GRADE 10 BIOLOGY SCHEMES OF WORK FOR TERM 1

NAME OF THE TEACHER:……

SCHOOL:…….. YEAR:…….

Week	LSN	Strand	Sub-strand	Specific Learning Outcomes	Key Inquiry Question(s)	Learning Experiences	Learning Resources	Assessment Methods	Refl
1	1	**1.0 Cell Biology and Biodiversity**	**1.1 Introduction to Biology**	By the end of the lesson, the learner should be able to explain the application of Biology in everyday life.	Why is it important to study Biology?	The learner is guided to search for information on the meaning and application of Biology in everyday life and share with peers[8].	Digital devices, internet access, textbooks.	Oral questions	
	2			By the end of the lesson, the learner should be able to relate fields of study in Biology to career opportunities (Botany, Zoology, Taxonomy).		The learner is guided to collaboratively search for information on fields of study (Botany, Zoology, Taxonomy) and relate them to career opportunities[9].	Print/non-print media, charts.	Observation	
	3			By the end of the lesson, the learner should be able to relate fields of study in Biology to career opportunities (Anatomy, Physiology, Ecology, Genetics).		The learner is guided to search for information on Anatomy, Physiology, Ecology, and Genetics and relate them to career opportunities[10].	Textbooks, career brochures.	Written assignment	
	4			By the end of the lesson, the learner should be able to relate fields of study in Biology to career opportunities (Microbiology, Entomology, Parasitology).		The learner is guided to search for information on Microbiology, Entomology, and Parasitology and relate them to career opportunities[11].	Digital devices, textbooks.	Oral questions	

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2	1			By the end of the lesson, the learner should be able to discuss factors influencing career choices in Biology.		The learner is guided to discuss factors like interest and ability, and reinforce those that should not influence choice (gender, stereotypes)[12].	Career guidance charts.	Discussion	
	2			By the end of the lesson, the learner should be able to Illustrate the careers related to fields of study in Biology.		The learner is guided to use locally available material to design a career wheel to relate fields of study in Biology to careers and make presentations[13].	Manilla paper, markers, scissors.	Project assessment	
	3		**1.2 Specimen Collection and Preservation**	By the end of the lesson, the learner should be able to identify apparatus used for collecting specimens.	How are specimens collected and preserved?	The learner is guided to in groups search for information on apparatus for collecting specimens (pooter, pitfall trap, sweep net)[14].	Textbooks, images of apparatus.	Observation	
	4			By the end of the lesson, the learner should be able to identify materials used for processing and preserving specimens.		The learner is guided to identify materials such as forceps, light traps, Tullgren funnel, envelopes, labels, and hand lenses[15].	Lab apparatus/charts.	Checklist	
3	1			By the end of the lesson, the learner should be able to improvise apparatus for collecting specimens.		The learner is guided to improvise apparatus from locally available materials and use them for collecting specimens[16].	Locally available materials (plastic bottles, netting).	Project assessment	
	2			By the end of the lesson, the learner should be able to collect plant specimens for preservation.		The learner is guided to collect plant specimens using appropriate methods (e.g., secateurs, collecting bags)[17].	Secateurs, collecting bags.	Observation	

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	3			By the end of the lesson, the learner should be able to make a herbarium to preserve specimens (Pressing).		The learner is guided to press plant specimens for a herbarium[18].	Plant press, newspapers/blotting paper.	Observation	
	4			By the end of the lesson, the learner should be able to make a herbarium to preserve specimens (Mounting and Labeling).		The learner is guided to dry, mount, and label specimens including common/local name and locality[19].	Mounting sheets, glue, labels.	Product assessment	
4	1			By the end of the lesson, the learner should be able to collect small animals using appropriate apparatus.		The learner is guided to collect small animals using apparatus such as pooter, pitfall trap, sweep net, or light traps[2020].	Pooter, sweep nets, traps.	Practical assessment	
	2			By the end of the lesson, the learner should be able to identify preservatives used in preservation of specimens.		The learner is guided to search for information on preservatives used in preservation of specimens and discuss with peers[2121].	Textbooks, internet.	Oral questions	
	3			By the end of the lesson, the learner should be able to process and preserve animal specimens (Ethanol/Wet).		The learner is guided to process and preserve animal specimens involving sorting and ethanol/wet preservation[2222].	Ethanol, specimen jars.	Observation	
	4			By the end of the lesson, the learner should be able to process and preserve animal specimens (Mounting).		The learner is guided to mount specimens on soft boards and label them appropriately[2323].	Soft boards, pins, labels.	Observation	
5	1			By the end of the lesson, the learner should be able to carry out a project on specimen collection (Planning).		The learner is guided to plan a project on collecting, processing, and preserving biological	Project planning templates.	Portfolio	

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						specimens, including budgeting[2424].			
	2			By the end of the lesson, the learner should be able to carry out a project on specimen collection (Execution).		The learner executes the project, collecting and processing specimens while conserving the environment[25252525].	Field equipment.	Observation	
	3			By the end of the lesson, the learner should be able to appreciate the importance of collecting specimens (Presentation).		The learner keeps a portfolio to document progress of the project and makes presentations[26].	Portfolios, presentation tools.	Oral presentation	
	4			By the end of the lesson, the learner should be able to demonstrate safety and security in specimen collection.		The learner is guided to observe safety precautions while collecting, processing, and preserving biological specimens[27].	Safety gear (gloves).	Observation	
6	1		**1.3 Cell Structure and Specialization**	By the end of the lesson, the learner should be able to differentiate between light and electron microscope (Resolution/Magnification).	1. Why do plant and animal cells differ? 2. How are cells specialized?	The learner is guided to search for information using print and non-print media on structural and functional differences (resolution and magnification)[28].	Textbooks, internet.	Written assignment	
	2			By the end of the lesson, the learner should be able to differentiate between light and electron microscope (Structure).		The learner is guided to compare the physical structure and operation of light and electron microscopes[29].	Charts of microscopes.	Oral questions	
	3			By the end of the lesson, the learner should be able		The learner is guided to carry out experiments on the procedures in	Razors, plant stems, glass slides.	Practical assessment	

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				to prepare temporary slides (Sectioning).		preparation of specimen slides (sectioning)[30].			
	4			By the end of the lesson, the learner should be able to prepare temporary slides (Staining and Mounting).		The learner is guided to carry out experiments on staining, mounting, and fixation of specimen slides[31].	Stains (iodine/methylene blue), coverslips.	Practical assessment	
7	1			By the end of the lesson, the learner should be able to estimate cell size using a light microscope.		The learner is guided to prepare temporary slides (onion bulbs/kales) and use them under a light microscope to estimate cell sizes[32].	Light microscopes, onion bulbs, rulers.	Practical assessment	
	2			By the end of the lesson, the learner should be able to describe the structure of plant cells as observed in an electron microscope.		The learner is guided to use photomicrographs/charts to examine the structure of plant cells under an electron microscope[33].	Photomicrographs of plant cells.	Observation	
	3			By the end of the lesson, the learner should be able to describe the structure of animal cells as observed in an electron microscope.		The learner is guided to use photomicrographs/charts to examine the structure of animal cells under an electron microscope[34].	Photomicrographs of animal cells.	Observation	
	4			By the end of the lesson, the learner should be able to draw and label plant cells as seen under an electron microscope.		The learner is guided to draw and label the structure of plant cells as seen under an electron microscope[35].	Drawing books, pencils.	Portfolio	
8	1			By the end of the lesson, the learner should be able to draw and label animal cells as seen under an electron microscope.		The learner is guided to draw and label the structure of animal cells as seen under an electron microscope[36].	Drawing books, pencils.	Portfolio	

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	2			By the end of the lesson, the learner should be able to compare plant and animal cells.		The learner is guided to discuss the differences between plant and animal cells based on electron microscope observations[37].	Comparison charts.	Discussion	
	3			By the end of the lesson, the learner should be able to model the structure of plant cells.		The learner is guided to model the structure of plant cells as seen under an electron microscope[38].	Modeling clay/locally available materials.	Project assessment	
	4			By the end of the lesson, the learner should be able to model the structure of animal cells.		The learner is guided to model the structure of animal cells as seen under an electron microscope[39].	Modeling clay/locally available materials.	Project assessment	
9	1			By the end of the lesson, the learner should be able to relate the structures of specialized plant cells to functions (Root hair).		The learner is guided to discuss root hair cells and relate them to their function[40].	Charts/Slides of root hairs.	Oral questions	
	2			By the end of the lesson, the learner should be able to relate the structures of specialized plant cells to functions (Palisade).		The learner is guided to discuss palisade cells and relate them to their function[41].	Charts/Slides of leaves.	Oral questions	
	3			By the end of the lesson, the learner should be able to relate the structures of specialized plant cells to functions (Guard cells/Pollen).		The learner is guided to discuss guard cells and pollen grains and relate them to their functions[42].	Charts/Slides.	Written quiz	
	4			By the end of the lesson, the learner should be able to relate the structures of specialized animal cells to functions (Muscle).		The learner is guided to discuss muscle cells and relate them to their function[43].	Charts/Slides of muscle tissue.	Oral questions	
10	1			By the end of the lesson, the learner should be able		The learner is guided to discuss nerve cells and	Charts/Slides of neurons.	Oral questions	

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				to relate the structures of specialized animal cells to functions (Nerve).		relate them to their function[44].			
	2			By the end of the lesson, the learner should be able to relate the structures of specialized animal cells to functions (Blood).		The learner is guided to discuss blood cells (RBC, WBC) and relate them to their function[45].	Charts/Slides of blood smear.	Written quiz	
	3			By the end of the lesson, the learner should be able to relate the structures of specialized animal cells to functions (Reproductive).		The learner is guided to discuss reproductive cells and relate them to their function[46].	Charts of sperm/ovum.	Oral questions	
	4			By the end of the lesson, the learner should be able to observe specialized cells using photomicrographs.		The learner is guided to observe photomicrographs/permanent slides of specialized plant and animal cells, draw and label[47].	Permanent slides, microscope.	Practical assessment	
11	1			By the end of the lesson, the learner should be able to discuss cell organization (Organelles to Cells).		The learner is guided to discuss levels of organization starting from organelles to cells[48].	Flow charts of organization.	Discussion	
	2			By the end of the lesson, the learner should be able to discuss cell organization (Tissues).		The learner is guided to discuss the organization of cells into tissues[49].	Charts of tissues.	Oral questions	
	3			By the end of the lesson, the learner should be able to discuss cell organization (Organs).		The learner is guided to discuss the organization of tissues into organs[50].	Models of organs (heart, leaf).	Oral questions	
	4			By the end of the lesson, the learner should be able to discuss cell		The learner is guided to discuss the organization of	Charts of human body systems.	Written assignment	

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				organization (Organ Systems).		organs into organ systems[51].			
12	1			By the end of the lesson, the learner should be able to appreciate the cell as the basic unit of life.		The learner is guided to consolidate understanding of the cell as the fundamental unit of life[52].	Review materials.	Reflection	
	2			By the end of the lesson, the learner should be able to demonstrate appropriate waste management during cell modeling.		The learner is guided to appropriately dispose of waste materials generated from modeling cell structures[53].	Waste bins.	Observation	
	3			By the end of the lesson, the learner should be able to demonstrate digital literacy in cell biology.		The learner uses digital tools to search for information on microscope differences and specialized cells[54].	Computers/Tablets.	Observation	
	4			By the end of the lesson, the learner should be able to review Cell Biology concepts.		Review of Strand 1.0 concepts (Cell Structure and Specialization).	Past papers/Quizzes.	Written test	
13	1			By the end of the lesson, the learner should be able to demonstrate understanding of Term 1 concepts.		End of Term 1 Assessment Administration.	Exam papers.	Written Exam	
	2			By the end of the lesson, the learner should be able to demonstrate understanding of Term 1 concepts.		End of Term 1 Assessment Administration.	Exam papers.	Written Exam	
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	4			By the end of the lesson, the learner should be able to reflect on Term 1 performance.		Closing of the term and reflection on performance.		QA / Reflection	