

# PHYSICS, F1, T1

## REFERENCES: Secondary Physics KLB

W K	LS N	TOPIC	SUB-TOPIC	OBJECTIVES;  By the end of the lesson, the learner should be able to	L/ACTIVITIES	L/T AIDS	REFERENCE	REMARKS
<b>1-4</b>				<b>REPORTING</b>				
3	1-2	Introduction To Physics	Physics as a science	Explain what the study of physics involves Relate physics to other subjects and to technology Identify career opportunities related to physics	Discussions of value and meaning of physics Drawing flow charts of the braches of physics Listing career opportunities related to physics	Chart on definition of physics Flow charts on branches of physics Chart on scientific method List of career related to physics	Secondary Physics students Book 1 (KLB) pages 1-6	
	3-4	Introduction To Physics	Basic laboratory rules	State and explain the basic laboratory rules	Discussions Explanation of rules	Chart on standard laboratory rules Pictures showing dangers of not observing laboratory rules	Secondary Physics students Book 1 (KLB) pages 6-7	
4	1-2	Measurements	Measuring length, area volume and mass	Define length, area, volume, mass and state their symbols and SI units	Conversions Measuring Experiment Counting Demonstrations	Meter rule Burette Pipette Measuring cylinder Weighing balance Rod Shadow	Secondary Physics students Book 1 (KLB) pages 8,22,14,33	
	3-4	Measurements	Measuring instruments	Use measuring instrument accurately Meter rule, tape measure, beam balance, stop clock, measuring cylinder, pipette and burette	Demonstrations Reading scales and correcting errors	Meter rule Pipettes Burettes Stop watches Tape measure Measuring cylinder, beam balance	Secondary Physics students Book 1 (KLB) pages 10,28	
5	1-2	Measurements	Measuring density	Determine and mentally explain the density of substances Work our density of mixtures Solve numerical problems involving density	Experiment Working out answers to problems	Measuring cylinder Mass weighing balance Density bottle	Secondary Physics students Book 1 (KLB) pages 35-48	
	3-4	Measurements	Measuring Time		Experiments with pendulum	Pendulum		

				Determine experimentally, the measurement of time	Timing events	Clock Watch	Secondary Physics students Book 1 (KLB) pages 46	
6	1-2	Forces	Types of forces	the end of the lesson, the learner should be able to Define force and state its SI units Describe types of forces State the effects of force	Discussions Explaining Demonstrations Identifying effects of forces	Charts of force String Elastic material Magnets Water Greece Oil spring balance	Secondary Physics students Book 1 (KLB) pages 49-68	
	3-4	Forces	Surface tension	Describe experiments to illustrate cohesion, adhesion and surface tension State the factors affecting surface tension, its consequence and importance	Discussions Demonstrations Explaining the effects of surface tensions	Funnel Water Wire loop Tap Soap/detergent	Secondary Physics students Book 1 (KLB) pages 63-70	
7	1-2	Forces	Mass and weight	State and explain the relationship between mass and weight Define scalar and vector magnitude	Demonstrations Discussions Problems solving on mass and weight	Beam balance Spring balance Sponge Store Polythene	Secondary Physics students Book 1 (KLB) pages 72-75	
	3-4	Forces	Measuring Force	Measure weight using spring balance Solve numerical problems on numerical forces	Discussions Experiments	Spring balance Chart on vectors and scalars	Teacher's Book 1 pages 17-15	
8	<b>MID –TERM BREAK</b>							
9	1-2	Forces	Pressure and force	Define pressure and state its SI units Determine pressure exerted by solids	Discussions Demonstrations Problem solving	Block of wood Spring balance Meter rule	Secondary Physics students Book 1 (KLB) pages 82-85	
	3-4	Pressure	Pressure in liquids	Investigate experimentally the factors that affect pressure in liquids (Fluids) Derive the formula for	Demonstrations Working out problems Discussions Experiments	Communication tubes Tin with holes at different heights Waters	Secondary Physics students Book 1 (KLB) pages 49-68	

				calculating pressure in fluids State the principle of transmission of pressure in fluids					
10	1-2	Pressure	Pressure in gases	Explain atmospheric pressure and its effects State and explain how pressure is transmitted in fluids	Demonstrations Explanation of pressure transmission in fluids discussions	Water/oil Syringe	Secondary Physics students Book 1 (KLB) pages 115-116,93-100		
	3-4	Pressure	Ganges and siphons	Describe the working of siphon and pressure gauge	Discussions Explanations Questions and answers	Barometer Bourdon gauge Syringes	Secondary Physics students Book 1 (KLB) pages 113,117		
11	1-2	Pressure	Application of pressure in liquids and gases	Explain the working of a hydraulic, braking system of vehicle Explain the working of mercury and forties barometer, bicycle pump and pressure gauges	Explaining the application of pressure in liquids and gases Class discussion on the principles of pressure in liquids Experiments	Chart showing the working of a hydraulic braking system Model of hydraulic brake system Barometer Bicycle pump	Secondary Physics students Book 1 (KLB) pages 96-112		
	3-4	Pressure	Revision on question on the topic pressure	Answer questions on pressure	Questions and answers	Questions in students book 1	Secondary Physics students Book 1 (KLB) pages 119-123		
12		<b>TOPICAL REVISION</b>							
13-14		<b>END OF TERM EXAMS</b>							

# PHYSICS, F1, T2

**REFERENCES:** Secondary Physics KLB,

W K	LS N	TOPIC	SUB-TOPIC	OBJECTIVES	L/ACTIVITIES	L/T AIDS	REFERENCE	REMARKS
1	1-4	<b>REPORTING AND REVISION OF LAST TERM'S EXAMS</b>						
2	1-2	Particulate Nature Of Matter	States of matter	to show that matter is made of up tiny particles	Demonstration Discussions of kinetic theory	Beaker Crystals Solutes Solvent	Secondary Physics students Book 1 (KLB) pages 124-128	
	3-4	Particulate Nature Of Matter	The Brownian motion	Give evidence that matter is made up of tiny particles Demonstrate the Brownian motion in liquids & gases Explain the arrangement of particles in matter Explain the state on matter in terms of particle movement	Experiments Observations Discussions	Chalk dust Transparent lid Pollen grains Lens Beaker Smoke cell Source of light	Secondary Physics students Book 1 (KLB) pages 127-130	
3	1-2	Particulate Nature Of Matter	Diffusion in liquid, gases and solids	Explain diffusion in gases/liquids and solids	Experiments Discussions	Promise gas Jars Potassium permanganate Solvent Hydrochloric acid Ammonia Glass tube cotton wool	Secondary Physics students Book 1 (KLB) pages 132-136	
	3-4	Particulate Nature Of Matter	Revision on Particulate nature of matter	: Answer questions in students Book 1	Discussion Demonstrations Asking questions Answering questions		Secondary Physics students Book 1 (KLB) pages 136-138	
	1-2	Thermal Expansion	Expansion of solids	Define temperature Describe the functionality of various thermometers Explain the expansion and contraction in solids Explain forces due to expansion and contraction	Experiments Demonstration Experiments	Meter rule Metal rods Materials that conduct or do not conduct heat Ball and ring apparatus Bar gauge	Secondary Physics students Book 1 (KLB) pages 139-144	
	3-4	Thermal Expansion	Applications of expansion in solids	Explain the application of	Demonstrations Discussions	Charts on the application of expansion	Secondary Physics students	

				expansion and contraction	Experiments	Rivets Bimetallic strips	Book 1 (KLB) pages 145,151-153	
4	1-2	Thermal Expansion	Expansion and contraction of liquid and gases	Explain the expansion of liquid Describe the anomalous expansion of water and its effect	Discussions Experiments Demonstrations	Water Spirit Alcohol thermometer	Secondary Physics students Book 1 (KLB) pages 149-155	
	3-4	Thermal Expansion	Thermometers	Explain the functioning of various thermometers Describe the functioning of various thermometers	Demonstrations Discussions	Liquid in glass thermometers Clinical thermometers Maximum and minimum thermometers	Secondary Physics students Book 1 (KLB) pages 155-161	
5	1-2	Thermal Expansion	Molecules and heat	Explain the effect of heat on the molecules of solid, liquid and gases	Discussions Experiments Demonstrations	Solids Liquids Air Source of heat Containers	Secondary Physics students	
	3-4	Thermal Expansion	Revision on thermal expansion	Answer questions involving thermal expansions	Questions answers	Set questions	Secondary Physics students Book 1 (KLB) pages 161-162	
6	1-2	Heat Transfer	Heat and temperature	define heat State the difference between heat and temperature	Definitions Discussions Experiments	Materials that conduct heat and materials that do not conduct heat	Secondary Physics students Book 1 (KLB) pages 163	
	3-4	Heat Transfer	Conduction of heat	State and explain modes of heat transfer Explain factors affecting conduction		Metal rods Source of heat Test tube Water Ice in gauge	Secondary Physics students Book 1 (KLB) pages 163-186	
7	1-2	Heat Transfer	Convection	Demonstrate convection in liquids Explain the working of hot water systems, car engine, cooling system and land sea breeze Explain the molecular	Experiments Discussion	Water Potassium permanganate Source of heat Smoke cell apparatus Chart on hot water system Car engine	Secondary Physics students Book 1 (KLB) pages 177-188	

				application of convection in fluids				
	3-4	Heat Transfer	Radiation	Compare absorption and emission of radiant heat Explain the working of solar concentrators, heat taps and solar heaters Explain the working of a thermos flask		Experiments Making comparisons Discussions Explanations	Secondary Physics students Book 1 (KLB) pages 187-198	
8	<b>MID- TERM BREAK</b>							
	1-2		REVISION	Answer questions on heat transfer	Questions Answers	Set questions	Past papers	
9	3-4	Recti-Linear Propagation And Reflection Of Light On Plane Surfaces	Propagation of light	Define opaque, translucent and transparent objects Describe the types of beams Perform and describe experiments to show rectilinear propagation of light	Discussions Experiments Descriptions Explanations	Opaque objects Glass Greased paper Card board Source of light Screens	Secondary Physics students Book 1 (KLB) pages 199-204	
10	1-2	Recti-Linear Propagation And Reflection Of Light On Plane Surfaces	The pin-hole camera	Explain the functions and principles involved in working of a pin-hole camera	Experiments Drawing Discussion	Pin hole camera Source of light (candle)	Secondary Physics students Book 1 (KLB) pages 211-219	
	3-4	Recti-Linear Propagation And Reflection Of Light On Plane Surfaces	Shadows	Describe the formation of shadows Describe the solar and linear eclipses	Experiments Discussions Demonstrations Explanations Descriptions	Opaque objects Chart of the eclipse of earth and moon Source of light Screen	Secondary Physics students Book 1 (KLB) pages 203-219	
11	1-2	Recti-Linear Propagation And Reflection Of Light On Plane Surfaces	Reflection of light on plane surfaces	Verify experimentally the law of reflection	Experiments Descriptions Explanations Discussions	Plane mirrors Pins White sheets of paper Soft boards	Secondary Physics students Book 1 (KLB) pages 222-228	

	3-4	Recti-Linear Propagation And Reflection Of Light On Plane Surfaces	Image formation	Locate images in plane mirrors and state their characteristics	Experiments Descriptions Discussions	Pins Boards Protractor Mirror	Secondary Physics students Book 1 (KLB) pages 228-230	
12	1-2	Recti-Linear Propagation And Reflection Of Light On Plane Surfaces	The application of plane mirrors	Explain the reflection of light on plane surfaces at an angle Explain the working of a periscope and kaleidoscope	Experiments Explanations Descriptions Discussions	Plane mirrors Objects such as candles Pipe Card board	Secondary Physics students Book 1 (KLB) pages 235-239	
	3-4	Recti-Linear Propagation And Reflection Of Light On Plane Surfaces	Revision	solve problems involving the propagation and reflection of light on plane surfaces	Problem solving Questions and answers Discussion	Set questions	Secondary Physics students Book 1 (KLB) pages 241-244	
13	<b>TOPICAL REVISION</b>							
14	<b>END OF TERM EXAMINATIONS</b>							

# PHYSICS, F1, T3

REFERENCES: Secondary Physics KLB,

W K	LS N	TOPIC	SUB-TOPIC	OBJECTIVES;  By the end of the lesson, the learner should be able to	L/ACTIVITIES	L/T AIDS	REFERENCE	REMARKS
<b>1</b>	<b>1-4</b>	<b>REPORTING AND REVISION OF LAST TERM'S EXAMS</b>						
<b>2</b>	<b>1-2</b>	Electrostatics	Charging materials by induction and contact	Explain the charging of materials by induction and contact Describe origin of charge State the law of charges	Demonstrations Discussions Experiments	Polythene bags Thrust Glass rod	Secondary Physics students Book 1 (KLB) pages 245-250	
	<b>3-4</b>	Electrostatics	Laws of charge	Describe the electrostatic charge Explain the electrostatic charge State types of charge	Experiments Discussion Observations	Rubber Piece of paper Glass Amber Silk material Fur Electroscope	Secondary Physics students Book 1 (KLB) pages 245-248	
<b>3</b>	<b>1-2</b>	Electrostatics	The leaf electroscope	State the unit of charges and construct leaf electroscope	Discussions Constructing an electroscope Experiment	Leaf electroscope Glass rod	Secondary Physics students Book 1 (KLB) pages 251-252	
	<b>3-4</b>	Electrostatics	Charging an electroscope by contact	charge an electroscope by contact	Demonstration Discussions Experiments	Electroscope Glass rod Ebonite rod	Secondary Physics students Book 1 (KLB) pages 249-250	
<b>4</b>	<b>1-2</b>	Electrostatics	Charging an electroscope by induction	charge an electroscope by induction	Demonstrations Discussions Experiments	Electroscope Glass rod Ebonite rod	Secondary Physics students Book 1 (KLB) pages 248-249	
	<b>3-4</b>	Electrostatics	Charging an electroscope by separation	charge an electroscope by separation	Discussions Experiments Descriptions	Rods of conductors and non-conductors Electroscope	Secondary Physics students Book 1 (KLB) pages 250-251	

						Tiles		
5	1-2	Electrostatics	Charging an electroscope by EHT source	Charge electroscope by an EHT source	Descriptions Experiments Discussions	Rods of conductors and non-conductors Electroscope Tiles	Teacher's Book 1 pages 29-32	
	3-4	Electrostatics	Revision	By the end of the lesson, the learner should be able to answer questions on electrostatics	Questions and answers	Chalkboard Text books	Secondary Physics students Book 1 (KLB) pages 259-260	
6	1-2	Cells And Simple Circuits	Sources of continuous current	By the end of the lesson, the learner should be able to state sources of continuous current	Experiments Discussions Demonstration	Cells Acids Fruits Solar panels Petroleum products	Secondary Physics students Book 1 (KLB) pages 261-265	
	3-4	Cells And Simple Circuits	Connecting an electric circuit	Draw and set up a simple electric circuit Identify circuit symbols	Identifying circuit symbols Discussions Demonstrations Experiments	Cells Wires Bulbs Charts on circuit symbols	Secondary Physics students Book 1 (KLB) pages 266-273	
7	1-2	Cells And Simple Circuit	Connecting and electric circuit	Define electric current Explain the working of a cell Connect cells in series and parallel Measure the effective e.m.f.	Measuring Demonstrations Discussions Experiments	Cells Connecting wires Bulbs	Secondary Physics students Book 1 (KLB) pages 241-273	
	3-4	Cells And Simple Circuits	The measuring of E.M.F	measure e.m.f.	Experiments Discussions Measuring Demonstrations	Ammeter Voltmeter Switch	Secondary Physics students Book 1 (KLB) pages 264	
8	1-2	Cells And Simple Circuit	Conductivity of materials	Investigate the electrical conductivity of materials	Calculating Testing Conductivity Experiments	Conductors Non-conductors	Secondary Physics students Book 1 (KLB) pages 273-275	
	3-4	Cells And Simple Circuits	Measuring current in a circuit	measure current in a circuit	Measuring Experiments Calculating	Voltmeter Ammeter Switch	Secondary Physics students Book 1 (KLB) pages 266-269	

9	1-2	Cells And Simple Circuits	Primary cells	Describe the working of primary cells Explain the defects of primary cells Explain how to care for a primary cell	Discussions Experiments Explaining the defects of primary cells	Primary cells	Secondary Physics students Book 1 (KLB) pages 276-280		
	3-4	Cells And Simple Circuits	Measuring e.m.f. in a primary cell	Measure e.m.f. in a primary	Experiments Discussions Demonstrations Measuring	Primary cells Voltmeter Switch	Secondary Physics students Book 1 (KLB) pages 276-280		
10	1-2	Cells And Simple Circuits	Secondary cells	Charge a secondary cell Discharge a secondary cell Take care of a secondary cell	Explanation on charging and maintenance of simple cells	Secondary cells	Secondary Physics students Book 1 (KLB) pages 280-284 Golden tips physics pages 140		
	3-4	Revision		Answer questions on cells Answer questions on circuits	Discussions Demonstrations Asking questions Answering questions		Secondary Physics students Book 1 (KLB) pages 287-288		
11		<b>END OF TERM EXAMS</b>							
12		<b>REPORTS MAKING AND CLOSURE</b>							