

PRESIDENT’S OFFICE, REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

TYPE OF WORK: SCHEME OF WORK COUNCIL: SONGEA DC; REGION: RUVUMA

Name of teacher: JACKSON ROBERT ISANGI

Year: 2025.

Class/Stream: FORM THREE

Name of School: MUHUKURU SECONDARY SCHOOL

Term: 1 & 2

Subject: PHYSICS

MAIN COMPETENCE	SPECIFIC COMPETENCE	TEACHING ACTIVITIES	MONTH	WEEK	PERIODS	REFERENCE	TEACHING/LEARNING TOOLS	ASSESSMENT TOOLS	REMARKS
APPLICATIONS OF VECTORS	Scalar and Vector quantities	- Prepare students to classify the physical quantities into scalars and vectors - To demonstrate on adding vectors by graphical method - Prepare students to find the resultant and direction of a vector by using triangle and parallelogram laws - Prepare students to state triangle and parallelogram laws of forces	JANUARY	2 ND	04	TIE(2022) <i>Physics for secondary schools student's book form three</i> , Tanzania Institute of education , Dar es salaam ,Tanzania .	Graph paper, ruler, mathematical set.	Exercise	
	Relative motion	- Prepare students to explain the concept of relative motion - Prepare students to find the relative velocities of two bodies by drawing or calculation - Prepare students to discuss the applications of relative motion in daily life.		3 RD	02		- Graph paper. - Ruler - Mathematic set	Homework	
	Resolution of Vectors	- Prepare students to explain the concept of resolution of vector			02		Charts of moving boat or air plane	Exercise	

		- Prepare them to resolve a vector into two mutually perpendicular directions. - Prepare students to solve problems of forces and velocities by resolving							
FRICTION	Concept of friction	- Prepare students to explain the concept of friction. - Prepare students to discuss the advantages and disadvantages of friction in daily life - Group students and Prepare them to discuss the way of reducing friction.		4 TH	02		Rollers, Grease, ball-bearing	Test	
	Type of Friction	- Prepare the students to discuss the types of friction forces - Prepare them to determine the limiting friction by using a black of wood.	FEBRUARY	1 ST	02	TIE(2022) Physics for secondary school's student's book form three, Tanzania Institute of education , Dar es salaam ,Tanzania.	- Block of wood - Rough surface - Spring balance - Pulley - String	Class work	
	Laws of friction	- Prepare students to state laws of friction - Prepare students to define the coefficient of static and dynamic friction.		2 ND	04			Group work	
LIGHT	Refraction of light	- Prepare students of define refraction of light using a stick immersed in a glass of water. - Demonstrate to students on finding the angle of incidents and angle of refraction.		3 RD	04		- Rectangular Glass block -Optical pins -Protractor - Drawing board. -Ruler. -White paper	Homework	
	Laws of Refraction of light.	- Prepare students to state laws of refraction of light.		4 TH	02			Exercise	

		- Prepare students to carry out an experiment to determine the refractive index of a material.							
	Critical angle and total internal reflection	- Prepare students to define critical angle and total internal refraction - Prepare students to determine critical angle and total internal reflection using semicircular glass block. - Discuss with students on refraction through triangular prism. - Demonstrate dispersion of white light. - Discuss on angle of deviation.	MARCH		02		- Semicircular glass block - Optical pins - Plane paper - Triangular prism	Test Class work	
				1 ST					
	Colours of Light	- Prepare students to determine angle of deviation and minimum deviation. - Explain the components of white light. - Discuss on the methods of recombination of colours of white light. - Demonstrate the appearance of coloured objects in white light.		2 ^{ND\} TO 3 RD	08		- Triangular glass block. - Optical pins. - White paper - Coloured objects - Coloured filters - White objects	Group work	

MID-TERM ASSESSMENT (4TH WEEK OF MARCH)

MID-TERM BREAK (28/03/2024 - 08/04/2024)

	Refraction of Light Lens	- Prepare student to identity primary, secondary and complementary colour of light. - Discuss with students about additive and subtractive colour mixing - Display the concave and convex lenses to students. - Explain the terms focal length, principle focus, principle axis and optical centre as applied to lenses.	APRIL	2 ND TO 3 RD	04	TIE(2022) <i>Physics for secondary school's student's book form three,</i> Tanzania Institute of education , Dar es salaam ,Tanzania.	- Blue, Green and Red filters. - White screen. - Concave and convex mirrors	Homework	
		- Prepare students to determine the focal length of a convex lens. - Discuss using ray diagrams how to locate the image formation by a lens. - Guide the students to determine the position, size and nature of the image formed by using lens formula $\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$ - Do more calculations as example					Convex lens Meter rule.	Homework	
OPTICAL INSTRUMENTS	Simple microscope	Prepare students to describe the - structure and mode of action of a simple microscope	MAY	1 ST	02		Simple microscope	Exercise	
	Compound Microscope	- Prepare the students to discuss the structure and mode of action of a compound microscope. - Prepare students to highlight the common uses of a compound microscope in daily life.					- Chart of compound microscope - Lenses screen, objects.	Homework Exercise	

	Astronomical telescope	- Prepare students to describe the structure and mode of action of an astronomical telescope. - Highlight the uses of an astronomical telescope.		2 ND	02	<i>student's book form three, Tanzania Institute of education , Dar es salaam ,Tanzania .</i>	- Lenses. - Chart of an astronomical telescope		
	Projection lantern	- Prepare students to discuss on the structure and mode of action of a projection lantern - Discuss, by demonstration, the uses of a projection lantern			02		- Projection lantern - Slides - -Chart of projection lantern	Test	
	Lens camera	- Prepare students to discuss on the structure and mode of action of a lens camera - Ask students to mention uses of a camera		3 RD	04		- Lens camera - Chart of lens - Camera	Class work	

TERMINAL ASSESSMENT (4TH WEEK OF MAY)
FIRST TERM BREAK (31/05/2024 - 01/07/2024)
UMISSETA SPORTS COMPETITIONS (16/06/2024 – 29/06/2024)

	The Human eye	- Describe the structure and mode of action of a human eye. - Prepare students to identify the defects of the human eye and how they can be connected - Ask students to write down the similarities of human eye and lens camera as a home work. - Do calculations on optical instruments.	JULY	1 ST	04	TIE(2022) <i>Physics for secondary schools student's book form three, Tanzania Institute</i>	- Model of human eye. - Optical diagram of lens camera		
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THERMAL EXPANSION	Thermal energy and thermal expansion of solids	- Prepare students to brainstorm on the concept of heat. - Highlight the sources of thermal energy in everyday life. - Prepare students of differentiate between heat and temperature. - Prepare students to demonstrate the expansion of solids using ball and ring experiment.		2 ND	04	of education , Dar es salaam ,Tanzania .	Ball and ring Source of heart	Homework	
		- Prepare students to discuss in groups the expansion and contraction of solids interns of the kinetic theory of matter. - Prepare students to develop the formula of linear expansion of solids - Highlight on applications of the expansion of solids.		3 RD	04			Exercise	
	Thermal expansion of liquid	- Prepare students to explain the apparent expansion of a liquid. - Demonstrate the volume expansion of liquids (different) - Prepare students to define volume expansivity of liquid - Prepare students, through question, how hear affect the density of liquids. - Verify the anomalous expansion of water, and explain the application of liquids in everyday life.		4 TH	04		Ball and ring Source of heart.	Homework	

	Thermal Expansion of gases	- Prepare students to discuss the concept of the thermal expansion of gases. - Prepare students to the statement of Charles’s law and Boyle’s law. - Lead students to derive the general gas law $pV = \text{constant}$	AUGUST	1 ST			- Graph paper - Model of a position engine	Exercise	
		- Prepare students by questions and answer technique to explain the concept of the absolute zero temperature and the absolute scale of temperature (Kelvin) - Prepare students to convert in degree centigrade to Kelvin. - Prepare students to convert in degree centigrade to Kelvin. - Prepare students to discuss the value of standard temperature and pressure.		2 ND				Test	
	TRANSFER OF THERMAL ENERGY	Conduction - Prepare students to brainstorm the concept of heat transfer -Prepare students to identify good and bad conductors of heat. - Prepare students to explain how heat losses due to conduction can be minimized. - Discuss with students the selective uses of good and bad conductors of heat in everyday life.		3 RD	04	TIE(2022) <i>Physics for secondary school s student’s book form three,</i> Tanzania Institute of education , Dar es salaam ,Tanzania.	- Brass rods - Wood a bar - Foam insulation. - Thick carpet - Curtains.	Class work	

MID-TERM ASSESSMENT (4TH WEEK OF AUGUST)
MID-TERM BREAK (30/08/2024 - 16/09/2024)

MEASUREMENT OF THERMAL ENERGY	Convection	- Prepare students to demonstrate convection currents in water using crystals of potassium permanganate. - Prepare students to discuss heat transfer in liquids and gases using the kinetic theory of matter. - Prepare students to minimize heat losses due to convection. - Prepare students to minimize heat losses due to convection.	SEPTEMBER	3 RD	04	TIE(2022) <i>Physics for secondary schools student's book three,</i> Tanzania Institute of education, Dar es salaam, Tanzania.	- Smoke - Potassium permanganate - Water - Diagram of sea and land breezes	Group work	
	Radiations	- Guide students to brainstorm how heat from the sun reaches the earth's surface - Prepare students to demonstrate that black surfaces are good absorbers and emitters of radiant heat. - Prepare students to discuss the way heat loss by radiation can be minimized by using thermos flask.			04		- Thermometer - Concave reflector - Lens - Thermos flask	Homework	
	Heat Capacity	- Discuss with the students on the factors which determine heat quantity of a substance. - Prepare students to the definition of the heat capacity of a substance. - Highlight the concept of specific heat capacity of a substance.		4 TH	04		- Heat - Thermometer - Beaker	Homework	

	Change of State	- Prepare students to demonstrate the behavior of particles in a solid, liquid and gases. - Prepare students to discuss the concept of melting/freezing points of a substance. - Prepare students to demonstrate the effect of the impurities of freezing point and boiling point of water.	OCTOBER	1 ST	08	- Naphthalene - thermometer - Test tube - Graph paper - ice - Salt - Water - Beaker	Exercise	
	Change of state Effect of pressure on boiling point and freezing point	- Prepare students to demonstrate the effect of pressure on the boiling point and freezing point of water. - Prepare students to demonstrate the effect of phenomenon of regulation. - Highlight the concept of boiling and evaporation in respect to the kinetic theory of matter				- Conical flask - Rubber band - Thermometer - Water - Ice block - Weight - Thin wire - Beaker	Test	
	Latent heat of fusion and vaporization	- Prepare students to discuss in groups the concept of the specific latent heat of fusion and vaporization of substance and its S.I. Units. - Prepare students to discuss the heating of water into vapour and plot the temperature time graph to deduce the latent heat of vaporization.		2 ND		-	Class work	
	Refrigerator	- Display a chart of a diagram of a refrigerator and lead students to discuss the parts of it. - Describe the mechanism of the refrigeration. - Prepare students to discuss the concept of evaporation of liquids				- Chart of diagram of refrigerator - Refrigerator - Ether spirit - Conical flask	Group work	

VAPOUR AND HUMIDITY	Vapour	- Prepare students to the factors affecting evaporation of liquid. - Help students to distinguish between saturated and unsaturated vapours.		3 RD	04			Homework	
	Saturated vapour pressure (S.V.P)	- Prepare students to discuss the increase of S.V.P of a volatile liquid due to temperature rise. - Prepare students to discuss the concept of humidity. - Prepare students to explain the process of dew formation and the factors that influence the formation of dew.						Exercise	
	Relative humidity	- Prepare students in determination of Relative Humidity of air using wet and dry bulb hydrometer. - Prepare students to discuss the effect of R.H. in everyday life.					- Wet and dry bulb - hygrometer.	Test	
CURRENT ELECTRICITY	Emf and P.D	- Prepare students to discuss the concept of emf and p.d. - Prepare students to state the units of emf and p.d. - Prepare students to measure the emf and p.d across a conductor - Prepare students to connect and analyse simple electric circuits	NOVEMBER	1 ST	04		Battery Wire Ammeter voltameter	Class work	

	Resistance to electric current	- Prepare students to discuss the concept of resistance - Prepare students to state the units of resistance - Prepare students to measure resistance - Prepare students to connect and analyse simple electric circuits		2 ND	08	TIE(2022) Physics for secondary schools student's book three, Tanzania Institute of education , Dar es salaam ,Tanzania	Battery Wire Ammeter Voltmeter resistor	Homework	
	Effects of an electric current	- Prepare students to discuss the effects of an electric circuit		3 RD	04		Battery Wire Ammeter Voltmeter resistor	Exercise Test	
	Electric installation	- Prepare students to discuss electric installation		4 TH	04		Battery Wire Ammeter Voltmeter resistor	Class work	
	Cells	- Prepare students to discuss electric cells			04		Battery Wire Ammeter Voltmeter resistor	Group work	

ANNUAL ASSESSMENT (1ST WEEK OF DECEMBER)
END OF YEAR BREAK (06/12/2024)