to observe/diagrams of muscles and discuss its structure. ● To draw and ● label the structure of biceps, during bending and stretching of the arm.	● Charts/diagrams/photograph of muscles	-//- -//-		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS
do-	-do-	FEBRUARY	4		2.3 Movement in plants.	4	● To lead a class discussion on the adaptations of different types of muscles to their roles. ● To guide students in groups through questions and answer to discuss on causes, effects and preventive measures of muscles craps.	● In groups to observe pictures/diagrams of different types of muscles and discuss their adaptations. ● In groups to discuss causes, effects and preventive measures of muscles cramps	● Models/pictures/diagrams of muscles.	-//-	To check if a student is able to explain causes, effects and preventive measures of muscle cramps by giving a short test.	

SCHEME OF WORK

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

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

Year: **.....**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

							● To guide students in observing plants showing movement in plants. ● To organize students in groups and their discuss movement exhibited by plants and their importance. ● To make clarification and conclusion on meaning and importance of movement exhibited by plants. ● Leading a class discussion on the types of movement exhibited by plants.	● .observing polled plants showing movement and record their findings. ● In groups to discuss movement exhibited by plants and their importance and then present. ● To discuss in groups on the types of movement exhibited by plants.	● Photograph diagrams and charts showing movement in plants. ● Plants showing movement of curvature. ● A variety of plants showing movement exhibited by plants.	-//-	To check if a students is able to explain the concept of movement by giving quiz. ● Observing students in groups investigating movement in plants.	
COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

							● Provide guidelines to students for performing experiments to investigate movement exhibited by plants. ● To lead a class discussion on findings, making clarifications and conclusion.	●Students in groups by using guidelines to perform experiments to investigate movement exhibited by plants and record their findings. ● To presents their findings.	● Potted plants.	-//-	-//-	
MID TERM TESTS AND MIDTERM BREAK												

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

Demonstrate appropriate use of biological knowledge concepts, principles and skills in evaluating the role of various physiological processes in animals.	Acquire basic knowledge, principles, concepts, and skills in evaluating the role of physiological processes in animals.	MARCH	3	COORDINATION	Conception of coordination	4	● To guide students in group to discuss meaning and importance of coordination. ● To make clarification and conclusion. ● To guide students in observing charts/diagrams/ pictures showing main components of nervous coordination. ● To lead a class discussion on the ways in which coordination is brought about.	● To discuss in their groups meaning and importance of coordination and present their tasks. ● To observe charts/diagrams /pictures showing main components of nervous coordination and discuss the role of each components. ● In groups to discuss the ways in which coordination is brought.	● Hot objects ● Sharp object ● Live specimen of insects and small mammals. ● Game or puzzle charts on nervous coordination process.	-//- -//-	To check if a student's is able to:- ● Explain the concept of coordination in organisms. ● Outline ways in which coordination is brought about by giving test.	

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS
-do-	-do-	MARCH	4		Nervous coordination in Human Neurones.	2	● To lead a class discussion on the structures of motors, sensory and neurones. ● Organizing students in groups and ask them to discuss on the roles of motor, sensory and relay neurones. ● To summarize students responses, make general comments and necessary corrections.	● To discuss in groups in structure of motor, sensory and relay neurons. ● To discuss on the role of motor, sensory and relay neurons and present their tasks.	● Models/pictures/photographs of neurons ● Prepared slides of neurones ● Microscope ● A chart showing summary of the roles of motor, sensory and relay neurones.	-//-	● To check if the student can:- ● Describe the structure of motors, sensory and relay neurones. Explain the role of motor sensory and relay neurones.	

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

					Central Nervous System (CNS)	2	● To organize a brain storming session on meaning of central nervous system (CNS). ● To summarize students responses and give general comments and conclusion. ● To guide students in groups to identify the components of the central nervous system and discuss their roles.	● Brainstorm on meaning of CNS ● In group to identify the components of the CNS and discuss their roles.	● Charts of the Central Nervous System. ● Diagrams / models of brain and spinal cord.	-//-	● To check if the students able to give meaning of CNS, identify, components of the CNS and their functions by giving quiz.	
COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS
							● To guide students in groups to observe models/diagrams of the spinal cord and brain and discuss their structure.	● To observe models/diagrams of brain and spinal cord, discuss their structures. ● Draw and label the structure of brain and spinal cord.	● Models of brain and spinal cord.	-//-		

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

-do-	-do-	APRIL	1	COORDINATION	Peripheral Nervous System (PNS)	2	● Organizing a brainstorming session on meaning of PNS. ● To summarize, make corrections and conclusion. ● To lead a class discussion on components of PNS	● Give meaning ● Discuss the components of PNS in groups.	● Photograph / charts showing the structure of PNS	-//-	Asking oral questions to check if the student is able to give meaning of PNS & identify its components.	

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

					Reflex Action		● To design Activities for students to demonstrate the reflex action. ● To lead students to discuss the meaning of reflex action.	● Perform Activities showing reflex actions. ● To discuss meaning of reflex action.	● Hot objects ● Live insects or small mammals. ● Toys (snake, scorpion)	-//-	To check of the students is able to given meaning of reflex action by asking questions.	
COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

		APRIL			Reflex Action	6	• To display the charts/diagrams showing the neurotic pathway of a reflex action. • To lead a class discussion pathway of a reflex action.	• Observe and identify the components of neurotic pathway of reflex action. • To discuss the neurotic pathway of a reflex action.	• Charts/diagrams showing neurotic pathway of a reflex action.			
-do-	-do-		1 & 2				• To design activities for students to demonstrate simple reflex action and conditional actions. • To lead a class discussion on the differences between simple reflex action and conditioned reflex action.	• In groups to demonstrate simple and conditional reflex actions and record their findings. • To discuss the differences between simple and conditional reflex actions.	• Charts/drawings of simple conditional reflex actions. • Video/radio tapes showing simple and conditional reflex actions.	-//-		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS
-do-	-do-	**APRIL**	3 & 4	COORDINATION	Sense Organs	6	● To guide students in groups to observe models/pictures/diagrams and brainstorm on meaning of sense organ, identify them and their related position. ● Lead students to discuss in groups structure of each sense organ. ● Leading a class discussion on the role of each sense organ and its adaptive features.	● Brainstorm on of sense organ, identify them and state their relative position. ● Discuss in groups structure of sense organ and draw and label the human ear, eye, nose tongue and s. Of the skin. ● Discussing role of each sense organ and its adaptive features.	● Charts of different sense organs. ● Charts/models/photographs of different sense organs.	-//-	Check if a students is able to:- ● Explain meaning of sense organ. ● Identify types of sense organs. ● Describe structure of each sense organ . ● State functions of sense organ by giving test.	

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

					Drug and drug abuse in Relation to Nevours Coordination.		● To lead students to discuss in groups meaning of drug and drug abuse in relation to nervous coordination.	● In groups to discuss meaning of drug and drug abuse in relation to nervous coordination.	● Video/film on effect of drug and substance abuse ● Simple drugs.	-//-		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

.	Apply appropriate skills in managing problems related drug/substance abuse	**MAY & APRIL**	4 & 1		Drugs and Drug abuse in relation to our	6	● To invite heath practitioner officer to talk on drug addiction, its causes and effects. ● To guide students to clarify major issues and make conclusion. ● Organize students in groups and discuss on preventive and control measures of drug abuse. ● Use students correspondence and make clarification.	● To summarize major points from the guest speaker presentation. ● Prepare project on cases of drug addiction in their surrounding community. ● Discuss in groups on preventive and control measures of drug abuse.	● Brounchure and fliers on causes and effects of drug abuse. ● Posters of drug addicts or users.	-//-		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

					scoordination.							
					Hormonal Coordination		● To lead a class discussion on the location of the endocrine glands in the mammalian body and types of hormones produced by each gland	●To draw the diagram to show location of endocrine glands in human body.	● Charts/diagrams of endocrine glands and hormones produced by each gland.	-//-		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

Demonstrate appropriate use of biological knowledge, concepts, principles and skills in evaluating the role of various physiological activities in plants and animals.	Acquire basic knowledge principles, concepts and skills in evaluating the role of physiological processes in plants and animals.	**MAY**	1 & 2 & 3	COORDINATION	.Hormonal Endocrine Coordination	6	● Land a class discussion on the: ● Difference between endocrine and exocrine glands. ● Role of each hormone in the mammalian body. ● Disorders of hormonal coordination due to hyper and hypo-secretion on insulin, GH, ADH and throxine.	●Discuss the difference between endocrine and exocrine glands. ●Role of each hormone in mammalian body ●Disorders of hormonal coordination due to hyper- and hypo- secretion of mentioned hormones.	● Pictures/photographs of disorders of hormal coordination . Eg. Goitre gigantism and dwarfisim.	-//-		
					Coordination in plants. Concepts of Topic Nastic responses		● Guide students to observe potted plants in all round light and unilateral light and record their observations. ● To guide students to give meaning of topic and nastic responses through questions and answers	●Observe plants and records observations. ●Give meaning of topic and nastic Reponses.	● Potted plants. ● Mimos plant ● Charts/photographs or pictures of topic responses.	-//-		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS
		MAY	3	COORDINATION	Coordination in plants		● Provide students with guidelines for practical activity on the effects of topic and nastic plants. ● To guide students in discussing on the importance of hydro-geo-photo and chemo- tropisms in plants. ● To lead discussion, make general and conclusion on the significance of tropisms and nastic responses in plants.	● Using guidelines to carry out experiments to investigate the effects of tropic and nastic in plants and record their findings. ● To discuss on groups the importance of hydro –geo-photo and chemo-tropism in plants. ● To outline significance of tropism in plants.	● Potted plants subjects to all round –light and unidirectional light. ● Charts to show examples of tropic responses. ● Mimosa plant.	Biology Form 3 & 4 (TIE) 2007		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

			4	EXCRETION			• Brainstorm • Organize a brainstorming session on meaning of excretion • To lead students to name excretory.	• To brainstorm on meaning of excretion.	• Models of kidney. • Diagram / charts of excretory system.			
TERMINAL EXAMS - LONG VACATION												
COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

Demonstrate appropriate use of biological knowledge, concepts, principles and skills in evaluating the roles of various processes in plants and animals.	Acquire basic knowledge principles, concepts and skills in evaluating the role of physiological processes in plants and animals.	JULY	3	EXCRETION	Excretion In Human	4	• To lead students to discuss on the types on the types of excretory organs in human. • To dissect any small mammal and display the urinary system. • To lead students to discuss the structure of the urinary system and its adaptive features. • To organize students in groups and brainstorm on the process of urine formation. • To make clarification.	• To discuss the types of excretory organs in human. • To observe the urinary system and identify the structures. • To discuss and draw the structure of human urinary system. • To discuss the process of urine formation in groups.	• Dissecting kit. • Chloroform • Cotton • Models/charts pictures showing human urinary system.			

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

-do-	-do-		4	EXCRETION	Complication and disorder of excretory sysem.	4	• To prepare a case study on common disorders of the excretory system. • To lead students in groups discuss on causes, symptoms, effects and control measures of disorders and complications of the excretory system.	• To discuss on the case study. • In groups to discuss of causes, symptoms, effects and control measures of disorders and complications the excretory system.	• Charts/diagrams of the urinary system and associated disorders and complications. • Charts/models/pictures showing urinary system.	Human biology Zambak Publishers.		

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

		AUGUST	1		Excretion in plants.	4	• To lead students through question and answers to mention ways by which plants get rid of excretory products and give examples . • To make general comment and conclusion on different types of excretory products eliminated by plants.	• To summarize major points and list down types of excretory products eliminated by plants.	• Sample of plant excretory products such as gum, latex alkaloids.	Biology Form 3 & 4 (TIE)		
COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

		A U G U S T					● To lead students in groups to discuss the importance of excretory products of plant.	● To discuss in groups on the importance of excretory products of plants.	● A chart showing various plants and their waste products.		
-do-	-do-		2	R E G U L A T I O N	C o n c e p t o f R e g u l a t i o n	2	● To guide students in groups to discuss the meaning of regulation and its importance. ● To lead a plenary discussion and make clarification and conclusion of the concept of regulation and its importance. ● To lead a class discussion on the types of regulations; temperature regulation, regulation of water and mineral salts in animals.	● To discuss the meaning of regulation and its importance. ● To discuss groups on the types of regulation.	● A chart showing the process of regulation in animals. ● Charts /pictures /diagrams showing various types of regulation.		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

-do-	-do-	AUGUST	2 & 3	REGULATION	Temperature Regulation in Animals.		● Guide students in group to perform experiments to determine the temperature of a frog and a small mammal under different conditions. ● Clear misconceptions and make conclusion. ● To lead a class discussion on the temperature regulation in mammals. ● To lead a class discussion on the structure of the skin in relation to temperature regulation (vasoconstriction and Vasodilation)	● In groups to determine the temperature of a frog and a small mammal, under different conditions and record their findings. ● Divide the experimental animals into two groups; ectoderms and endodermis. ● In pairs, carry out practical exercise on measuring body temperature before and after performing exercise and report that findings. ● To discuss in groups the body reactions when temperature of the surrounding is lower and when is higher than body temperature. ● Draw an label section of the skin showing vasoconstriction and vasodilation.	● Toad /Frog ● Small mammal (rat, mouse, rabbit_ ● A clinical thermometer. ● A chart showing a table for recording body temperature. ● Pictures/diagrams showing the reaction of the skin under different conditions (hot and cold)	Fundamentals of Biology Book 3 (J.M. Mwanki (G.G. Geoffrey)		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

-do-	-do-	AUGUST	4	REGULATION		4	● Lead students in groups to discuss on meaning of osmoregulation and its importance. ● To make Clarification and conclusion on meaning and importance. ● To guide students through question and answer to mention factors which may affect the contents of salt and water in the body. ● To guide students in groups to categorize factors which may salt and water content.	● Discuss the meaning and importance of osmoregulation. ● To mention the factors which may affect the contents of salt and water in the body. ● Present their task and categorize the factors.	● Charts/ pictures photographs or diagrams showing osmoregulti on in mammals. ● Models/ Charts/ pictures showing the structure of a nephron.			

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

		SEPTEMBER	1		Blood Sugar regulation in mammals		● Lead students to discuss on how hormones regulate sugar level in the blood (insulin and glucagon. ● To guide students summarize major ideas and make conclusion on the mechanism of regulation sugar level.	● To discuss in groups how hormones regulate sugar level in the blood and present their task.	● Pictures /charts photographs showing mechanisms of regulation sugar level in the blood.			
COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

-do-	-do-	SEPTEMBER	2	REGULATION	Blood sugar regulation	4	● To assign tasks to students in group to read literatures and outlines the causes, symptoms and effects of high and low sugar level in the blood. ● To guide students to summarize major ideas and make conclusion on the mechanisms of regulating sugar level in the blood.	●Students to read on literature and outlines the causes, symptoms and effects of high and low sugar level in the blood and present their tasks.	●			

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

				REPRODUCTION	Concept of reproduction.			•	•			
COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

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

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

Year: **.....**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

Demonstrate, appropriate use of biological knowledge, concepts, principles and skills in evaluating the role of various physiological processes in plants and animals.	Acquire basic knowledge, principle and skills in evaluating the role of physiological processes in plants and animals.	SEPTEMBER	3	REPRODUCTION	Concept of reproduction	2	● To guide students to discuss the meaning and importance of reproduction. ● To summarize students responses and make necessary clarification. ● To observe a variety of organism which reproduce by seeds or vegetable. ● To lead a plenary discussion, make general comments and conclusion.	● To discuss the meaning and importance of reproduction. ● To observe a variety of organisms displayed and discuss in groups the ways in which the plants reproduce by asexual or sexual reproduction. ● To discuss in groups the difference between asexual and sexual reproduction and present their group task.	● Flip charts ● V.I.P.P cards carrying key message on reproduction ● Variety of organism.	Biology Forms 3 & 4 (TIE) 2007		
					Meiosis and Reproduction		● To guide students to brainstorm the meaning of meiosis using charts/photograph and models showing stages of meiosis. ● To summarize students responses and make conclusion. ● To lead a class discussion on the significance of meiosis in relation to reproduction.	● To brainstorm the meaning of meiosis. ● To discuss on the significance of meiosis in relation to reproduction.	● Charts/photographs showing stages of meiosis. ● Models showing stages of meiosis.	Fundamentals of Biology Book 3.		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS
-do-	-do-	SEPTEMBER	4	REPRODUCTION		2	● To display charts/photographs/diagrams showing the events taking place in each stage of meiosis process. ● To lead a plenary discussion and make reflection on students responses to summarize major idea.	● To observe the events taking place in meiosis and outline them. ● Present for class discuss.	● Prepare microscope slide on stages of meiosis ● Microscope ● Charts/ photographs models showing stages of meiosis.	Human Biology Zambak Publishers.		

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

					Reproductive in flowering plants.	2	● To provide guidelines to students for collecting various types of flowers. ● To lead a plenary discussion and make clarification and conclusion on the structure of a flower. ● Lead students to identify and discuss reproductive parts of flowers.	● To observe the collected flowers and identify different parts of the flower and describe their structures. ● To draw a well labelled diagram of the named flower. ● To identify and discuss reproductive parts of a flower.	● Variety of flowers. ● Charts/models/photographs of flowers.	-//-		

SCHEME OF WORK

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

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

Year: **.....**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

					The structure of the flower.							
COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

-do-	-do-	OCTOBER	3	REPRODUCTION	Reproduction in mammals	4	● To guide students to identify male and female reproductive organs from the dissected mice. ● To lead a class discussion and make correction and clarification on the structures of male and female reproductive systems.	● In groups to identify in male and female reproductive organs from the dissected mice. ● To discuss on the structure of male and female reproductive systems and draw the diagrams.	● Mouse/any other small mammal ● Dissecting kit. ● Tray / dissecting board ● Chloroform ● Cotton wool ● Water.	-//-		

SCHEME OF WORK

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

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

Year: **.....**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

			4		Gametefo rmatio n and fertili zatio n		● To lead a plenary discussion on gamete formation, liberation and meaning of gamete. ● To guide students to identify the phases of menstrual cycle and events that take place in each phase. ● To guide students to discuss the process of fertilization pregnancy and child birth.	● To discuss in groups the process of gamete formation in mammals and liberation. ● To identify the phase of menstrual cycle and events that take place. ● Discuss on the process of ovulation and hormones involved in the process. ● To discuss in groups the process of fertilization pregnancy and child birth.	● Pictures showing formational liberation of gametes. ● Charts on fertilization process.	-//-		
COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

Use appropriate skills to solve various health related problems.	Take appropriate precaution and measures against problems. Related to reproductive processes in plants and animals.	NOVEMBER	1	REPRODUCTION	Multiple Pregnancies.	2	● To lead as in groups to discuss factors affecting fertilization. ● To lead students to discuss on meaning and importance of artificial insemination. ● To guide students to summarize the major responses and make general comments.	● To discuss in groups the factors affecting fertilization and present their tasks. ● Discuss on meaning and importance of artificial insemination, and present their tasks.	● Charts/drawing depicting artificial insemination.	-//-		
			1 & 2		Disorders of Reproductive system.	4	● To lead students to discuss on meaning and causes of multiple pregnancies. ● To lead a class discussion and summarize the major points on differences between identical and fraternal twins. ● Lead students in groups and discuss on types of disorders of the human reproductive system.	● To discuss of meaning and causes of multiple pregnancies. ● Discuss on differences between identical and fraternal twins. ● To discuss in group different types of disorders of the human reproductive system.	● Charts/ pictures on multiple pregnancies. ● Charts /diagrams or pictures or pictures showing identical and fraternal twins ● Document on disorders of the human reproductive system..	-//-		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS
-do-	Take appropriate precautions and measures against problems related to reproductive processes in animals	NOVEMBER	2 & 3				● Guiding students in groups with questions to discuss on causes and effects of the reproductive system disorders. ● To lead a class discussion on the possible remedies of reproductive system disorders.	● To discuss on causes and effects of the reproductive system disorders. ● To discuss possible remedies of the reproductive system disorders.	● Documents on the disorders of the human reproductive system.	--//-		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

					Complications of the Reproductive system.	6	● To guide students to brainstorm on the types of complications of the reproductive systems. ● To summarize the major points on the meaning of aborting, still birth, miscarriage and ectopic pregnancy. ● Lead students to discuss on causes and effects of complications of reproductive system. ● To make clarification and conclusion. ● To guide students to discuss in groups ways of minimizing complications and disorders of the reproductive system.	● To brainstorm on the types of complications of the reproductive system. ● To discuss on causes , effects of complications of reproductive system. ● To discuss ways of minimizing complications and disorders of the reproductive system.	● Video, tapes ● Text on case studies on complications of the reproductive system. ● Video tapes/charts pictures photographs showing complications of the female reproductive system.	-//-		
COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

-do-	-do-	NOVEMBER	4	REPRODUCTION	Sexuality and sexual Health and Responsible sexual behaviour.	4	● Guide students to discuss meaning of sexuality sexual health and sexual behaviour. ● Guide students in groups to discuss on factors influencing sexual behaviour in different groups of people. ● Guide students to discuss responsible and irresponsible sexual behaviour and their impacts on one self, family and community. ● To guide students to summarize outline ways of eradication irresponsible sexual behaviour in the family, school and community. ● To lead plenary discussion and make clarifications on appropriate life skills required to cope with adolescent sexuality and sexual behaviour such as self esteem, problems solving and decision making.	● Discuss on meaning of the sexuality, sexual health and sexual behaviour. ● Discuss in groups on factors influencing sexual behaviour in different groups of people. ● To discuss the responsible and irresponsible sexual behaviour and their impacts. ● Tabulate differences between responsible and irresponsible sexual behaviour. ● Discuss the ways of eradicating irresponsible sexual behaviour. ● Discuss on appropriate life skills required to cope with adolescent sexuality and sexual behaviour.	● Pictures, charts and photographs, video tapes depicting cases of sexuality and sexual behaviours. ● Radio/video tapes pictures/ charts showing people with different sexual behaviours	-//- -//- -//-		

SCHEME OF WORK

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

Year: **.....** TERM: **1 to 2**

Class/Stream: **FORM THREE** Subject: **BIOLOGY**

COMPETENCE	GENERAL OBJECTIVES	MONTH	WEEK	MAIN TOPIC	SUB-TOPIC	PERIODS	TEACHING ACTIVITIES	LEARNING ACTIVITIES	T/L MATERIAS	REFERENCES	ASSESSMENT	REMARKS
		NOVEMBER	4		Family planning and contraception	4	● To lead student to discuss on the concepts of family planning and contraception. ● Organize students in groups and discuss of various family planning and contraception methods their advantages and disadvantages ● Importance of family planning and contraception.	● To discuss on the concepts of family planning and contraception. ● To discuss of various family planning methods and contraception, their advantages and disadvantages. ● Importance of family planning contraception.	● Various family planning devices. ● Charts/ pictures photographs of family planning devices.	-//-		

SCHEME OF WORK

Name of teacher:**……**

Name of School: **……**

Year: **…….**

TERM: **1 to 2**

Class/Stream: **FORM THREE**

Subject: **BIOLOGY**

					Maternal and child care.		● Lead students to discuss on maternal and child care. ● Assign students to investigate socio-cultural factors which affect maternal and child care. ● To lead a class discussion on the ways of providing appropriate maternal and child care for PLWHA	● To discuss importance of maternal and child care. ● Present their investigations for class discussion. ● To discuss on ways of providing appropriate maternal and child care for PLWHA	● Charts/ pictures and photographs of women and children living with HIV/AIDS	-//-		