PRESIDENT'S OFFICE, REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

SCHEME OF WORK

Name of teacher: JACKSON ROBERT ISANGI **Name of School: MUHUKURU SECONDARY SCHOOL**
Year: 2025. **Term: 1 & 2**
Class/Stream: FORM TWO **Subject: PHYSICS**

MAIN COMPETENCE	SPECIFIC COMPETENCE	TEACHER'S ACTIVITIES	MONTH	WEEK	PERIODS	REFERENCES	TEACHING AND LEARNING TOOLS	ASSESSMENT TOOLS	REMARKS
1 STATIC ELECTRICITY	**1.1 Concept of static electricity**	- Preparing students to define the concept of electrostatic charges - Preparing students picking up tiny pieces of paper by electrified pen and the origin of charges. - Discussing with students on the two types of charges. - Demonstrating on attraction and repulsion between the suspended rod and other bodies and stating the law of static electricity - Discussing with students on charging bodies using different methods	**JANUARY**	2ND	01	TIE(2021) *Physics for secondary school s student's book form two*, Tanzania Institute of education , Dar es salaam ,Tanzania.	Plastic pen Plastic comb Tissue paper fur	Homework	
	1.2 Detection of charges	- Preparing the student to describe the structure of gold leaf electroscope - Preparing the student to charge the electrophorus by induction and contact using polythene base. - Preparing students to detect charges by Gold leaf electroscope - Preparing students to identify steps of charging - Preparing students to identify steps of charging and discharging of a gold leaf electroscope		3RD	01		Gold leaf electroscope Diagram of G/ leaf electroscope Electrophorus C/wire	Exercise	
	1.3 conductors and insulators	- Preparing students to distinguish between insulator and conductor - Preparing students to identify conductors and insulators by passing an electric current through them - Preparing students to explain the difference between electrical conductivities of conductors and insulators			01		Copper wire Aluminum Bulb Glass rod Wood Fur, Wax	Homework	

r	**1.4 Capacitors**	- Preparing students to define capacitance of a body - Preparing students to explain the mode action of capacitor. - Preparing students to identify different types of capacitors - Preparing students to construct air capacitor - Preparing students to determine equivalent capacitance of a combination capacitors - Marking students exercise books		4TH	04	TIE(2021) *Physics for secondary school s student's book form two*, Tanzania Institute of education , Dar es salaam ,Tanzania.	Source of charge Copper electrodes Variable capacitor Battery Resistor voltmeter capacitors	Exercise	
	1.5 Charge distribution along the Surface of a conductor	- Preparing the students to carry an experiment to demonstrate the distribution of charge on the outside of bodies. - Preparing students to carry any experiment that charge are concentrated on the sharp pointed part and are uniformly distributed in the cylindrical object.	**FEBRUARY**	1ST	02		Electrophorus Different shapes of conductor Gold leaf electroscope Proof plane	Homework	
	1.6 Lightening conductor	- To prepare jigsaw presentation on the phenomenon of lightening conductor - To prepare students through question and answers to highlight the structure and model of lighting conductors. To prepare students to draw and label the structure and model of lighting conductor - To prepare students to construct and install a lighting conductor in buildings		2ND	03		Chart showing lighting Copper plate Sharp pointed conductor	Classwork	
2.CURRENT ELECTRICITY	**2.1 Concepts of Electricity**	- To prepare students to define current electricity - To prepare students through questions and answers to identify sources of electricity. - prepare the students to make groups for discussing different sources of electricity		3RD	03		Dry cell Accumulator Dynamo Generator Solar panel	Assignment	
	2.2 Simple Electric Circuit	- To prepare students to discuss different circuit components - To prepare students to identify basic electric symbols - Explaining the concept of current, Voltage and resistance - Discussing with students on how to connect electric circuit. - Through deductive method to guide students to analyze simple electric circuits	**MARCH**	4TH 1ST	06		Charts showing basic electric symbols Battery, cell, Resistors, switch, c/ wires Bulb	Groupwork	

3. MAGNETISM	**3.1 Concept of Magnetism**	- To prepare students to find out the origin of magnetism - To prepare students to identify magnetic and nonmagnetic materials - To prepare students to investigate properties of magnets - To display various types of magnets - To identify application of magnets	**MARCH**	2ND	02	TIE(2021) *Physics for secondary school s student's book form two*, Tanzania Institute of education , Dar es salaam ,Tanzania.	Magnets Magnetic materials Non magnetic materials Flip charts Marker pen	Exercise	
	3.2 Magnetization and demagnetization	- To prepare students to explain the concept of magnetization and demagnetization - To prepare students to magnetize a magnetic material - To prepare students to demonstrate demagnetization of a magnetic material - Stimulate discussion on how a magnet can lose its magnetization' - To prepare students to mention methods of storing magnets		3RD	04		Bar magnet Iron nail A.C source Steel bar	Exercise	
MID-TERM ASSESSMENT (4TH WEEK OF MARCH) **MID-TERM BREAK (28/03/2024 - 08/04/2024)**									
	3.4 Earth's Magnetic Field	- To prepare students to explain the concepts of magnetic fields - prepare students to determine direction of magnetic field. - To prepare students to identify properties of magnetic lines of force - To prepare students to demonstrate how shield a magnetic material from magnetic lines of force - Prepare notes - Prepare exercise - Marking exercise books	**APRIL**	2ND	03	TIE(2021) *Physics for secondary school s student's book form two*, Tanzania Institute of education , Dar es salaam ,Tanzania.	Magnet Compass needle nail Iron fillings Pencil plain paper	Homework Classwork	
4.0 FORCES IN EQUILIBRIUMS	**4.1 Moment of a Force**	- To prepare students to the meaning of moment of force. Differentiating between translational and rotational motion. - To prepare students to determine the moment of force and stating its S.I units - To prepare students to conduct an experiment to verify the principle of moments. - To prepare students to apply the concepts of moments and solving different question relating the moment of force.		3RD	03		Hinged window Suspended piece of wood Meter rule String\two different masses B/ balance	Assignment	

	4.2 Center of gravity	- To prepare student's gallery- walk to presentation on the meaning of center of gravity. - To prepare students to determine center of gravity of regular and irregular shaped body - To prepare students to determine center of gravity of irregular and irregular shaped body		4TH	03	TIE(2021) *Physics for secondary school s student's book form two*, Tanzania Institute of education , Dar es salaam ,Tanzania.	Flip chart Different object with different center of gravity	Exercise	
	4.3 Types of equilibrium	- To prepare students to brainstorm on the condition of equilibrium. - prepare the students to explaining the condition of equilibrium - prepare the students explaining the concept of stable, unstable and neutral equilibrium in daily life. - prepare the students to the discussion on the application of equilibrium	**MAY** AUGUST	1ST	03		Ropes Solid wooden cone Model of bus	Homework	
5.0. SIMPLE MACHINE	**5.1 Concept of simple machine**	- prepare the student to deduce the meaning of simple machine - prepare the students to deduce the meaning of terms Load, Effort, Mechanical advantage, Velocity ration, and efficiency as applied to simple machine and stimulating identify different kinds of simple machine.		2ND	02		Bolts and nuts Spanner Single fixed pulley Stone Bottle opener	Classwork	
	5.2 Levers	- To f prepare students to identify three classes of lever - To prepare the student to determine the mechanical advantage, velocity ratio and efficiency of a lever - To prepare the student to discuss the application of lever in daily life		3RD	04		Scissors, claw hammer Nut cracker Wheel barrow Crow bar	Assignment	
TERMINAL ASSESSMENT (4TH WEEK OF MAY) **FIRST TERM BREAK (31/05/2024 - 01/07/2024)** **UMISSETA SPORTS COMPETITIONS (16/06/2024 – 29/06/2024)**									
	5.3 Pulleys	- To prepare the students to identify different pulley systems. - To prepare the students to determine the mechanical advantage, Velocity ratio and efficiency of pulley system. - To prepare the student to discuss the application of pulleys in daily life.	**JULY**	1ST	03	TIE(2021) *Physics for secondary school s student's book form two*, Tanzania Institute of education , Dar es salaam ,Tanzania.	s/fixed pulley s/movable pulley rope meter ruler	Groupwork	

	5.6 Inclined plane	- To prepare the student to the discussion of the use of inclined plane on lifting heavy loads. - To prepare the students to determine the mechanical advantage, Velocity ratio and efficiency of Inclined plane. - To prepare the student to discuss the application of Inclined plane in daily life		2ND	02		Heavy load Inclined plane ladder	Test	
	5.7 Screw jack	- To prepare students to study the main features of the screw jack and the way it functions - To prepare the students to determine the mechanical advantage, Velocity ratio and efficiency of Screw jack. - To prepare the student to discuss the application of screw jack in daily life			02		Screw jack Car jack Heavy loads car	Exercise	
	5.8 Wheel and axle	- To display a wheel and axle of a bicycle and showing how it function - To prepare the students to determine the mechanical advantage, Velocity ratio and efficiency of Wheel and axle. - To prepare the student to discuss the application of Wheel and axle in daily life		3RD	02		Wheel and axle Bicycle Heavy load Windlass machine	Homework	
	5.9 Hydraulic press	- To display a model of the hydraulic press and guiding the students to discuss the working mechanism - To prepare the students to determine the mechanical advantage, Velocity ratio and efficiency of Hydraulic press. - To prepare the student to discuss the application of Hydraulic press in daily life.		4TH	04		Model of hydraulic press Strings Internet Reference books Flip chart Flash cards	Exercise	
6.0 MOTION IN STRAIGHT LINE	**6.0 Distance and displacement**	- Discussing with students on the meaning of distance as used in motion in straight line - prepare the student to give the meaning of displacement. - prepare the students to differentiate between distance and displacement. - Displaying various flash cards with SI unit of distance and displacement.	**AUGUST**	1ST	01	TIE(2021) *Physics for secondary school s student's book form two*, Tanzania Institute of education , Dar es salaam ,Tanzania.	Tape measure Timer Internet Reference books flash cards	Homework	

	6.1 Speed and velocity	- Discussing with students on the meaning of speed, velocity and its SI units. - prepare the students to differentiate between speed and velocity - Discussing with students on how to solve problems on speed and velocity of the body using formulas.			02		Speedometer Timer Measuring tape Velocity time graph	Classwork	
	6.2 Acceleration	- prepare the students to the definition of acceleration - Preparing with students on how to use the formula on finding acceleration of a body. - prepare the students to apply accelerated body in daily life - prepare the students on the difference between acceleration and retardation - Discussing with students on how to use velocity time graph in finding the acceleration of the body			02		Velocity time graph Trolleys Ticker- tape- timer	Assignment	
	6.3 Equation of uniform accelerated motion	- Discussing with students on first equation of motion, second and third equation of motion - Preparing the students to use the three equations of linear motion in solving related problems - Discussing with students on how to draw velocity- time graph, Distance time graph and displacement time graph. - Discussing with students on how to use velocity time graph to find the distance and Displacement time graph to find the velocity of the body		2ND	02		Kinematics reference books Velocity time graph Bank of kinematics questions	Groupwork	
	6.4 motion under gravity	- Preparing the students to share the idea on the body thrown vertically upwards and a falling body. - Preparing the student to explain the concept of gravitational force - Discussing with students on how to find the acceleration due to gravity experimentally using simple pendulum. - Preparing the student to the discussion of application of gravitational force		3RD	02	TIE(2021) *Physics for secondary school s student's book form two*, Tanzania Institute of education , Dar es salaam ,Tanzania.	Stones Balls Pendulum bob Thread Meter ruler Stop watch Retort stand Graph paper Internet	Exercise	

MID-TERM ASSESSMENT (4TH WEEK OF AUGUST)

MID-TERM BREAK (30/08/2024 - 16/09/2024)

7.0 NEWTONS LAWS OF MOTION	**7.1 Newtons first Law of motion**	- Discussing with students on the concept of inertia. - Preparing the students to state Newton's first law of motion. - Preparing the students to demonstrate Newton's first law of motion - Performing an experiment to verify Newton's first law of motion	**SEPTEMBER**	3RD	03	TIE(2021) *Physics for secondary school s student's book form two*, Tanzania Institute of education , Dar es salaam ,Tanzania.	Heavy loads Bottle Cards Coin Tea cups	Homework	
	7.2 Second Law of motion	- Preparing the student to investigate the relationship between velocity and mass of the body moving in a straight line - Preparing the student to the meaning and stating the SI unit of linear Momentum - Preparing the students to determine the linear momentum of the body experimentally and by formula - Preparing the student to determine the rate of change of linear momentum of a body. - Preparing the students to state Newton's second law of motion. - Preparing the student to carry out the experiment to verify Newton's second law of motion			03		Trolley Various masses Timmer Meter ruler String Trick- tape- timer Muddy surface Hard/soft surface	Classwork	

	7.3 Conservation linear momentum	- Preparing the students to distinguish between elastic and inelastic collisions. - Preparing the students to deduce the relationship between linear momentum before and after collision. - Preparing the student to compare total momentum before and after collision, and hence deducing the principle of conservation of linear momentum. - Preparing the student to determine linear momentum of two or more bodies moving in the same or opposite direction. - Preparing with student to identify the application of principle of conservation of momentum		4TH	02	TIE(2021) *Physics for secondary school s student's book form two*, Tanzania Institute of education , Dar es salaam ,Tanzania.	Tennis ball Spongy floor/surface Hard/soft surface Muddy surface Trolley Various Reference books	Exercise	
	7.4 Third law of motion	- Preparing the student to give the meaning of action and reaction force. - Preparing the students to identify the action force and reaction form and differentiating these forces. - Discussing with student to state Newton's third law of motion. - Preparing the student in groups to discuss application of Newton's third law of motion in daily life.			01		Balloon Bicycle pump Table Weighing scale	Homework	
8. TEMPERATURE MOTION	**8.1 Concept of temperature**	- Preparing the students using think pair- share to define the term temperature. - Preparing the student to state the SI unit of temperature and converting temperature from one unit to another.	**OCTOBER**		01		Water, ice Alcohol Melting ice Boiling water	Classwork	
	8.2 Measurement of Temperature	- Preparing the students to seek information from different measurable physical properties that change with temperature. - Guiding the students to define fundamental interval of a thermometer. – - Preparing the student to define upper and lower fixed point of a thermometer. - Preparing the student to describe the mode of action of liquid in glass thermometer.		1ST	02		Thermometer Water, ice Alcohol Melting ice Boiling water	Assignment	
9. SUSTAINABLE ENERGY	**9.1 Water energy**	Leading the student to the discussion of generation of electricity from water. Preparing the student to the discussion of importance and advantage of hydro-electricity. Showing the diagram of model of hydroelectric power plant.	**OCTOBER**	2ND	01	TIE(2021) *Physics for secondary school s student's book form two*, Tanzania Institute of education , Dar es salaam ,Tanzania.	Hydroelectric power plant Reference book Internet	Groupwork	

	9.2 Solar energy	Discussing with students on sun as the primary source of energy on earth. Preparing the student to explain the conservation of solar energy into electric energy. Preparing the student to the discussion of construction of model of solar panel.			01		Solar panel Cell Photovoltaic (solar) Solar cell	Test	
	9.3 Wind energy	Preparing the student to explain wind as a source of energy Preparing the students to visit the place where wind energy is generated. Preparing the students to construct the model of a wind mill. Discussing with students on the application of wind mill in daily life.			01		Wind Feathers Cotton wool Wood Nails glue	Exercise	
	9.4 Sea wave energy	Discussing with the students on sea wave as a source of sustainable energy. Discussing with students on the construction of sea wave energy. Discussing with students on the application of sea wave energy in daily life.			02		Flip chart Marker pen Masking tape Internet	Homework	
	9.5 Geothermal energy	Preparing the students in groups to discuss the geothermal energy as the source of energy. Leading the student to brainstorm and explain the conversion of geothermal energy to electric energy. Discussing with students on the importance of geothermal energy in real life			01		Flip chart Marker pen Masking tape Internet Reference books	Classwork	
PREPARATION FOR FORM TWO NATIONAL ASSESSMENT (OCTOBER 3RD WEEK TO 4TH WEEK) **END OF YEAR BREAK (06/12/2024)**									