BIOLOGY FORM 1 SCHEMES OF WORK – TERM 1								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
5	1	INTRODUCTION TO BIOLOGY	Definition of Biology	By the end of the lesson, the learner should be able to: 1) Define Biology 2) List the branches of Biology	• Define Biology • Linking biology with the science that students learnt in primary	• Charts on various disciplines	• Comprehensive secondary Biology students Bk. 1 page 1 • Teachers bk. 1 pages 1-4 • KLB secondary Biology • Students book Page 1 • Golden tips Biology Page 1	
	2	INTRODUCTION TO BIOLOGY	Importance of Biology Characteristics of organisms	By the end of the lesson, the learner should be able to: 1. Explain the importance of Biology 2. State and explain some of the characteristics of organisms	• Explain the importance of Biology • Naming common Characteristics of organisms.	• Organisms in the school compound • Charts on the characteristics of organisms.	• Comprehensive secondary Biology students Bk. 1 page 1-2 • Teachers bk. 1 pages 1-4 • KLB secondary Biology • Students book Page 1-2 • Golden tips Biology Page 1 • KLB teachers book 1 pages 14-16	
	3-4	INTRODUCTION TO BIOLOGY	Characteristics of organisms External features of plants and animals	By the end of the lesson, the learner should be able to: 1. State and explain some of the general characteristics of organisms 2. Explain the	• Discussion on the other general characteristics of organisms • Collecting, observing and recording external features of plants and animals.	• Organisms in the school compound • Charts on external features of plants and animals	• Comprehensive secondary Biology students Bk. 1 page 2-3 • Teachers bk. 1 pages 1-4 • KLB secondary Biology	

				external features of plants and animals 3. Write down the difference between plants and animals			• Students book Page 2-6 • Golden tips Biology Page 1-2 • KLB teachers book 1 pages 14-16 • Gateway secondary Biology pages 1-3	
6	1	CLASSIFICATION 1	Definition Use of magnifying lens	By the end of the lesson, the learner should be able to: 1. Define classification 2. Use the magnifying lens to observe the external features of plants/ animals	• Define classification • Drawing of a magnifying lens • Using magnifying lens to observe the external features of plants and animals • Discussion on how to calculate magnification	• Magnifying lens • Different specimen of plants and animals • Rulers with measurement in mm • Chart on external features of plants and animals	• Comprehensive secondary Biology students Bk. 1 page 5 • Teachers bk. 1 pages 5-10 • KLB secondary Biology • Students book Page 8 • Golden tips Biology Page 3-5 • KLB teachers book 1 pages 14-16 • Gateway secondary Biology pages 5-12	
	2	CLASSIFICATION 1	Observation of features of organisms Plant leaf forms	By the end of the lesson, the learner should be able to: 1. Record observations of the main external features of plant leaf form 2. Draw different types of leaf forms	• Observing, recording the main external features of the leaf forms of plants	• Different types of leaves • Chart on different types of leaves	• Comprehensive secondary Biology students Bk. 1 page 6-8 • Teachers bk. 1 pages 5-10 • KLB secondary Biology • Students book Page 8-10 • Golden tips Biology Page 4-5 • KLB teachers book 1 pages 17-20	
	3-4	CLASSIFICATIO	External features	By the end of the lesson,	• Observing,	• Different types	• Comprehensive	

		N 1	of plants and animals	the learner should be able to: 1. Observe, record and draw the main external features of plants 2. Observe record and draw the main external features of animals	recording and drawing the main external features of plants • Observing, recording and drawing the main external features of animals	of stems and roots • Different types of small animals • Chart on features of plants and animals	secondary Biology students Bk. 1 page 8-12 • Teachers bk. 1 pages 5-10 • KLB secondary Biology • Students book Page 10-14 • Golden tips Biology Page 3	
7	1-2	CLASSIFICATIO N 1	Necessity and significance of classification Major units of classification	By the end of the lesson, the learner should be able to: 1. State the necessity and significance of classification 2. Name the major units of classification 3. Name the five kingdoms of living things	• Discussion on the necessity and significance of classification	• Charts on classification • Charts with the five kingdoms and examples in each case.	• Comprehensive secondary Biology students Bk. 1 page 12-13 • Teachers bk. 1 pages 5-10 • KLB secondary Biology • Students book Page 14-15 • Golden tips Biology Page 6-12 • KLB teachers book 1 pages 17-20 • Gateway secondary Biology pages 5-12	
	3-4	CLASSIFICATIO N 1	Taxonomic units in plants and animal kingdom	By the end of the lesson, the learner should be able to: 1. List the taxonomic units in plant and animal kingdoms 2. Classify maize and human beings	• Naming taxonomic units in plants and animal kingdoms • Classification of maize and human beings	• Charts on Classification of maize and human beings	• Comprehensive secondary Biology students Bk. 1 page 13-14 • Teachers bk. 1 pages 5-10 • KLB secondary Biology • Students book Page 14 • Golden tips Biology Page 6-12	

							• KLB teachers book 1 pages 17-20 • Gateway secondary Biology pages 5-12	
8	1-2	CLASSIFICATION 1	Binomial nomenclature in naming organisms	By the end of the lesson, the learner should be able to: 1. Define Binomial nomenclature 2. State the principles of Binomial nomenclature In naming organisms	• Defining Binomial nomenclature on the principles of Binomial nomenclature • Classification of given organisms using generic and specific names	Charts on Binomial nomenclature	• Comprehensive secondary Biology students Bk. 1 page 14 • Teachers bk. 1 pages 5-10 • KLB secondary Biology • Students book Page 15-16 • Golden tips Biology Page 6 • KLB teachers book 1 pages 17-20 • Gateway secondary Biology pages 5-12	
	3-4	CLASSIFICATION 1	Collection of plants and animals	By the end of the lesson, the learner should be able to: 1. Use collecting nets, cutting instructions instruments and hand lens 2. Preserve the collected specimen	• Collecting plants and animals • Preserving Collecting plants and animals collected	• Specimen bottle • Sweep nets • Cotton wool • Forceps • chloroform	• Comprehensive secondary Biology students Bk. 1 page 14-16 • Teachers bk. 1 pages 5-10 • KLB secondary Biology • Students book Page 9 • Golden tips Biology Page 6-12	
9	1-2	CLASSIFICATION 1	Grouping of organisms according to their similarities	By the end of the lesson, the learner should be able to: 1. Observe and group collected and preserved specimen	• Observing and grouping animals according to their similarities • Observing and grouping plants according to their	• Collected and preserved specimen • Hand lens	• Comprehensive secondary Biology students Bk. 1 page 15 • Teachers bk. 1 pages 5-10 • KLB secondary	

				according to their similarities	similarities		Biology • Students book Page 15-16 • Golden tips Biology Page 7-9 • KLB teachers book 1 pages 17-20	
	3-4	THE CELL	Introduction to light microscope	By the end of the lesson, the learner should be able to: 1. Define a cell 2. Draw and label the light microscope	• Description of a cell • Drawing and labeling the light microscope	• Light microscope • Diagram of light microscope	• Comprehensive secondary Biology students Bk. 1 page 17 • Teachers bk. 1 pages 11-19 • KLB secondary Biology • Students book Page 18 • Golden tips Biology Page 15-16 • KLB teachers book 1 pages 23-25	
10	1-2	THE CELL	Parts of the light microscope and their functions Calculation of magnification using light microscope	By the end of the lesson, the learner should be able to: 1. Identify parts of the light microscope and state their functions 2. Describe how to care for a light microscope 3. Describe how a light microscope is used.	• Discussion on parts of a light microscope • Caring for the light microscope • Demonstration on how to use the light microscope • Prepared slides	• Light microscope • Chart of light microscope	• Comprehensive secondary Biology students Bk. 1 page 20 • Teachers bk. 1 pages 11-19 • KLB secondary Biology • Students book Page 21 • Golden tips Biology Page 17-18 • KLB teachers book 1 pages 23-25	
	3-4	THE CELL	Plant and animal cells as seen under a light microscope	By the end of the lesson, the learner should be able to: 1. Draw and label	• Drawing and labeling of plant and animal cells as seen under a	• Charts of plants and animal cells as seen under a light	• Comprehensive secondary Biology students Bk. 1 page 20	

			Calculation of magnification using light microscope	plant and animal cells as seen under a light microscope 2. Calculate the magnification of objects as seen under a light microscope	light microscope • Demonstration on how to calculate magnification of objects as seen under a light microscope	microscope • Microscope	• Teachers bk. 1 pages 11-19 • KLB secondary Biology • Students book Page 18-20 • Golden tips Biology Page 15-17 • KLB teachers book 1 pages 23-25 • Gateway secondary biology pages 26-32	
11	1-2	THE CELL	Using the light microscope with prepared slides	By the end of the lesson, the learner should be able to: 1. Observe a prepared slide under a light microscope 2. Prepare temporary slide of onion epidermis and observe it under a light microscope	• Permanent slides of animal and plant cells • Light microscope • Microscope slide • Cover slip • scalpel • Distilled water • Iodine solution • Onion bulb • Droppers • Pointed forceps • Glass rod • Mounted needle • Blotting paper	• Observing prepared slides of plant and animal cells • Preparing and mounting onion epidermal cells	• Comprehensive secondary Biology students Bk. 1 page 33 • Teachers bk. 1 pages 11-19 • KLB secondary Biology • Students book Page 22 • Golden tips Biology Page 16 • KLB teachers book 1 pages 23-25 • Gateway secondary biology pages 26-32 • Longman biology page 31-32	
	3-4	THE CELL	Cell structure as seen under the electron microscope	By the end of the lesson, the learner should be able to: 1. Draw and label plant and animal cells as seen under electron microscope	• Drawing and labeling plant and animal cells as seen under an electron microscope	• Diagrams of plant and animal cells as seen under electron microscope	• Comprehensive secondary Biology students Bk. 1 page 19-20 • Teachers bk. 1 pages 11-19 • KLB secondary Biology • Students book Page	

							23 • Golden tips Biology Page 18 • KLB teachers book 1 pages 23-25 • Gateway secondary biology pages 26-32	
12	1	THE CELL	Physiology of the cell Cell wall Cell membrane cytoplasm	By the end of the lesson, the learner should be able to: • Describe the structure and function of the cell • Cell wall • Cell membrane • cytoplasm	• discussion on the functions of cell components - cell wall - cell membrane - cytoplasm • drawing and labeling these parts of the cell	• chart on plant and animal cells as seen under electron microscope	• Comprehensive secondary Biology students Bk. 1 page 23-24 • Teachers bk. 1 pages 11-19 • KLB secondary Biology • Students book Page 24-26 • Golden tips Biology Page 18-19 • KLB teachers book 1 pages 23-25 • Gateway secondary biology pages 26-32	
	2	THE CELL	Cell organelles Estimating the size of a cell	By the end of the lesson, the learner should be able to: • Describe the structure and function of the cell organelles • Estimate the size of a cell as seen in the field of view of a microscope	• discussion on the functions of cell organelles • Drawing and labeling the cell and organelles • Explain how to estimate the size of onion epidermal cells • Estimating the size of onion epidermal cells	• chart on various cell organelles • cover slip • iodine solution • distilled water • scalpel • two droppers • pointed scalpel • mounting needle • filter paper • transparent ruler with mm markings • onion bulb	• Comprehensive secondary Biology students Bk. 1 page 24-33 • Teachers bk. 1 pages 11-19 • KLB secondary Biology • Students book Page 27-28 • Golden tips Biology Page 15-20 • KLB teachers book 1 pages 23-25 • Gateway secondary biology pages 27-32	

							• Longman biology pages 30-31	
	3-4	THE CELL	Comparison between plant and animal cells Cell specialization - Tissues - Organs - Organ systems	By the end of the lesson, the learner should be able to: • Write down the differences between plants and animal cells • Write down similarities between plant and animal cells • List down specialized plant and animal cells • State the modifications and functions of specialized cells • Define tissues, organs and organ systems • Give examples of tissues organs and organ systems	• Distinguishing between plant and animal cells • Naming specialized cells and their functions • Drawing specialized cells • Explaining modification of cells to their functions	• Table summarizing the differences between plant and animal cells • Charts on similarities between plant and animal cells • Charts on various specialized cells • Chart on plant and animal tissues	• Comprehensive secondary Biology students Bk. 1 page 22-32 • Teachers bk. 1 pages 11-19 • KLB secondary Biology • Students book Page 26-31 • Golden tips Biology Page 17-20 • KLB teachers book 1 pages 23-25 • Gateway secondary biology pages 26-32 • Longman biology pages 32 • Fly higher series pages 6-7	
13	**REVISION AND EXAMINATION**							

BIOLOGY FORM 1 SCHEMES OF WORK – TERM 2								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	1-2	CELL PHSIOLOGY	Cell physiology Properties of the cell membrane	By the end of the lesson, the learner should be able to: • Define the term cell physiology • Describe the structure and properties of cell membrane	• Defining the term cell physiology • Describing the structure of the cell membrane and its properties	• Charts on the structure of the cell membrane	• Comprehensive secondary Biology students Bk. 1 page 37-38 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 32-33 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 32-36	
	2	CELL PHSIOLOGY	Diffusion	By the end of the lesson, the learner should be able to: • Define diffusion	• Defining diffusion • Discussion on diffusion in liquids, gasses and solids	• Charts on distribution of molecules during distribution	• Comprehensive secondary Biology students Bk. 1 page 38 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 33 • KLB teachers book 1 pages 28-32 • Gateway secondary biology	

							pages 32-36	
	3-4	CELL PHSIOLOGY	Diffusion	By the end of the lesson, the learner should be able to: Carry out experiments to demonstrate • diffusion in liquids • diffusion in gasses	• Carrying out experiments on diffusion in liquids and gasses • Discussions of results from experiments	• Beaker • Potassium permanganate crystals • Cold water • Glass tube • Strong smelling perfume	• Comprehensive secondary Biology students Bk. 1 page 38-39 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 33-34 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 32-36 • Golden tips biology pages 23-24	
2	1	CELL PHSIOLOGY	Factors affecting Diffusion	By the end of the lesson, the learner should be able to: • Explain the factors affecting diffusion • Explain the role of diffusion in living things	• Discussing the factors affecting diffusion • Discussing the role of diffusion in living things	• Charts on factors affecting diffusion	• Comprehensive secondary Biology students Bk. 1 page 39 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 35-36 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 32-36 • Golden tips biology pages 24 • Longman biology page 36	
	2	CELL PHSIOLOGY	Osmosis	By the end of the lesson, the learner should be able	• Defining osmosis • Describing osmosis	• Diagram on movement of water	• Comprehensive secondary Biology	

				to: • Define osmosis • Describe movement of water molecules across semi-permeable membrane	across a semi - permeable membrane	molecules across a semi -permeable membrane	students Bk. 1 page 40 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 36-38 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 33-36 • Golden tips biology pages 24-25 • Longman biology page 37	
	3-4	CELL PHSIOLOGY	Osmosis (practical lesson)	By the end of the lesson, the learner should be able to: • demonstrate osmosis by using a Viking tubing • carry out an experiment on osmosis using Irish potatoes	• carry out an experiment on osmosis using a Viking tubing • carry out an experiment on osmosis using Irish potatoes • Discussion on results of both experiments	• Viking tubing • Thread • Tap water • Sucrose solution • Irish potatoes • Scalpel • Cork borer • Transparent ruler • Distilled water • 20% sucrose solution • Two petri-dishes • Tissue paper	• Comprehensive secondary Biology students Bk. 1 page 46 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 37-39 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 34-36 • Golden tips biology pages 24-25 • High flyer series pages 10-11	
3	1-2	CELL PHSIOLOGY	Terms used in the study of Osmosis	By the end of the lesson, the learner should be able to: define and describe the	• Defining terms used in the study of osmosis	• Charts on turgid cells and plasmolysed cells	• Comprehensive secondary Biology students Bk. 1	

				terms used in the study of osmosis such as: • Osmotic pressure • Osmotic potential • Isotonic solution • Hypertonic solution • Hypotonic solution • Turgor pressure • Hemolysis • Wall pressure • Plasmolysis • Deplasmolysis	• Discussion on the terms used in the study of osmosis		page 42 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 37-39 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 33-36 • Golden tips biology pages 24-26 • High flyer series pages 37	
	3-4	CELL PHSIOLOGY	Osmosis in plant cells	By the end of the lesson, the learner should be able to carry out an experiment on selective permeability of membrane	• carry out an experiment on selective permeability of membranes and movement of water in Irish potatoes	• Scalpel • Ruler • Means of heating • 3 Irish potatoes • 3 petri-dishes • Viking tubing • 20% starch solution • Iodine solution • $50cm^3$ beaker • thread	• Comprehensive secondary Biology students Bk. 1 page 47 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 40-42 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 34-36 • Golden tips biology pages 26 • Longman biology pages 37-38 • High flyer series pages 10	
4	1	CELL PHSIOLOGY	Factors affecting Osmosis	By the end of the lesson, the learner should be able	• Discussion on factors affecting	• Charts on factors affecting osmosis	• Comprehensive secondary Biology	

			Role of osmosis in organisms	to • State factors affecting osmosis • Explain the role of osmosis in organisms • Explain the factors affecting osmosis	osmosis • Discussion on the role of osmosis in organisms	and role of osmosis in organisms	students Bk. 1 page 40-41 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 43-44 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 33 • Golden tips biology pages 27 • Longman biology pages 37 • High flyer series pages 10	
	2	CELL PHSIOLOGY	Water relations in plant cells	By the end of the lesson, the learner should be able to • Describe what happens when a plant cell is placed in a hypertonic, hypotonic or isotonic solution	• Discussion on how plant cells behave in hypertonic, hypotonic or isotonic solutions	• Charts on water movement in and out of plant cells	• Comprehensive secondary Biology students Bk. 1 page 42-43 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 40-42 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 34-36 • Golden tips biology pages 25-26	
	3-4	CELL PHSIOLOGY	Plasmolysis in onion bulb cells	By the end of the lesson, the learner should be able to	• Carry out an experiment to show plasmolysis	• Distilled water • Two microscope slides	• Comprehensive secondary Biology students Bk. 1	

				• Carry out an experiment to show plasmolysis in epidermal cells of an onion bulb	in epidermal cells from an onion bulb • Discussion of results of the experiment on movement of water in and out of the cells	• Two cover slips • 10% sucrose solution • Forceps • Dropper • Light microscope • Onion bulb • scalpel	page 46 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 42 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 34-36 • Golden tips biology pages 26 • Longman Biology page 37 • High Flyer page 10	
5	1	CELL PHSIOLOGY	Water relations in animals	By the end of the lesson, the learner should be able to • Describe osmosis of animal cells in a hypertonic solution	• Discussion on osmosis in animal cells when placed in hypertonic or hypotonic solution	• Charts on cremated animal cell and haemolyzed animal cell	• Comprehensive secondary Biology students Bk. 1 page 44 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 40 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 34-36 • Golden tips biology pages 25-26 • Longman Biology page 37	
	2	CELL PHSIOLOGY	Active transport	By the end of the lesson, the learner should be able to	• Discussion on active transport factors affecting	• Charts on factors affecting active transport and role	• Comprehensive secondary Biology students Bk. 1	

				• List down factors affecting active transport • Define active transport • Define the role of active transport in living things	active transport and its role in organisms	of active transport	page 41-42 • Teachers bk. 1 pages 20-30 • KLB secondary Biology • Students book Page 44 • KLB teachers book 1 pages 28-32 • Gateway secondary biology pages 35-36 • Golden tips biology pages 27-28 • Longman Biology page 36 • High flyer series pages 10-11	
	3 and 4	NUTRITION IN PLANTS	Meaning importance and types of nutrition External structure of a leaf	By the end of the lesson, the learner should be able to • Define nutrition • Write down the importance of nutrition • List down the modes of feeding in organisms • Draw and label the external structure of a leaf	• Discussion on definition of nutrition, importance and modes of feeding • Drawing and labeling the external structure of a leaf • Observing the external parts of a leaf	• Green leaves • Chart on the external structure of a leaf	• Comprehensive secondary Biology students Bk. 1 page 51 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 48-49 • KLB teachers book 1 pages 37-55 • Gateway secondary biology pages 46-47 • Golden tips biology pages 31 • Longman Biology page 40	
6	1	NUTRITION IN PLANTS	internal structure of a leaf	By the end of the lesson, the learner should be able	• Drawing and labeling the	• Chart on the internal structure of	• Comprehensive secondary Biology	

				to • Draw and label the internal structure of the leaf	internal structure of the leaf	the leaf	students Bk. 1 page 51-52 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 50 • KLB teachers book 1 pages 47-48 • Gateway secondary biology pages 46-47 • Golden tips biology pages 32 • Longman Biology page 41	
	2	NUTRITION IN PLANTS	Parts of a leaf and their functions	By the end of the lesson, the learner should be able to • Name the parts of a leaf • State the functions of the parts of a leaf	• Discussion on the functions of the different parts of a leaf	• Chart on the internal and external structure of the leaf	• Comprehensive secondary Biology students Bk. 1 page 52-53 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 50-51 • KLB teachers book 1 pages 37-55 • Gateway secondary biology pages 47-48 • Golden tips biology pages 33 • Longman Biology page 41	
	3 and 4	NUTRITION IN PLANTS	photosynthesis	By the end of the lesson, the learner should be able to	Discussion on photosynthesis , the structure of	• Chart on the stages of photosynthesis	• Comprehensive secondary Biology students Bk. 1	

				• Define photosynthesis • Draw and label the chloroplast • Describe the process of photosynthesis	the chloroplasts and the stages involved in photosynthesis		page 54-55 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 53-54 • KLB teachers book 1 pages 37-55 • Gateway secondary biology pages 48-49 • Golden tips biology pages 33-34	
7	1-2	NUTRITION IN PLANTS	Importance of photosynthesis and factors affecting photosynthesis	By the end of the lesson, the learner should be able to • List down the importance of photosynthesis • Explain some of the factors influencing photosynthesis	• Discussion on the importance of photosynthesis • Discussion factors influencing photosynthesis	• Chart on the factors influencing photosynthesis	• Comprehensive secondary Biology students Bk. 1 page 55-56 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 55-59	
	3-4	NUTRITION IN PLANTS	Factors affecting photosynthesis (continued)	By the end of the lesson, the learner should be able to • Explain the factors affecting photosynthesis	• Discussion on factors influencing photosynthesis	• Variegated leaves • Charts on factors influencing photosynthesis	• Comprehensive secondary Biology students Bk. 1 page 56-57 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 55-59 • KLB teachers book 1 pages 37-55 • Gateway secondary biology pages 48-49	

							• Golden tips biology pages 34	
8	1-2	NUTRITION IN PLANTS	Adaptation of the leaf to photosynthesis	By the end of the lesson, the learner should be able to • Explain how the leaf is adapted to the process of photosynthesis	• Discussion on adaptations of the leaf to photosynthesis	• Green leaves • Chart showing internal structure of a leaf	• Comprehensive secondary Biology students Bk. 1 page 52-53 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 51-52 • KLB teachers book 1 pages 37-55 • Gateway secondary biology pages 47 • Golden tips biology pages 32-33	
	3-4	NUTRITION IN PLANTS	Factors influencing photosynthesis (practical lessons)	By the end of the lesson, the learner should be able to • Test the presence of starch in a green leaf • Investigate whether chlorophyll is necessary for photosynthesis • Investigate whether light is necessary for photosynthesis	• Carrying out experiments on • -presence of starch in a leaf • -factors influencing photosynthesis in plants	• Green leaves • Boiling tube • Means of heating • Methylated spirit • Iodine solution • Dropper • White tile • Pair of forceps • Variegated leaf • Aluminum foil on carbon paper	• Comprehensive secondary Biology students Bk. 1 page 64-66 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 55-59 • KLB teachers book 1 pages 37-55 • Gateway secondary biology pages 48-49 • Golden tips biology pages 35-36 • Longman biology 42	
9	1-2	NUTRITION	Factors	By the end of the lesson,	• carry out an	• Potted plant	• Comprehensive	

		IN PLANTS	influencing photosynthesis (practical lessons)	the learner should be able to carry out an experiment to investigate whether • Carbon (IV) oxide is necessary for photosynthesis • Oxygen is produced during photosynthesis	experiment to investigate whether Carbon (IV) oxide is necessary for photosynthesis and whether Oxygen is produced during photosynthesis	• Heat source • Boiling tubes • Two conical flasks • Potassium hydroxide • Materials for testing for starch in a leaf • Test tubes • 500cm^3 beaker • Funnel • Pod weed • Sodium hydrogen Carbonate Wooden splint • leaf	secondary Biology students Bk. 1 page 66-67 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 15-59 • KLB teachers book 1 pages 37-55 • Gateway secondary biology pages 48-49 • Golden tips biology pages 35-36 • Longman biology 42	
	3	CONTINUOUS ASSESMENT TEST	Work covered since previous test	By the end of the lesson, the learner should be able • To answer the questions asked	• Learner to answer the given questions • Teacher to supervise test	• Question paper • Marking scheme	• Work covered since previous test	
	4	NUTRITION IN PLANTS	Chemicals of life carbohydrates	By the end of the lesson, the learner should be able to • Define Chemicals of life • List down types of carbohydrates • Write down properties and functions of monosaccharaides	• Defining Chemicals of life • Discussion on 1. Types of chemicals of life 2. Types of carbohydrates 3. Properties of monosaccharaides	• Samples of sources of carbohydrates, proteins, lipids and glucose	• Comprehensive secondary Biology students Bk. 1 page 57-58 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 59-60 • KLB teachers book 1 pages 37-55 • Gateway secondary biology pages 49-50	

10	1	NUTRITION IN PLANTS	disaccharides	By the end of the lesson, the learner should be able to • Define disaccharides • List properties and functions of disaccharides • Define hydrolysis and condensation	• Defining disaccharides • Discussion on properties and functions of disaccharides	• Charts on condensation and hydrolysis of disaccharides	• Comprehensive secondary Biology students Bk. 1 page 58 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 60-61 • KLB teachers book 1 pages 37-55 • Gateway secondary biology page 50	
	2	NUTRITION IN PLANTS	Polysaccharides lipids	By the end of the lesson, the learner should be able to • Define polysaccharides and lipids • Write down the properties of polysaccharides and lipids	• Defining polysaccharides and lipids • Discussion on properties and functions of polysaccharides and lipids	• Charts on properties of polysaccharides • Charts on properties of lipids	• Comprehensive secondary Biology students Bk. 1 page 58-61 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 61-64 • KLB teachers book 1 pages 37-55 • Gateway secondary biology page 50-52 • Golden tips biology pages 37-40	

	3-4	NUTRITION IN PLANTS	Food tests	By the end of the lesson, the learner should be able to carry out tests on • Starch • Reducing sugars • Non-reducing sugar • Lipids • Proteins • Vitamin c	• Demonstration of experiments on food tests • Carry out experiments on food tests • Discussion on results obtained from experiments	• Food test reagents and apparatus • Benedicts solution • Dilute HCL • 0.5% copper sulphate • 10% sodium hydroxide • DCPIP • Iodine solution	• Comprehensive secondary Biology students Bk. 1 page 67-68 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 61-64 • KLB teachers book 1 pages 37-55 • Gateway secondary biology page 51-52 • Golden tips biology pages 39-40 • Longman biology page 43	
11	1	NUTRITION IN PLANTS	proteins	By the end of the lesson, the learner should be able to • Write down the properties and functions of proteins • Distinguish between carbohydrates, proteins and lipids	• Discussion on functions of proteins • Distinguishing between carbohydrates, proteins and lipids	• Charts on the properties of proteins • Charts on a comparison between carbohydrates, proteins and lipids	• Comprehensive secondary Biology students Bk. 1 page 60-61 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 65-67 • KLB teachers book 1 pages 37-55 • Gateway secondary biology page 50-51 • Golden tips biology pages 38-39 • Longman biology page 43	

	2	NUTRITION IN PLANTS	enzymes	By the end of the lesson, the learner should be able to • Define enzymes • Write down the properties and functions of enzymes • Know the naming of the enzymes and their substrates • Explain the importance of enzymes	• Discussion on properties and functions of enzymes	• Charts on the properties enzymes	• Comprehensive secondary Biology students Bk. 1 page 62-64 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 67-69 • KLB teachers book 1 pages 37-55 • Gateway secondary biology page 52-53 • Golden tips biology pages 42	
	3-4	NUTRITION IN PLANTS	Factors affecting enzymes	By the end of the lesson, the learner should be able to carry out an experiment on • Effect of temperature on enzymes • Effects of enzyme concentration on the rate of a reaction • Effect of PH on enzyme activities	• Carrying out an experiment on factors affecting enzymes	• Materials and apparatus for various experiments • Soaked beans • Hydrogen peroxide • Test tube (5) • Test tube rack • Water bath • Thermometer • Measuring cylinder • Watch • 10% starch solution • 0.1% and o.2% diastase • White tiles • Egg albumens • Distilled water • 2m HCL	• Comprehensive secondary Biology students Bk. 1 page 68-69 • Teachers bk. 1 pages 31-44 • KLB secondary Biology • Students book Page 67-69 • KLB teachers book 1 pages 37-55 • Gateway secondary biology page 53-55 • Golden tips biology pages 40-41 • Longman biology pages 43-44 • High flyer series pages 15-16	

						• 2m sodium hydrogen carbonate		
12 - 13	**REVISION AND END OF TERM EXAMS**							

BIOLOGY FORM 1 SCHEMES OF WORK – TERM 3								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	1	NUTRITION IN ANIMALS	Definition of heterotrophism Modes of heterotrophic nutrition	By the end of the lesson, the learner should be able to • Define hetetrophism • List down the different modes of heterotrophism and describe them	• Defining the term heterotrophism • Discussion on modes of heterotrophism	• Chart on modes of heterotrophism	• Comprehensive secondary Biology students Bk. 1 page 73 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 72 • KLB teachers book 1 pages 37-55 • Gateway secondary biology page	
	2	NUTRITION IN	Dentition	By the end of the lesson,	• Defining the term	• Different types	• Comprehensive	

		ANIMALS	Types of teeth	the learner should be able to • Define dentition • Draw and label different types of teeth • Describe the structure of a tooth	dentition • Identifying and drawing different types of teeth	of teeth • Chart on different types of teeth	secondary Biology students Bk. 1 page 74 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 73-76 • KLB teachers book 1 pages 37-55	
	3-4	NUTRITION IN ANIMALS	Adaptations of teeth to their functions	By the end of the lesson, the learner should be able to: 1. Identify different types of teeth 2. Describe the adaptations of the teeth to their functions	• Discussions on the adaptations of teeth to their functions	• Different types of teeth • Chart on different types of teeth	• Comprehensive secondary Biology students Bk. 1 page 75 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 75 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 56-58 • Gold tips biology page 43	
2	1	NUTRITION IN ANIMALS	Dental formulae	By the end of the lesson, the learner should be able to: • Define dental formulae • Describe and write down the dental formulae of herbivore carnivore and omnivore	• Defining the term dental formulae • Discussion on the dental formulae of herbivores, carnivores, omnivores	• Jaws of herbivore and carnivore • Model of human skeleton with teeth on the jaws (artificial teeth) • Chart on various dental formulae	• Comprehensive secondary Biology students Bk. 1 page 75-77 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 73-75 • KLB teachers book 1 pages 37-55	

							• Gateway secondary Biology pages 56-58 • Gold tips biology page 43-44	
	2	NUTRITION IN ANIMALS	Dental adaptations of herbivores, carnivores, omnivores	By the end of the lesson, the learner should be able to: • Write down the definition of herbivores, carnivores and omnivores • Explain the adaptations of dental formulae in various groups of animals, to their mode of feeding	• Discussion on dental adaptation of herbivores and omnivores	• Jaws of herbivore and carnivore • Model of human skeleton with teeth on the jaws (artificial teeth)	• Comprehensive secondary Biology students Bk. 1 page 77 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 73-75 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 56-58 • Gold tips biology page 42-43	
	3-4	NUTRITION IN ANIMALS	Internal structure of different types of teeth Functions of the internal structure of a tooth Common dental diseases	By the end of the lesson, the learner should be able to: • Draw and label the internal structure of different types of teeth • Write down the functions of the different parts of the internal structure of teeth • Name and discuss common dental diseases	• Drawing of internal structure of different types of teeth • Discussion on the functions of various parts of the teeth • Discussion on common dental diseases	• Jaws of herbivores and carnivores • Model of human skeleton with teeth on the jaws (artificial teeth) • Chart on teeth with some dental diseases	• Comprehensive secondary Biology students Bk. 1 page 77-78 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 75-76 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 56-57 • Gold tips biology page 44 • Longman biology page 46	
3	1	NUTRITION IN	Adaptation to the	By the end of the lesson,	• Discussion on	• Chart on the	• Comprehensive	

		ANIMALS	modes of feeding in herbivores	the learner should be able to: • Write down the adaptations of herbivores to their mode of feeding	adaptation of herbivores to their modes of feeding	jaws of herbivores • Chart on the molars from the jaws of a herbivore • Jaws of a herbivore	secondary Biology students Bk. 1 page 76 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 73-74 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 55-56 • Gold tips biology page 43 • Longman biology page 45	
	2	NUTRITION IN ANIMALS	carnivores	By the end of the lesson, the learner should be able to: • Write down the adaptations of carnivores to their modes of feeding	• Discussion on adaptation of carnivores to their modes of feeding	• Chart on the jaws of a carnivores animal • Chart on the different teeth from the jaws of a carnivore • Jaws of a carnivore	• Comprehensive secondary Biology students Bk. 1 page 77 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 74 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 56 • Gold tips biology page 43 • Longman biology page 45	
	3-4	NUTRITION IN ANIMALS	Digestive system of a rabbit	By the end of the lesson, the learner should be able to: • Identify various	• Dissecting a rabbit assisted by a few students (students to wear gloves)	• Live rabbit • Gloves • Chloroform • Dissection kit	• Comprehensive secondary Biology students Bk. 1 page 90-91	

				organs associated with the digestive system of a rabbit		• Cotton wool • Dissecting board	• Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 85-86 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 58-59 • Gold tips biology page • Longman biology page	
4	1	NUTRITION IN ANIMALS	Human Digestive system	By the end of the lesson, the learner should be able to: • Draw and label parts of the human digestive system	• Drawing and labeling the human digestive system • Discussion on the parts of the human digestive system	• Chart on the human digestive system	• Comprehensive secondary Biology students Bk. 1 page 79 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 78-82 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages • Gold tips biology page • Longman biology page	
	2	CONTINOUS ASSESSMENT TEST	Topic covered so far	By the end of the lesson, the learner should be able to: • Answer all the questions asked	• Learners to answer all the questions asked • Teacher to supervise the students while they do the test	• Question paper • Marking scheme	• Comprehensive secondary Biology students Bk. 1 page 73-80 • Teachers bk. 1 pages 45-55 • Gateway secondary	

							Biology pages 64-83	
	3-4	NUTRITION IN ANIMALS	Human Digestive system	By the end of the lesson, the learner should be able to: • Describe the regions of the alimentary canal of human digestive system • Explain the functions of the human digestive system	• Discussion on various regions of the human alimentary canal • Discussion on some of the human digestive system	• Chart on the human digestive system	• Comprehensive secondary Biology students Bk. 1 page 80-81 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 78-82 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 58-60 • Gold tips biology page 45-47 • Longman biology page	
5	1	NUTRITION IN ANIMALS	Human Digestive system	By the end of the lesson, the learner should be able to: • Describe the various regions of the human alimentary canal and their functions	• Discussion on other parts of the human alimentary canal	• Chart on the human digestive system	• Comprehensive secondary Biology students Bk. 1 page 81 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 78-82 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 58-60 • Gold tips biology page 45-47 • Longman biology page	

	2	NUTRITION IN ANIMALS	Adaptation of the Ileum to its functions	By the end of the lesson, the learner should be able to: • Describe how the ileum is adapted to its function	• Discussion on how the ileum is adapted to its functions • Drawing of the intestinal villi	• Chart on the intestinal villi	• Comprehensive secondary Biology students Bk. 1 page 83 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 83-84 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 61 • Gold tips biology page • Longman biology page	
	3-4	NUTRITION IN ANIMALS	Food content in alimentary canal of a herbivore Breakdown of starch by diastase enzyme	By the end of the lesson, the learner should be able to: • Analyze the food content in the alimentary canal of a herbivore • Carry out an experiment on the breakdown of starch by diastase enzymes	• Dissecting a rabbit to obtain food content from the ileum • Carry out analysis on food content of the ileum	• Dead rabbit/rat • Dissecting board and kit • Cotton wool • Benedicts solution • Dilute HCL • Sodium hydrogen carbonate • 1% diastase enzyme • Starch, test tube • Iodine solution • Means of heating • Test tube holder • Dropper • Measuring cylinder • Water bath	• Comprehensive secondary Biology students Bk. 1 page 90-91 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 85-86 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 49-50 • Gold tips biology page 40-42 • Longman KCSE revision 48 • Longman biology page 47- 48 • High flyer series	

						• White tile • Boiled diastase	pages 14-15	
6	1-2	NUTRITION IN ANIMALS	More adaptation of ileum to its function	By the end of the lesson, the learner should be able to: • Describe how the ileum is farther adapted to its functions	• Discussion on further adaptation of ileum to its function	• Chart on intestinal villi	• Comprehensive secondary Biology students Bk. 1 page 82 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 81-82 • Gateway secondary Biology pages 61	
	3-4	NUTRITION IN ANIMALS	Products of digestion Food assimilation	By the end of the lesson, the learner should be able to: • Explain the end products of the digestion of various food • Explain the function of the colon • Explain the process of assimilation of food substances	• Discussion on the products of digestion and assimilation of food • Discussion on the functions of colon	• Chart on the products of digestion	• Comprehensive secondary Biology students Bk. 1 page 82 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 84 • Golden tips biology page 49 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 61-62	
7	1-2	NUTRITION IN ANIMALS	Chemical digestion in alimentary canal	By the end of the lesson, the learner should be able to: • Write down the summary of chemical digestion in alimentary canal	• Discussion on chemical digestion In alimentary canal	• Chart showing summary of chemical digestion in alimentary canal	• Comprehensive secondary Biology students Bk. 1 page 82-83 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page	

							80-81 • KLB teachers book 1 pages 37-55 • Golden tips biology page 48	
	3-4	NUTRITION IN ANIMALS	Importance of vitamins in human nutrition	By the end of the lesson, the learner should be able to: • Write down the importance of vitamins in human nutrition • Write down the sources of vitamins • State deficiency diseases of various vitamins	• Discussion on the importance of vitamins, their sources and deficiency diseases • Test for vitamin C	• Materials and procedure required	• Comprehensive secondary Biology students Bk. 1 page 83-92 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 85-86 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 61-62 • Golden tips biology page 49	
8	1-2	NUTRITION IN ANIMALS	Continuous assessment test	By the end of the lesson, the learner should be able to • Answer the questions	• Learner to answer the questions asked • Teacher to supervise the students as they do the test	• Question papers • Marking schemes	• Comprehensive secondary Biology students Bk. 1 page 73-86 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 89-92 • KLB teachers book 1 pages 52-55	
	3-4	NUTRITION IN ANIMALS	Importance of mineral salts in human nutrition, their sources and deficiency diseases	By the end of the lesson, the learner should be able to: • Write down the importance of mineral salts in	• Discussion on importance of mineral salts in humans, their sources and deficiency diseases	• Chart showing mineral salts, their sources and deficiency diseases	• Comprehensive secondary Biology students Bk. 1 page 84 • Teachers bk. 1 pages 45-55	

				human nutrition • State the source of mineral salts • State the deficiency diseases of mineral salts			• KLB secondary Biology • Students book Page 86-87 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 63	
9	1-2	NUTRITION IN ANIMALS	Role of water and roughage in nutrition	By the end of the lesson, the learner should be able to: • Write down the role of roughage in nutrition • Write down the role of water in nutrition	• Discussion on the role of water and roughage in nutrition	• Sample of sources of roughage	• Comprehensive secondary Biology students Bk. 1 page 86-87 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 84 • KLB teachers book 1 pages 37-55 • Gateway secondary Biology pages 61	
	3-4	NUTRITION IN ANIMALS	Factors determining energy requirements in humans	By the end of the lesson, the learner should be able to • Discuss factors which determine energy requirements in human beings	• Discussion on the factors determining energy requirements in human beings	• Chart showing factors that determine energy requirements in human beings	• Comprehensive secondary Biology students Bk. 1 page 87-88 • Teachers bk. 1 pages 45-55 • KLB secondary Biology • Students book Page 88-89 • KLB teachers book 1 pages 37-55	
10	1-4	NUTRITION IN ANIMALS	Factors determining energy requirements in human beings	By the end of the lesson, the learner should be able to • Participate in group discussions	• Group discussions coordinated by the teacher • Group presentations by	• Research material obtained by students	• Comprehensive secondary Biology students Bk. 1 page 87-88 • Teachers bk. 1	

			(group activity)	and present findings on factors that determine energy requirements in human beings	preventatives members		pages 48-55 • KLB secondary Biology • Students book Page 88-89 • KLB teachers book 1 pages 37-55 Gateway secondary Biology pages 63-64	
12		**REVISION & END YEAR EXAMINATIONS**						

BIOLOGY FORM 2 SCHEMES OF WORK – TERM 1								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	1-2	TRANSPORT IN PLAN TS	Introduction	By the end of the lesson, the learner should be able to: • Define the term transport	• Defining the term transport • Listing substances transported in organisms	• Large and small cubes • Surface area • Surface area to volume ration of	• Comprehensive secondary Biology students Bk. 2 page 1-2 • Teachers bk. 2	

				• List substances transported in plants and animals • Link surface area to volume ratio of organisms to the transport system of the organism • Explain the necessity of transport in plants	• Relating surface area to volume ratio of organisms to transport systems	different cubes	pages 1-13 • KLB secondary Biology • Students book 2 Page 1 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 1 • Golden tips biology pages 54-58 • Gateway secondary Biology pages 84 • Longman biology page 52	
	3	TRANSPORT IN PLANTS	Structure of roots and root hairs	By the end of the lesson, the learner should be able to: • Draw the structure of roots and root hairs • Relate the structure of the root to their functions	• Discussing the structure of root and root hairs • Drawing the root and root hair • Relating the structure to functions	• Chart of root and root hair	• Comprehensive secondary Biology students Bk. 2 page 2-4 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 2 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 1 • Golden tips biology pages 55-56 • Gateway secondary Biology pages 84 • Longman biology page	
	4	TRANSPORT IN PLANTS	Structure of roots and root hairs	By the end of the lesson, the learner should be able	• Observing and comparing	• Microscopes prepared slides	• Comprehensive secondary Biology	

			(practical lesson)	to: • Observe prepared slides of roots and root hairs • Compare monocotyledons and dicotyledonous root sections • Observe charts and drawings of root sections	prepared slides of monocotyledonous and dicotyledonous roots and root hairs under a light microscope • Observing charts and drawings of root section	of root sections and root hairs • Charts on root sections of monocotyledonous and dicotyledonous roots	students Bk. 2 page 2-4 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 1-2 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 2-5 • Golden tips biology pages 56 • Gateway secondary Biology pages 84 • Longman biology page	
2	1	TRANSPORT IN PLANTS	Xylem Vessels	By the end of the lesson, the learner should be able to: • Draw and label the structure of the Xylem Vessel • Define Xylem Vessel • Relate the structure of the Xylem Vessel to its function	• Defining the term Xylem Vessel • Drawing and labeling the structure of the Xylem Vessel • Relating the structure of the Xylem Vessel to its function	• Photographs of Xylem Vessels • Chart on Xylem Vessels	• Comprehensive secondary Biology students Bk. 2 page 8-9 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 2-10 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 17-20 • Golden tips biology pages 58 • Gateway secondary Biology pages 84-85 • Longman biology	

							page	
	2	TRANSPORT IN PLANTS	Tracheid elements	By the end of the lesson, the learner should be able to: • Define Tracheid elements • Relate the structure of the Tracheid elements to their functions • Distinguish between xylem vessels and Tracheid elements	• Defining Tracheid elements • Distinguishing between vessels and tracheids • Discussion on the structure of Tracheid elements • Relating the structure of the Tracheid elements to their functions	• Photographs of Tracheid elements • Chart on Tracheid elements	• Comprehensive secondary Biology students Bk. 2 page 8-9 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 10-11 • KLB teachers book 2 pages 5-34 • Longhorn secondary biology: students book 2 page 19-20 • Golden tips biology pages 58 • Gateway secondary Biology pages 84-85 • Longman biology page 53-54	
	3	TRANSPORT IN PLANTS	Absorption water and mineral salts	By the end of the lesson, the learner should be able to: • Describe water and salt uptake by roots from the soil • Explain the physiological process involved in the uptake of water and mineral salts	• Explaining water absorption and mineral salt uptake by roots in plants • Discussion of water absorption and uptake of mineral salts in plants	• Photographs of monocotyledonous and dicotyledonous stem sections showing the xylem • Chart on the stem sections • Chart on roots, roots hairs and section of roots • Photographs of roots and root hairs	• Comprehensive secondary Biology students Bk. 2 page 2-5 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 7-9 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 2-8 • Golden tips biology pages 54-56	

							• Gateway secondary Biology pages 84-85 • Longman biology page 54	
3	1	TRANSPORT IN PLANTS	Internal tissues of the stem	By the end of the lesson, the learner should be able to: • Draw the monocotyledonous and dicotyledonous stem sections • Define the term transpiration and relate the structure of xylem to its role in transpiration	• Defining transpiration • Discussion on the structure of the xylem to its function • Drawing the stem section	• Photographs of monocotyledonous and dicotyledonous stem sections showing the xylem • Chart on the stem sections	• Comprehensive secondary Biology students Bk. 2 page 6-7 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 5-7 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 4-10 • Golden tips biology pages 59 • Gateway secondary Biology pages 86-87 • Longman biology page	
	2	TRANSPORT IN PLANTS	The role of the leaf in transpiration	By the end of the lesson, the learner should be able to: • Draw and label the internal and the external structure of a leaf • Describe the functions of the leaf • Relate the parts of a leaf to their functions	• Drawing and labeling the structure of a leaf • Discussion on the parts of a leaf and how they relate to their functions	• Sample leaves of various pants • Charts on the section of a leaf	• Comprehensive secondary Biology students Bk. 2 page 7 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 9-10 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students	

							book 2 page 10-12 • Golden tips biology pages 57-58 • Gateway secondary Biology pages 84 • Longman biology page 54	
	3-4	TRANSPORT IN PLANTS	Transport of water and mineral salts in plants (practical lesson)	By the end of the lesson, the learner should be able to: • Demonstrate the movement of water in plants • Observe prepared leaf sections to identify vascular tissues	• Carrying out an experiment to demonstrate the movement of water in plants • Observing prepared leaf section under a light microscope • Identifying vascular tissues in leaves	• Sample leaves of various pants • Charts on the section of a leaf sections • microscopes	• Comprehensive secondary Biology students Bk. 2 page 14 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 14-16 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 7	
4	1	TRANSPORT IN PLANTS	Movement of water in plants	By the end of the lesson, the learner should be able to: • Discuss the forces involved in movement of water in plants such as transpiration, pull, cohesion and adhesion capillarity and root pressures • Demonstrate the forces involved in movement of water in plants	• Describing the forces involved in movement of water in plants • Discussion on forces involved in movement of water in plants • Carrying out experiments to show the forces involved	• Tubes of different diameters • Beakers containing colored water • Fresh plant stump with fluid oozing	• Comprehensive secondary Biology students Bk. 2 page 11-12 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 11-12 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 5-6 • Golden tips biology pages 59-60	

							• Gateway secondary Biology pages 86-87 • Longman biology page	
	2	TRANSPORT IN PLANTS	Importance of transpiration	By the end of the lesson, the learner should be able to: • Identify the importance of transpiration in plants • Discuss the importance of transpiration in plants	• Discussion on the significance of transpiration in plants	• Wilted potted plants • Potted plants growing normally	• Comprehensive secondary Biology students Bk. 2 page 12 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 12 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 12 • Golden tips biology pages 54 • Gateway secondary Biology pages 84 • Longman biology page	
	3-4	TRANSPORT IN PLANTS	The phloem	By the end of the lesson, the learner should be able to: • Explain what the phloem is • Draw the structure of the phloem and relate its structure to its function • List down materials translocated in the phloem	• Drawing the structure of the phloem • Discussing the functions of phloem in relation to its structure • Listing down the materials translocated in plants	• Chart on structure of the phloem • Photographs of the phloem	• Comprehensive secondary Biology students Bk. 2 page 12-14 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 1-13 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students	

							book 2 page 24-26 • Golden tips biology pages 61-62 • Gateway secondary Biology pages 86 • Longman biology page	
6	1	TRANSPORT IN PLANTS	The phloem	By the end of the lesson, the learner should be able to: • Draw the structure of the phloem • Relate the parts of the phloem to its functions	• Drawing the phloem • Discussion on the functions of the parts of the phloem	• Chart of the phloem structure • Drawings of the phloem structure	• Comprehensive secondary Biology students Bk. 2 page 12 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 17-18 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 24-25 • Golden tips biology pages 62 • Gateway secondary Biology pages 86-87 • Longman biology page 55	
	2	TRANSPORT IN PLAN TS	Function of phloem	By the end of the lesson, the learner should be able to: • Discuss the function of the phloem • List down materials translocated and the sites of storage in the phloem	• Discussion on the functions of the phloem • Listing down materials translocated and storage sites in the phloem	• Chart of the phloem structure • Photographs of the phloem	• Comprehensive secondary Biology students Bk. 2 page 12-14 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 17-18 • KLB teachers book 2	

							pages 15-34 • Longhorn secondary biology: students book 2 page 24-26 • Golden tips biology pages 61-62 • Gateway secondary Biology pages 86-87 • Longman biology page 55	
	3-4	TRANSPORT IN PLAN TS	Function of phloem (practical lesson)	By the end of the lesson, the learner should be able to: • Set up an experiment to investigate translocation of food substances in dicotyledonous plants • Set up an experiment to investigate translocation of food substances in a monocotyledonous plant • Explain the processes involved in the translocation of food in plants	• Setting up an experiment to investigate translocation • Explaining the processes involved in the translocation of food in plants • Discussion on the result of the experiment	• A young plant • Sharp knife • Saplings	• Comprehensive secondary Biology students Bk. 2 page 14 • Teachers bk. 2 pages 1-13 • KLB secondary Biology • Students book 2 Page 12-14 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 25-26 • Golden tips biology pages 62 • Gateway secondary Biology pages 86-87 • Longman biology page	
7	1-2	TRANSPORT IN ANIMALS	Introduction Transport in unicellular animals	By the end of the lesson, the learner should be able to: • Identify unicellular organisms such as amoeba • Describe transport of substances in	• Identify some unicellular organisms such as amoeba • Explaining transport in unicellular organisms	• Chart showing movement of gasses in and out of an amoeba by diffusion	• Comprehensive secondary Biology students Bk. 2 page 21 • Teachers bk. 2 pages 1-13 • KLB secondary Biology	

				unicellular organisms • Explain the necessity of an elaborate transport system in most animals	• Explaining the need for an elaborate transport system in most animals		• Students book 2 Page 18 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 26 • Golden tips biology pages 63 • Gateway secondary Biology pages 88 • Longman biology page 55-56	
	3-4	TRANSPORT IN ANIMALS	Open circulatory system	By the end of the lesson, the learner should be able to: • Define an open circulatory system • Discuss the open circulatory system • Draw the open circulatory system of an insect	• Explaining open circulatory system in insects • Discussing the open circulatory system • Drawing the open circulatory system of an insect • Labeling the open circulatory system	• Chart showing the circulatory system of a cockroach	• Comprehensive secondary Biology students Bk. 2 page 21 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 18-20 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 26-27 • Golden tips biology pages 63-64 • Gateway secondary Biology pages 88 • Longman biology page	
8	1	TRANSPORT IN ANIMALS	Closed circulatory system	By the end of the lesson, the learner should be able to: • Define an closed transport system	• Defining closed circulatory systems • Stating organisms with closed	• Chart showing closed circulatory system • Chart showing	• Comprehensive secondary Biology students Bk. 2 page 22-23 • Teachers bk. 2	

				• Identify animals with the open circulatory system • Distinguish between closed and open circulatory systems	circulatory systems such as human beings • Distinguishing between closed and open circulatory systems	the difference between closed circulatory system and open circulatory system	pages 14-25 • KLB secondary Biology • Students book 2 Page 19-20 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 26-27 • Golden tips biology pages 64-65 • Gateway secondary Biology pages 88-89 • Longman biology page 55-56	
	2-3	TRANSPORT IN ANIMALS	Double circulatory system	By the end of the lesson, the learner should be able to: • Define an Double circulatory system • Draw and label circulatory systems in mammals • Dissect a rabbit and observe its transport system	• Discussing the Double circulatory system • Observing the transport system in a rabbit • Drawing the double circulatory system of a mammal	• Chart showing the circulatory system of a mammal • Dissected rabbit displaying the circulatory system	• Comprehensive secondary Biology students Bk. 2 page 24-42-44 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 19-20 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 28-34 • Golden tips biology pages 64-65 • Gateway secondary Biology pages 88-89 • Longman biology page 56 • High flyer series pages 30-32	

	4	CONTINOUS ASSESMENT TEST	Topics covered so far	By the end of the lesson, the learner should be able to answer the given questions in the test	• Learner to answer questions • Teacher to supervise the test	• Question paper • Marking scheme		
9	1	TRANSPORT IN ANIMALS	The mammalian heart	By the end of the lesson, the learner should be able to: • Draw and label the external parts of the mammalian heart • Draw and label the internal structure of the mammalian heart • Explain the functions of the heart • Relate the structure of the heart to its functions	• Drawing and labeling the mammalian heart and relating its structure to its functions • Discussing the structure of the mammalian heart	• Chart showing the structure of a mammalian heart • Model of a heart	• Comprehensive secondary Biology students Bk. 2 page 24-25 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 21-23 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 28-32 • Golden tips biology pages 65-66 • Gateway secondary Biology pages 89 • Longman biology page • High flyer series pages	
	2	TRANSPORT IN ANIMALS	Blood flow in the circulatory system of mammals	By the end of the lesson, the learner should be able to: • Trace the path taken by blood from the heart to the body parts and back to the heart • State the substances supported by the blood of mammals	• Discussing the blood flow in mammals • Tracing the path taken by blood from the heart to all body parts and back to the heart	• Chart showing the path of blood flow in the circulatory system of a mammal	• Comprehensive secondary Biology students Bk. 2 page 25-26 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 19-20 • KLB teachers book 2 pages 15-34	

				• Describe the flow of oxygenated blood in and out of the body through the heart			• Longhorn secondary biology: students book 2 page 31-32 • Golden tips biology pages 65-67 • Gateway secondary Biology pages 88-90 • Longman biology page 56 • High flyer series pages	
	3-4	TRANSPORT IN ANIMALS	Blood vessels	By the end of the lesson, the learner should be able to: • Explain the structure of arteries, veins and capillaries • Relate the structure of the arteries, veins and capillaries to their function	• Explaining and relating the structure to their functions • Drawing the arteries, veins and capillaries • Making medals of blood vessels	• Chart showing arteries, veins, and capillaries • Modes of blood vessels • Different colours of Plasticine	• Comprehensive secondary Biology students Bk. 2 page 29-31 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 25-30 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 33-43 • Golden tips biology pages 67-68 • Gateway secondary Biology pages 88-90 • Longman biology page 56 • High flyer series pages	
10	1	TRANSPORT IN ANIMALS	Diseases and defects of the circulatory system	By the end of the lesson, the learner should be able to: • Name the common diseases of	• Name the diseases of the circulatory system • Suggest methods of	• Resource person such as the school nurse • Photographs of people suffering	• Comprehensive secondary Biology students Bk. 2 page 32-33 • Teachers bk. 2	

				circulatory system such as thrombosis, varicose veins • Suggest methods of control/prevention for the diseases.	control/prevention	from diseases of the circulatory system	pages 14-15 • KLB secondary Biology • Students book 2 Page 31-32 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 43-45 • Golden tips biology pages 73-74 • Gateway secondary Biology pages 92-93 • Longman biology page 57 • High flyer series pages	
	2	TRANSPORT IN ANIMALS	The structure and function of the blood	By the end of the lesson, the learner should be able to: • List the components of the blood • State the functions of each of the blood components	• Listing components of blood • Relating blood components to their functions • Modeling red blood cells (RBC)	• Resource person such as the school nurse • Model RBCs using Plasticine	• Comprehensive secondary Biology students Bk. 2 page 33-37 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 32-35 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 45-50 • Golden tips biology pages 69-71 • Gateway secondary Biology pages 90 • Longman biology page 58-59	

							• High flyer series pages	
	3-4	TRANSPORT IN ANIMALS	The structure and function of the blood	By the end of the lesson, the learner should be able to: • Explain how oxygen and carbon dioxide are transported in the blood • Describe the mechanisms of blood clotting and its importance	• Explaining how oxygen and carbon dioxide are transported in the blood • Describing the mechanisms of blood clotting and its importance •	• Resource person such as the school nurse • Chart showing blood clotting mechanism	• Comprehensive secondary Biology students Bk. 2 page 34-35 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 36-38 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 45-51 • Golden tips biology pages 70-71 • Gateway secondary Biology pages 90 • Longman biology page • High flyer series pages	
11	1	TRANSPORT IN ANIMALS	Blood grouping and blood transfusion	By the end of the lesson, the learner should be able to: • Describe the human blood group system • State the importance of blood groups in blood transfusion	• Describing blood groups • Stating the importance of human blood groups in blood transfusion • Playing cards/bottle tops in pairs •	• Resource person such as the school nurse • Chart showing blood groups and possible transfusions • Prepared cards/bottle tops	• Comprehensive secondary Biology students Bk. 2 page 37-38 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 36-38 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students	

							book 2 page 51-54 • Golden tips biology pages 72-73 • Gateway secondary Biology pages 90-91 • Longman biology page 56 • High flyer series pages	
	2	TRANSPORT IN ANIMALS	Blood grouping and blood transfusion	By the end of the lesson, the learner should be able to: • Discuss the rhesus factor • State the role of the rhesus factor in blood transfusion	• Discussing the rhesus factor and its role in blood transfusion •	• Resource person such as the school nurse • Blood transfusion personnel	• Comprehensive secondary Biology students Bk. 2 page 38-39 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 37-39 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 52-55 • Golden tips biology pages 72-73 • Gateway secondary Biology pages 92 • Longman biology page 59 • High flyer series pages	
	3-4	TRANSPORT IN ANIMALS	The structure of the heart (practical lesson)	By the end of the lesson, the learner should be able to: • Examine the external and internal structure of a cows heart	• Examining a mammalian heart structure and identifying various parts • Working in pairs to examine pulse	• Fresh heart of a mammal such as a cow • Dissecting kit • Hand lens • Stop watch	• Comprehensive secondary Biology students Bk. 2 page 44-45 • Teachers bk. 2 pages 14-25 • KLB secondary	

				• Investigate pulse rate at the wrist	rate before and after vigorous activities •		Biology • Students book 2 Page 30-31 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 28 • Golden tips biology pages 66 • Gateway secondary Biology pages 89 • Longman biology page 59 • High flyer series pages	
12	1	TRANSPORT IN ANIMALS	Immune responses	By the end of the lesson, the learner should be able to: • Defining immunity • Describe immune response • Differentiate between natural and artificial immunity	• Defining immunity • Describing immune responses • Distinguishing between natural and artificial immunity	• Chart showing types of immunity	• Comprehensive secondary Biology students Bk. 2 page 39-41 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 40-41 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 56-58 • Golden tips biology pages 74-75 • Gateway secondary Biology pages 93 • Longman biology page • High flyer series pages	

	2	TRANSPORT IN ANIMALS	vaccination	By the end of the lesson, the learner should be able to: • Define vaccination • Describe importance of vaccination against diseases such as tuberculosis, poliomyelitis, measles, diphtheria, whooping cough	• Defining vaccination • Describing the importance of vaccination • Drawing the vaccination table	• Chart showing the vaccination table	• Comprehensive secondary Biology students Bk. 2 page 40-41 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 41-43 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 58-59 • Golden tips biology pages 75-76 • Gateway secondary Biology pages 93-94 • Longman biology page • High flyer series pages	
	3-4	TRANSPORT IN ANIMALS	Allergic reactions	By the end of the lesson, the learner should be able to: • Define allergic reactions and explain their causes • Carry out an experiment to demonstrate the unidirectional flow of blood in the cutaneous veins of the forearm	• Defining allergic reactions and explaining their causes • Carrying out an experiment to demonstrate the unidirectional flow of blood in the cutaneous veins	• School nurse • Rubber bands • Bandages or handkerchiefs	• Comprehensive secondary Biology students Bk. 2 page 41-42-45 • Teachers bk. 2 pages 14-25 • KLB secondary Biology • Students book 2 Page 43 • KLB teachers book 2 pages 15-34 • Longhorn secondary biology: students book 2 page 58 • Golden tips biology	

							pages 76-77 • Gateway secondary Biology pages 93-94 • Longman biology page59-60 • High flyer series pages	
13	**REVISION AND END OF TERM EXAMINATIONS**							

BIOLOGY FORM 2 SCHEMES OF WORK – TERM 2								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	1	GASEOUS EXCHANGE IN PLANTS	Definition and importance of gaseous exchange	By the end of the lesson, the learner should be able to: • Define gaseous exchange • Identify the gases that are exchanged in the living organism • Explain the importance of gaseous exchange in organisms	• Defining gaseous exchange • state the gases that are exchanged in the living organisms such as oxygen and carbon dioxide • discussion on the importance of gaseous exchange in organisms	• charts on the importance of gaseous exchange in organisms	• Comprehensive secondary Biology students Bk. 2 page 48 • Teachers bk. 2 pages 26-33 • KLB secondary Biology • Students book 2 Page 48-50 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 70 • Golden tips biology pages 79 • Gateway secondary Biology pages 113	

							• Longman biology page 62 • High flyer series pages 36	
	2	GASEOUS EXCHANGE IN PLANTS	Gaseous exchange in the stomata	By the end of the lesson, the learner should be able to: • Describe the stomata • Draw and label open and closed stomata • Explain stomata and gaseous exchange	• Describing the parts of the stomata • Drawing and labeling of open and closed stoma • Discussion on stomatal gaseous exchange	• Chart showing open and closed stomata	• Comprehensive secondary Biology students Bk. 2 page 48-49 • Teachers bk. 2 pages • KLB secondary Biology • Students book 2 Page 48-51 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 70-74 • Golden tips biology pages 79-80 • Gateway secondary Biology pages 114 • Longman biology page 62 • High flyer series pages	
	3-4	GASEOUS EXCHANGE IN PLANTS	Stomata (practical lesson)	By the end of the lesson, the learner should be able to: • Investigate the presence of stomata on leaves • Investigate the shape of guard cells and the distribution of stomata on leaves	• Investigating the presence of stomata on leaves in groups • Investigating the shape of guard cells • Discussion on the distribution of stomata on leaves of various plants	• Water in a beaker • Leaves of various leaves • Means of heating • Clear nail varnish • Light microscope • Cover slip • Forceps • Microscope slide • Leaves of various plants	• Comprehensive secondary Biology students Bk. 2 page 54 • Teachers bk. 2 pages 26-33 • KLB secondary Biology • Students book 2 Page 48-50 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 76 • Golden tips biology pages	

							• Gateway secondary Biology pages 114 • Longman biology page • High flyer series pages	
2	1	GASEOUS EXCHANGE IN PLANTS	Mechanism of opening and closing stomata	By the end of the lesson, the learner should be able to: • Explain the mechanism of opening and closing of stomata • Describe photosynthetic/glucose accumulation theory of opening and closing stomata	• Explaining the mechanism of opening and closing of stomata • Discussion on the photosynthetic/glucose accumulation theory of opening and closing stomata	• Chart showing open and closed stomata	• Comprehensive secondary Biology students Bk. 2 page 49-50 • Teachers bk. 2 pages 26-33 • KLB secondary Biology • Students book 2 Page 50-51 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 71-74 • Golden tips biology pages 79-80 • Gateway secondary Biology pages 114 • Longman biology page 62 • High flyer series pages	
	2	GASEOUS EXCHANGE IN PLANTS	Mechanism of opening and closing stomata	By the end of the lesson, the learner should be able to: • Describe inter-conversion of starch and glucose and ion accumulation theories	• Discussion on the inter-conversion of starch and glucose and ion accumulation theories	• Chart showing open and closed stomata	• Comprehensive secondary Biology students Bk. 2 page 50 • Teachers bk. 2 pages 26-33 • KLB secondary Biology • Students book 2 Page 50-51 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 76 • Golden tips biology	

							pages 79-80 • Gateway secondary Biology pages 114 • Longman biology page • High flyer series pages	
	3-4	GASEOUS EXCHANGE IN PLANTS	Internal structure of stems and leaves (practical lessons)	By the end of the lesson, the learner should be able to: • Investigate the internal structure of stems and leaf stalk in aerial and aquatic plants • Investigate tissue distribution in aerial leaves and stems	• Investigation of the structure of stems and leaf stalks in aerial and aquatic plants	• Microscope • Prepared permanent slides of aerial leaves and stems • Water lily leaf stalk • Bougainvillea twig • Beaker containing water • scalpel	• Comprehensive secondary Biology students Bk. 2 page 55 • Teachers bk. 2 pages 26-33 • KLB secondary Biology • Students book 2 Page 50-52 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 75-76 • Golden tips biology pages • Gateway secondary Biology pages • Longman biology page 62 • High flyer series pages	
3	1	GASEOUS EXCHANGE IN PLANTS	Cuticular and lenticular gaseous exchange	By the end of the lesson, the learner should be able to describe Cuticular and lenticular gaseous exchange	• Discussion on lenticular gaseous exchange • Discussion on Cuticular gaseous exchange	• Chart showing internal leaf structure and lenticels	• Comprehensive secondary Biology students Bk. 2 page 52 • Teachers bk. 2 pages 26-33 • KLB secondary Biology • Students book 2 Page 51-53 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 75 • Golden tips biology	

							pages 81 • Gateway secondary Biology pages 114-115 • Longman biology page 62-64 • High flyer series pages 36-37	
	2	GASEOUS EXCHANGE IN PLANTS	gaseous exchange through the roots	By the end of the lesson, the learner should be able to; • Draw the structure of the root • Describe how gaseous exchange takes place through the epidermis of the roots	• Drawing the structure of the root • Discussion on gaseous exchange through the roots	• Photograph of pneumatophic • Chart showing breathing roots	• Comprehensive secondary Biology students Bk. 2 page 52-54 • Teachers bk. 2 pages 26-33 • KLB secondary Biology • Students book 2 Page 48-52 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 74-75 • Golden tips biology pages 81-82 • Gateway secondary Biology pages 113-114 • Longman biology page • High flyer series pages	
	3-4	GASEOUS EXCHANGE IN PLANTS	gaseous exchange structures	By the end of the lesson, the learner should be able to; • Examine various types of gaseous exchange structure in different organisms • Relate the various types of gaseous exchange	• Examining various types of gaseous exchange structures • Relating the various types of gaseous exchange structure to their functions in different organisms	• Tadpoles • Insects (alive) • Fish • Frog • earthworm	• Comprehensive secondary Biology students Bk. 2 page 57 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 58-61 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book	

				structure to their functions in different organisms			2 page 80-81 • Golden tips biology pages 82 • Gateway secondary Biology pages 115 • Longman biology page • High flyer series pages	
4	1	GASEOUS EXCHANGE IN ANIMALS	Gaseous exchange types and characteristics of respiratory surfaces in animals	By the end of the lesson, the learner should be able to; • State the characteristics of gaseous exchange surfaces in different organisms	• Discussion on characteristics of gaseous exchange surfaces • Discussion on mechanism of gaseous exchange surfaces • Discussion on mechanism of gaseous exchange in amoeba	• Chart showing diagrams of different gaseous exchange surfaces such as insects fish, frogs and earth worms • Chart showing diagram on gaseous exchange in amoeba	• Comprehensive secondary Biology students Bk. 2 page 57-58 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 53 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 80 • Golden tips biology pages 82-83 • Gateway secondary Biology pages 115 • Longman biology page 65 • High flyer series pages	
	2-3	GASEOUS EXCHANGE IN ANIMALS	gaseous exchange in an insect	By the end of the lesson, the learner should be able to; • Examine the gaseous exchange structures of a grasshopper or a locust • Draw the gaseous exchange structure of an	• Examining the gaseous exchange structures in insects • Drawing the gaseous exchange structure of an insect	• Chart on tracheal system in insects • Live grasshoppers • Dissecting board • Pins • Hand lens • Dissecting kit • Chloroform • Cotton wool	• Comprehensive secondary Biology students Bk. 2 page 58 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 54-56 • KLB teachers book 2 pages 35-44 • Longhorn secondary	

				insect			biology: students book 2 page 81-84 • Golden tips biology pages 83 • Gateway secondary Biology pages 115-116 • Longman biology page 64 • High flyer series pages 37-38	
	4	GASEOUS EXCHANGE IN ANIMALS & PLANTS	Continuous assessment test	By the end of the lesson, the learner should be able to answer all questions asked in the test	• Learner to write down the answers • Teacher to supervise test	• Question papers • Marking scheme	•	
5	1	GASEOUS EXCHANGE IN ANIMALS	gaseous exchange in bony fish	By the end of the lesson, the learner should be able to; • Draw and label the structure of gaseous exchange in bony fish • Relate the gills to their function	• discussion on gills of a bony fish • drawing and labeling the gill chamber and gills of bony fish • discussion on functions of parts of the gills	• Chart showing diagram of gill chamber of bony fish	• Comprehensive secondary Biology students Bk. 2 page 59-60 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 56-58 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 84-88 • Golden tips biology pages 84 • Gateway secondary Biology pages 116-117 • Longman biology page • High flyer series pages	
	2	GASEOUS EXCHANGE IN ANIMALS	Gaseous exchange in bony fish	By the end of the lesson, the learner should be able to describe the mechanism of gaseous exchange in	• Discussion on the mechanism of gaseous exchange in bony fish	• Chart showing diagram of gill chamber of bony fish	• Comprehensive secondary Biology students Bk. 2 page 60-61	

				bony fish			• Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 57-58 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 84 • Golden tips biology pages 84 • Gateway secondary Biology pages 116-117 • Longman biology page • High flyer series pages 38	
	3-4	GASEOUS EXCHANGE IN ANIMALS	Gaseous exchange in bony fish (practical lesson)	By the end of the lesson, the learner should be able to: • Examine the location and number of gills in gill chambers of bony fish • Examine, draw and label the gill of a bony fish	• Examining the location and number of gills in gill chambers of bony fish • Examining, drawing and labeling isolated gills in bony fish	• Tilapia fish • Hand lens • Gills of a bony fish • Dissecting kit • Pins • Dissecting board	• Comprehensive secondary Biology students Bk. 2 page 69 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 58 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 84-85 • Golden tips biology pages 84 • Gateway secondary Biology pages 116 • Longman biology page • High flyer series pages	
6	1	GASEOUS EXCHANGE IN ANIMALS	gaseous exchange in frogs	By the end of the lesson, the learner should be able to describe the gaseous	• Discussion on gaseous exchange in a frog	• Chart showing position of mouth cavity,	• Comprehensive secondary Biology students Bk. 2 page 61-	

				exchange I a frog through its gills, skin, mouth and lungs.		lungs and nostrils in a frog	62 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 58-59 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 88-90 • Golden tips biology pages 84-85 • Gateway secondary Biology pages 117 • Longman biology page 65-66 • High flyer series pages	
	2	GASEOUS EXCHANGE IN ANIMALS	gaseous exchange in human beings	By the end of the lesson, the learner should be able to: • State the structure involved in gaseous exchange in human beings • Explain the features of the structures involved in gaseous exchange in human beings • Draw and label the structures involved in gaseous exchange in human beings	• Stating the structures involved in gaseous exchange in human beings • Explaining the features of the structures involved in gaseous exchange in human beings • Drawing and labeling the structures involved in gaseous exchange in humans	• Chart showing the lungs and rib cage in human beings	• Comprehensive secondary Biology students Bk. 2 page 63-65 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 59-64 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 90-94 • Golden tips biology pages 85-86 • Gateway secondary Biology pages 117-118 • Longman biology page 66 • High flyer series pages	

							38-39	
6	3-4	GASEOUS EXCHANGE IN ANIMALS	gaseous exchange in human beings	By the end of the lesson, the learner should be able to: • Examine a dissected mammal to locate the gaseous exchange structures • Describe the mechanism of breathing in human beings	• Identifying the structures of gaseous exchange in a dissected rabbit (mammal) • Discussion on mechanism of breathing in human beings	• Chart showing the lungs and rib cage in human beings • Dissected rabbit displaying the gaseous exchange system	• Comprehensive secondary Biology students Bk. 2 page 64 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 59-64 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 94-97 • Golden tips biology pages 86 • Gateway secondary Biology pages 119 • Longman biology page • High flyer series pages 38-39	
7	1-2	GASEOUS EXCHANGE IN ANIMALS	Breathing mechanisms in human beings	By the end of the lesson, the learner should be able to: • Draw and label the alveoli where gaseous exchange occur in human beings • Describe how gaseous exchange occurs in alveoli	• Drawing and labeling the alveoli where gaseous exchange occur in human beings • Describing how gaseous exchange occurs in alveoli • Discussion on gaseous exchange at the alveoli	• Chart showing the exchange of gases in alveoli of human beings	• Comprehensive secondary Biology students Bk. 2 page 66 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 61-65 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 96-99 • Golden tips biology pages 86-87 • Gateway secondary Biology pages 119-120 • Longman biology page	

							67 • High flyer series pages 38-39	
	3-4	GASEOUS EXCHANGE IN ANIMALS AND PLANTS	Continuous assessment test	By the end of the lesson, the learner should be able to • Answer all questions asked in the test	• Learners to write down the answers to the questions • Teacher to supervise the students	• Question papers • Marking scheme	•	
8	1-2	GASEOUS EXCHANGE IN ANIMALS	Gaseous exchange in human beings	By the end of the lesson, the learner should be able to: • Explain how human beings are adapted to their functions • Able to examine the mammalian lung	• Explaining how human beings are adapted to their functions • Discussion on the adaptations of lungs in humans and examination of mammalian lung	• Lungs from a mammal eg. goat, sheep and cow	• Comprehensive secondary Biology students Bk. 2 page 66 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 59-65 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page • Golden tips biology pages 86-87 • Gateway secondary Biology pages 120 • Longman biology page 66-67 • High flyer series pages 38-39	
	3-4	GASEOUS EXCHANGE IN ANIMALS	Gaseous exchange in mammals (practical lesson)	By the end of the lesson, the learner should be able to: • Demonstrate the breathing mechanism of the lungs and diaphragm in a	• Carrying out a demonstration of breathing mechanism in human beings using a model	• A bell jar • Two balloons • Rubber stopper with a hole • Y-shape glass tube • Rubber sheet • String	• Comprehensive secondary Biology students Bk. 2 page 71 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 63	

				• model thoracic cavity • Demonstrate the breathing movement of ribs and muscles by using a model		• Petroleum jelly	• KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 96-99 • Golden tips biology pages 86-87 • Gateway secondary Biology pages 117-119 • Longman biology page • High flyer series pages	
9	1	GASEOUS EXCHANGE IN ANIMALS	Factors affecting the rate of breathing	By the end of the lesson, the learner should be able to: • Examine the factors affecting the rate of breathing in human beings • Explain the factors which control the rate of breathing in human beings	• Examining the factors affecting the rate of breathing in human beings • Discussion on factors affecting the rate of breathing in human beings	• Chart with table showing factors affecting breathing	• Comprehensive secondary Biology students Bk. 2 page 66-67 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 65-66 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 101-102 • Golden tips biology pages 87 • Gateway secondary Biology pages 119 • Longman biology page 67-68 • High flyer series pages	
	2	GASEOUS EXCHANGE IN ANIMALS	Respiratory diseases	By the end of the lesson, the learner should be able to: • State the causes of respiratory diseases • Discuss the	• Discussion on causes, symptoms and prevention measures of respiratory diseases	• Chart on respiratory diseases	• Comprehensive secondary Biology students Bk. 2 page 71 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page	

				symptoms of respiratory disease • explain the prevention measures of respiratory diseases			67-70 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 104-107 • Golden tips biology pages 87-88 • Gateway secondary Biology pages 121 • Longman biology page 68 • High flyer series pages	
	3-4	GASEOUS EXCHANGE IN ANIMALS	Gaseous exchange in animals (practical lesson)	By the end of the lesson, the learner should be able to demonstrate the effect of exercise on the rate of breathing	• Carrying out experiment to show the effect of exercise on rate of breathing	• Chair • Stop watch • Skipping rope	• Comprehensive secondary Biology students Bk. 2 page 74 • Teachers bk. 2 pages 34-48 • KLB secondary Biology • Students book 2 Page 66-67 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 101-104 • Golden tips biology pages • Gateway secondary Biology pages • Longman biology page • High flyer series pages	
10	1	RESPIRATION	Introduction Tissue respiration	By the end of the lesson, the learner should be able to: • Define respiration • State the significance of respiration	• Discussion on definition and significance of respiration • Drawing and labeling mitochondria	• Chart showing diagram of mitochondria	• Comprehensive secondary Biology students Bk. 2 page 74 • Teachers bk. 2 pages 49-57 • KLB secondary Biology • Students book 2 Page	

				• Draw and label mitochondria			73-74 • KLB teachers book 2 pages 45-48 • Longhorn secondary biology: students book 2 page 112-113 • Golden tips biology pages 91 • Gateway secondary Biology pages 130 • Longman biology page 71 • High flyer series pages	
	2	RESPIRATION	Anaerobic respiration	By the end of the lesson, the learner should be able to: • Define Anaerobic respiration • Describe Anaerobic respiration in plants • Describe Anaerobic respiration in animals	• Defining Anaerobic respiration • Discussion on Anaerobic respiration in plants and animals	• Chart showing diagram of mitochondria	• Comprehensive secondary Biology students Bk. 2 page 76-77 • Teachers bk. 2 pages 49-57 • KLB secondary Biology • Students book 2 Page 77-78 • KLB teachers book 2 pages 45-48 • Longhorn secondary biology: students book 2 page 116-119 • Golden tips biology pages 92-93 • Gateway secondary Biology pages 131 • Longman biology page 72 • High flyer series pages 41-42	
	3-4	RESPIRATION	Respiration (practical lesson)	By the end of the lesson, the learner should be able to: • Identify the gas	• Carrying out experiments to investigate the gas produced	• Retort stand • Maize flour • Test-tubes • Source of heat	• Comprehensive secondary Biology students Bk. 2 page 80-81	

				given off when food is burnt • Investigate the gas produced during fermentation	when food is burnt • Discussion on the gas produced when food is burnt	• Boiling tubes • Delivery tube • Rubber stopper • Lime water • clump	• Teachers bk. 2 pages 49-57 • KLB secondary Biology • Students book 2 Page 75-74 • KLB teachers book 2 pages 45-48 • Longhorn secondary biology: students book 2 page 116-118, 120-121 • Golden tips biology pages • Gateway secondary Biology pages • Longman biology page • High flyer series pages	
11	1-2	RESPIRATION	Economic importance of anaerobic respiration	By the end of the lesson, the learner should be able to: • State the economic importance of anaerobic respiration • Discuss the economic importance of anaerobic respiration in both plants and animals	• Discussion on economic importance of anaerobic respiration	• Chart on the economic importance of anaerobic respiration	• Comprehensive secondary Biology students Bk. 2 page 77 • Teachers bk. 2 pages 49-57 • KLB secondary Biology • Students book 2 Page 77-78 • KLB teachers book 2 pages 45-48 • Longhorn secondary biology: students book 2 page 119-120 • Golden tips biology pages 92-93 • Gateway secondary Biology pages 130 • Longman biology page 71 • High flyer series pages 41	
	3-4	RESPIRATION	Aerobic	By the end of the lesson,	• explain aerobic	• Chart on the	• Comprehensive	

			respiration	the learner should be able to: • Explain anaerobic respiration • Distinguish between anaerobic and aerobic respiration • Compare energy production in anaerobic and aerobic respiration	respiration • Distinguishing between aerobic respiration and anaerobic respiration • Discussion on energy formation and energy output in aerobic and anaerobic respiration	economic importance of aerobic respiration	secondary Biology students Bk. 2 page 74-76 • Teachers bk. 2 pages 49-57 • KLB secondary Biology • Students book 2 Page 74-76 • KLB teachers book 2 pages 45-48 • Longhorn secondary biology: students book 2 page 113-115 • Golden tips biology pages 91-92 • Gateway secondary Biology pages 130-131 • Longman biology page 72-73 • High flyer series pages 41	
12	1-2	RESPIRATION	Tissue respiration (practical lesson)	By the end of the lesson, the learner should be able to: • Investigate the production of heat by germinating seeds • Demonstrate that respiration takes place in plants	• Carrying out the various experiments in groups • Discussion on the observation or results observed	• Two vacuum flasks • Two thermometers • Beans and cotton wool • Sterilizer such as formalin • Bell jar • Soda lime • Two conical flasks • Black cloth • Lime water • Potted plant • Delivery tube • Filter pump • Corks	• Comprehensive secondary Biology students Bk. 2 page 81-82 • Teachers bk. 2 pages 49-57 • KLB secondary Biology • Students book 2 Page 76-77 • KLB teachers book 2 pages 45-48 • Longhorn secondary biology: students book 2 page 115 • Golden tips biology pages 94 • Gateway secondary Biology pages	

						• Petroleum jelly	• Longman biology page • High flyer series pages	
	3-4	RESPIRATION	Tissue respiration (practical lesson)	By the end of the lesson, the learner should be able to: • Show aerobic respiration in animals • Show the aerobic respiration takes place in animals	• Carrying out the experiments • Discussion on the results observed	• Grasshopper • Two pieces of insulin cloth or wire net • Bicarbonate indicator • Two conical flasks • Measuring cylinder • Two rubber bands • Two labels • Bell jar • Lime water • Delivery tubes • Soda lime • Rat • Filter pump • Petroleum jelly	• Comprehensive secondary Biology students Bk. 2 page 83-84 • Teachers bk. 2 pages 49-57 • KLB secondary Biology • Students book 2 Page 78 • KLB teachers book 2 pages 45-48 • Longhorn secondary biology: students book 2 page 117 • Golden tips biology pages 94 • Gateway secondary Biology pages • Longman biology page • High flyer series pages	
13	**REVISION AND END OF TERM EXAMINATION**							

BIOLOGY FORM 2 SCHEMES OF WORK – TERM 3								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	1	EXCRETION AND HOMEOSTASIS	Definition of terms	By the end of the lesson, the learner should be able to: • Define terms stated • Distinguish between excretion and egestion • Explain the necessity of excretion in plants and animals	• Defining excretion, homeostasis and secretion • Distinguishing between excretion and egestion • Explaining the necessity of excretion in plants and animals	• Chart showing major terms and their definitions	• Comprehensive secondary Biology students Bk. 2 page 86 • Teachers bk. 2 pages 58-68 • KLB secondary Biology • Students book 2 Page 83-84 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 124 • Golden tips biology pages 96 • Gateway secondary Biology pages 141 • Longman biology page	

							75 • High flyer series pages 44	
	2	EXCRETION AND HOMEOSTASIS	Excretion in plants	By the end of the lesson, the learner should be able to: • Describe the methods of excretion in plants • List down useful and harmful excretory products in plants	• Describing the methods of excretion in plants • Listing excretory products in plants	• Chart showing excretory products in plants and methods of excretion in plants	• Comprehensive secondary Biology students Bk. 2 page 86-87 • Teachers bk. 2 pages 58-68 • KLB secondary Biology • Students book 2 Page 83-84 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 124-125 • Golden tips biology pages 96-97 • Gateway secondary Biology pages 141 • Longman biology page 75-76 • High flyer series pages 44	
	3-4	EXCRETION AND HOMEOSTASIS	Excretion in plants	By the end of the lesson, the learner should be able to: • Identify the uses of excretory products in plants • Describe the uses of excretory products in plants	• Identifying the uses of excretory products in plants • Describing the uses of excretory products in plants	• Chart showing excretory products , sources and their economic importance in plants	• Comprehensive secondary Biology students Bk. 2 page 88 • Teachers bk. 2 pages 58-68 • KLB secondary Biology • Students book 2 Page 84 • KLB teachers book 2 pages • Longhorn secondary biology: students book 2 page 125-127 • Golden tips biology	

							pages 96-97 • Gateway secondary Biology pages 141 • Longman biology page 76 • High flyer series pages 44	
2	1	EXCRETION AND HOMEOSTASIS	Excretion and homeostasis in Animals	By the end of the lesson, the learner should be able to: • Describe excretion and homeostasis in unicellular animals such as amoeba • Draw an amoeba • Describe excretion in fresh water amoeba	• Describing excretion and homeostasis in unicellular organism such as amoeba • Drawing of amoeba • Describing the excretion of water and nitrogenous wastes in amoeba	• Chart showing an amoeba in stages of excreting water and wastes	• Comprehensive secondary Biology students Bk. 2 page 88 • Teachers bk. 2 pages 58-68 • KLB secondary Biology • Students book 2 Page 84-85 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 127-128 • Golden tips biology pages 97-98 • Gateway secondary Biology pages 142 • Longman biology page 77 • High flyer series pages 44	
	2	EXCRETION AND HOMEOSTASIS	Excretion and homeostasis in Animals	By the end of the lesson, the learner should be able to: • Explain the need for complex animals for excretion • List down organs involved In excretion in animals	• Explaining the need for complex excretory organs • Listing the excretory organs and substances released	• Chart showing the specialized organs and the main excretory products	• Comprehensive secondary Biology students Bk. 2 page 88 • Teachers bk. 2 pages • KLB secondary Biology • Students book 2 Page 84-87 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book	

				• List down waste products released by various organs			2 page 128-131 • Golden tips biology pages 98 • Gateway secondary Biology pages 142 • Longman biology page 77 • High flyer series pages 44-45	
	3-4	EXCRETION AND HOMEOSTASIS	The human kidney	By the end of the lesson, the learner should be able to: • Examine the kidney of a mammal • Draw and label the external structure of a kidney • Make a vertical section through the kidney • Identify the internal parts of the kidney	• Examining the kidney • Making a vertical section and identifying the parts of the kidney • Drawing the internal structure of the kidney	• Kidney of a mammal • Sharp knife • Chart showing section of a kidney	• Comprehensive secondary Biology students Bk. 2 page 91, 105 • Teachers bk. 2 pages • KLB secondary Biology 58-68 • Students book 2 Page 88-92 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 132-135 • Golden tips biology pages 100-101 • Gateway secondary Biology pages 144 • Longman biology page 77 • High flyer series pages	
3	1	EXCRETION AND HOMEOSTASIS	Functions of the nephron	By the end of the lesson, the learner should be able to: • Draw and label parts of the nephron • Relate its structure to its role in urine formation	• Drawing and labeling the nephron • Discussion on the structure of the nephron in relation to its function	• Chart showing the structure of the nephron	• Comprehensive secondary Biology students Bk. 2 page 92-94 • Teachers bk. 2 pages • KLB secondary Biology 58-68 • Students book 2 Page 90-92	

							• KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 135-137 • Golden tips biology pages 101-102 • Gateway secondary Biology pages 145 • Longman biology page 77 • High flyer series pages 47	
	2	EXCRETION AND HOMEOSTASIS	Neuro-endoctrine system and homeostasis	By the end of the lesson, the learner should be able to: • Identify the hormones involved in Neuro-endoctrine system and homeostasis eg insulin • Explain the process of urine formation in the kidney • Describe the role of various hormones in urine formation	• Identifying the hormones involved in Neuro-endoctrine system and homeostasis such as insulin, ADH and aldosterone I urine formation • Describing the role of insulin, ADH and aldosterone in urine formation	• Diagram of the nephron showing the movement of sodium ions and water	• Comprehensive secondary Biology students Bk. 2 page 93-94 • Teachers bk. 2 pages • KLB secondary Biology 58-68 • Students book 2 Page 97-100 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 139-142 • Golden tips biology pages 103-104 • Gateway secondary Biology pages 145 • Longman biology page 78 • High flyer series pages 45-47	
	3-4	EXCRETION AND HOMEOSTASIS	Neuro-endoctrine system and homeostasis	By the end of the lesson, the learner should be able to: • Describe the	• Describing the components and role of the Neuro-endoctrine	• Flow chart showing homeostatic mechanism,	• Comprehensive secondary Biology students Bk. 2 page 94-95	

				components and role of Neuro-endoctrine systems • Distinguish between internal and external environments • Explain the general working of the homeostatic mechanism	system • Distinguishing between internal and external environment • explaining the general working of the homeostatic mechanism	positive and negative feedback	• Teachers bk. 2 pages • KLB secondary Biology 58-68 • Students book 2 Page 97-100 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 139-142 • Golden tips biology pages 103-104 • Gateway secondary Biology pages 145-146 • Longman biology page 78-79 • High flyer series pages 49-51	
4	1	EXCRETION AND HOMEOSTASIS	osmoregulation	By the end of the lesson, the learner should be able to: • Define osmoregulation • Describe the role of the kidney in osmoregulation • Explain the role of hypothalamus in osmoregulation	• Defining Osmoregulation • Describing the role of the kidney in osmoregulation	• Flow chart showing the homeostatic mechanism in regulating osmotic pressure by the kidney	• Comprehensive secondary Biology students Bk. 2 page 95-97 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 100-101 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 140-142 • Golden tips biology pages 105 • Gateway secondary Biology pages 145-146 • Longman biology page 78 • High flyer series pages	

							45-47	
	2-3	EXCRETION AND HOMEOSTASIS	Diabetes insipidus and other common kidney diseases	By the end of the lesson, the learner should be able to: • Explain Diabetes insipidus and other common kidney diseases • Describe the causes of Diabetes insipidus and other common kidney diseases • State possible control/prevention methods of Diabetes insipidus	• Explaining Diabetes insipidus and other common kidney diseases • Describing the causes of Diabetes insipidus and other common kidney diseases	• Chart showing the diseases, causes, symptoms and control/ prevention methods	• Comprehensive secondary Biology students Bk. 2 page 96, 101-102 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 49-54 • KLB teachers book 2 pages 101, 93-94 • Longhorn secondary biology: students book 2 page 142, 138-140 • Golden tips biology pages 105, 102-103 • Gateway secondary Biology pages 147 • Longman biology page 77 • High flyer series pages 47	
	4	EXCRETION AND HOMEOSTASIS	Continuous assessment test	By the end of the lesson, the learner should be able to: • Answer all the questions asked in the test	• Learner to answer all the questions • Teacher to prepare and give the test • Teacher to supervise the students	• Question paper • Marking schemes		
5	1	EXCRETION AND HOMEOSTASIS	Excretion and homeostasis in animals	By the end of the lesson, the learner should be able to: • Draw and label parts of the skin • Relate the parts of the skin to their	• Discussion on the parts of the skin and their functions • Drawing and labeling parts of the skin and	• Chart showing the section of the skin	• Comprehensive secondary Biology students Bk. 2 page 89-90 • Teachers bk. 2 pages 58-68 • KLB secondary Biology	

				functions	relating parts to their functions		Students book 2 Page 85-87 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 129-132 • Golden tips biology pages 98-100 • Gateway secondary Biology pages 142 • Longman biology page 78 • High flyer series pages 45	
	2	EXCRETION AND HOMEOSTASIS	The role of the skin in homeostasis	By the end of the lesson, the learner should be able to: • Distinguish between osmoregulation and thermoregulation • Describe the role of the skin in osmoregulation • Describe the role of the skin in thermoregulation	• Distinguishing between osmoregulation and thermoregulation • Describing the role of the skin in osmoregulation • Describing the role of the skin in thermoregulation	• Chart showing diagram of the skin • Photograph of a section of the skin	• Comprehensive secondary Biology students Bk. 2 page 98-99 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 98-101 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 131-132 • Golden tips biology pages 98-100 • Gateway secondary Biology pages 142-143 • Longman biology page 78 • High flyer series pages 45-47	
	3-4	EXCRETION AND	Thermoregulation in human beings	By the end of the lesson, the learner should be able	• Identifying behavioral and	• Photographs of warmly dressed	• Comprehensive secondary Biology	

		HOMEOSTASIS		to: • Identify behavioral and physiological means of thermoregulation in animals • Describe behavioral and physiological means of thermoregulation in animals	physiological means of thermoregulation in animals • Describing behavioral and physiological means of thermoregulation in animals	people during cold weather • Photograph of people with light cloth during hot weather	students Bk. 2 page 99-100 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 98-100 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page • Golden tips biology pages 106-108 • Gateway secondary Biology pages 147-148 • Longman biology page 78 • High flyer series pages	
6	1	EXCRETION AND HOMEOSTASIS	Heat loss and heat gain	By the end of the lesson, the learner should be able to: • Explain Heat loss and heat gain • Describe the various methods of Heat loss and heat gain in mammals	• Explaining Heat loss and heat gain • Discussion on methods of Heat loss and heat gain in mammals	• Resource person e.g. physics teacher to describe methods of heat loss and heat gain	• Comprehensive secondary Biology students Bk. 2 page 99-100 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 98-100 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 149-153 • Golden tips biology pages 106-108 • Gateway secondary Biology pages 148 • Longman biology page 78-79	

							• High flyer series pages 49-50	
	2	EXCRETION AND HOMEOSTASIS	Surface area to volume ratio in relation to thermoregulation	By the end of the lesson, the learner should be able to: • Explain the terms Surface area to volume ratio in relation • Relate the body size of mammals to heat loss and heat gain	• Explaining the terms Surface area to volume ratio in relation • Discussion on the relationship between the body size of mammals to heat loss and heat gain	• Pictures of large sized mammals and small sized mammals	• Comprehensive secondary Biology students Bk. 2 page 99 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 100-101 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 152 • Golden tips biology pages 106-108 • Gateway secondary Biology pages 148 • Longman biology page 78-79 • High flyer series pages 49-50	
	3-4	EXCRETION AND HOMEOSTASIS	The role of the liver in homeostasis	By the end of the lesson, the learner should be able to: • Draw and label the liver and its associated parts • Describe the liver and its role in homeostasis	• Drawing and labeling the liver and its associated parts • Describing the liver and its role in homeostasis	• Chart showing the external structure of the liver in relation to the gut, gall bladder and blood vessels	• Comprehensive secondary Biology students Bk. 2 page 102-104 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 93-96 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 153-156 • Golden tips biology pages 108	

							• Gateway secondary Biology pages 148-149 • Longman biology page • High flyer series pages	
7	1-2	EXCRETION AND HOMEOSTASIS	Functions of the liver	By the end of the lesson, the learner should be able to: • List down some of the functions of the liver • Describe the functions of the liver	• Listing down some of the functions of the liver • Describing the functions of the liver	• Chart showing the functions of the liver	• Comprehensive secondary Biology students Bk. 2 page 103-104 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 95-96 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page • Golden tips biology pages 108 • Gateway secondary Biology pages 149-150 • Longman biology page 79 • High flyer series pages 48	
	3-4	EXCRETION AND HOMEOSTASIS	Diseases of the liver	By the end of the lesson, the learner should be able to: • Identify all the diseases of the liver • Describe the symptoms and possible control of diabetes mellitus and other liver diseases • Explain the causes	• Identifying all the diseases of the liver • Describing the symptoms and possible control of diabetes mellitus and other liver diseases • Explaining the causes symptoms and diseases of the liver	• Chart showing diseases of liver cause and control/treatment	• Comprehensive secondary Biology students Bk. 2 page 103-104 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 96-97 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book	

				symptoms and diseases of the liver			2 page 156-158 • Golden tips biology pages 109-110 • Gateway secondary Biology pages 149 • Longman biology page 79-80 • High flyer series pages 48-49	
8	1-2	EXCRETION AND HOMEOSTASIS	Excretion and homeostasis in animals (practical lesson)	By the end of the lesson, the learner should be able to: • explain catalase enzyme and hydrogen peroxide • describe the role of catalase enzyme in breaking down hydrogen peroxide • use liver and kidney to investigate the reaction	• explaining catalase enzyme and hydrogen peroxide • carrying out the experiment to investigate the effect of catalase enzyme in breaking down hydrogen peroxide • discussion on results obtained in the experiment	• hydrogen peroxide • two beakers • measuring cylinder • piece of liver and kidney • splint • ruler	• Comprehensive secondary Biology students Bk. 2 page 86-105 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 96 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 155-156 • Golden tips biology pages 110 • Gateway secondary Biology pages • Longman biology page • High flyer series pages	
	3-4	EXCRETION AND HOMEOSTASIS	Continuous assessment test	By the end of the lesson, the learner should be able to • Answer all the questions asked in the test	• Learner to answer all the questions • Teacher to supervise students	• Question paper • Marking scheme		

9	1-2	EXCRETION AND HOMEOSTASIS	Role of the liver in the regulation of blood glucose	By the end of the lesson, the learner should be able to: • Describe the role of the liver in blood sugar control • Describe the role of insulin hormone	• Describing the role of the liver in blood sugar control • Describing the role of insulin hormone	• Chart showing steps in controlling blood sugar levels	• Comprehensive secondary Biology students Bk. 2 page 97 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 102-103 • KLB teachers book 2 pages • Longhorn secondary biology: students book 2 page 153-156 • Golden tips biology pages 105-106 • Gateway secondary Biology pages 149 • Longman biology page 79 • High flyer series pages	
	3-4	EXCRETION AND HOMEOSTASIS	Regulation of blood sugar	By the end of the lesson, the learner should be able to: • Explain the regulation of blood sugar • Describe a flow chart showing the regulation of blood sugar	• Explaining the regulation of blood sugar • Describing a flow chart showing the regulation of blood sugar	• Flow chart showing regulation of blood sugar	• Comprehensive secondary Biology students Bk. 2 page 98 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 102-103 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 153-156 • Golden tips biology pages 105-106 • Gateway secondary Biology pages 146 • Longman biology page 78-79	

							• High flyer series pages	
10	1-2	EXCRETION AND HOMEOSTASIS	Thermo regulation in other animals	By the end of the lesson, the learner should be able to • Describe temperature regulation in other animals	• Describing temperature regulation in other animals	• Photographs of birds, reptiles and camels showing behavior of temperature regulation	• Comprehensive secondary Biology students Bk. 2 page 100 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 98-100 • KLB teachers book 2 pages 49-54 • Longhorn secondary biology: students book 2 page 146-152 • Golden tips biology pages 106-108 • Gateway secondary Biology pages 148 • Longman biology page • High flyer series pages	
	3-4	EXCRETION AND HOMEOSTASIS	Continuous assessment test	By the end of the lesson, the learner should be able to • Answer all the questions asked in the test	• Learner to be able to answer questions in the test • Teacher to supervise students as they do the test	• Question paper • Marking scheme		
11	1-2	REVISION	Gaseous exchange in animals	By the end of the lesson, the learner should be able to: • Relate parts of the lungs to its functions • Draw and label parts of the lungs	• Describing the parts of the lungs and relating the to its functions • Drawing and labeling parts of the lungs	• Chart showing parts of the lungs	• Comprehensive secondary Biology students Bk. 2 page 63-64,66 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 59-64 • KLB teachers book 2 pages 35-44	

							• Longhorn secondary biology: students book 2 page 91-94 • Golden tips biology pages 86 • Gateway secondary Biology pages 117 • Longman biology page 66-67 • High flyer series pages	
	3-4	REVISION	Gaseous exchange in animals	By the end of the lesson, the learner should be able to describe the functions of the lungs as discussed during gaseous exchange	• Reviewing gaseous exchange and functions of lungs • Reading notes on gaseous exchange	• Notes on gaseous exchange • Charts showing lungs	• Comprehensive secondary Biology students Bk. 2 page 63-65 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page 59-62 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 91-94 • Golden tips biology pages 85-87 • Gateway secondary Biology pages 117-118 • Longman biology page 65-67 • High flyer series pages	
12	1-4	REVISION	Gaseous exchange in animals (practical lesson)	By the end of the lesson, the learner should be able to: • Identify a mammals lungs • Observe and describe structures of lungs in relation	• Identifying fresh lungs of a mammal • Observing and describing the structure of a mammals lungs in relation to their	• Fresh lungs of a cow • Livestock officer	• Comprehensive secondary Biology students Bk. 2 page 63-65 • Teachers bk. 2 pages 58-68 • KLB secondary Biology Students book 2 Page	

				to functions	functions		63 • KLB teachers book 2 pages 35-44 • Longhorn secondary biology: students book 2 page 91-94 • Golden tips biology pages • Gateway secondary Biology pages • Longman biology page 66-67 • High flyer series pages	
13	**REVISION AND EXAMINATIONS**							

BIOLOGY FORM 3 SCHEMES OF WORK – TERM 1								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	1	CLASSIFICATION 2	Review of binominal nomenclature	By the end of the lesson, the learner should be able to: • Classify common organisms into their main taxonomic units • Write scientific names of organisms correctly • List the kingdoms of organisms	• Reviewing the work done in classification 1 • Classifying and naming common organisms like maize, beans, domestic dog and jack	• Local environment • Potted plant • Use of preserved specimen of plants and animals	• Comprehensive secondary Biology students Bk. 3 page 1-2 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 1-3 • KLB teachers book 3 pages 1-3 • Principles of biology vol. 2 pages 1-4	
	2	CLASSIFICATION 2	Kingdom monera	By the end of the lesson, the learner should be able to: • Describe the general characteristics of Kingdom monera	• Discussion on the general characteristics of Kingdom monera	• Local environment on a typical bacteria cell and different types of bacteria	• Comprehensive secondary Biology students Bk. 3 page • Teachers bk. 3 pages • KLB secondary Biology Students book 3 Page 3-4 • KLB teachers book 3 pages 12-27	

							• Principles of biology vol. 2 pages 5-6	
	3	CLASSIFICATIO N 2	Kingdom protoctista	By the end of the lesson, the learner should be able to: • Describe the general characteristics of Kingdom protoctista	• Discussion on the general characteristics of Kingdom protoctista • Listing down the members of kingdom protoctista	• Local environment • Wall charts on protoctista	• Comprehensive secondary Biology students Bk. 3 page 3-6 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 3-4 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 6-8	
	4-5	CLASSIFICATIO N 2	Kingdom protoctista	By the end of the lesson, the learner should be able to: • Describe the general characteristics of Kingdom protoctista • Observe, draw and name parts of spirogyra, amoeba, paramecium and euglena	• Observing, drawing and naming parts of spirogyra, amoeba, paramecium and euglena	• Local environment • Hand lenses • Microscope • Protozoa infusion (cultured)	• Comprehensive secondary Biology students Bk. 3 page 3-6 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 4-5 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 6-8	
2	1	CLASSIFICATIO N 2	Kingdom fungi	By the end of the lesson, the learner should be able to: • Describe the general characteristics of Kingdom fungi • List down all the members of kingdom fungi	• Describing the general characteristics of Kingdom fungi • Naming and drawing organisms in this kingdom	• Local environment • Wall charts on fungi • Specimen of fungi • Hand lenses • microscope	• Comprehensive secondary Biology students Bk. 3 page 6-8 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 6 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 11-14	
	2	CLASSIFICATIO	Kingdom fungi	By the end of the lesson,	• Observing,	• Hand lenses	• Comprehensive	

		N 2		the learner should be able to: • Draw and name parts of bread mold (mucor), yeast and mushrooms	drawing and labeling structures of yeast, bread mold and mushroom	• Charts on yeast, mushrooms and bread mold • Live specimens e.g. mushrooms	secondary Biology students Bk. 3 page 6-8 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 6 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 11-14	
	3	CLASSIFICATIO N 2	Kingdom plantae	By the end of the lesson, the learner should be able to: • Describe the main characteristics of kingdom plantae • Describe the main characteristics of bryophyta	• Discussion on the main characteristics of kingdom plantae • Describing and stating the main characteristics of bryophyta	• Local environment • Wall charts • Live specimens of moss	• Comprehensive secondary Biology students Bk. 3 page 8-9 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 7 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 15	
	4-5	CLASSIFICATIO N 2	Kingdom plantae	By the end of the lesson, the learner should be able to: • Identify examples of hyophyta • Observe draw and name parts of liverworts and moss plants	• Observing drawing and labeling structures of moss and liverworts • Asking and answering questions	• Local environment • hand lenses • Wall charts on bryophytes • Live specimens of moss plants	• Comprehensive secondary Biology students Bk. 3 page 8-9 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 7 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 15	
3	1	CLASSIFICATIO N 2	Kingdom plantae	By the end of the lesson, the learner should be able to: • Identify examples of pleridophyta • Observe draw and name parts of fern	• Discussing main characteristics of division pleridophyes • Stating and describing characteristics of	• Live specimen of fern • Local environment • Hand lenses	• Comprehensive secondary Biology students Bk. 3 page 9-10 • Teachers bk. 3 pages 1-8 • KLB secondary Biology	

				plant	pteridophytes		Students book 3 Page 8-9 • KLB teachers book 3 pages • Principles of biology vol. 2 pages 16	
	2	CLASSIFICATION 2	Kingdom plantae	By the end of the lesson, the learner should be able to: • Identify examples of division spermatophyta • Identify major sub-division of spermatophyta •	• Discussing main characteristics pleridophyes • Stating main characteristics of pleridophytes and their sub-division of the same I.e ginkgoales, cycadales and coniferles	• Live specimen spermatophytes • Wall charts on common spermatophytes	• Comprehensive secondary Biology students Bk. 3 page 10-11 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 9-10 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 17	
	3	CLASSIFICATION 2	Kingdom plantae - spermatophyta	By the end of the lesson, the learner should be able to: • List main characteristics of angiospermae • Differentiate between angiospermae and gymnospermae	• Discussing the characteristics of angiospermae and gymnospermae • Differentiating between angiospermae and gymnospermae •	• Live specimen of corn leaves • Wall charts on angiospermae and gymnospermae	• Comprehensive secondary Biology students Bk. 3 page 10-11 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 9-10 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 17	
	4-5	CLASSIFICATION 2	Kingdom plantae angiospermapyta	By the end of the lesson, the learner should be able to: • State the characteristics of angiospermapyta • Identify and state	• Differentiating between class monocotyledonae and dicotyledonae • Observing drawing and	• Live specimen of both monocotyledenous and dicotyledenous plants • B;ade	• Comprehensive secondary Biology students Bk. 3 page 11-12 • Teachers bk. 3 pages 1-8 • KLB secondary Biology	

				major characteristics of classes of angiospermapyta eg dicotyledonare &monocotyledonoe	labeling parts of monocotyledonous plants	• Staining material • Handlenses • microscope	Students book 3 Page 10-11 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 18-20	
4	1	CLASSIFICATION 2	Kingdom animalia	By the end of the lesson, the learner should be able to: • describe the general characteristics of kingdom animalia	• discussion on the main characteristics of phylum anthropoda • stating and describing general characteristics of kingdom animalia	• Preserved specimen of kingdom animalia • wall charts showing different animals	• Comprehensive secondary Biology students Bk. 3 page 12 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 12-13 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 20-24	
	2	CLASSIFICATION 2	Phylum arthropda	By the end of the lesson, the learner should be able to: • describe the general characteristics of Phylum arthropda • list down the classes of the Phylum arthropda	• stating and describing the general characteristics of Phylum arthropda • discussing the characteristics of arthropods	• Preserved specimen of arthropods • Wall charts showing different arthropods • Local environment • hand lenses	• Comprehensive secondary Biology students Bk. 3 page 14 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 12-13 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 25-26	
	3	CLASSIFICATION 2	Class crutacea	By the end of the lesson, the learner should be able to: • describe the general characteristics of Class crutacea	• describing the general characteristics of Class crutacea • observing, drawing and labeling various types of crutacea	• preserved specimen of crutacea • wall charts showing diagrams of crutacea • local	• Comprehensive secondary Biology students Bk. 3 page 14 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 13-14	

						environment • hand lenses	• KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 29	
	4-5	CLASSIFICATION 2	Class arachnida and insecta	By the end of the lesson, the learner should be able to: • describe the general characteristics of Class insect • describe the general characteristics of Class arachnida • list down the members of class arachnida and insecta	• discussion on classes arachnida and insect • stating and describing the characteristics of classes arachnida and insect • observing, drawing and labeling parts of various types of arachnida and insecta	• preserved specimen of class arachnida and insecta • wall charts showing diagrams of common members of class arachnida and insecta • local environment • hand lenses	• Comprehensive secondary Biology students Bk. 3 page • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 14-16 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 25,30	
5	1	EVALUATION	Continuous assessment test	By the end of the lesson, the learner should be able to • Answer all questions on the subtopics covered previously	• Learner answers questions • Teacher supervises learners as they write down their examination	• Question papers • Marking scheme	• Comprehensive secondary Biology students Bk. 3 page • Teachers bk. 3 pages • KLB secondary Biology Students book 3 Page 30 • KLB teachers book 3 pages 1-8 • Principles of biology vol. 2 pages	
	2	CLASSIFICATION 2	Classes chilopoda and diplopoda	By the end of the lesson, the learner should be able to: • Describe the general characteristics of Classes chilopoda and diplopoda • List down the	• Describing the general characteristics of Classes chilopoda and diplopoda • Observing, drawing and labeling of diplopods and	• Preserved specimen of chilopods and diplopods • Wall charts showing diagrams of centipedes and millipedes	• Comprehensive secondary Biology students Bk. 3 page 15 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 14 • KLB teachers book 3	

				members of class chilopoda and diplopoda	chilopods • Differentiating between chilopoda and diplopoda classes	• Local environment	pages 12-27 • Principles of biology vol. 2 pages 31	
	3	CLASSIFICATIO N 2	Phylum chordata	By the end of the lesson, the learner should be able to: • Describe the general characteristics of Phylum chordata	• Describing the general characteristics of Classes Phylum chordate • listing down the members of Phylum chordata	• Preserved specimen of Phylum chordata • local environment	• Comprehensive secondary Biology students Bk. 3 page 16-17 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 16-17 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 32	
	4-5	CLASSIFICATIO N 2	Classes Pisces and amphibia	By the end of the lesson, the learner should be able to: • describe the general characteristics of Pisces and amphibia	• describing the general characteristics of Classes Pisces and amphibian • observing, drawing and labeling different types of fish • differentiating between bony and cartilaginous fish	• Wall charts of fish • Live specimen amphibia • Local environment	• Comprehensive secondary Biology students Bk. 3 page 17-19 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page • KLB teachers book 3 pages • Principles of biology vol. 2 pages 32-33	
6	1	CLASSIFICATIO N 2	Classes amphibian and reptilia	By the end of the lesson, the learner should be able to: • describe the general characteristics of reptilia	• Describing the general characteristics of reptilia • Observing, drawing and labeling different	• Photographs/ diagrams of amphibia and reptilia • Preserved specimen reptilia	• Comprehensive secondary Biology students Bk. 3 page 18-19 • Teachers bk. 3 pages 1-8 • KLB secondary Biology	

					types of amphibia and reptilia		Students book 3 Page 18-19 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 33-34	
	2	CLASSIFICATION 2	Class aves	By the end of the lesson, the learner should be able to: • describe the general characteristics of Class aves	• Describing and stating the general characteristics of Class aves • Observing, drawing and labeling different parts of aves	• Photographs/ diagrams of birds	• Comprehensive secondary Biology students Bk. 3 page 19-20 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 19-20 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 34-35	
	3	CLASSIFICATION 2	Class Mammalia	By the end of the lesson, the learner should be able to: • Describe the general characteristics of Class Mammalia • Identify different types of members of Class Mammalia	• Describing and stating the general characteristics of Class Mammalia • Asking and answering questions	• Photographs/ diagrams of different mammals	• Comprehensive secondary Biology students Bk. 3 page 20-21 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 21 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 35-36	
	4-5	CLASSIFICATION 2	dichotomous key	By the end of the lesson, the learner should be able to: • Construct a simple dichotomous to identify given organisms	• Constructing a simple dichotomous key using common organisms	• Common plant and animal species	• Comprehensive secondary Biology students Bk. 3 page 21-22 • Teachers bk. 3 pages 1-8 • KLB secondary Biology	

							Students book 3 Page 22-26 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 37-41	
7	1	CLASSIFICATION 2	dichotomous key	By the end of the lesson, the learner should be able to: • Use an already constructed dichotomous key to identify given organisms	• Using a dichotomous key to identify arthropods	• Chart showing a constructed dichotomous key	• Comprehensive secondary Biology students Bk. 3 page 21-22 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 27-28 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 37-41	
	2	CLASSIFICATION 2	dichotomous key	By the end of the lesson, the learner should be able to: • Use an already constructed dichotomous key to identify given organisms	• Using a dichotomous key to identify plants	• Chart showing a constructed dichotomous key	• Comprehensive secondary Biology students Bk. 3 page 21-22 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 29 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 37-41	
	3	CLASSIFICATION 2	Dichotomous key	By the end of the lesson, the learner should be able to: • Use an already constructed dichotomous key to identify given	• Using a dichotomous key to identify phylum chordata	• Chart showing a constructed dichotomous key	• Comprehensive secondary Biology students Bk. 3 page 21-22 • Teachers bk. 3 pages 1-8 • KLB secondary Biology	

				organisms			Students book 3 Page • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages	
	1	EVALUATION & REVISION OF THE TOPICS	Continuous assessment test	By the end of the lesson, the learner should be able to: • answer all questions on the topic covered • draw and label organisms correctly	• Learner answers questions • Teacher supervises learners as they write down their examination	• Question papers • Marking scheme	• Comprehensive secondary Biology students Bk. 3 page25-26 • Teachers bk. 3 pages 1-8 • KLB secondary Biology Students book 3 Page 30 • KLB teachers book 3 pages 12-27 • Principles of biology vol. 2 pages 42-47	
8	1	ECOLOGY	Introduction to ecology	By the end of the lesson, the learner should be able to: • Define the term ecology and identify terms used in ecology	• Defining the terms used in ecology	• Wall chart showing terms used in ecology and their definitions and their Local environment	• Comprehensive secondary Biology students Bk. 3 page 27-28 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 33-34 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 48	
	2	ECOLOGY	Introduction to ecology	By the end of the lesson, the learner should be able to: • Define the term ecology and identify terms used in ecology	• Defining the terms used in ecology	• Wall chart showing terms used in ecology and their definitions and their Local environment	• Comprehensive secondary Biology students Bk. 3 page 27-28 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page	

							33-34 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 48	
	3	ECOLOGY	Factors affecting the distribution of organisms in an ecosystem Light	By the end of the lesson, the learner should be able to: • Identify the types of ecosystems • State and explain how light determines distribution of organisms in an ecosystem	• Discussing how light determines distribution of organisms in an ecosystem	• Instruments for measuring light or their diagrams • Local environment	• Comprehensive secondary Biology students Bk. 3 page 29 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 34 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 50	
	4-5	ECOLOGY	Factors affecting the distribution of organisms in an ecosystem temperature	By the end of the lesson, the learner should be able to: • Identify and describe how temperature determines distribution of organisms in an ecosystem	• Discussing on the role of temperature in the distribution of organisms in an ecosystem • Drawing and labeling parts of a thermometer	• Instruments for measuring temperature or their diagrams • Local environment	• Comprehensive secondary Biology students Bk. 3 page • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 34 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 50	
9	1	ECOLOGY	Factors affecting the distribution of organisms in an ecosystem Rainfall and humidity	By the end of the lesson, the learner should be able to: • Identify and describe how Rainfall and humidity determines distribution of organisms in an	• Discussing on the role of Rainfall and humidity in the distribution of organisms in an ecosystem • Stating and describing how Rainfall and humidity	• Instruments for measuring Rainfall and humidity or their diagrams/photographs • Local environment	• Comprehensive secondary Biology students Bk. 3 page 31 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 34-35 • KLB teachers book 3 pages 28-56	

				ecosystem	determines distribution of organisms • Drawing of instruments e.g. rain gauge		• Principles of biology vol. 2 pages 51	
	2	ECOLOGY	Factors affecting the distribution of organisms in an ecosystem Wind and atmospheric pressure	By the end of the lesson, the learner should be able to: • describe how Wind and atmospheric pressure determines distribution of organisms in an ecosystem	• describing how Wind and atmospheric affects the distribution of organisms in an ecosystem • Drawing and labeling of instruments used in measuring wind direction & strength	• Instruments for measuring strength of wind, direction of wind and atmospheric pressure • Local environment	• Comprehensive secondary Biology students Bk. 3 page 29-30 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 34-35 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 51-52	
	3	EVALUATION	Continuous assessment test	By the end of the lesson, the learner should be able to: • Write down correct answers to questions asked in the test	• Learner recalls and writes down answers questions asked • Teacher supervises learners as they write down their examination	• Question papers • Marking scheme	• Comprehensive secondary Biology students Bk. 3 page 1-30 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 70 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 94	
	4-5	ECOLOGY	Factors affecting the distribution of organisms in an ecosystem salinity	By the end of the lesson, the learner should be able to: • describe how salinity affects the distribution of organisms in	• describing how salinity affects the distribution of organisms in aquatic ecosystems • discussion on the	• diagrams of aquatic profile of lakes/oceans • Local environment	• Comprehensive secondary Biology students Bk. 3 page 31 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page	

				aquatic ecosystems	role of salinity in distribution of organisms and methods of measuring salinity		35-36 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 51	
10	1	ECOLOGY	Factors in an ecosystem and how they affect distribution of organisms Waves, curves and Tides	By the end of the lesson, the learner should be able to: • describe how waves, currents and tides affects the distribution of organisms in aquatic ecosystem	• describing how waves, currents and tides affects the distribution of organisms in aquatic ecosystems	• diagrams of aquatic profile of lakes/oceans • Local environment	• Comprehensive secondary Biology students Bk. 3 page 31-32 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 36 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 49- 51	
	2	ECOLOGY	Factors in an ecosystem and how they affect distribution of organisms Edaphic factors	By the end of the lesson, the learner should be able to: • Describe how Edaphic factors affects the distribution of organisms in an ecosystem	• Describing how Edaphic factors affects the distribution of organisms in an ecosystem • Discussion on the role of edaphic factors in distribution of organisms in an ecosystem	• Soil samples of different types from different places • petri dishes • Local environment	• Comprehensive secondary Biology students Bk. 3 page 32 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 36 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 52	
	3	ECOLOGY	Factors in an ecosystem and how they affect distribution of organisms (practical lesson)	By the end of the lesson, the learner should be able to: • Measure certain factors in samples of different soils	• Measuring the PH and soil water content in sandy, clay and loamy soils	• Samples of sandy, clay and loamy soils • Weighing balance • Source of heat • Universal indicator • Funnel/filter	• Comprehensive secondary Biology students Bk. 3 page 32 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 36 • KLB teachers book 3	

						papers • Cotton wool • Measuring cylinders	pages 28-56 • Principles of biology vol. 2 pages 92-93	
	4-5	ECOLOGY	Factors in an ecosystem and how they affect distribution of organisms Geological factors	By the end of the lesson, the learner should be able to: • Describe how Geological factors affect the distribution of organisms in an ecosystem	• Describing how Geological factors affect the distribution of organisms in an ecosystem • Discussion on the role of geological factors in the distribution of organisms in an ecosystem	• Local environment • Maps or photographs of various landscapes	• Comprehensive secondary Biology students Bk. 3 page 32-33 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page • KLB teachers book 3 pages • Principles of biology vol. 2 pages 54	
11	1	ECOLOGY	Abiotic factors in an ecosystem	By the end of the lesson, the learner should be able to: • Describe how Abiotic factors affect the distribution of organisms in an ecosystem	• Describing how other Abiotic factors affect the distribution of organisms in an ecosystem • Discussion on the role of pollutants, oxygen concentration in the distribution of organisms in an ecosystem	• Local environment • Photographs of polluted environments	• Comprehensive secondary Biology students Bk. 3 page 33 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page • KLB teachers book 3 pages • Principles of biology vol. 2 pages 52-54	
	2	ECOLOGY	Biotic factors in an ecosystem Competition	By the end of the lesson, the learner should be able to: • Describe how competition affects the distribution of organisms in an ecosystem	• Describing how competition affects the distribution of organisms in an ecosystem • Discussion on how competition affects the	• Local environment • Graphs showing relation of different organisms in an ecosystem using a factor e.g. food	• Comprehensive secondary Biology students Bk. 3 page 40 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 37-38 • KLB teachers book 3	

					distribution of organisms in an ecosystem		pages 28-56 • Principles of biology vol. 2 pages 56-58	
	3	ECOLOGY	Biotic factors in an ecosystem Predation and Symbiosis	By the end of the lesson, the learner should be able to: • Describe how Predation and Symbiosis affects the distribution of organisms in an ecosystem	• Describing how Predation and Symbiosis affects the distribution of organisms in an ecosystem • Discussion on the role of Predation and Symbiosis in the distribution of organisms in an ecosystem • Drawing and labeling parts of a leguminous root	• Leguminous root • Local environment	• Comprehensive secondary Biology students Bk. 3 page 40-41 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 39-40 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 57-59	
	4-5	ECOLOGY	Parasitism and saprophytism	By the end of the lesson, the learner should be able to: • Differentiate between Parasitism and saprophytism • Describe how Parasitism and saprophytism influence the distribution of organisms in an ecosystem e.g. Tick and cattle	• Differentiating between Parasitism and saprophytism • Describing how Parasitism and saprophytism influence the distribution of organisms in an ecosystem e.g. Tick and cattle • Discussion on Parasitism and saprophytism and their role in distribution of organisms in an ecosystem	• Live/preserved specimen of common parasites • Diagrams or photographs of common Parasitism and saprophytism • Local environment	• Comprehensive secondary Biology students Bk. 3 page 41 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 39-40 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 58-59	
12	1	ECOLOGY	Recycling of matter and energy flow in an	By the end of the lesson, the learner should be able to:	• Describing the interaction between	• Chart showing pyramid of biomass and	• Comprehensive secondary Biology students Bk. 3 page 37-	

			ecosystem	• Describe the interaction between organisms in an ecosystem	organisms in an ecosystem • Discussion on the role of producers, consumers and decomposers in an ecosystem • Construction of a pyramid of biomass and numbers	numbers • Local environment	39 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 44-45 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 69-71	
	2	ECOLOGY	Nitrogen cycle & carbon cycle	By the end of the lesson, the learner should be able to: • Describe the role of decomposers in Nitrogen cycle & carbon cycle	• Describing the Nitrogen cycle • Discussion on the role of decomposers in Nitrogen cycle • Construction of the Nitrogen cycle	• Wall chart on Nitrogen cycle	• Comprehensive secondary Biology students Bk. 3 page 41-42 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 41-42 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 71-73	
	3	ECOLOGY	Recycling of matter & energy flow in an ecosystem	By the end of the lesson, the learner should be able to: • Define the terms food chain and food web • Construct food chains and food webs	• Defining the terms food chain and food web • Discussion on food chains and food webs • Constructing food chains and food webs	• Examples of food chains and food webs	• Comprehensive secondary Biology students Bk. 3 page 37-38 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 42-44 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 74	
	4-5	ECOLOGY	Recycling of matter & energy	By the end of the lesson, the learner should be able	• Studying energy flow in a local		• Comprehensive secondary Biology	

			flow in an ecosystem	to: • Describe energy flow in a local ecosystem and Construct food chains and food webs	ecosystem • Constructing food chains and food webs		students Bk. 3 page 37-38, 39-40 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 42-44 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 69-70	
13	**REVISION AND END OF TERM EXAMINATIONS**							

BIOLOGY FORM 3 SCHEMES OF WORK – TERM 2								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	1	ECOLOGY	population	By the end of the lesson, the learner should be able to: • Define population • List down the characteristics of population	• Defining population • Listing characteristics of population	• Photographs of population • Data on population of some organisms shown e.g. in a graph • Local	• Comprehensive secondary Biology students Bk. 3 page 33-34 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 46	

						environment	• KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 75-81	
	2	ECOLOGY	Population estimation	By the end of the lesson, the learner should be able to: • Explain the use of quadrants and transects as methods of Population estimation	• Describing how quadrants and transects as methods of Population estimation • Discussion on the use of quadrants and transects as methods of Population estimation	• quadrants • wall charts with transects • 2 ropes with IM interval marks	• Comprehensive secondary Biology students Bk. 3 page 35-36 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 46-48 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 82-84	
	3	ECOLOGY	Population estimation	By the end of the lesson, the learner should be able to: • Explain the capture –recapture method of population estimation	• Describing capture recapture method of population estimation • Using capture – recapture method by estimating the total number of beads in a beaker	• Beads of two colours • Local environment	• Comprehensive secondary Biology students Bk. 3 page 36-37 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 49 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 84	
	4-5	ECOLOGY	Population estimation (practical lesson)	By the end of the lesson, the learner should be able to: • Use quadrant method to estimate population of named organisms within the	• Identifying, estimating and recording organisms in the school compound using quadrant method	• School compound • Quadrant • herbs	• Comprehensive secondary Biology students Bk. 3 page 36-37 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 47	

				compound			• KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 82-83	
2	1	ECOLOGY	Population estimation	By the end of the lesson, the learner should be able to: • Describe total count, aerial count and aerial photography and other methods of population estimation	• Describing total count, aerial count and aerial photography and other methods of population estimation • Discussion on these methods of population estimation.	• Photographs of populations • Local environment	• Comprehensive secondary Biology students Bk. 3 page 35 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 46 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 81-82	
	2	ECOLOGY	Adaptation of organisms to their habitats	By the end of the lesson, the learner should be able to: • Relate to the adaptations of xerophytes to their habitats	• Discuss the adaptations of xerophytes to their habitats	• Photographs and diagrams of xerophytes • Local environment	• Comprehensive secondary Biology students Bk. 3 page 42-44 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 50-51 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 60-62	
	3	ECOLOGY	Adaptation of organisms to their habitats	By the end of the lesson, the learner should be able to: • Relate to the adaptations of mesophytes to their habitats	• Discuss the adaptations of mesophytes to their habitats	• Photographs and diagrams of mesophytes • Local environment	• Comprehensive secondary Biology students Bk. 3 page 44-45 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 51 • KLB teachers book 3	

							pages 28-56 • Principles of biology vol. 2 pages 62-63	
	4-5	ECOLOGY	Adaptation of organisms to their habitats	By the end of the lesson, the learner should be able to: • Relate to the adaptations of hydrophytes to their habitats • Observe, draw and label parts of named hydrophytes, mesophytes and xerophyte plants	• Discuss the adaptations of hydrophytes to their habitats • Observing, drawing and labeling structures of xerophytes, mesophytes and hydrophytes	• Photographs and diagrams of mesophytes e.g. black jack • Hydrophytes e.g. papyrus • Xerophytes e.g. cactus • Hand lens • blade • Local environment	• Comprehensive secondary Biology students Bk. 3 page 42-46 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 52-53 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 63-64	
3	1	ECOLOGY	Adaptation of organisms to their habitats	By the end of the lesson, the learner should be able to: • Relate to the adaptations of halophytes to their habitats	• Discussion on the adaptations of halophytes to their habitats • Describing the adaptations of halophytes to their habitats	• Photographs and diagrams of halophytes • Local environment • Wall charts on halophytes	• Comprehensive secondary Biology students Bk. 3 page 46-47 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 53-54 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 65	
	2	ECOLOGY	Environmental pollution	By the end of the lesson, the learner should be able to: • Explain pollution and give examples of pollutants	• Defining pollution and identifying various pollutants • Discussion on pollutants within and around the school compound	• Photographs and diagrams of polluted areas • Local environment	• Comprehensive secondary Biology students Bk. 3 page 46-47 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 55-56 • KLB teachers book 3	

							pages 28-56 • Principles of biology vol. 2 pages 100-101	
	3	ECOLOGY	Air pollution	By the end of the lesson, the learner should be able to: • Describe the various air pollutants	• Identify various air pollutants • Describing various air pollutants	• Photographs and diagrams of air pollution • Local environment	• Comprehensive secondary Biology students Bk. 3 page 47 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 56 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 100-104	
	4-5	ECOLOGY	Air pollution	By the end of the lesson, the learner should be able to: • Discuss the effects of air pollution on the environment • Suggest methods of controlling air pollution	• Discussing the effects of air pollution on human health and animals • Suggesting methods of controlling air pollution	• Photographs and diagrams of areas polluted by air • Local environment	• Comprehensive secondary Biology students Bk. 3 page 47-50 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 56-59 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 101-104	
4	1	ECOLOGY	Land/ soil pollution	By the end of the lesson, the learner should be able to: • Describe various causes of Land/ soil pollution	• Identification and description of various causes of Land/ soil pollution	• Photographs and diagrams of polluted land • Local environment	• Comprehensive secondary Biology students Bk. 3 page 47-50 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 62-64 • KLB teachers book 3 pages 28-56	

							• Principles of biology vol. 2 pages 104-105	
	2	ECOLOGY	Land/ soil pollution	By the end of the lesson, the learner should be able to: • Discuss the effects of Land/ soil pollution and human health in rural and urban centers • Suggest methods of controlling Land/ soil pollution	• Discussion on the effects of Land/ soil pollution on human and animal health • Suggesting methods of controlling Land/ soil pollution	• Photographs and diagrams of polluted land • Local environment	• Comprehensive secondary Biology students Bk. 3 page 47-50 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 62-64 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 104-105	
	3	ECOLOGY	Water pollution	By the end of the lesson, the learner should be able to: • Describe the causes of Water pollution	• Identifying and describing the causes of Water pollution	• Photographs and diagrams of polluted water • Local environment	• Comprehensive secondary Biology students Bk. 3 page 50-52 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 60-62 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 105-108	
	4-5	ECOLOGY	environmental pollution	By the end of the lesson, the learner should be able to: • Identify other causes of environmental pollution in rural and urban centers	• Identifying and describing the causes of environmental pollution e.g. noise, radioactive pollutions	• Photographs and diagrams of polluted environment • Local environment	• Comprehensive secondary Biology students Bk. 3 page 47-53 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 64 • KLB teachers book 3 pages 28-56	

							• Principles of biology vol. 2 pages 108-112	
5	1	EECOLOGY	Continuous assessment test	By the end of the lesson, the learner should be able to: • Write down correct answers to questions asked in the test	• Learner recalls and writes down answers questions asked • Teacher supervises learners as they write down their examination	• Question papers • Marking scheme	• Comprehensive secondary Biology students Bk. 3 page 33-52 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page • KLB teachers book 3 pages • Principles of biology vol. 2 pages 100-110	
	2	ECOLOGY	water pollution	By the end of the lesson, the learner should be able to: • Discuss the effects of water pollution on human health in rural and urban centers and other organisms • Suggest methods of controlling water pollution	• Discussion on the effects of water pollution on human health in rural and urban centers and other organisms • Suggesting methods of controlling water pollution	• Photographs and diagrams of polluted areas • Local environment	• Comprehensive secondary Biology students Bk. 3 page 50-52 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 60-62 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 105-108	
	3	ECOLOGY	Human diseases	By the end of the lesson, the learner should be able to: • Identify symptoms of cholera and typhoid fever • State methods of transmission • Suggest control measures	• Discussion on the symptoms, methods of transmission and control of cholera and typhoid fever	• resource person e.g. school nurse • Journals, periodicals and newspapers from library having information about cholera and typhoid fever	• Comprehensive secondary Biology students Bk. 3 page 53-54 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 64-66 • KLB teachers book 3 pages 28-56 • Principles of biology	

							vol. 2 pages 121-122	
	4-5	ECOLOGY	protozoan diseases	By the end of the lesson, the learner should be able to: • Identify the causes, symptoms and methods of transmission and control of malaria	• Discussion on the causes, symptoms and methods of transmission and control of malaria	• resource person e.g. school nurse • Journals, periodicals and newspapers from library having information about malaria	• Comprehensive secondary Biology students Bk. 3 page 54-55 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 66-70 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 129-130	
6	1	ECOLOGY	protozoan diseases	By the end of the lesson, the learner should be able to: • Identify the causes, symptoms and methods of transmission of amoebic dysentery • Suggest control methods of amoebic dysentery	• Discussion on the causes, symptoms and methods of transmission and control of amoebic dysentery	• resource person e.g. school nurse • Wall charts on life cycle of entomoeba hystolitica	• Comprehensive secondary Biology students Bk. 3 page 55 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 66-67 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 131	
	2	ECOLOGY	Diseases caused by parasitic worms	By the end of the lesson, the learner should be able to: • Identify the causes, symptoms and methods of transmission of ascariosis	• Discussion on the causes, symptoms and methods of transmission of ascariosis	• Resource person e.g. school nurse • Wall charts on life cycle of ascaris tumbricoides • Journals, periodicals and newspapers having information about ascaris	• Comprehensive secondary Biology students Bk. 3 page 56 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 67-68 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 124-128	

						tumbricoides		
	3	ECOLOGY	Diseases caused by parasitic worms	By the end of the lesson, the learner should be able to: • Identify the causes, symptoms and methods of transmission and control of schistomiasis	• Discussion on the causes, symptoms and methods of transmission and control of schistomiasis	• Recourse person e.g. school nurse • Wall charts on life cycle of schistomiasis	• Comprehensive secondary Biology students Bk. 3 page 55-56 • Teachers bk. 3 pages 8-24 • KLB secondary Biology Students book 3 Page 69-70 • KLB teachers book 3 pages 28-56 • Principles of biology vol. 2 pages 124-128	
	4-5	REPRODUCTION	Introduction to reproduction	By the end of the lesson, the learner should be able to: • Define reproduction and state its importance • Differentiate between asexual and sexual reproduction	• Defining reproduction • Differentiation between asexual and sexual reproduction • Stating the importance of reproduction	• Recourse person e.g. school nurse • Wall charts on significance of reproduction	• Comprehensive secondary Biology students Bk. 3 page 64,103 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 78 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 141	
7	1	REPRODUCTION	Concepts of reproduction	By the end of the lesson, the learner should be able to: • Describe the appearance and location of chromosomes	• Describing the appearance and location of chromosomes • Modeling chromosomes using Plasticine • Drawing and labeling chromosomes	• Chart showing chromosomes • Plasticine of different colours • Manila paper	• Comprehensive secondary Biology students Bk. 3 page 64-65 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 79 • KLB teachers book 3	

							pages 57-78 • Principles of biology vol. 2 pages 141	
	2	REPRODUCTION	mitosis	By the end of the lesson, the learner should be able to: • Define mitosis • Describe chromosomic movement during mitosis	• Defining mitosis and description of stages of mitosis • Description of chromosomic movement in mitosis	• Wall Chart showing mitosis • Plasticine of different colours • Use of mitosis pictures	• Comprehensive secondary Biology students Bk. 3 page 65-67 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 79-82 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 142-144	
	3	REPRODUCTION	mitosis	By the end of the lesson, the learner should be able to: • Describe e the movement of chromosomes in mitosis • Identify stages of mitosis	• Identifying stages of mitosis • Describing chromosomic movement in mitosis • Drawing the stages of mitosis	• Wall Chart showing mitosis • Plasticine of different colours • Use of mitosis pictures • photomicrographs	• Comprehensive secondary Biology students Bk. 3 page 65-67 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 79-82 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 142-144	
	4-5	REPRODUCTION	mitosis	By the end of the lesson, the learner should be able to: • Identify and describe stages of mitosis	• Identifying stages of mitosis • Describing the stages of mitosis • Drawing the stages of mitosis	• Wall Chart showing mitosis • Plasticine of different colours • Use of mitosis pictures • photomicrographs	• Comprehensive secondary Biology students Bk. 3 page 65-67 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 79-82 • KLB teachers book 3	

							pages 57-78 • Principles of biology vol. 2 pages 142-144	
8	1	REPRODUCTION	Significance of mitosis	By the end of the lesson, the learner should be able to: • State the significance of mitosis in reproduction	• Stating the significance of mitosis in reproduction • Discussion on the significance of mitosis	• Wall Chart showing stages of mitosis	• Comprehensive secondary Biology students Bk. 3 page 66-67 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 82 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 142-143	
	2	EVALUATION	Continuous assessment test	By the end of the lesson, the learner should be able to: • Write down correct answers to questions asked in the test	• Learner recalls and writes down answers questions asked • Teacher supervises learners as they write down their examination	• Question papers • Marking scheme	• Comprehensive secondary Biology students Bk. 3 page 64-112 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 128-131 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 180-185	
	3	REPRODUCTION	meiosis	By the end of the lesson, the learner should be able to: • Define meiosis • State the stages of meiosis • Describe the chromosome movement during meiosis	• Defining meiosis • Describing the stages of meiosis • Describing the chromosome movement during meiosis	• Wall Chart showing stages of meiosis • Plasticine • photomicrographics	• Comprehensive secondary Biology students Bk. 3 page 67-70 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 82-85 • KLB teachers book 3	

							pages 57-78 • Principles of biology vol. 2 pages 144-145	
	4-5	REPRODUCTION	meiosis	By the end of the lesson, the learner should be able to: • Observe the stages of meiosis • Describe the movement of chromosomes during meiosis	Observing, identifying and drawing stages of meiosis in anther cells under a microscope	• Mature flower of hibiscus plant • microscopes	• Comprehensive secondary Biology students Bk. 3 page 104-105 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 86 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 144-145	
9	1	REPRODUCTION	Significance of meiosis in reproduction	By the end of the lesson, the learner should be able to: • State the significance of meiosis in reproduction	• Stating the significance of meiosis in reproduction • Discussion on the significance of meiosis in reproduction	• Charts showing stages of meiosis • photomicrographics	• Comprehensive secondary Biology students Bk. 3 page 70 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 86 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 145	
	2	REPRODUCTION	Difference between mitosis and meiosis	By the end of the lesson, the learner should be able to: • Differentiate between mitosis and meiosis	• Discussion on the difference between mitosis and meiosis	• Charts on meiosis and mitosis	• Comprehensive secondary Biology students Bk. 3 page 70 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 87 • KLB teachers book 3 pages 57-78 • Principles of biology	

							vol. 2 pages 145-146	
	3	REPRODUCTION	Asexual reproduction Binary fission	By the end of the lesson, the learner should be able to: • State and describe the importance of Binary fission	• Describing the importance of Binary fission • Drawing on stages of Binary fission in amoeba	• Protozoan infusion • Microscope • Hand lenses	• Comprehensive secondary Biology students Bk. 3 page 70-72 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 87-88 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 146	
	4-5	REPRODUCTION	Binary fission	By the end of the lesson, the learner should be able to: • Observe spore formation in bread mould (mucor) and binary fission in paramecium	• Description of binary fission and sporulation in reproduction • Drawing and labeling bread mould showing pore-producing structures	• Protozoan infusion • Light Microscope • Hand lenses • Bread mould (mucor) growing on bread	• Comprehensive secondary Biology students Bk. 3 page 70-72 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 87-88 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 146-147	
10	1	REPRODUCTION	Asexual reproduction Budding	By the end of the lesson, the learner should be able to: • State and describing the importance of budding in reproduction • Observing drawing and budding cells of yeast	• Identifying, stating and describing the importance of budding in reproduction • Observing, drawing and labeling budding cells of yeast	• Yeast fermentation (prepared an hour to the lesson) • Microscope, slides • Cover slips Methylene blue stain	• Comprehensive secondary Biology students Bk. 3 page 72 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 89 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 146-147	

	2	REPRODUCTION	Asexual reproduction in flowering plants	By the end of the lesson, the learner should be able to: • Describe the external structure of a typical flower	• Identifying the external floral parts • Observing, drawing and describing corolla and calyx of a flower	• Big mature flowers e.g. hibiscus • Hand lenses	• Comprehensive secondary Biology students Bk. 3 page 73 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 90-91 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 152-155	
	3	REPRODUCTION	Sexual reproduction in flowering plants	By the end of the lesson, the learner should be able to: • Describe the internal structure of a typical flower	• Identifying the internal floral parts • Observing, identifying and describing stamens and carpels of a flower	• Big mature flowers e.g. hibiscus & Nandi flame • Hand lenses • blade	• Comprehensive secondary Biology students Bk. 3 page 73 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 91 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 154-156	
	4-5	REPRODUCTION	Sexual reproduction in flowering plants	By the end of the lesson, the learner should be able to: • Observe, describe and draw different types of pollen grains • Describe the structure of ovules • Describe other characteristics of flowers	• Observing, Identifying, and recording other characteristics of flowers • Comparing insect pollinated and wind pollinated flowers	• A variety of mature wind and insect pollinated flowers • Light microscope • Microscope slides • Cover slips	• Comprehensive secondary Biology students Bk. 3 page 79,105 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 91-92 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 157-158	
11	1	REPRODUCTION	Sexual reproduction in	By the end of the lesson, the learner should be able	• Observing, Identifying, and	• A variety of mature flowers	• Comprehensive secondary Biology	

			flowering plants	to: • Describe and compare adaptations of wind and insect pollinated flowers	recording other characteristics of flowers • Comparing insect pollinated and wind pollinated flowers	still attached to their stem • Local environment	students Bk. 3 page 74-75 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 94-95 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 159	
	2	REPRODUCTION	Sexual reproduction in flowering plants	By the end of the lesson, the learner should be able to: • Describe the features and mechanisms that hinder self-pollination and self-fertilization	• Describing pollination • Stating the types of pollination • Comparing adaptations of wind pollinated and insect pollinated flowers	• Insect and wind pollinated flowers • Local environment	• Comprehensive secondary Biology students Bk. 3 page 74-78 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 94-95 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 159	
	3	REPRODUCTION	Sexual reproduction in flowering plants	By the end of the lesson, the learner should be able to: • Describe the process of fertilization in flowering plants	• Describing double fertilization in flowering plants • Describing features and mechanisms hindering self-pollination and self-fertilization	• Variety of mature flowers • Local environment • Wall charts of various types of flowers	• Comprehensive secondary Biology students Bk. 3 page 78 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 96-97 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 159-160	
	4-5	REPRODUCTION	Sexual reproduction in flowering plants	By the end of the lesson, the learner should be able to:	• Describing and explaining the formation of	• Wall charts showing embryo	• Comprehensive secondary Biology students Bk. 3 page 79-	

				• Describe and explain how embryo and seeds are formed in flowering plants	embryo and seed in flowering plants	formation in flowering plants • Bean seeds	80 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 97-98 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 161-162	
12	1	REPRODUCTION	Sexual reproduction in flowering plants	By the end of the lesson, the learner should be able to: • Describe how fruits are formed in flowering plants	• Describing and explaining fruit formation in flowering plants	• Specimen of fruits	• Comprehensive secondary Biology students Bk. 3 page 80-82, 107 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 97-100 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 161-165	
	2	REPRODUCTION	Sexual reproduction in flowering plants	By the end of the lesson, the learner should be able to: • Differentiate between a fruit and a seed	• Differentiating between fruits and seeds	• Fruits • seeds	• Comprehensive secondary Biology students Bk. 3 page 82, 107 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 97-100 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 161-165	
	3	REPRODUCTION	Sexual reproduction in flowering plants	By the end of the lesson, the learner should be able to:	• Describing and explaining methods of fruit	• Different types of fruits and seeds	• Comprehensive secondary Biology students Bk. 3 page 80-	

				• Describe and explain how different seeds and fruits are dispersed	and seed dispersal		82 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 102-104 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 164-165	
	4-5	REPRODUCTION	Classifying fruits	By the end of the lesson, the learner should be able to: • Classifying various types of fruits and describe their placentation	• Description and examination of placentation of various fruits	• Handouts on types of fruits • Various types of fruits	• Comprehensive secondary Biology students Bk. 3 page 84-87 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 101-104 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 162-165	
13	**REVISION AND END OF TERM EXAMINATIONS**							

BIOLOGY FORM 3 SCHEMES OF WORK – TERM 3								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	1	REPRODUCTION	Sexual reproduction	By the end of the lesson, the learner should be able to: • Differentiate between internal and external fertilization • Describe external fertilization in amphibians	• Differentiating between internal and external fertilization • Discussion on external fertilization in amphibians	• Amphibian eggs in a jelly string • Hand lenses • Local environment	• Comprehensive secondary Biology students Bk. 3 page 91,107 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 104 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 165-166	
	2	REPRODUCTION	Sexual reproduction in mammals	By the end of the lesson, the learner should be able to: • Relate the structure of mammalian male reproductive system to its functions	• Relating the structure of mammalian male reproductive system to its functions • Drawing and labeling the male reproductive system	• Wall chart on the male reproductive system • Dissected small mammal	• Comprehensive secondary Biology students Bk. 3 page 93,107 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 105-106 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 166-167	

	3	REPRODUCTION	Sexual reproduction in mammals	By the end of the lesson, the learner should be able to: • Relate the structure of mammalian male reproductive organ and spermatozoa to its function	• Drawing and labeling the structure of the spermatozoa • Relating the spermatozoa to its function	• Wall chart on spermatozoa	• Comprehensive secondary Biology students Bk. 3 page 93-95 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 112 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 169	
	4-5	REPRODUCTION	Sexual reproduction in mammals	By the end of the lesson, the learner should be able to: • Relate the structure of mammalian female reproductive system to its function	• Discussion of the female reproductive system • Drawing and labeling and relating the female reproductive system to its functions	• Charts showing female reproductive system • Dissected small animals	• Comprehensive secondary Biology students Bk. 3 page 95,107 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 108-110 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 167-168	
2	1	REPRODUCTION	Sexual reproduction in mammals	By the end of the lesson, the learner should be able to: • Relate the structure of mammalian ovum to its function	• Drawing and labeling and relating the structure of the ovum to its functions	• Wall Charts showing structure of the ovum	• Comprehensive secondary Biology students Bk. 3 page 92-93 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 108-109 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 169-170	

	2	REPRODUCTION	Sexual reproduction in mammals	By the end of the lesson, the learner should be able to: • Describe internal fertilization in mammals	• Defining fertilization • Discussion on internal fertilization in mammals	• Wall Charts on fertilization process	• Comprehensive secondary Biology students Bk. 3 page 95 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 111-113 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 171-172	
	3	REPRODUCTION	Sexual reproduction in mammals	By the end of the lesson, the learner should be able to: • Describe the fertilization process	• Describing the fertilization process • Drawing and labeling the fertilized ovum	• Wall Charts on the process of fertilization	• Comprehensive secondary Biology students Bk. 3 page 95 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 112-114 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 171-172	
	4-5	REPRODUCTION	Sexual reproduction in mammals	By the end of the lesson, the learner should be able to: • Describe implantation and the role of the placenta in mammals	• Describing implantation • Explaining the role of the placenta in mammals	• Wall Charts showing the stages of implantation	• Comprehensive secondary Biology students Bk. 3 page 95 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 114-116 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 173-174	
3	1	REPRODUCTION	Sexual reproduction in mammals	By the end of the lesson, the learner should be able to:	• Defining gestation • Identifying	• Wall Charts containing gestation	• Comprehensive secondary Biology students Bk. 3 page 97	

				• Define gestation in mammals • Identify different gestation periods in different mammals	different gestation periods in different mammals	periods of different mammals • Photograph of a foetus	• Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 116-117 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 173-174	
	2	REPRODUCTION	Sexual reproduction in mammals	By the end of the lesson, the learner should be able to: • Describe birth and explain parental care	• Defining different terms used in birth • Explaining the parental care • Drawing and labeling the foetus	• Wall Charts showing definitions of different terms in birth • Photographs on parturition	• Comprehensive secondary Biology students Bk. 3 page 76 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 117-119 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 177-179	
	3	REPRODUCTION	Role of hormones in human reproduction	By the end of the lesson, the learner should be able to: • Describe the role of hormones in reproduction of humans	• Discussion on role of hormones in reproduction of humans	• Wall Charts showing hormones involved with reproduction in human beings and their effects	• Comprehensive secondary Biology students Bk. 3 page 97-98 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 120-123 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 175-176	
	4-5	REPRODUCTION	Menstrual cycle	By the end of the lesson, the learner should be able to: • Describe the role of hormones in the	• Discussion on role of hormones in the menstrual cycle	• Wall Charts on the menstrual cycle	• Comprehensive secondary Biology students Bk. 3 page 97-98 • Teachers bk. 3 pages	

				menstrual cycle			25-45 • KLB secondary Biology Students book 3 Page 121-124 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 175-177	
4	1	REPRODUCTION	Sexually transmitted diseases/infections	By the end of the lesson, the learner should be able to: • Identify symptoms and explain the methods of transmission and prevention of gonorrhea and herpes simplex	• Discussion on symptoms, methods of transmission and prevention of gonorrhea and herpes simplex	• Photographs of body parts affected by STI's • Resource persons e.g. school nurse	• Comprehensive secondary Biology students Bk. 3 page 99-101 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 123-125 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 179	
	2	REPRODUCTION	Sexually transmitted diseases	By the end of the lesson, the learner should be able to: • Identify symptoms and explain the methods of transmission and prevention of syphilis and trichomoniasis	• Discussion on symptoms and explain the methods of transmission and prevention of syphilis and trichomoniasis	• Photographs of body parts affected by STI's •	• Comprehensive secondary Biology students Bk. 3 page 99-100 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 124 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 179	
	3	REPRODUCTION	Sexually transmitted infections	By the end of the lesson, the learner should be able to: • Identify symptoms and explain the	• Discussion on symptoms and explain the methods of transmission and	• Photographs showing the symptoms of candidiasis and hepatitis	• Comprehensive secondary Biology students Bk. 3 page 100-102 • Teachers bk. 3 pages	

				methods of transmission and prevention of candidiasis and hepatitis	prevention of candidiasis and hepatitis		25-45 • KLB secondary Biology Students book 3 Page 124-125 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 179	
	4-5	REPRODUCTION	Sexually transmitted diseases	By the end of the lesson, the learner should be able to: • Identify the causes and modes of transmission of HIV/AIDS and prevention of HIV and AIDS • Identify effects of HIV/AIDS in human economy	• Identifying the causes and modes of transmission of HIV/AIDS • Discussion on the causes and modes of transmission of HIV/AIDS	• Photographs of patients showing the signs & symptoms HIV and AIDS	• Comprehensive secondary Biology students Bk. 3 page 100-102 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 125-127 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 179-180	
5	1	REPRODUCTION	Sexually transmitted diseases	By the end of the lesson, the learner should be able to: • Identify the symptoms of HIV/AIDS and stages of HIV and AIDS	• Discussion on symptoms of HIV/AIDS	• Photographs of patients showing the signs & symptoms HIV and AIDS	• Comprehensive secondary Biology students Bk. 3 page 102-103 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 125-126 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 180	
	2	REPRODUCTION	Sexually transmitted diseases	By the end of the lesson, the learner should be able to: • Explain ways of preventing and	• Explaining ways of preventing and controlling the spread of HIV/AIDS	• Photographs of patients showing the signs & symptoms HIV	• Comprehensive secondary Biology students Bk. 3 page 102-103 • Teachers bk. 3 pages	

				controlling the spread of HIV/AIDS	• Discussion on methods of preventing and controlling the spread of HIV/AIDS	and AIDS	25-45 • KLB secondary Biology Students book 3 Page 126 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 179	
	3	EVALUATION	Continuous assessment test	By the end of the lesson, the learner should be able to: • Answer questions asked in the test	• Learner recalls and writes down answers to questions asked • Teacher supervises the learners as they write examinations	• Question papers • Marking scheme	• Comprehensive secondary Biology students Bk. 3 page 64-103 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 128-131 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 180-184	
	4-5	REPRODUCTION	Sexually transmitted diseases	By the end of the lesson, the learner should be able to: • Discuss the social effects of HIV/AIDS	• Discussion on the social effects of HIV/AIDS	• Handouts on STDs	• Comprehensive secondary Biology students Bk. 3 page 103 • Teachers bk. 3 pages 25-45 • KLB secondary Biology Students book 3 Page 127 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 180	
6	1	REPRODUCTION	Asexual and sexual reproduction	By the end of the lesson, the learner should be able to: • Explain the advantages and disadvantages of	• Explaining the advantages and disadvantages of sexual and asexual reproduction	• Charts showing advantages and disadvantages of sexual and asexual reproduction	• Comprehensive secondary Biology students Bk. 3 page 103 • Teachers bk. 3 pages 25-45 • KLB secondary Biology	

				sexual and asexual reproduction			Students book 3 Page 127-128 • KLB teachers book 3 pages 57-78 • Principles of biology vol. 2 pages 179-180	
	2	GROWTH AND DEVELOPMENT	Concept of growth and development	By the end of the lesson, the learner should be able to: • Define the terms growth and development • Describe the sigmoid growth curve	• Defining the terms growth and development • Describing the sigmoid growth curve	• Charts showing sigmoid curve	• Comprehensive secondary Biology students Bk. 3 page 113 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 132 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 186	
	3	GROWTH AND DEVELOPMENT	Measurement of growth	By the end of the lesson, the learner should be able to: • Describe the phases of sigmoid curve • Describe the intermittent growth curve	• Describing the phases of sigmoid curve • Describing the intermittent growth curve	• Charts showing growth curves	• Comprehensive secondary Biology students Bk. 3 page 113 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 133-135 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 186-190	
	4-5	GROWTH AND DEVELOPMENT	Measurement of growth	By the end of the lesson, the learner should be able to: • Analyze data on growth rate • Draw growth curves	• Analyzing data on growth rate • Drawing growth curves	• Charts showing growth curves • Data on growth rate	• Comprehensive secondary Biology students Bk. 3 page 113,116-117,125 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 133-135	

							• KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 190	
7	1	GROWTH AND DEVELOPMENT	Growth and development in plants	By the end of the lesson, the learner should be able to: • Define seed dormancy • Identify factors affecting viability and dormancy of seeds	• Defining seed dormancy • Identifying factors affecting viability and dormancy of seeds	• Dry bean seeds • Dry maize seeds	• Comprehensive secondary Biology students Bk. 3 page 113-114 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 136-137 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 190,198	
	2	GROWTH AND DEVELOPMENT	Growth and development in plants	By the end of the lesson, the learner should be able to: • Identify factors affecting seed dormancy	• Identifying causes of seed dormancy •	• Dry bean seeds • Dry maize seeds	• Comprehensive secondary Biology students Bk. 3 page 113-114 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 136-137 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 190,198	
	3	GROWTH AND DEVELOPMENT	Growth and development in plants	By the end of the lesson, the learner should be able to: • Define seed germination • Differentiate between types of seed germination	• Observing, drawing and labeling types of seed germination in beans and maize • Differentiate between epigeal and hypogeal	• Seedling of maize and beans at different stages of development	• Comprehensive secondary Biology students Bk. 3 page 114-145 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 137,141-142	

					• germination •		• KLB teachers book 3 pages 79-98 • Principles of biology vol.2 pages 191	
	4-5	GROWTH AND DEVELOPMENT	Conditions necessary for germination	By the end of the lesson, the learner should be able to: • Identifying Conditions necessary for germination - oxygen	• setting up experiments to investigate conditions (oxygen) necessary for germination of seeds	• maize grains and beans seeds • cotton wool • flasks • pyrogallic acid • muslin bags • germination maize and bean seeds	• Comprehensive secondary Biology students Bk. 3 page 114-115 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 138 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 192-193	
8	1	GROWTH AND DEVELOPMENT	Conditions necessary for seed germination	By the end of the lesson, the learner should be able to: • Investigate the necessity of water and warmth	• Investigating the necessity of water and warmth	• Beans seeds • cotton wool • 4 petri dishes • Labels • Thermometer • refrigerator	• Comprehensive secondary Biology students Bk. 3 page 127-128 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 138,140 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 192	
	2	GROWTH AND DEVELOPMENT	Conditions necessary for seed germination	By the end of the lesson, the learner should be able to: • Investigate the necessity of water and warmth	• Investigating the necessity of warmth	• Beans seeds • cotton wool • 4 petri dishes • Labels • Thermometer • refrigerator	• Comprehensive secondary Biology students Bk. 3 page 127-128 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 138,140	

							• KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 192	
	3	EVALUATION	Continuous assessment test	By the end of the lesson, the learner should be able to: • Write down the correct answers to questions asked in the test	• Learner recalls and writes down answers to questions asked • Teacher supervises the learners as they write down the exams	• Question paper • Marking scheme	• Comprehensive secondary Biology students Bk. 3 page 132 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 134,138 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 203,206	
	4-5	GROWTH AND DEVELOPMENT	Growth in seedling	By the end of the lesson, the learner should be able to: • Describe the region of growth in seedlings • Identify the regions of growth	• Describing the region of growth in seedlings • Identifying the regions of growth	• Charts on shoot and root tips • Potted plants • Local environment	• Comprehensive secondary Biology students Bk. 3 page 131-132 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 143-144 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 193-194	
9	1	GROWTH AND DEVELOPMENT	Growth in seedling	By the end of the lesson, the learner should be able to: • Determine the regions of growth in seedlings • Measure the aspect of growth in a given seedling	• Determine the regions of growth in seedlings by measuring one parameter -height	• Growing seedling • Rulers • Local environment	• Comprehensive secondary Biology students Bk. 3 page 115-116 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 143-144 • KLB teachers book 3	

							pages 79-98 • Principles of biology vol. 2 pages 194, 196	
	2-3	GROWTH AND DEVELOPMENT	Primary and secondary growth	By the end of the lesson, the learner should be able to: • Describe growth in plants I.e. Primary and secondary growths • Investigate primary and secondary growth in a seedling	• Discussion on Primary and secondary growth in plants • Investigating primary and secondary growth in a seedling	• Bean seeds • Beakers • Cotton wool • Soft board • Piece of wire • Indian ink • Thread • Ruler • Petri dishes	• Comprehensive secondary Biology students Bk. 3 page 118-120 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 144-145 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 195-198	
	4-5	GROWTH AND DEVELOPMENT	Role of hormones in plants	By the end of the lesson, the learner should be able to: • Explain the role of hormones in regulation of growth and development in plants	• Discussion on the role common hormones in growth and development of plants • cytokinius • eltylene • Doscisic acid • Auxines and gibbrellins	• Chart on plant hormones and their effects	• Comprehensive secondary Biology students Bk. 3 page 121-122 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 146-147 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 195-199	
10	1	GROWTH AND DEVELOPMENT	Apical dominance	By the end of the lesson, the learner should be able to: • Explain Apical dominance in plants	• Discussion on Apical dominance in plants • Explaining Apical dominance in plants • Stating the application of Apical dominance in agriculture	• Photographs of plants • Specimen of plants that are pruned and others that are not	• Comprehensive secondary Biology students Bk. 3 page 122 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 147-148 • KLB teachers book 3 pages 79-98	

							• Principles of biology vol. 2 pages 198-199	
	2-3	GROWTH AND DEVELOPMENT	metamorphosis	By the end of the lesson, the learner should be able to: • Define metamorphosis • Distinguish between complete and incomplete metamorphosis • Describe complete metamorphosis in housefly and anopheles mosquito	• Defining metamorphosis • Distinguishing between complete and incomplete metamorphosis • Describing complete metamorphosis in housefly and anopheles mosquito	• Chart on the life cycles of housefly and anopheles mosquito	• Comprehensive secondary Biology students Bk. 3 page 118-120 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 148-149 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 199-203	
	4-5	GROWTH AND DEVELOPMENT	Incomplete metamorphosis	By the end of the lesson, the learner should be able to: • Describe incomplete metamorphosis in a cockroach	• Describing incomplete metamorphosis in a cockroach • Discussion on the life cycle of a cockroach • Drawing and labeling Incomplete metamorphic stages	• Chart on the life cycles of a cockroach • Preserved specimens showing stages of growth in a cockroach	• Comprehensive secondary Biology students Bk. 3 page 124-125 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 144-150 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 203	
11	1-2	GROWTH AND DEVELOPMENT	Role of growth hormones in insects	By the end of the lesson, the learner should be able to: • Describe and explain the Role of growth hormones in metamorphosis in insects	• Discussion of the Role of growth hormones in metamorphosis in insects	• Wall Charts on hormones involved in metamorphosis	• Comprehensive secondary Biology students Bk. 3 page 125-126 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 150-151 • KLB teachers book 3	

							pages 79-98 • Principles of biology vol 2 pages 203	
	3-5	GROWTH AND DEVELOPMENT	Metamorphosis (practical lesson)	By the end of the lesson, the learner should be able to: • Observe metamorphosis in some insects	• Observing, identifying, drawing and labeling various stages of insect development	• Eggs of various insects • Pupae and caterpillars • Specimen bottles • Transparent reagent bottles • Green vegetables • forceps	• Comprehensive secondary Biology students Bk. 3 page 129-130 • Teachers bk. 3 pages 46-64 • KLB secondary Biology Students book 3 Page 150 • KLB teachers book 3 pages 79-98 • Principles of biology vol. 2 pages 200-203	
12	**REVISION AND END OF TERM EXAMINATIONS**							

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BIOLOGY FORM 4 SCHEMES OF WORK – TERM 1								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	1	GENETICS	Introduction to genetics	By the end of the lesson, the learner should be able to: • Define the term genetics • Differentiate between heredity and variation • Distinguish between continuous and discontinuous variations	• Defining the term genetics • Differentiating between heredity and variation • Demonstrating tongue rolling	• Members of the class • Teacher to demonstrate tongue rolling	• Comprehensive secondary Biology students Bk. 4 page 1 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 1 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 207	
	2	GENETICS	Variation within plants and animals	By the end of the lesson, the learner should be able to: • Describe continuous and discontinuous variations • Observe variations in plants and animals	• Describing continuous and discontinuous variations • Observing variations in plants and animals in the surrounding	• Students to be observed on variations like tongue rolling, sex, finger prints, eye colour, height • Leaves of different plants • Seeds of different plants	• Comprehensive secondary Biology students Bk. 4 page 1-4 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 1-4 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 207	
	3	‘	chromosomes	By the end of the lesson,	• Reviewing the	• Wall chart on	• Comprehensive	

		‘] GENETICS		the learner should be able to: • Describe the structure, nature and properties of chromosomes	nature and structure of chromosomes • Discussion on the structure and properties of chromosomes • Drawing and labeling the chromosomes	structure of chromosomes • Plasticine to mold the chromosomes	secondary Biology students Bk. 4 page 4-6 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 4-7 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 221	
	4-5	GENETICS	chromosomes	By the end of the lesson, the learner should be able to: • Describe the structure, nature and properties of DNA molecule	• Describing the basic nature of DNA molecule and gene • Illustrating the structure of the DNA molecules using models	• Models of diagrams of DNA molecule • Wires and different colours of beads for DNA genes	• Comprehensive secondary Biology students Bk. 4 page • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 7-10 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 221-222	
2	1	GENETICS	chromosomes	By the end of the lesson, the learner should be able to: • Differentiate between DNA and RNA	• Differentiating between DNA and RNA • Discussion on differences between DNA and RNA molecules	• Models of DNA and RNA strands • Charts on DNA and RNA molecules	• Comprehensive secondary Biology students Bk. 4 page 5-6 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 9-10 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 221-226	
	2	GENETICS	First law of inheritance	By the end of the lesson, the learner should be able to: • Distinguish	• Differentiating between F1 and F2 off springs • Defining Mendel’s	• Chart showing genetic crossing	• Comprehensive secondary Biology students Bk. 4 page 6-10	

				between F1 and F2 generation • Determine Mendel's first law of inheritance	first law of inheritance • Discussion on the differences between F1 and F2 off springs		• Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 11-15 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 211-213	
	3	GENETICS	First law of inheritance	By the end of the lesson, the learner should be able to: • Define other terms used in inheritance such as phenotype, genotype, dominant gene, recessive gene, haploid and diploid	• Defining terms used in inheritance	• Chart on terms used in inheritance	• Comprehensive secondary Biology students Bk. 4 page 7-8 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 13-14 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 210	
	4-5	GENETICS	First law of inheritance	By the end of the lesson, the learner should be able to: • Demonstrate monohybrid inheritance in plants and animals • Predict outcomes of various genetic crosses	• Demonstrating monohybrid inheritance in plants and animals • Working out F1 and F2 offspring in monohybrid crosses • Predicting outcomes of various crosses	• Illustrations on monohybrid crosses • Pannet squares on charts	• Comprehensive secondary Biology students Bk. 4 page 6-9 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 12-15 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 207-209	
3	1	GENETICS	First law of inheritance	By the end of the lesson, the learner should be able to: • Construct and make use of pannet squares	• Working out monohybrid ratio of F2 offspring • Working out phenotypic and genotypic ratios	• Chart showing punnet squares and illustrations on monohybrid inheritance	• Comprehensive secondary Biology students Bk. 4 page 7-9 • Teachers bk. 4 pages 1-13 • KLB secondary Biology	

				• Work out genotypic and phenotypic ratios • Predict outcomes of various crosses	and probabilities		Students book 4 Page 14-16 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 213-214	
	2	GENETICS	Back cross or test cross	By the end of the lesson, the learner should be able to: • Determine the unknown genotypes in a cross using a test cross	• Defining a test cross or back cross • Explaining the use of test cross in determining unknown genotypes	• Chart showing punnet squares illustrating monohybrid inheritance (test cross)	• Comprehensive secondary Biology students Bk. 4 page 10-11 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 22-23 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 212-213	
	3	GENETICS	Monohybrid inheritance	By the end of the lesson, the learner should be able to: • Describe albinism as an example of monohybrid inheritance in human beings	• Describing inheritance of albinism in human beings	• Chart showing crosses on punnet squares to show inheritance of albinism	• Comprehensive secondary Biology students Bk. 4 page 21 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 25 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 213-214	
	4-5	GENETICS	Inheritance of ABO blood groups	By the end of the lesson, the learner should be able to: • Explain the inheritance of ABO blood groups in human beings	• Explaining the inheritance of ABO blood groups in human beings • Demonstrating crosses	• Chart showing blood group crosses on punnet squares	• Comprehensive secondary Biology students Bk. 4 page 11-12 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page	

							20-21 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 220-221	
4	1	GENETICS	Inheritance of rhesus factor	By the end of the lesson, the learner should be able to: • Explain the inheritance of rhesus factor as an example of monohybrid inheritance in human beings	• Describing the inheritance of rhesus factor in human beings	• Chart showing blood group crosses on punnet squares	• Comprehensive secondary Biology students Bk. 4 page 12 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 21-22 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 221	
	2	GENETICS	Inheritance of blood groups	By the end of the lesson, the learner should be able to: • Predict the inheritance of blood groups human beings	• Predicting the inheritance of blood groups human beings	• Demonstration of crosses • Punnet squares	• Comprehensive secondary Biology students Bk. 4 page 11-12 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 20-21 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 220-221	
	3	EVALUATION	Continuous assessment test	By the end of the lesson, the learner should be able to: • Write down the correct answers to the questions in the test	• Learner recalls and writes down answers to questions • Teacher supervises as learners do the test	• Question papers • Marking scheme	• Comprehensive secondary Biology students Bk. 4 page 11-12 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 1-22	

							• KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 207-220	
	4-5	GENETICS	Incomplete dominance	By the end of the lesson, the learner should be able to: • Describe incomplete dominance • Describe inheritance of colour in flowers of mirabis jalapa	• Defining incomplete dominance • Describing inheritance of colour in flowers of mirabis jalapa	• Punnet squares	• Comprehensive secondary Biology students Bk. 4 page 9-10 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 19-20 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 214-215	
5	1	GENETICS	Inheritance of sickle cell anemia	By the end of the lesson, the learner should be able to: • Describe Inheritance of sickle cell anemia in human beings	• Describe Inheritance of sickle cell anemia as co-dominant	• Illustrations of crosses • Punnet squares	• Comprehensive secondary Biology students Bk. 4 page 21-22 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 35-37 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 215-216	
	2	GENETICS	Sex determination in human beings	By the end of the lesson, the learner should be able to: • Explain how sex is determined in human beings • Describe sex linkages in human beings	• Explaining and describing sex determination • Explaining and discussing sex linkage in human beings	• Charts showing diagrams of sex chromosomes	• Comprehensive secondary Biology students Bk. 4 page 13-14 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 23-24	

							• KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 217-220	
	3	GENETICS	linkage	By the end of the lesson, the learner should be able to: • Define linkage and sex-linkage • Describe linkage in human beings e.g. colour blindness and hemophilia	• Defining and describing linkage and sex-linkage • Demonstrating crosses on colour blindness and hemophilia	• Charts showing crosses on colour blindness and hemophilia • Punnet squares	• Comprehensive secondary Biology students Bk. 4 page 14-16 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 24-27 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 218-220	
	4-5	GENETICS	Inheritance of colour blindness	By the end of the lesson, the learner should be able to: • Describe colour blindness as an example of sex-linked trait in human beings • Interpret pedigree of inheritance	• Describing colour blindness • Discussion on inheritance of colour blindness • Interpreting pedigree chart of inheritance	• Charts showing pedigree chart of inheritance	• Comprehensive secondary Biology students Bk. 4 page 15-16 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 25-26 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 218-219	
6	1-2	GENETICS	Inheritance of hemophilia	By the end of the lesson, the learner should be able to: • Describe the Inheritance of hemophilia as an example of sex-linked traits in human beings	• Describing Inheritance of hemophilia as an example of sex-linked traits in human beings • Discussions on inheritance of hemophilia in	• Punnet squares • Pedigree chart of inheritance from texts	• Comprehensive secondary Biology students Bk. 4 page 16-17 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 27	

					human beings		• KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 220	
	3	GENETICS EVALUATION	Continuous assessment test	By the end of the lesson, the learner should be able to: • write down the correct answers to the questions given	• Students recalls and writes down answers to questions asked • Teacher supervises as students do the test	• Question papers • Marking scheme	• Comprehensive secondary Biology students Bk. 4 page 1-18 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 234-236	
	4-5	GENETICS	Sources of variations in organisms	By the end of the lesson, the learner should be able to: • Define mutation • Differentiate between mutations and mutagens • List down causes of mutations	• Defining mutations • identifying mutagens • Listing down causes of mutations	• Pictures or photographs of organisms that have mutations	• Comprehensive secondary Biology students Bk. 4 page 17-18 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 28-29 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 232-233	
7	1-2	GENETICS	Types of mutations	By the end of the lesson, the learner should be able to: • State the types of mutations • List down the various chromosal mutations • Describe chromosal	• Stating the types of chromosal mutations • Listing down the various chromosal mutations • Describing chromosal mutations • Discussion on	• Chart on the various types of chromosal mutations	• Comprehensive secondary Biology students Bk. 4 page 17-19 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 28-33 • KLB teachers book 4	

				mutations	duplication, inversion, translocation and non-disjunction		pages 12-30 • Principles of biology vol. 2 pages 229-231	
	3	GENETICS	Effects of chromosal mutations	By the end of the lesson, the learner should be able to: • Explain the Effects of chromosal mutations	• Discussion on effects of Effects of chromosal mutations	•	• Comprehensive secondary Biology students Bk. 4 page 19 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 30-33 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 230-231	
	4-5	GENETICS	Gene mutations	By the end of the lesson, the learner should be able to: • Describe gene mutations and their effects on organisms	• Describing gene mutations • Discussion on substitution, point mutation, insertion and gene mutations	• Chart showing diagrams on gene mutations • Photographs • Magazines • Newspaper cuttings	• Comprehensive secondary Biology students Bk. 4 page 20-22 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 33-34 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 228-229	
8	1-2	GENETICS	Practical application of genetics	By the end of the lesson, the learner should be able to: • Describe areas in which the knowledge of genetics has been applied	• Discussion on scientific fields where genetic knowledge has been applied	• Photographs • Magazines • Newspaper cuttings • Scientific journals	• Comprehensive secondary Biology students Bk. 4 page 23-28 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 39-44 • KLB teachers book 4	

							pages 12-30 • Principles of biology vol. 2 pages 233	
	3	GENETICS	Practical application of genetics	By the end of the lesson, the learner should be able to: • Explain the practical applications of genetics	• Discussion on the practical applications of genetics	• Photographs • Magazines • Newspaper cuttings • Scientific journals	• Comprehensive secondary Biology students Bk. 4 page 23-28 • Teachers bk. 4 pages 1-13 • KLB secondary Biology Students book 4 Page 39-44 • KLB teachers book 4 pages 12-30 • Principles of biology vol. 2 pages 233	
	4-5	EVOLUTION	Introduction to evolution	By the end of the lesson, the learner should be able to: • Define evolution • Explain the current concepts of the origin of life	• Defining evolution • Explaining the current concepts of the origin of life	• Local museum • Historical sites	• Comprehensive secondary Biology students Bk. 4 page 35-36 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 49-51 • KLB teachers book 4 pages 31-37 • Principles of biology vol. 2 pages 238-239	
9	1	EVOLUTION	Continuous assessment test	By the end of the lesson, the learner should be able to: • Write down correct answers to questions asked	• Learner to recall and write down answers to questions asked • Teacher to supervise the learners as they do their exams life	• Question paper • Marking schemes	• Comprehensive secondary Biology students Bk. 4 page 1-36 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 46-48 • KLB teachers book 4	

							pages 31-37 • Principles of biology vol. 2 pages 234-237	
	2	EVOLUTION	Origin of life	By the end of the lesson, the learner should be able to: • Explain the current concepts on origin of life	• Explaining current concepts of origin of life • Discussion on evolution theory	• Information from a local museum and historical sites	• Comprehensive secondary Biology students Bk. 4 page 36 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 49-51 • KLB teachers book 4 pages 31-37 • Principles of biology vol 2 pages 239-242-243	
	3	EVOLUTION	Evidence of organic evolution theory	By the end of the lesson, the learner should be able to: • Describe the study of fossils as evidence of organic evolution theory	• Describing the study of fossils • Discussion on evolution theory based on the study of fossils	• Information from a local museum and historical sites	• Comprehensive secondary Biology students Bk. 4 page 36-37 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 51-56 • KLB teachers book 4 pages 31-37 • Principles of biology vol. 2 pages 245-249	
	4-5	EVOLUTION	Evidence of organic evolution theory	By the end of the lesson, the learner should be able to: • Describe competitive anatomy as evidence of organic evolution	• Identifying homologous structures in organisms and describing divergent evolution	• Diagrams and photographs of homologous structures • Information from local museums and historical sites • Vertebrate limbs	• Comprehensive secondary Biology students Bk. 4 page 39-40 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 59-64 • KLB teachers book 4 pages 31-37	

							• Principles of biology vol. 2 pages 250-251	
10	1	EVOLUTION	Evidence of organic evolution theory	By the end of the lesson, the learner should be able to: • Describe competitive anatomy	• Identifying analogous structures in organisms and describing convergent evolution • Discussion on divergent evolution	• Diagrams and photographs of analogous structures in organisms • Information from local museums and historical sites • Wings of birds and insects	• Comprehensive secondary Biology students Bk. 4 page 41 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 59-64 • KLB teachers book 4 pages 31-37 • Principles of biology vol. 2 pages 250-251	
	2-3	EVOLUTION	Evidence of organic evolution theory	By the end of the lesson, the learner should be able to: • Describe occurrence of vestigial structures and geographical distribution of organisms as evidence of organic evolution	• Describing vestigial structures • Discussion on geographical distribution of organisms	• Diagrams and photographs of vestigial structures • Chart of globe showing geographical distribution of organisms • Information from local museums and historical sites	• Comprehensive secondary Biology students Bk. 4 page 37-41 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 56,64 • KLB teachers book 4 pages 31-37 • Principles of biology vol. 2 pages	
	4-5	EVOLUTION	Evidence of organic evolution theory	By the end of the lesson, the learner should be able to: • Describe comparative embryology, cell biology and biochemistry as evidence of organic evolution	• Describing comparative embryology, cell biology and biochemistry as evidence of organic evolution theory	• Diagrams and photographs of embryos of different chorales and plant and animal cells • Information from local museums and historical sites	• Comprehensive secondary Biology students Bk. 4 page 39-42 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 59,64-65 • KLB teachers book 4 pages 31-37	

							• Principles of biology vol. 2 pages 252-253	
11	1-2	EVOLUTION	Human evolution	By the end of the lesson, the learner should be able to: • Describe evolution of hominids	• Describing evolution of hominids from earliest common proconsul ancestors to date • Discussion on evolution of hominids	• Diagrams skulls and limbs of hominids • Information from local museums and historical sites	• Comprehensive secondary Biology students Bk. 4 page 42-44 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 52-53 • KLB teachers book 4 pages 31-34 • Principles of biology vol. 2 pages 256-261	
	3	EVOLUTION	Mechanism of evolution	By the end of the lesson, the learner should be able to: • Describe Lamarck's theory	• Describing Lamarck's theory • Discussion on Lamarck's theory	• Information from local museums and historical sites	• Comprehensive secondary Biology students Bk. 4 page 45-46 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 67 • KLB teachers book 4 pages 31-37 • Principles of biology vol. 2 pages 238-239	
	4-5	EVOLUTION	Mechanism of evolution	By the end of the lesson, the learner should be able to: • Describe and discuss the struggle for existence and survival for the fittest	• Discussion on Darwin's theory of natural selection • Discussion on struggle for existence and survival for the fittest	• Information from local museums and historical sites	• Comprehensive secondary Biology students Bk. 4 page 46-47 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 68-69 • KLB teachers book 4 pages 31-37	

							• Principles of biology vol. 2 pages 240-241	
12	1-2	EVOLUTION	Mechanism of evolution	By the end of the lesson, the learner should be able to: • Describe and discuss new concepts of Darwin's theory	• Discussion on Neo-Darwinism with regard to new discoveries e.g. mutations	• Information from local museums and historical sites	• Comprehensive secondary Biology students Bk. 4 page 47 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 67-69 • KLB teachers book 4 pages 31-37 • Principles of biology vol. 2 pages 239-240	
	3	EVOLUTION	Mechanism of evolution	By the end of the lesson, the learner should be able to: • Describe natural selection in action	• Describing mechanism of peppered moth	• Photographs of peppered moth	• Comprehensive secondary Biology students Bk. 4 page 46-47 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 69-71 • KLB teachers book 4 pages 31-37 • Principles of biology vol. 2 pages 261-262	
	4-5	EVOLUTION	Mechanism of evolution	By the end of the lesson, the learner should be able to: • Describe natural selection in nature	• Describing resistance to antibiotics, fungicides and pesticides by organisms	• Journals, periodicals and magazines • Local environment	• Comprehensive secondary Biology students Bk. 4 page 48 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page 70-71 • KLB teachers book 4 pages 31-37 • Principles of biology vol. 2 pages 262-263	

13	**REVISION AND END OF TERM EXAMINATIONS**

BIOLOGY FORM 4 SCHEMES OF WORK – TERM 2								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	1-2	EVOLUTION	Mechanism of evolution	By the end of the lesson, the learner should be able to: • Describe the isolation mechanism in speciation	• Discussion on the isolation mechanism in speciation	• Journals, periodicals and magazines • Local environment	• Comprehensive secondary Biology students Bk. 4 page 48 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page • KLB teachers book 4 pages 31-37 • Principles of biology vol. 2 pages 243-244	
	3	EVOLUTION	Artificial selection	By the end of the lesson, the learner should be able to:	• Identifying the role of artificial selection in	• Journals, periodicals and magazines	• Comprehensive secondary Biology students Bk. 4 page 48-	

				• Describe Artificial selection in plants and animals and how it leads to speciation	evolution • Discussion on hybridization, cultivars and green revolution	• Local environment	49 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page • KLB teachers book 4 pages • Principles of biology vol. 2 pages 263-264	
	4-5	EVOLUTION	Evolution and sexual reproduction	By the end of the lesson, the learner should be able to: • Explain the importance of sexual reproduction in evolution	• Explaining the role of sexual reproduction in evolution	• Journals, periodicals and magazines •	• Comprehensive secondary Biology students Bk. 4 page 47-48 • Teachers bk. 4 pages 14-24 • KLB secondary Biology Students book 4 Page • KLB teachers book 4 pages • Principles of biology vol. 2 pages 243-244	
2	1	RECEPTION RESPONSE AND CO-ORDINATION	Introduction	By the end of the lesson, the learner should be able to: • Define stimulus • Define irritability • Define response	• Defining stimulus, irritability and response • Demonstrating how stimulus, response and irritability are related and coordinated	• Pin • Candle • Match box • bell	• Comprehensive secondary Biology students Bk. 4 page 52 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 73-74 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 266-267	
	2	RECEPTION RESPONSE AND CO-ORDINATION	Reception response and co-ordination in plants	By the end of the lesson, the learner should be able to: • Define tactic and	• Defining tactic and tropic responses • Defining and	• Chart showing tactic and tropic responses in	• Comprehensive secondary Biology students Bk. 4 page 52-54	

				tropic responses • List down tactic responses in plants • List down tropic responses in plants • Differentiate between tactic and tropic responses	demonstrating tropism in plants • List down tactic responses in plants • List down tropic responses in plants • Differentiate between tactic and tropic responses	plants • Potted seedlings • Source of light • Cotton box	• Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 76-78 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 294-299	
	3	RECEPTION RESPONSE AND CO-ORDINATION	Geotropism	By the end of the lesson, the learner should be able to: • Define geotropism • Describe geotropism in roots and shoots of plants	• Defining and illustrating geotropism • Discussion on geotropism	• Plants with shoots and roots • Charts showing geotropism and phototropism	• Comprehensive secondary Biology students Bk. 4 page 55 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 80-83 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 298-300	
	4-5	RECEPTION RESPONSE AND CO-ORDINATION	Phototropism and Geotropism	By the end of the lesson, the learner should be able to: • Differentiate between Phototropism and geotropism • Carry out experiments demonstrating both Phototropism and geotropism in a plant seedling	• Differentiating between Phototropism and geotropism • Carrying out experiments demonstrating both Phototropism and geotropism	• Potted plants • Carton/ cardboard • Knife/blade • Source of light • Germinating bean seeds • Clinostat • Cello tape • Cotton wool • Pin • Plasticine • Petri dishes	• Comprehensive secondary Biology students Bk. 4 page 82-83 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 82-83 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 297-300	

3	1-2	RECEPTION RESPONSE AND CO-ORDINATION	Reception response and co-ordination in organisms	By the end of the lesson, the learner should be able to: • Carry out experiments to demonstrate tactic responses to light and water • Carry out experiments to show chemotactic response using fruit juice	• Carrying out experiments to demonstrate tactic response and to show chemotactic response using fruit juice	• 4 test tubes • Black paper • Woodlice • Silverfish • Termites or fly maggots • Plasticine • Moist soil • Dry soil • 3 petri dishes with lids • Fruit flies drosophila melanogarta • Mashed over ripe bananas • Fruit insect net	• Comprehensive secondary Biology students Bk. 4 page 81-82 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 79-80 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 294-295	
	3	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Hydrotropism and thigmotropism	By the end of the lesson, the learner should be able to: • Define Hydrotropism and thigmotropism	• Defining Hydrotropism and thigmotropism juice • Discussion on Hydrotropism and thigmotropism	• Charts on Hydrotropism and thigmotropism	• Comprehensive secondary Biology students Bk. 4 page 55 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 83 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 301-302	
	4-5	RECEPTION RESPONSE AND CO-ORDINATION	Tactic and tropic responses	By the end of the lesson, the learner should be able to: • State the importance of Tactic and tropic responses	• Discussion on the importance of Tactic and tropic responses	• Chart with listed survival values of Tactic and tropic responses	• Comprehensive secondary Biology students Bk. 4 page 53-55 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 79-80 • KLB teachers book 4	

							pages 38-58 • Principles of biology vol. 2 pages 298-302	
4	1-2	RECEPTION RESPONSE AND CO-ORDINATION	Plant hormones and their effects on plant growth	By the end of the lesson, the learner should be able to: • Explain the production of Plant hormones and their effects on plants	• Discussion on production of auxins and their movement and effect on plant	• Chart showing plant hormones and their effects on plants	• Comprehensive secondary Biology students Bk. 4 page 55 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 80-83 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 296-301	
	3-4	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Hydrotropism (practical lesson)	By the end of the lesson, the learner should be able to: • Carry out experiment to investigate hydrotropism • Carry out experiment to investigate etiolation	• Carrying out experiments to investigate hydrotropism and etiolation	• Fine wire gauze • Wooden box • Blotting paper • Soil or sand • Soaked beans • Box or dark cupboard • Tins with perforated bases	• Comprehensive secondary Biology students Bk. 4 page 83-84 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 77-78 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 300	
	5	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Simple reflex action	By the end of the lesson, the learner should be able to: • Demonstrate the knee jerk in a reflex action	• Demonstrating knee jerk (reflex action) • Discussion on the knee jerk	• Wooden ruler • stool	• Comprehensive secondary Biology students Bk. 4 page 64 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 89-90 • KLB teachers book 4 pages 38-58 • Principles of biology	

							vol. 2 pages 271-272	
5	1	EVALUATION	Continuous assessment test	By the end of the lesson, the learner should be able to: • Answer the questions asked in the test	• Learner to recall and writes down answers to questions in the test • Teacher to supervise students as they do the test	• Question papers • Marking schemes	• Comprehensive secondary Biology students Bk. 4 page 86-87 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 107-109 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 304-308	
	2-3	RECEPTION RESPONSE AND CO-ORDINATION	Conditioned reflex actions	By the end of the lesson, the learner should be able to: • Defined Conditioned reflex actions • Describe Conditioned reflex action using parlous dog • Compare simple and conditioned reflex actions	• Defining Conditioned reflex actions • Describing Conditioned reflex action • Differentiating between simple and conditioned reflex actions	• Chart on the differences between simple and conditioned reflex actions	• Comprehensive secondary Biology students Bk. 4 page 64-65 • Teachers bk. 4 pages 24-65 • KLB secondary Biology Students book 4 Page 90 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 274-275	
	4-5	RECEPTION RESPONSE AND CO-ORDINATION IN ANIMALS AND PLANTS	The role of hormones in co-ordination in mammals	By the end of the lesson, the learner should be able to: • Explain the role of endocrine system in a human being • Explain the effect over secretion and under secretion of thyroxin and adrenaline	• Naming endocrine organs in human beings • Stating the functions of endocrine organs • Discussion on the effect of under secretion and over secretion of thyroxin and	• Chart on position of endocrine glands in females and males human beings • Charts showing feedback mechanisms of adrenaline and	• Comprehensive secondary Biology students Bk. 4 page 65-66 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 93-95 • KLB teachers book 4 pages 38-58	

					adrenaline	thyroxin	• Principles of biology vol. 2 pages 291-294	
6	1-2	RECEPTION RESPONSE AND CO-ORDINATION IN ANIMALS AND PLANTS	The role of hormones in co-ordination in mammals	By the end of the lesson, the learner should be able to: • Isolate and list the similarities and differences between the endocrine and the nervous system	• Explaining the similarities and differences between the endocrine and the nervous system	• Chart on the comparison between endocrine and the nervous system	• Comprehensive secondary Biology students Bk. 4 page 66-67 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 95 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 291-292	
	3	RECEPTION RESPONSE AND CO-ORDINATION	Effects of drug abuse on human health	By the end of the lesson, the learner should be able to: • State the effects of drug abuse on human health	• Defining drugs and drug abuse • Discussion on drugs, drug abuse and effects on human health	• Chart with table on effects of drug abuse on human health • Photographs of people affected by drug abuse	• Comprehensive secondary Biology students Bk. 4 page 67-68 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 96 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages	
	4-5	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Structure of mammalian eye	By the end of the lesson, the learner should be able to: • Draw and label the mammalian eye • State the functions of the mammalian eye	• Drawing and labeling the mammalian eye	• Chart showing the human eye	• Comprehensive secondary Biology students Bk. 4 page 68-69 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 96-97 • KLB teachers book 4 pages 38-58	

							• Principles of biology vol. 2 pages 279-281	
7	1-2	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Structure of the human eye	By the end of the lesson, the learner should be able to: • Describe how the structure of the mammalian eye is adapted to its functions	• Discussion on the adaptations of the various parts of the eye to their functions	• Chart showing the mammalian eye • Chart with table showing summary of parts, adaptations and functions of the mammalian heart	• Comprehensive secondary Biology students Bk. 4 page 69-72 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 97-98 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 280-281	
	3-4	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Structure of the mammalian eye	By the end of the lesson, the learner should be able to: • Dissect and display parts of the mammalian eye	• Dissecting mammalian eye and identifying the various parts (external and internal)	• mammalian eye • dissecting tray • gloves	• Comprehensive secondary Biology students Bk. 4 page 69 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 97 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 280	
	5	RECEPTION RESPONSE AND CO-ORDINATION	Image formation in the mammalian eye	By the end of the lesson, the learner should be able to: • Describe how an image is formed and interpreted in the mammalian eye	• Describing how an image is formed and interpreted in the mammalian eye	• Chart on image formation in the retina	• Comprehensive secondary Biology students Bk. 4 page 69 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 100-101 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 280-281	

8	1-2	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Accommodation in the mammalian eye	By the end of the lesson, the learner should be able to: • Describe Accommodation in the mammalian eye	• Defining accommodation • Drawing diagrams on accommodation of the far and near objects • Discussion on accommodation	• Chart on accommodation of distant and nearby objects in the mammalian eye	• Comprehensive secondary Biology students Bk. 4 page 72-73 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 101-102 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 283-285	
	3	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Common eye defects	By the end of the lesson, the learner should be able to: • Name and explain the Common eye defects	• Naming and explaining the Common eye defects	• Chart on defects and their corrections	• Comprehensive secondary Biology students Bk. 4 page 73-75 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 102-104 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 287-288	
	4-5	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Common eye defects	By the end of the lesson, the learner should be able to: • Describe Common eye defects and their corrections • Investigate the blind spot In the eye • Investigate which eye is used more during vision	• Describing and illustrating common eye defects e.g. long sightedness and short sightedness	• Chart on eye defects and their corrections • Pencils • Ruler • Paper • Biro • Window/door frame	• Comprehensive secondary Biology students Bk. 4 page 73-75,84 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 102-104 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 289-286	

9	1-2	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Common eye diseases	By the end of the lesson, the learner should be able to: • Name and describe Common eye diseases	• Naming and describing Common eye diseases	• Resource person e.g. eye specialist	• Comprehensive secondary Biology students Bk. 4 page 75-76 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 102-104 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 285-286	
	3	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Structure of the mammalian ear	By the end of the lesson, the learner should be able to: • Draw and label the mammalian ear	• Drawing and labeling the mammalian ear	• Chart showing parts of the mammalian ear	• Comprehensive secondary Biology students Bk. 4 page 76-77 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 104-105 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 286	
	4-5	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Structure of the mammalian ear	By the end of the lesson, the learner should be able to: • Describe the mammalian ear and how it is adapted to its functions	• Discussion on the structures of the mammalian ear and how they are adapted to their functions	• Chart showing parts of the mammalian ear	• Comprehensive secondary Biology students Bk. 4 page 76-78 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 104-105 • KLB teachers book 4 pages 38-58 • Principles of biology	

							vol. 2 pages 286-287	
10	1-2	EVALUATION	Continuous assessment test	By the end of the lesson, the learner should be able to: • Answer the questions asked in the test	• Learner to recall and writes down answers to questions in the test • Teacher to supervise students as they do the test	• Question papers • Marking schemes	• Comprehensive secondary Biology students Bk. 4 page 86-87 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 107-110 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 304-308	
	3	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	The mechanism of hearing	By the end of the lesson, the learner should be able to: • Describe the mechanism of hearing	• Discussion on the mechanism of hearing	• Chart showing the mechanism of hearing	• Comprehensive secondary Biology students Bk. 4 page 79-80 • Teachers bk. 4 pages 24-38 • KLB secondary Biology Students book 4 Page 106-107 • KLB teachers book 4 pages 38-58 • Principles of biology vol. 2 pages 287-289	
	4-5	RECEPTION RESPONSE AND CO-ORDINATION IN PLANTS AND ANIMALS	Common defects of the ear	By the end of the lesson, the learner should be able to: • Discuss thick ear drum, damaged cochlea, raptured eardrum, fussed ossicles, otitis media, ostosceleross and tinnitus	• Discussion on common ear defects	• Chart showing common defects of the ear • Ear specialist	• Comprehensive secondary Biology students Bk. 4 page 79-80 • Teachers bk. 4 pages 24-80 • KLB secondary Biology Students book 4 Page 107 • KLB teachers book 4 pages 38-58 • Principles of biology	

							vol. 2 pages 289-290	
11 - 13	**REVISION AND END OF TERM EXAMINATIONS**							

BIOLOGY FORM 4 SCHEMES OF WORK – TERM 3								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	1	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Introduction	By the end of the lesson, the learner should be able to: • Define support and	• Defining support and movement • Describing the necessity of	• Potted plants • Small animals e.g. Fish rabbits and rats	• Comprehensive secondary Biology students Bk. 4 page 88-89	

				• movement • Describe the necessity of movement in plants and animals	movement in plants and animals		• Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 111-112 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 309	
	2	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	support and movement in plants	By the end of the lesson, the learner should be able to: • Review the tissue distribution in monocotyledonous an dicotyledonous plants	• Reviewing stem sections of monocotyledonous an dicotyledonous plants	• Chart showing sections of tracheids and xylem vessels	• Comprehensive secondary Biology students Bk. 4 page 89-90 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 112-114 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 327-328	
	3	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Plants with woody stems and tendrils	By the end of the lesson, the learner should be able to: • Describe support in woody and non-woody stems • Describe the role of tendrils and tender stems in support	• Describing support in woody and non-woody stems • Describing the role of tendrils and tender stems in support	• Plants with tender stems e.g. Morning glory • Plants with tendrils e.g. Passion fruit • Pictures of climbing plants • Pictures of woody plants	• Comprehensive secondary Biology students Bk. 4 page 90-91 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 114-116 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages	
	4-5	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Support and movement in plans (practical lesson)	By the end of the lesson, the learner should be able to: • Observe prepared	• Observing prepared sections of woody and herbaceous stems	• Wilting plant • prepared sections of stems	• Comprehensive secondary Biology students Bk. 4 page 115-116	

				sections of woody and herbaceous stems • Observe a wilting plant	• Observing a wilting plant • Discussion on the observations made	• slides • fine point brush • cover slips • scalpels • iodine solution • beaker	• Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 115-116 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages	
2	1-2	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Types of skeletons	By the end of the lesson, the learner should be able to: • List he types of skeletons • Describe the role of exoskeleton in insects • Describe the role and components of endoskeleton	• Listing the types of skeletons • Describing the role of exoskeleton in insects • Distinguishing between a bone and a cartilage	• Earth worm • Insect e.g. Locust • Bones from a chicken or goat	• Comprehensive secondary Biology students Bk. 4 page 92-96 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 116-117 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 310-312	
	3	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Supported movement in animals	By the end of the lesson, the learner should be able to: • Describe the role of skeleton in vertebrates • Draw the structure of a finned fish (tilapia) • Calculate the tail power	• Description of skeleton in vertebrate • Drawing of a tilapia fish	• Finned fish • Ruler • Chart showing finned fish	• Comprehensive secondary Biology students Bk. 4 page 96-97 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 117-118 • KLB teachers book 4 pages 59-68 • Principles of biology vol 2 pages 325-326	
	4-5	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Locomotion in a finned fish	By the end of the lesson, the learner should be able to: • Explain how	• Describing external and internal features of the fish to	• Finned fish in an aquarium • Chart showing tilapia fish	• Comprehensive secondary Biology students Bk. 4 page 96-98	

				locomotion occurs in fish • Name and draw the different fins and state their functions	explain how it is adapted to locomotion in water • Observing locomotion of tilapia fish in water		• Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 118 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 325-326	
3	1	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Locomotion and support in mammals	By the end of the lesson, the learner should be able to: • Draw the human skeleton and identify the component parts • Identify and draw the skull	• Drawing and labeling the human skeleton • Using model to identify the components of the skeleton	• Model of human skeleton • Chart on human skeleton • Skull of a goat	• Comprehensive secondary Biology students Bk. 4 page 98-99 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 119-120 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 312-313	
	2	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Axial skeleton	By the end of the lesson, the learner should be able to: • Identify bones of Axial skeleton in the vertebral column • Identify the cervical vertebrae	• Identifying bones of the vertebral columns • Drawing the cervical vertebrae • Relating the structures to their functions	• Model of human skeleton • Chart on showing the cervical vertebrae • Axis, atlas and other cervical vertebrae	• Comprehensive secondary Biology students Bk. 4 page 99-101 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 120-122 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 312-315	
	3	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	thoracic	By the end of the lesson, the learner should be able to: • Identify the	• Identifying, drawing and relating the structure of the	• Model of human skeleton • Chart on showing the	• Comprehensive secondary Biology students Bk. 4 page 102 • Teachers bk. 4 pages	

				• structures of the thoracic vertebrae • Relate the structure of the thoracic vertebrae to their functions	• thoracic vertebrae from goat • Charts showing thoracic vertebrae	• cervical vertebrae • Axis, atlas and other cervical vertebrae	39-58 • KLB secondary Biology Students book 4 Page 122 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 315	
	4-5	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	thoracic	By the end of the lesson, the learner should be able to: • Identify the structures of lumbar, sacral and candal vertebrae • Show how ribs articulate with thoracic vertebrae	• Drawing and labeling the lumbar sacral and candal vertebrae • Relating the parts of the vertebrae to their functions	• Model of human skeleton • Chart on showing the lumbar, sacral and candal vertebrae of a goat • Axis, atlas and other cervical vertebrae	• Comprehensive secondary Biology students Bk. 4 page 102-103 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 122-124 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 315-317	
4	1	EVALUATION	Continuous assessment test	By the end of the lesson, the learner should be able to: • Answer the questions asked in the test	• Learner to recall and writes down answers to questions in the test • Teacher to supervise students as they do the test	• Question papers • Marking schemes	• Comprehensive secondary Biology students Bk. 4 page 120 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 12131-132 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 328-329	
	2	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Ribs and sternum	By the end of the lesson, the learner should be able to: • Draw and label Ribs and sternum	• Drawing and labeling the Ribs and sternum • Relating the structure to their	• Model of human skeleton • Rib bones • Sternum • Charts showing	• Comprehensive secondary Biology students Bk. 4 page 104-105 • Teachers bk. 4 pages	

				• Relate the structure to their functions	functions	Ribs and sternum	39-58 • KLB secondary Biology Students book 4 Page 120-121 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 315-316	
	3	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Appendicular skeleton	By the end of the lesson, the learner should be able to: • Identify components of Appendicular skeleton • Draw the scapula bone and relate it to its functions	• Identifying the bones of the Appendicular skeleton • Drawing and labeling scapula and relating the structure to its functions	• Model of human skeleton • Scapula bones • Chart showing scapula bone	• Comprehensive secondary Biology students Bk. 4 page 105 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 124-125 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 317-320	
	4-5	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	The fore limbs	By the end of the lesson, the learner should be able to: • Identify the bones of the fore limbs • Draw the structure of the humerus, radius and ulna	• Identifying drawing and labeling the structure of the humerus, radius and ulna • Discussing the adaptations of these bones to their functions	• humerus, radius and ulna bones • model of human skeleton • charts showing humerus, radius and ulna	• Comprehensive secondary Biology students Bk. 4 page 105-106 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 125 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 318-320	
5	1	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Bones of the hand	By the end of the lesson, the learner should be able to: • Identify the bones of the hands • Draw and label	• Identifying drawing and labeling the bones of the hands • Relating the structure to their	• Bones of the hand • Model of the human skeleton • Chart showing bones of the	• Comprehensive secondary Biology students Bk. 4 page 106 • Teachers bk. 4 pages 39-58 • KLB secondary Biology	

				bones of the hand	functions	hand	Students book 4 Page 126 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 318	
	2	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	The pelvic girdle	By the end of the lesson, the learner should be able to: • Draw the pelvic girdle • Name the bones of The pelvic girdle • Relate the structure to their functions	• Identifying drawing and labeling the pelvic girdle relating its structure to its functions	• Pelvic girdle bones • Model of the human skeleton • Chart showing the pelvic girdle	• Comprehensive secondary Biology students Bk. 4 page 107 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 126 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 320	
	3	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	The hind limb	By the end of the lesson, the learner should be able to: • Identify, draw and label the femur, tibia and tibula bones • Relate their structure to their functions	• Identifying drawing and labeling the bones of the hind limb • Relating the structure to their functions	• Tibia and tibula bone • Femur bone • Model of human skeleton	• Comprehensive secondary Biology students Bk. 4 page 107-108 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 319,320,321	
	4-5	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Bones of the foot	By the end of the lesson, the learner should be able to: • Draw and label the bones of the foot • Relate the structure of bones of the foot to their	• drawing, labeling and relating the structure of the foot to its functions	• Model of the human skeleton • Bones of the foot	• Comprehensive secondary Biology students Bk. 4 page 108-109 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page	

				functions			119 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 319	
6	1	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	joints	By the end of the lesson, the learner should be able to: • Define a joint • List the three types of joints • Describe the types of joints	• Defining a joint • Identifying the types of joints • Describing the types of joints	• Model of the human skeleton • Chart showing types of joints • Bones showing all types of joints	• Comprehensive secondary Biology students Bk. 4 page 109-112 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 127-128 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 320-321	
	2	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Joints	By the end of the lesson, the learner should be able to: • List examples of movable joints, hinge joints and bell and socket joints	• Naming examples of movable joints, hinge joints and bell and socket joints on a model skeleton	• Model of the human skeleton • Chart showing all types of joints	• Comprehensive secondary Biology students Bk. 4 page 110-112 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 127-128 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 320-321	
	3	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	Immovable joints	By the end of the lesson, the learner should be able to: • Define Immovable joints • Name Immovable joints	• Defining and naming Immovable joints	• Model of the human skeleton • Chart showing Immovable joints , gliding joints and skull	• Comprehensive secondary Biology students Bk. 4 page 109-110 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page	

							127-128 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 320-321	
	4-5	SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS	muscles	By the end of the lesson, the learner should be able to: • Define muscles • Explain the differences between the three types of muscles • Identifying biceps and triceps in the arm movement	• Defining muscles • Differentiating between the three types of muscles • Describing the role of Biceps and triceps in movement of the arm	• Chart showing smooth skeletal and cardiac muscles • Chart showing biceps and triceps muscles • Students arm	• Comprehensive secondary Biology students Bk. 4 page 109-112 • Teachers bk. 4 pages 39-58 • KLB secondary Biology Students book 4 Page 129-131 • KLB teachers book 4 pages 59-68 • Principles of biology vol. 2 pages 321-325	
7-12	**REVISION AND END OF TERM EXAMINATIONS**							