

**PRESIDENT’S OFFICE, REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**  
**SCHEME OF WORK**

**Name of teacher:** JACKSON ROBERT ISANGI  
**Year:** 2025  
**Class/Stream:** FORM FOUR

**Name of School:** MUHUKURU SECONDARY SCHOOL  
**Term:** 1 & 2  
**Subject:** PHYSICS

MAIN COMPETENCE	SPECIFIC COMPETENCE	TEACHING ACTIVITIES	MONTH	WEEK	PERIOD	REFERENCE	TEACHING/LEARNING AIDS	ASSESSMENT TOOLS	REMARKS		
1.0 APPLYING THE CONCEPT OF IN EVERYDAY LIFE WAVES	Introduction To Waves	Preparing students to explain the concept of wave	JANUARY	2 <sup>ND</sup>	04	Fundamentals of Physics Form Four, Longhorn Publishers	Slinky spring Tuning fork Rope Drum Light	Exercise			
		Preparing students to explain the terms wavelength, frequency and wave velocity		TO							
		Preparing students to identify types of waves		3 <sup>RD</sup>							
	Behavior Of Waves	Preparing students to explain reflection, refraction, diffraction and interference of waves		FEBRUARY	4 <sup>TH</sup>		08	Ripple tank and its accessories Radio Mobile phone Water White board	Homework		
		Preparing students to mention the application of reflection, refraction, diffraction and interference of wave in life	1 <sup>ST</sup>								
		Preparing students to demonstrate the behavior of waves									
	Propagation Of Waves	Preparing students students to describe the propagation of mechanical waves	2 <sup>ND</sup>		08		Chart showing the electromagnetic spectrum	Assignment			
		Preparing students to explain the propagation of e.m.w								TO	
		Preparing students to determine the relation between frequency, speed and wavelength of wave									3 <sup>RD</sup>
		Preparing students to determine the refractive index of a medium									
	Sound Waves	Preparing students to identify sources of sound waves	MARCH		4 <sup>TH</sup>		08	Drum Guitar Whistle Tuning fork Chart of human ear Hall/ tall wall Spongy/cloth material	Assignment		
		Preparing students to explain the concept of audibility range									
		Preparing students to describe the perception of hearing									
		Preparing students to explain the concept of echo and reverberation of sound		1 <sup>ST</sup>							
		Preparing students to determine the speed of sound in air									
	Musical Sound	Preparing students to explain the concept of a musical sound		2 <sup>ND</sup>	12		Drum Microphone Tuning fork Pipe, string, membrane, electronic musical instruments	Exercise			
		Preparing students to identify factors affecting loudness, pitch and quality of a musical sound									
		Preparing students to identify different musical instruments									
		Preparing students to explain the terms stationary wave, node and antinodes		3 <sup>RD</sup>							
		Preparing students to determine the frequency of a musical note									
		Preparing students to distinguish between the fundamental note and overtones									
		Preparing students to explain the concept of resonance as applied to sound									
	Sonometer Resonance box	Quiz									

		Preparing students to construct a simple musical instrument							
<div>MID-TERM ASSESSMENT (4<sup>TH</sup> WEEK OF MARCH)</div> <div>MID-TERM BREAK (28/03/2024 - 08/04/2024)</div>									
2.0 C O M P R E H E N D T H E K N O W L E D G E O F E L E C T R O M A G N E T I S M	Electromagnetic Spectrum	Preparing students to explain the concept of electromagnetic spectrum	APRIL	2 <sup>ND</sup>	04	Fundamentals of Physics Form Four, Longhorn Publishers	Chart showing electromagnetic spectrum Glass prism	Exercise	
		Preparing students to identify the main bands of the electromagnetic spectrum							
	Applications Of Electromagnetic Waves In Daily Life	Preparing students to identify the applications of microwaves, radio waves, infra-red, gamma rays and x rays		3 <sup>RD</sup> TO 4 <sup>TH</sup>	04		TV Radio Hospital equipment Phone Domestic materials	Test	
		Preparing students to explain the importance of e.m.w in agriculture and climate							
	Magnetic Fields Due To A Current-Carrying Conductor	Preparing students to explain how electric current produces a magnetic field	MAY	1 <sup>ST</sup>	04		Long wire Compass needle Rheostat Connecting wire Source of current	Quiz	
		Preparing students to identify the pattern of the magnetic field lines around a straight conductor							
		Preparing students to determine the direction of magnetic field around a current carrying conductor							
		Preparing students to determine the direction of a force on a current carrying conductor in a magnetic field							
		Preparing students g to determine the direction of force due to two current carrying conductors when current is flowing in the same/ opposite directions							
	Electromagnetic Induction	Preparing students to explain the concept of electromagnetic induction		2 <sup>ND</sup>  TO  3 <sup>RD</sup>	08		Bar Magnet Wires Galvanometer Coil wound on soft paper	Homework	
		Preparing students to state the laws of electromagnetic induction							
		Preparing students to explain the concept of self and mutual induction							
		Preparing students to describe the mode of action of induction							
		Preparing students to describe the mode of action of a.c and d.c generator							
<div>TERMINAL ASSESSMENT (4<sup>TH</sup> WEEK OF MAY)</div> <div>FIRST TERM BREAK (31/05/2024 - 01/07/2024)</div> <div>UMISSETA SPORTS COMPETITIONS (16/06/2024 – 29/06/2024)</div>									

3.0	A Q U I R I N G S K I L S O N H O W T O A P P L Y R A D I O A C T I V I T Y I N L I F E	The Nucleus Of An Atom	Preparing students to describe the structure of an atom and naming forces holding the nucleus	JULY	1 <sup>ST</sup>	04	Fundamentals of Physics Form Four, Longhorn Publishers	Model of atom Chart of atom	Exercise	
			Preparing students to explain the Z,A and isotopes of an element and their symbols							
		Natural Radioactivity	Preparing students to explain the concept of radioactivity		2 <sup>ND</sup>	04		Periodic table Chart of bombarding element Chart showing α, β and γ radiations GMT, Cloud chamber and spark chamber	Quiz	
			Preparing students to describe properties of the radiations emitted by radioactive substance							
			Preparing students to explain the nuclear changes due to emission of α, β and γ rays							
			Preparing students to explain the detection of α, β and γ rays							
			Preparing students to describe half-life as applied to a radioactive substance							
			Preparing students to determine the half-life of radioactive element							
			Preparing students to identify the applications of natural radioactive substances							
		Artificial Radioactivity	Preparing students to distinguish between natural and artificial radioactivity			04		Chart showing use of radioactivity Periodic table Chart of bombarding element	Assignment	
			Preparing students to describe methods of producing artificial radioactive isotopes							
			Preparing students to mention the applications of artificial radioactivity							
		Radiation Hazards And Safety	Preparing students to explain the effects of nuclear radiations on human body		3 <sup>RD</sup>	02		Chart of hazards of radiations	Exercise	
			Preparing students to protect human from nuclear radiation hazards							
		Nuclear Fission And Fusion	Preparing students to brainstorm the concept of nuclear fission and fusion		4 <sup>TH</sup>	02		Chart of nuclear weapons Power stations	Test	
			Preparing students to mention the apps of nuclear fission and fusion							
		4.0	T H E R M I O N I C E M I S S I O N		Cathode Rays	Preparing students to explain the production of cathode rays		AUGU ST	1 <sup>ST</sup>	02
Preparing students to state properties of cathode rays										
Preparing students state the applications of C.R.T	02			Chart showing X-ray tube		Quiz				
X Rays					Preparing students to describe the structure and mode of action of the x-ray tube					
					Preparing students to distinguish between soft and hard X-rays and their production					
					Preparing students to state the properties of X-rays					
	Preparing students to identify the applications of X rays in life									
5.0	L E C T R O N I C S	Semiconductors	Preparing students to explain the concept of energy bands in solids	2 <sup>ND</sup>	06	Conductors Semiconductors Insulators Battery Galvano Connecting wire Chart showing energy levels Silicon Germanium Chart of doping process	Homework			
			Preparing students to distinguish between conductors, insulators and semiconductors							
			Preparing students to describe the effects of temperature on the conductivity of conductors, semiconductors, and insulators							

		Preparing students to identify the types of semiconductors								
		Preparing students to describe the mechanism of doping intrinsic semiconductors								
	Diodes	Preparing students to describe the construction of PN Junction		3 <sup>RD</sup>	02			Chart showing diodes and PN Junction diode Diodes Bulb Cells Wires, LED	Exercise	
		Preparing students to explain the mode of action of a PN Junction								
		Preparing students to identify the types of diodes and construct a half-wave and full-wave rectifier								
MID-TERM ASSESSMENT (4 <sup>TH</sup> WEEK OF AUGUST) MID-TERM BREAK (30/08/2024 - 16/09/2024)										
6.0 E L E M E N T A R Y A S T R O N O M Y	Transistor	Preparing students to describe the construction of a PNP transistor	SEPT EMB ER	3 <sup>RD</sup>	04	Fundamentals of Physics Form Four, Longhorn Publishers	CRO DC source Resistors Capacitors Bulb Diodes Chart of transistors	Assignment		
		Preparing students to explain the mode of action of a PNP transistor								
		Preparing students to identify types of transistors			04		TV Radio Mobile phone	Exercise		
		Preparing students to outline the applications of transistors in life								
	Single Stage Amplifier	Preparing students to explain the concept of analogue signals		4 <sup>TH</sup>	02		Chart of universe Clear sky	Quiz		
		Preparing students to explain the concept of digital signals								
	Introduction To Astronomy	Preparing students to explain the concept of astronomy		4 <sup>TH</sup>	02		Solar system chart Chart of earth Two bodies	Exercise		
		Preparing students to explain the importance of astronomy in life								
	Solar System	Preparing students to distinguish between a star and a planet		OCT OBE R	1 <sup>ST</sup>		02	Charts of moon and ocean tides	Test	
		Preparing students to explain the force of gravitation which maintains celestial bodies in their orbits								
	Constellation	Preparing students to explain the concept of constellation								
		Preparing students to identify constellations and their uses in daily life								
	The Earth And The Moon	Preparing students to describe the surface features and temperature of the moon								
		Preparing students to explain the causes of ocean tides								

7.0 A P P L Y I N G E O P H Y S I C S , K N O W L E D G E I N R E A L L I F E	Structure And Composition Of The Earth	Preparing students to describe the structure of the earth		2 <sup>ND</sup>	02		Chart of structure of earth	Exercise		
		Preparing students to describe the composition of the layers of the earth with their importance								
	Earthquakes And Volcanoes	Preparing students to explain the origin of volcanoes			02		Chart of volcanoes	Homework		
		Preparing students to describe effects of volcanoes								
		Preparing students to explain the origin of earthquake								
		Preparing students to describe the principle of measurement of earthquake		3 <sup>RD</sup>	02		Picture of earthquake Seismometer Meteorology report	Exercise		
	Preparing students to identify precautions against earthquake hazards									
	Structure And Composition Of The Atmosphere	Preparing students to describe the vertical structure of the atmosphere			02		Chart of atmosphere Communication system	Assignment		
		Preparing students to describe the composition of the atmosphere								
		Preparing students to explain the importance of various layers of the atmosphere								
	The Greenhouse Effect And Global Warming	Preparing students to explain the greenhouse effects			02		Chart of ozone layer/greenhouse gases, global warming	Test		
		Preparing students to identify sources of greenhouse								
		Preparing students to explain the occurrence of global warming								
		Preparing students to state the consequences of global warming								

**PREPARATION FOR CERTIFICATE OF SECONDARY EDUCATION EXAMINATION**  
**(OCTOBER 4<sup>TH</sup> WEEK TO NOVEMBER 1<sup>ST</sup> WEEK)**