PHYSICS FORM 1 SCHEMES OF WORK – TERM 1								
WEEK	**LESSON**	**TOPIC**	**SUB-TOPIC**	**LEARNING OBJECTIVES**	**TEACHING/LEARNING ACTIVITIES**	**TEACHING/LEARNING RESOURCES**	**REFERENCES**	**REMARKS**
5	**1-2**	INTRODUCTION TO PHYSICS	Physics as a science	By the end of the lesson, the learner should be able to (i) Explain what the study of physics involves (ii) Relate physics to other subjects and to technology (iii) 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	• Comprehensive secondary physics Students Book 1 page 1-2 Teacher's Book 1 pages 1-3 • Secondary Physics students Book 1 (KLB) pages 1-6	
	3-4	INTRODUCTION TO PHYSICS	Basic laboratory rules	By the end of the lesson, the learner should be able to (i) State and explain the basic laboratory rules	• Discussions • Explanation of rules	• Chart on standard laboratory rules • Pictures showing dangers of not observing laboratory rules	• Comprehensive secondary physics Students Book 1 page 1-2 Teacher's Book 1 pages 1-3 • Secondary Physics students Book 1 (KLB) pages 6-7	
6	**1-2**	MEASUREMENTS	Measuring length, area volume and mass	By the end of the lesson, the learner should be able to: (i) 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	• Comprehensive secondary physics Students Book 1 page 4-8 Teacher's Book 1 pages 4-6 • Secondary Physics students Book 1 (KLB) pages 8,22,14,33 • Golden tips physics pages 1-7 • Principles of Physics(M.Nelkon) pages 4-9	

	3-4	MEASUREMENTS	Measuring instruments	By the end of the lesson, the learner should be able to: (i) Use measuring instrument accurately (ii) Metre 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	• Comprehensive secondary physics Students Book 1 page 6-7 Teacher's Book 1 pages 5-6 • Secondary Physics students Book 1 (KLB) pages 10,28 • Golden tips physics pages 2 • Principles of Physics(M.Nelkon) pages 7-9	
7	**1-2**	MEASUREMENTS	Measuring density	By the end of the lesson, the learner should be able to: (i) Determine and mentally explain the density of substances (ii) Work our density of mixtures (iii) Solve numerical problems involving density	• Experiment • Working out answers to problems	• Measuring cylinder • Mass weighing balance • Density bottle	• Comprehensive secondary physics Students Book 1 page 9-12 Teacher's Book 1 pages 4-6 • Secondary Physics students Book 1 (KLB) pages 35-48 • Golden tips physics pages 7,10	
	3-4	MEASUREMENTS	Measuring Time	By the end of the lesson, the learner should be able to (i) Determine experimentally, the measurement of time	• Experiments with pendulum • Timing events	• Pendulum • Clock • Watch	• Comprehensive secondary physics Students Book 1 page 12-15 Teacher's Book 1 pages 6 • Secondary Physics students Book 1 (KLB) pages 46-47 • Golden tips physics pages 8 • Principles of Physics(M.Nelkon) pages 23	

8	**1-2**	FORCES	Types of forces	By the end of the lesson, the learner should be able to (i) Define force and state its SI units (ii) Describe types of forces (iii) State the effects of force	• Discussions • Explaining • Demonstrations • Identifying effects of forces	• Charts of force • String • Elastic material • Magnets • Water • Greece • Oil spring balance	• Comprehensive secondary physics Students Book 1 page 61-19 Teacher's Book 1 pages 6-10 • Secondary Physics students Book 1 (KLB) pages 49-68 • Golden tips physics pages 11-12 • Principles of Physics(M.Nelkon) pages 64-65	
	3-4	FORCES	Surface tension	By the end of the lesson, the learner should be able to: (i) Describe experiments to illustrate cohesion, adhesion and surface tension (ii) 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	• Comprehensive secondary physics Students Book 1 page 19-22 Teacher's Book 1 pages 6-10 • Secondary Physics students Book 1 (KLB) pages 63-70 • Golden tips physics pages 12	
9	**1-2**	FORCES	Mass and weight	By the end of the lesson, the learner should be able to: (i) State and explain the relationship between mass and weight (ii) Define scalar and vector magnitude	• Demonstrations • Discussions • Problems solving on mass and weight	• Beam balance • Spring balance • Sponge • Store • Polythene	• Comprehensive secondary physics Students Book 1 page 17-22 Teacher's Book 1 pages 6-10 • Secondary Physics students Book 1 (KLB) pages 72-75 • Golden tips physics	

							pages 7 • Principles of Physics(M.Nelkon) pages 40	
	3-4	FORCES	Measuring Force	By the end of the lesson, the learner should be able to: (i) Measure weight using spring balance (ii) Solve numerical problems on numerical forces	• Discussions • Experiments	• Spring balance • Chart on vectors and scalars	• Comprehensive secondary physics Students Book 1 page 17-18 Teacher's Book 1 pages 17-15	
10	**1-2**	FORCES	Pressure and force	By the end of the lesson, the learner should be able to: (i) Define pressure and state its SI units (ii) Determine pressure exerted by solids	• Discussions • Demonstrations • Problem solving	• Block of wood • Spring balance • Meter rule	• Comprehensive secondary physics Students Book 1 page 6-10 Teacher's Book 1 pages 6-10 • Secondary Physics students Book 1 (KLB) pages 82-85 • Golden tips physics pages 44 • Principles of Physics(M.Nelkon) pages 119-121	
	3-4	PRESSURE	Pressure in liquids	By the end of the lesson, the learner should be able to (i) Investigate experimentally the factors that affect pressure in liquids (Fluids) (ii) Derive the formula for calculating pressure in fluids	• Demonstrations • Working out problems • Discussions • Experiments	• Communication tubes • Tin with holes at different heights • Waters	• Comprehensive secondary physics Students Book 1 page 27-30 Teacher's Book 1 pages 12-15 • Secondary Physics students Book 1 (KLB) pages 49-68 • Golden tips physics pages 44-45 • Principles of Physics(M.Nelkom)	

				(iii) State the principle of transmission of pressure in fluids			pages 121-124	
11	**1-2**	PRESSURE	Pressure in gases	By the end of the lesson, the learner should be able to (i) Explain atmospheric pressure and its effects (ii) State and explain how pressure is transmitted in fluids	• Demonstrations • Explanation of pressure transmission in fluids • discussions	• Water/oil • Syringe	• Comprehensive secondary physics Students Book 1 page 25-26,30-32 Teacher's Book 1 pages 12-15 • Secondary Physics students Book 1 (KLB) pages 115-116,93-100 • Golden tips physics pages 45-46 • Principles of Physics(M.Nelko) pages 124	
	3-4	PRESSURE	Ganges and siphons	By the end of the lesson, the learner should be able to (i) Describe the working of siphon and pressure gauge	• Discussions • Explanations • Questions and answers	• Barometer • Bourdon gauge • Syringes	• Comprehensive secondary physics Students Book 1 page 31-34 Teacher's Book 1 pages 13-15 • Secondary Physics students Book 1 (KLB) pages 113,117 • Golden tips physics pages 44-45 • Principles of Physics(M.Nelko) pages 133	
12	**1-2**	PRESSURE	Application of pressure in liquids and gases	By the end of the lesson, the learner should be able to (i) Explain the working of a hydraulic, braking system of	• 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	• Comprehensive secondary physics Students Book 1 page 30-39 Teacher's Book 1 pages 13-15 • Secondary Physics	

				vehicle (ii) Explain the working of mercury and forties barometer, bicycle pump and pressure gauges		• Bicycle pump	students Book 1 (KLB) pages 96-112 • Golden tips physics pages 46-47 • Principles of Physics(M.Nelko) pages 124-132	
	3-4	PRESSURE	Revision on question on the topic pressure	By the end of the lesson, the learner should be able to (i) Answer questions on pressure	• Questions and answers	Questions in students book 1	• Comprehensive secondary physics Students Book 1 page 39-41 Teacher's Book 1 pages 13-15 • Secondary Physics students Book 1 (KLB) pages 119-123 • Golden tips physics pages 54-55 • Principles of Physics(M.Nelko) pages 138-140	

PHYSICS FORM 1 SCHEMES OF WORK – TERM 2

WEEK	**LESSON**	**TOPIC**	**SUB-TOPIC**	**LEARNING OBJECTIVES**	**TEACHING/LEARNING ACTIVITIES**	**TEACHING/LEARNING RESOURCES**	**REFERENCES**	**REMARKS**
1	**1-2**	PARTICULATE NATURE OF MATTER	States of matter	By the end of the lesson, the learner should be able (i) to show that matter is made of up tiny particles	• Demonstration • Discussions of kinetic theory	• Beaker • Crystals • Solutes • Solvent	• Comprehensive secondary physics Students Book 1 page 42 Teacher's Book 1 pages 15-18 • Secondary Physics students Book 1 (KLB) pages 124-128 • Golden tips physics	

							pages 68 • Principles of Physics(M.Nelko) pages 142	
	3-4	PARTICULATE NATURE OF MATTER	The Brownian motion	By the end of the lesson, the learner should be able to: (i) Give evidence that matter is made up of tiny particles (ii) Demonstrate the Brownian motion in liquids & gases (iii) Explain the arrangement of particles in matter (iv) 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	• Comprehensive secondary physics Students Book 1 page 43-48 Teacher's Book 1 pages 15-18 • Secondary Physics students Book 1 (KLB) pages 127-130 • Golden tips physics pages 68 • Principles of Physics(M.Nelko) pages 148-150	
2	**1-2**	PARTICULATE NATURE OF MATTER	Diffusion in liquid, gases and solids	By the end of the lesson, the learner should be able to (i) Explain diffusion in gases/liquids and solids	• Experiments • Discussions	• Promise gas • Jars • Potassium permanganate • Solvent • Hydrochloric acid • Ammonia • Glass tube cotton wool	• Comprehensive secondary physics Students Book 1 page 46-49 Teacher's Book 1 pages 15-18 • Secondary Physics students Book 1 (KLB) pages 132-136 • Golden tips physics pages 69 • Principles of Physics(M.Nelko) pages 146-147	
	3-4	PARTICULATE NATURE OF MATTER	Revision on Particulate nature of matter	By the end of the lesson, the learner should be able to: (i) Answer	• Discussion • Demonstrations • Asking questions • Answering		• Secondary Physics students Book 1 (KLB) pages 136-138	

				questions in students Book 1	questions		• Golden tips physics pages 69-70 • Principles of Physics(M.Nelko) pages 164 • Past Papers	
	1-2	THERMAL EXPANSION	Expansion of solids	By the end of the lesson, the learner should be able to: (i) Define temperature (ii) Describe the functionally of various thermometers (iii) Explain the expansion and contraction in solids (iv) 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	• Comprehensive secondary physics Students Book 1 page 50-52 Teacher's Book 1 pages 18-21 • Secondary Physics students Book 1 (KLB) pages 139-144 • Golden tips physics pages 70-72 • Principles of Physics(M.Nelko) pages 168,175-176	
	3-4	THERMAL EXPANSION	Applications of expansion in solids	By the end of the lesson, the learner should be able to: (i) Explain the application of expansion and contraction	• Demonstrations • Discussions • Experiments	• Charts on the application of expansion • Rivets • Bimetallic strips	• Comprehensive secondary physics Students Book 1 page 52-54 Teacher's Book 1 pages 18-21 • Secondary Physics students Book 1 (KLB) pages 145,151-153 • Golden tips physics pages 73 • Principles of Physics(M.Nelko) pages 177-179	
4	**1-2**	THERMAL EXPANSION	Expansion and contraction of liquid and gases	By the end of the lesson, the learner should be able to: (i) Explain the expansion of	• Discussions • Experiments • Demonstrations	• Water • Spirit • Alcohol • thermometer	• Comprehensive secondary physics Students Book 1 page 54-56	

				liquid (ii) Describe the anomalous expansion of water and its effect			Teacher's Book 1 pages 18-21 • Secondary Physics students Book 1 (KLB) pages 149-155 • Golden tips physics pages 72-73 • Principles of Physics(M.Nelko) pages 182	
	3-4	THERMAL EXPANSION	Thermometers	By the end of the lesson, the learner should be able to: (i) Explain the functioning of various thermometers (ii) Describe the functioning of various thermometers	• Demonstrations • Discussions	• Liquid in glass thermometers • Clinical thermometers • Maximum and minimum thermometers	• Comprehensive secondary physics Students Book 1 page 56-59 Teacher's Book 1 pages 18-21 • Secondary Physics students Book 1 (KLB) pages 155-161 • Golden tips physics pages 70-72 • Principles of Physics(M.Nelko) pages 168-173	
5	**1-2**	THERMAL EXPANSION	Molecules and heat	By the end of the lesson, the learner should be able to (i) Explain the effect of heat on the molecules of solid, liquid and gases	• Discussions • Experiments • Demonstrations	• Solids • Liquids • Air • Source of heat • Containers	• Comprehensive secondary physics Students Book 1 page 60-61 Teacher's Book 1 pages 18-21 • Secondary Physics students Book 1 (KLB) pages 139-162	
	3-4	THERMAL EXPANSION	Revision on thermal expansion	By the end of the lesson, the learner should be able to: (i) Answer questions involving thermal expansions	• Questions • answers	• Set questions	• Comprehensive secondary physics Students Book 1 page 61-62 Teacher's Book 1 pages 21 • Secondary Physics	

							students Book 1 (KLB) pages 161-162 • Golden tips physics pages 85-86 • Principles of Physics(M.Nelko) pages 185	
6	**1-2**	HEAT TRANSFER	Heat and temperature	By the end of the lesson, the learner should be able to (i) define heat (ii) State the difference between heat and temperature	• Definitions • Discussions • Experiments	• Materials that conduct heat and materials that do not conduct heat	• Comprehensive secondary physics Students Book 1 page 63 Teacher's Book 1 pages 22-24 • Secondary Physics students Book 1 (KLB) pages 163 • Golden tips physics pages 774 • Principles of Physics(M.Nelko) pages 168	
	3-4	HEAT TRANSFER	Conduction of heat	By the end of the lesson, the learner should be able to: (i) State and explain modes of heat transfer (ii) Explain factors affecting conduction		• Metal rods • Source of heat • Test tube • Water • Ice in gauge	• Comprehensive secondary physics Students Book 1 page 63-67 Teacher's Book 1 pages 22-24 • Secondary Physics students Book 1 (KLB) pages 163-186 • Golden tips physics pages 74-77 • Principles of Physics(M.Nelko) pages 234-242	
7	**1-2**	HEAT TRANSFER	Convection	By the end of the lesson, the learner should be able to (i) Demonstrate convection in liquids	• Experiments • Discussion	• Water • Potassium permanganate • Source of heat • Smoke cell apparatus	• Comprehensive secondary physics Students Book 1 page 67-69 Teacher's Book 1 pages 23	

				(ii) Explain the working of hot water systems, car engine, cooling system and land sea breeze (iii) Explain the molecular application of convection in fluids		• Chart on hot water system • Car engine	• Secondary Physics students Book 1 (KLB) pages 177-188 • Principles of Physics(M.Nelko) pages 238-2433	
	3-4	HEAT TRANSFER	Radiation	By the end of the lesson, the learner should be able to (i) Compare absorption and emission of radiant heat (ii) Explain the working of solar concentrators, heat taps and solar heaters (iii) Explain the working of a thermos flask		• Experiments • Making comparisons • Discussions • Explanations	• Comprehensive secondary physics Students Book 1 page 70-74 Teacher's Book 1 pages 18-24 • Secondary Physics students Book 1 (KLB) pages 187-195 • Golden tips physics pages 75 • Principles of Physics(M.Nelko) pages 246	
8	**1-2**		REVISION	By the end of the lesson, the learner should be able to (i) Answer questions on heat transfer	• Questions • Answers	Set questions		
	3-4	RECTI-LINEAR PROPAGATION AND REFLECTION OF LIGHT ON PLANE SURFACES	Propagation of light	By the end of the lesson, the learner should be able to: (i) Define opaque, translucent and transparent objects (ii) Describe the	• Discussions • Experiments • Descriptions • Explanations	• Opaque objects • Glass • Greased paper • Card board • Source of light • Screens	• Comprehensive secondary physics Students Book 1 page 76-77 Teacher's Book 1 pages 25-27 • Secondary Physics students Book 1 (KLB) pages 199-204	

				types of beams (iii) Perform and describe experiments to show rectilinear propagation of light			• Golden tips physics pages 75 • Principles of Physics(M.Nelko) pages 251-252	
9	**1-2**	RECTI-LINEAR PROPAGATION AND REFLECTION OF LIGHT ON PLANE SURFACES	The pin-hole camera	By the end of the lesson, the learner should be able to: (i) Explain the functions and principles involved in working of a pin-hole camera	• Experiments • Drawing • Discussion	• Pin hole camera • Source of light (candle)	• Comprehensive secondary physics Students Book 1 page 77 Teacher's Book 1 pages 25-27 • Secondary Physics students Book 1 (KLB) pages 211-219 • Golden tips physics pages 99 • Principles of Physics(M.Nelko) pages 252-255	
	3-4	RECTI-LINEAR PROPAGATION AND REFLECTION OF LIGHT ON PLANE SURFACES	Shadows	By the end of the lesson, the learner should be able to: (i) Describe the formation of shadows (ii) 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	• Comprehensive secondary physics Students Book 1 page 78-79 Teacher's Book 1 pages 25-27 • Secondary Physics students Book 1 (KLB) pages 203-219 • Principles of Physics(M.Nelko) pages 254-257	
10	**1-2**	RECTI-LINEAR PROPAGATION AND REFLECTION OF LIGHT ON PLANE SURFACES	Reflection of light on plane surfaces	By the end of the lesson, the learner should be able to: (i) Verify experimentally the law of reflection	• Experiments • Descriptions • Explanations • Discussions	• Plane mirrors • Pins • White sheets of paper • Soft boards	• Comprehensive secondary physics Students Book 1 page 80-82 Teacher's Book 1 pages 25-27 • Secondary Physics	

							students Book 1 (KLB) pages 222-228 • Golden tips physics pages 100 • Principles of Physics(M.Nelko) pages 260	
	3-4	RECTI-LINEAR PROPAGATION AND REFLECTION OF LIGHT ON PLANE SURFACES	Image formation	By the end of the lesson, the learner should be able to: (i) Locate images in place mirrors and state their characteristics	• Experiments • Descriptions • Discussions	• Pins • Boards • Protractor • Mirror	• Comprehensive secondary physics Students Book 1 page 83-84 Teacher's Book 1 pages 25-27 • Secondary Physics students Book 1 (KLB) pages 228-230 • Golden tips physics pages 100-101 • Principles of Physics(M.Nelko) pages 264	
11	**1-2**	RECTI-LINEAR PROPAGATION AND REFLECTION OF LIGHT ON PLANE SURFACES	The application of plane mirrors	By the end of the lesson, the learner should be able to: (i) Explain the reflection of light on plane surfaces at an angle (ii) Explain the working of a periscope and kaleidoscope	• Experiments • Explanations • Descriptions • Discussions	• Plane mirrors • Objects such as candles • Pipe • Card board	• Comprehensive secondary physics Students Book 1 page 84-86 Teacher's Book 1 pages 25-27 • Secondary Physics students Book 1 (KLB) pages 235-240 • Golden tips physics pages 101	
	3-4	RECTI-LINEAR PROPAGATION AND REFLECTION OF LIGHT ON PLANE SURFACES	Revision	By the end of the lesson, the learner should be able to (i) solve problems involving the propagation and reflection	• Problem solving • Questions and answers • Discussion	Set questions	• Comprehensive secondary physics Students Book 1 page 87-88 Teacher's Book 1 pages 28-29 • Secondary Physics students Book 1	

				of light on plane surfaces			(KLB) pages 241-244 • Golden tips physics pages 101-102 • Principles of Physics(M.Nelko) pages 266-267	
12	**END OF TERM EXAMINATIONS**							

PHYSICS FORM 1 SCHEMES OF WORK – TERM 3

WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	**1-2**	ELECTROSTATICS	Charging materials by induction and contact	By the end of the lesson, the learner should be able to: (i) Explain the charging of materials by induction and contact (ii) Describe origin of charge (iii) State the law of charges	• Demonstrations • Discussions • Experiments	• Polythene bags • Thrust • Glass rod	• Comprehensive secondary physics Students Book 1 page 89 Teacher's Book 1 pages 29-32 • Secondary Physics students Book 1 (KLB) pages 245-250 • Golden tips physics pages 133-134 • Principles of Physics(M.Nelko) pages 264	
	3-4	ELECTROSTATICS	Laws of charge	By the end of the lesson the learner should be able to: (i) Describe the electrostatic charge (ii) Explain the electrostatic	• Experiments • Discussion • Observations	• Rubber • Piece of paper • Glass • Amber • Silk material • Fur • Electroscope	• Comprehensive secondary physics Students Book 1 page 89-91 Teacher's Book 1 pages 29-32 • Secondary Physics	

				charge (iii) State types of charge			students Book 1 (KLB) pages 245-248 • Golden tips physics pages 133 • Principles of Physics(M.Nelko) pages 509-510	
2	**1-2**	ELECTROSTATICS	The leaf electroscope	By the end of the lesson, the learner should be able to (i) State the unit of charges and construct leaf electroscope	• Discussions • Constructing an electroscope • Experiment	• Leaf electroscope • Glass rod	• Comprehensive secondary physics Students Book 1 page 91-92 Teacher's Book 1 pages 29-32 • Secondary Physics students Book 1 (KLB) pages 251-252 • Golden tips physics pages 133 • Principles of Physics(M.Nelko) pages 511	
	3-4	ELECTROSTATICS	Charging an electroscope by contract	By the end of the lesson, the learner should be able to (i) charge an electroscope by contact	• Demonstration • Discussions • Experiments	• Electroscope • Glass rod • Ebonite rod	• Comprehensive secondary physics Students Book 1 page 94-96 Teacher's Book 1 pages 29-32 • Secondary Physics students Book 1 (KLB) pages 249-250 • Golden tips physics pages 134 • Principles of Physics(M.Nelko) pages 512	
3	**1-2**	ELECTROSTATICS	Charging an electroscope by induction	By the end of the lesson, the learner should be able to	• Demonstrations • Discussions • Experiments	• Electroscope • Glass rod • Ebonite rod	• Comprehensive secondary physics Students Book 1	

				(i) charge an electroscope by induction			page 94-96 Teacher's Book 1 pages 29-32 • Secondary Physics students Book 1 (KLB) pages 248-249 • Principles of Physics(M.Nelko) pages 513-515	
	3-4	ELECTROSTATICS	Charging an electroscope by separation	By the end of the lesson, the learner should be able to (i) charge an electroscope by separation	• Discussions • Experiments • Descriptions	• Rods of conductors and no-conductors • Electroscope • Tiles	• Comprehensive secondary physics Students Book 1 page 96-97 Teacher's Book 1 pages 29-32 • Secondary Physics students Book 1 (KLB) pages 250-251	
4	**1-2**	ELECTROSTATICS	Charging an electroscope by EHT source	By the end of the lesson, the learner should be able to (i) Charge electroscope by an EHT source	• Descriptions • Experiments • Discussions	• Rods of conductors and non-conductors • Electroscope • Tiles	• Comprehensive secondary physics Students Book 1 page 97 Teacher's Book 1 pages 29-32	
	3-4	ELECTROSTATICS	Revision	By the end of the lesson, the learner should be able to (i) answer questions on electrostatics	• Questions and answers	Chalkboard Text books	• Secondary Physics students Book 1 (KLB) pages 259-260 • Principles of Physics(M.Nelko) pages 527-530 • Golden tips physics pages 138-139	
5	**1-2**	CELLS AND SIMPLE	Sources of continuous	By the end of the lesson, the learner should be able	• Experiments • Discussions	• Cells • Acids	• Comprehensive	

		CIRCUITS	current	to (i) state sources of continuous current	• Demonstration	• Fruits • Solar panels • Petroleum products	secondary physics Students Book 1 page 99-100 Teacher's Book 1 pages 34-37 • Secondary Physics students Book 1 (KLB) pages 261-265 • Golden tips physics pages 140 • Principles of Physics(M.Nelko) pages 408-409	
	3-4	CELLS AND SIMPLE CIRCUITS	Connecting an electric circuit	By the end of the lesson, the learner should be able to (i) Draw and set up a simple electric circuit (ii) Identify circuit symbols	• Identifying circuit symbols • Discussions • Demonstrations • Experiments	• Cells • Wires • Bulbs • Charts on circuit symbols	• Comprehensive secondary physics Students Book 1 page 99-101 Teacher's Book 1 pages 34-37 • Secondary Physics students Book 1 (KLB) pages 266-273 • Golden tips physics pages 140 • Principles of Physics(M.Nelko) pages 408-409	
6	**1-2**	CELLS AND SIMPLE CIRCUIT	Connecting and electric circuit	By the end of the lesson the learner should be able to (i) Define electric current (ii) Explain the working of a cell (iii) Connect cells in series and parallel (iv) Measure the effective e.m.f	• Measuring • Demonstrations • Discussions • Experiments	• Cells • Connecting wires • Bulbs	• Comprehensive secondary physics Students Book 1 page 100-101 Teacher's Book 1 pages 34-37 • Secondary Physics students Book 1 (KLB) pages 241-273 • Golden tips physics pages 140-143	

	3-4	CELLS AND SIMPLE CIRCUITS	The measuring of E.M.F	By the end of the lesson, the learner should be able to measure e.m.f	• Experiments • Discussions • Measuring • Demonstrations	• Ammeter • Voltmeter • Switch	• Comprehensive secondary physics Students Book 1 page 101-102 Teacher's Book 1 pages 34-37 • Secondary Physics students Book 1 (KLB) pages 264 • Golden tips physics pages 143 • Principles of Physics(M.Nelko) pages 409	
7	**1-2**	CELLS AND SIMPLE CIRCUIT	Conductivity of materials	By the end of the lesson, the learner should be able to (i) Investigate the electrical conductivity of materials	• Calculating • Testing • Conductivity • Experiments	• Conductors • Non-conductors	• Comprehensive secondary physics Students Book 1 page 101-103 Teacher's Book 1 pages 34-37 • Secondary Physics students Book 1 (KLB) pages 273-275 • Principles of Physics(M.Nelko) pages	
	3-4	CELLS AND SIMPLE CIRCUITS	Measuring current in a circuit	By the end of the lesson, the learner should be able to measure current in a circuit	• Measuring • Experiments • Calculating	• Voltmeter • Ammeter • Switch	• Comprehensive secondary physics Students Book 1 page 101-103 Teacher's Book 1 pages 34-37 • Secondary Physics students Book 1 (KLB) pages 266-269 • Golden tips physics pages 142	

8	**1-2**	CELLS AND SIMPLE CIRCUITS	Primary cells	By the end of the lesson, the learner should be able to: (i) Describe the working of primary cells (ii) Explain the defect s of primary cells (iii) Explain how to care for a primary cell	• Discussions • Experiments • Explaining the defects of primary cells	• Primary cells	• Comprehensive secondary physics Students Book 1 page 104-106 Teacher's Book 1 pages 34-37 • Secondary Physics students Book 1 (KLB) pages 276-280 • Principles of Physics(M.Nelko) pages 409-414	
	3-4	CELLS AND SIMPLE CIRCUITS	Measuring e.m.f in a primary cell	By the end of the lesson, the learner should be able to: (i) Measure e.m.f in a primary	• Experiments • Discussions • Demonstrations • Measuring	• Primary cells • Voltmeter • Switch	• Comprehensive secondary physics Students Book 1 page 106 Teacher's Book 1 pages 34-37 • Secondary Physics students Book 1 (KLB) pages 276-280 • Principles of Physics(M.Nelko) pages 409-414	
9	**1-2**	CELLS AND SIMPLE CIRCUITS	Secondary cells	By the end of the the lesson the learner should be able to: (i) Charge a secondary cell (ii) Discharge a secondary cell (iii) Take care of a secondary cell	• Explanation on charging and maintenance of simple cells	Secondary cells	• Comprehensive secondary physics Students Book 1 page 106-109 Teacher's Book 1 pages 34-37 • Secondary Physics students Book 1 (KLB) pages 280-284 • Golden tips physics pages 140	
	3-4	REVISION		By the end of the lesson, the learner should be able	• Discussions • Demonstrations		• Secondary Physics students Book 1	

				to (i) Answer questions on cells (ii) Answer questions on circuits	• Asking questions • Answering questions		(KLB) pages 287-288 • Golden tips physics pages 150-151 • Principles of Physics(M.Nelkon) pages 422-423	

PHYSICS FORM 2 SCHEMES OF WORK – TERM 1

WEEK	LESSON	TOPIC	SUB - TOPIC	OBJECTIVES	LEARNING/TEACHING ACTIVITIES	LEARNING/TEACHING RESOURCES	REFERENCES	REMARKS
1	**1-2**	MAGNETISM	Magnetism and magnetic materials	By the end of the lesson, the learner should be able to: (i) Identify magnetic and non-magnetic materials	• Observing attraction and repulsion of magnets • Identifying the test for magnetic materials • Describing natural and artificial materials • Carrying out experiments to identify magnetic and non-magnetic materials	• Magnets • Nails • Pins • Wood • Plastics • Tins • Spoons • Strings • Razor blade • Stand	• Comprehensive secondary physics students book 2 pages 1-2 • Comprehensive secondary physics teachers book 2 pages 1-5 • Secondary physics KLB students book 2 page • Principles of physics (M.Nelkom) pages 442-443 • Golden tips physics page 124	
	3-4	MAGNETISM	Properties of magnets and the law of magnetism	By the end of the lesson, the learner should be able to (i) Describe the properties of magnets (ii) State the logic law of magnetism	• Investigating properties of magnets • Stating the laws of magnetism	• Magnets • Charts on properties • Iron fillings • Strings • Stand	• Comprehensive secondary physics students book 2 pages 1-2 • Comprehensive secondary physics teachers book 2 pages 1-5 • Secondary physics KLB students book 2	

							page 1-4 • Principles of physics (M.Nelkom) pages 149 • Golden tips physics page 124	
2	**1-2**	MAGNETISM	The compass	By the end of the lesson, the learner should be able to (i) Construct simple compass	• Constructing a simple compass	• Pin/screw • Magnet • Cork • Glass top • Water trough • Piece of stiff paper • Razor blade • Glue	• Comprehensive secondary physics students book 2 pages 3-5 • Comprehensive secondary physics teachers book 2 pages 1-5 • Secondary physics KLB students book 2 page 5 • Principles of physics (M.Nelkom) pages 151 • Golden tips physics page 127	
	3-4	MAGNETISM	Magnetic field patterns	By the end of the lesson, the learner should be able to: (i) Describe magnet field patterns	• Plotting the field of a bar magnet using a compass and iron filings	• A compass • Iron fillings • Bar magnets • Can with lid • Card board • Sheet of papers	• Comprehensive secondary physics students book 2 pages 3-5 • Comprehensive secondary physics teachers book 2 pages 1-5 • Secondary physics KLB students book 2 page 6-7 • Principles of physics (M.Nelkom) pages 444 • Golden tips physics page 124-125	
3	**1-2**	MAGNETISM	Making magnets by induction and stroking	By the end of the lesson, the learner should be able to make magnets by :	• Demonstrating induction • Magnetizing a steel	• Bar magnets • Steel bars • Nails	• Comprehensive secondary physics students book 2	

				(i) Induction (ii) Stroking	bar by stroking single and double strikes • Defining hard and soft magnets	• Iron bars	pages 6-7 • Comprehensive secondary physics teachers book 2 pages 1-5 • Secondary physics KLB students book 2 page 19-22 • Principles of physics (M.Nelkom) pages 441-442 • Golden tips physics page 125-126	
	3-4	MAGNETISM	Making magnets by an electric current	By the end of the lesson, the learner should be able to: (i) Magnetize a material by an electric current	• Magnetizing a steel bar by an electric current	• Insulated wire • Battery cell • Steel bar	• Comprehensive secondary physics students book 2 pages 8 • Comprehensive secondary physics teachers book 2 pages 1-5 • Secondary physics KLB students book 2 page 23-24 • Principles of physics (M.Nelkom) pages 440 • Golden tips physics page 125-126	
4	**1-2**	MAGNETISM	Demagnetization and caring for magnets	By the end of the lesson, the learner should be able to (i) Describe the methods of demagnetizative (ii) Describe how to care for magnets	• Describing ways of demagnetizing of magnet • Explaining how to care for magnets • Carrying out experiments to demagnetize and care for magnets	• Battery/cell • Keepers • Bar magnets • Chart on demagnetization and care for magnets	• Comprehensive secondary physics students book 2 pages 8-9 • Comprehensive secondary physics teachers book 2 pages 1-5 • Secondary physics KLB students book 2 page 25-26 • Principles of physics	

							(M.Nelkom) pages 442 • Golden tips physics page 126-127	
	3-4	MAGNETISM	Uses of magnets	By the end of the lesson, the learner should be able to (i) Describe the uses of magnets	• Describing uses of magnets • Discussions • Using magnets	• Magnets • Metallic bars • Non-metallic bars	• Comprehensive secondary physics students book 2 pages 9 • Comprehensive secondary physics teachers book 2 pages 1-5 • Secondary physics KLB students book 2 page 27 • Principles of physics (M.Nelkom) pages • Golden tips physics page 127	
5	**1-2**	MAGNETISM	The domain theory of magnetism	By the end of the lesson, the learner should be able to: (i) Explain the domain theory	• Describing the domain theory of magnetism • Explaining the application of the domain theory of magnetism	• Charts on domain theory • Bar magnets • Iron fillings • Test tubes • Cork	• Comprehensive secondary physics students book 2 pages 9-10 • Comprehensive secondary physics teachers book 2 pages 1-5 • Secondary physics KLB students book 2 page 17 • Principles of physics (M.Nelkom) pages • Golden tips physics page 127	

	3-4	MAGNETISM	Revision	By the end of the lesson, the learner should be able to: (i) Answer questions on magnetism	• Questions and answers • Read more on magnetism	• Questions and project to the students book 2	• Comprehensive secondary physics students book 2 pages 11-12 • Comprehensive secondary physics teachers book 2 pages 5-6 • Secondary physics KLB students book 2 page 27 • Principles of physics (M.Nelkom) pages • Golden tips physics page 131	
6	**1-2**	MEASUREMENT II	The vernire calipers	By the end of the lesson, the learner should be able to (i) Measure length using vernire calipers	• Measuring length and diameter of various objects using a venire calipers	• Vernire calipers • Circular containers • Nail • needles	• Comprehensive secondary physics students book 2 pages 13-15 • Comprehensive secondary physics teachers book 2 pages 6-11 • Secondary physics KLB students book 2 page 31-36 • Principles of physics (M.Nelkom) pages • Golden tips physics page 3-4	
	3-4	MEASUREMENT II	The micrometer Screw gauge	By the end of the lesson, the learner should be able to: (i) Measure length using the	• Measuring small diameters and thickness using the screw gauge	• Micrometer screw gauge • Charts on how to read the scale of a screw gauge • Wires	• Comprehensive secondary physics students book 2 pages 15-17 • Comprehensive	

				micrometer screw gauge		• paper	secondary physics teachers book 2 pages 6-11 • Secondary physics KLB students book 2 page 36-40 • Principles of physics (M.Nelkom) pages • Golden tips physics page 4-5	
7	**1-2**	MEASUREMENT II	Decimal places, significant figures and standard form	By the end of the lesson, the learner should be able to: (i) State numbers in standard form, decimal places and significant figures	• Working out problems in decimals • Identifying the significant figures of a number • Writing numbers in standard form		• Comprehensive secondary physics students book 2 pages 17-19 • Comprehensive secondary physics teachers book 2 pages 6-11 • Secondary physics KLB students book 2 page 40-41 • Principles of physics (M.Nelkom) pages • Golden tips physics page 8-9	
	3-4	MEASUREMENT II	Determining the size of a molecule	By the end of the lesson, the learner should be able to: (i) Estimate the diameter of a drop of oil	• Measuring the diameter of an molecule	• Oil • Burette • Wire • Trough • Water • Floor or pollen grain • strings	• Comprehensive secondary physics students book 2 pages 6-11 • Comprehensive secondary physics teachers book 2 pages 19-21 • Secondary physics KLB students book 2	

							page 42-44 • Principles of physics (M.Nelkom) pages • Golden tips physics page 9	
8	**1-2**	MEASUREMENT II	Revision	By the end of the lesson the learner should be able to: (i) Answer questions involving measurement	• Problem solving • Identifying values on appropriate scale • Carrying out a project work	• Questions and project the students book 2 • Questions work sheet	• Comprehensive secondary physics students book 2 pages 21-23 • Comprehensive secondary physics teachers book 2 pages 11 • Secondary physics KLB students book 2 page 46-49 • Principles of physics (M.Nelkom) pages • Golden tips physics page 10	
	3-4	THE TURNING EFFECTS OF A FORCE	The moments of a force	By the end of the lesson, the learner should be able to: (i) Define moments of force about a point (ii) State the SI units of moment of force	• Defining moments of force • Calculating moment	• Meter rule • Knife edge • Strings • Spring balance • Masses	• Comprehensive secondary physics students book 2 pages 24 • Comprehensive secondary physics teachers book 2 pages 12-14 • Secondary physics KLB students book 2 page 50-52 • Principles of physics (M.Nelkom) pages • Golden tips physics page 13	

9	**1-2**	THE TURNING EFFECTS OF A FORCE	Principles of moments	By the end of the lesson, the learner should be able to: (i) State and verify the principle of moment	• Stating the principle of moment of a force • Calculating moments	• Meter rule • Knife edge • Strings • Spring balance • Masses	• Comprehensive secondary physics students book 2 pages 24 • Comprehensive secondary physics teachers book 2 pages 12-14 • Secondary physics KLB students book 2 page 53-56 • Principles of physics (M.Nelkom) pages • Golden tips physics page 14-15	
	3-4	THE TURNING EFFECTS OF A FORCE	Revision	By the end of the lesson, the learner should be able to (i) Solve problems involving moments	• Problems solving • Discussion of correct procedure • Questions and answers	• The exercise in the student book	• Comprehensive secondary physics students book 2 pages 27-28 • Comprehensive secondary physics teachers book 2 pages 13-14 • Secondary physics KLB students book 2 page 65-67 • Principles of physics (M.Nelkom) pages • Golden tips physics page 14-15	
10	**1-2**	TURNING EFFECTS OF A FORCE	Revision	By the end of the lesson, the learner should be able to: (i) Answer questions on the covered	• Answer questions in quiz or test form • Discussing answers	• Moderate a review questions • Marking schemes	• Comprehensive secondary physics students book 2 pages 1-28 • Comprehensive	

				topics			secondary physics teachers book 2 pages 1-14 • Secondary physics KLB students book 2 page 65-67 • Principles of physics (M.Nelkom) pages • Golden tips physics page 14-15	
	3-4	EQUILIBRIUM AND CENTRE OF GRAVITY	Equilibrium	By the end of the lesson, the learner should be able to: (i) Identify and explain the states of equilibrium	• Identifying the states of equilibrium • Explaining the conditions of equilibrium	• Objects with stable, unstable and neutral equilibrium	• Comprehensive secondary physics students book 2 pages 33 • Comprehensive secondary physics teachers book 2 pages 15-17 • Secondary physics KLB students book 2 page 17-18 • Principles of physics (M.Nelkom) pages • Golden tips physics page 15-16	
11	**1-2**	Equilibrium and centre of gravity	Centre of gravity	By the end of the lesson, the learner should be able to (i) Define centre of gravity (ii) Determine centre of gravity of lamina objects	• Defining centre of gravity • Determining centre of gravity of lamina objects	• Lamina objects • Plumb line • pencils	• Comprehensive secondary physics students book 2 pages 30 • Comprehensive secondary physics teachers book 2 pages 15-17 • Secondary physics KLB students book 2	

							page 68-76 • Principles of physics (M.Nelkom) pages • Golden tips physics page 15	
	3-4	Equilibrium and centre of gravity	Stability	By the end of the lesson, the learner should be able to: (i) Explain and state the factors affecting stability of an object	• Identifying the factors affecting stability • Explaining how equilibrium is maintained	• Chart showing factors of stability	• Comprehensive secondary physics students book 2 pages 31-33 • Comprehensive secondary physics teachers book 2 pages 15-17 • Secondary physics KLB students book 2 page 78 • Principles of physics (M.Nelkom) pages • Golden tips physics page 16	
12	**1-2**	Equilibrium and centre of gravity	Stability	By the end of the lesson, the learner should be able to: (i) Explain where stability is applicable	• Explaining the application of stability • Discussions	• Pictures and charts showing applications of stability	• Comprehensive secondary physics students book 2 pages 15-17 • Comprehensive secondary physics teachers book 2 pages 33 • Secondary physics KLB students book 2 page 79-80 • Principles of physics (M.Nelkom) pages • Golden tips physics page 16	

	3-4	Equilibrium and centre of gravity	Revision	By the end of the lesson, the learner should be able to: (i) Solve problems involving centre of gravity and moment of a force	• Problem solving • Discussion of solution • Questions and answers • Doing end of term examinations	• Moderate review questions • Marking schemes • Exercises in the students book 2	• Comprehensive secondary physics students book 2 pages 34 • Comprehensive secondary physics teachers book 2 pages 17 • Secondary physics KLB students book 2 page 80-82 • Principles of physics (M.Nelkom) pages • Golden tips physics page 16	

PHYSICS FORM 2 SCHEMES OF WORK – TERM 2

WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	**1-2**	REFLECTION AT CURVED SURFACES	Spherical mirrors	By the end of the lesson, the learner should be able to: (i) Describe concave, convex and parabolic reflectors	• Reflecting light at curved mirrors	• Concave mirrors • Convex mirrors • parabolic mirrors • Plane papers • Soft board, pins	• Comprehensive secondary physics students book 2 pages 35 • Comprehensive secondary physics teachers book 2 pages 18-22 • Secondary physics KLB students book 2 page 83	

							• Principles of physics (M.Nelkom) pages • Golden tips physics page 102	
	3-4	REFLECTION AT CURVED SURFACES	Parts of spherical mirrors and parabolic surfaces	By the end of the lesson, the learner should be able to: (i) Describe using any diagram, the principle axes, principle focus, centre of curvature, radius of curvature and related terms	• Describing parts of a curved mirrors • Observing reflection at spherical mirrors	• Variety of a curved mirrors • Graph papers • Rulers	• Comprehensive secondary physics students book 2 pages 35-37 • Comprehensive secondary physics teachers book 2 pages 18-22 • Secondary physics KLB students book 2 page 85-87 • Principles of physics (M.Nelkom) pages • Golden tips physics page 102	
2	**1-2**	REFLECTION AT CURVED SURFACES	Locating images in curved mirrors and parabolic surfaces	By the end of the lesson, the learner should be able to: (i) Use ray diagram to locate images formed by plane mirrors	• Drawing ray diagrams • Describing image characteristics	• Graph papers • Soft boards • Plane papers • Pins	• Comprehensive secondary physics students book 2 pages 37-38 • Comprehensive secondary physics teachers book 2 pages 18-22 • Secondary physics KLB students book 2 page 86 • Principles of physics (M.Nelkom) pages • Golden tips physics page 103 •	
	3-4	REFLECTION AT CURVED	Characteristics of images formed by	By the end of the lesson, the learner should be able	• Experimenting with concave	• Concave mirrors	• Comprehensive secondary physics	

		SURFACES	concave mirrors	to (i) Determine experimentally the characteristics of images formed by concave mirrors	mirrors • Describing the nature of images formed in concave mirror		students book 2 pages 39-40 • Comprehensive secondary physics teachers book 2 pages 19-22 • Secondary physics KLB students book 2 page 95-100 • Principles of physics (M.Nelkom) pages 439-440 • Golden tips physics page 103	
3	**1-2**	REFLECTION AT CURVED SURFACES	Applications of curved reflecting surfaces and magnification	By the end of the lesson, the learner should be able to (i) Define magnification (ii) State and explain the applications of curved mirrors (iii) State the defects of spherical mirrors	• Explaining magnification and formula in curved mirrors • Describing the uses of curved mirrors • Asking questions	• Curved mirrors • Exercise in students book 2	• Comprehensive secondary physics students book 2 pages 40-43 • Comprehensive secondary physics teachers book 2 pages 19-24 • Secondary physics KLB students book 2 page 104-120 • Principles of physics (M.Nelkom) pages • Golden tips physics page 105	
	3-4	THE MAGNETIC EFFECT OF ELECTRIC CURRENT	Magnetic field due to current	By the end of the lesson, the learner should be able to (i) Perform and describe an experiment to determine the direction of a magnetic field	• Observing and describing the direction of magnetic field round a current carrying a conductor • Carrying out experiments	• Compass • Wires • Battery • Ammeter • Compass needle • Cardboard • Screws • Iron fillings	• Comprehensive secondary physics students book 2 pages 44-47 • Comprehensive secondary physics teachers book 2	

				round a current carrying conductor			pages 25-28 • Secondary physics KLB students book 2 page 123-128 • Principles of physics (M.Nelkom) pages 439-440 • Golden tips physics page 128	
4	**1-2**	MAGNETIC EFFECT OF ELECTRIC CURRENT	Magnetic field pattern	By the end of the lesson, the learner should be able to: (i) Determining the magnetic field patterns on straight conductors and solenoid	• Constructing a simple electromagnetic	• Soft iron • Nails • Compass • Solenoid	• Comprehensive secondary physics students book 2 pages 47-48 • Comprehensive secondary physics teachers book 2 pages 25-28 • Secondary physics KLB students book 2 page 128 • Principles of physics (M.Nelkom) pages 439-440 • Golden tips physics page 129	
	3-4	MAGNETIC FIELD OF ELECTRIC CURRENT	Electromagnetic field pattern	By the end of the lesson, the learner should be able to: (i) Construct a simple electromagnet	• Constructing a simple electromagnets	• Solenoid • Soft iron • Nails compass	• Comprehensive secondary physics students book 2 pages 47-48 • Comprehensive secondary physics teachers book 2 pages 25-28 • Secondary physics KLB students book 2 page 143 • Principles of physics	

							(M.Nelkom) pages 439-440 • Golden tips physics page 130	
5	**1-2**	MAGNETIC EFFECTS OF ELECTRIC CURRENT	Strength of an electron-magnets	By the end of the lesson, the learner should be able to: (i) Explain the working of simple electronic motor and an electric bell	• Investigating the factors that affect the strength of an electromagnet	• Battery • Ammeter • Different magnetic materials	• Comprehensive secondary physics students book 2 pages 48-49 • Comprehensive secondary physics teachers book 2 pages 25-28 • Secondary physics KLB students book 2 page 131 • Principles of physics (M.Nelkom) pages • Golden tips physics page 130	
	3-4	MAGNETIC EFFECTS OF ELECTRIC CURRENT	Applications of electromagnets	By the end of the lesson, the learner should be able to: (i) Explain the working of a simple electric motor and an electric bell	• Discussing the use of an electric bell • Discussing the use of electric motor	• An electric bell • An electric motor	• Comprehensive secondary physics students book 2 pages 49-58 • Comprehensive secondary physics teachers book 2 pages 23-28 • Secondary physics KLB students book 2 page 143-151 • Principles of physics (M.Nelkom) pages • Golden tips physics page 130 •	
6	**1-2**	MAGNETIC EFFECTS OF	Construction of an electric bell	By the end of the lesson, the learner should be able	• Constructing an electric bell	• Materials for constructing an	• Comprehensive secondary physics	

		ELECTRIC CURRENT		to (i) Construct a simple electric bell		electric bell • Chart in electric bell	students book 2 pages 48-49 • Comprehensive secondary physics teachers book 2 pages 25-28 • Secondary physics KLB students book 2 page 131 • Principles of physics (M.Nelkom) pages • Golden tips physics page 131	
	3-4	MAGNETIC EFFECTS OF ELECTRIC CURRENT	Motor effect	By the end of the lesson, the learner should be able to (i) Experimentally determine direction of a force on a conductor carrying current in a magnetic field	• Experiments on motor effects • Flemings rules illustrated	• Magnets • Wires • Pattery • Pins	• Comprehensive secondary physics students book 2 pages 52-53 • Comprehensive secondary physics teachers book 2 pages 25-28 • Secondary physics KLB students book 2 page 150-151 • Principles of physics (M.Nelkom) pages • Golden tips physics page 130	
7	**1-2**	THE MAGNETIC EFFECT OF ELECTRIC CURRENT	Factors affecting force on a current carrying conductor	By the end of the lesson, the learner should be able to: (i) State and explain factors affecting force on a current carrying conductors in a magnetic fields	• Rotation between current magnetism and force	• Battery • Magnets • Wires • Ferromagnetic materials	• Comprehensive secondary physics students book 2 pages 49-51 • Comprehensive secondary physics teachers book 2 pages 27 • Secondary physics	

							KLB students book 2 page 131 • Principles of physics (M.Nelkom) pages • Golden tips physics page 130	
	3-4	THE MAGNETIC EFFECT OF ELECTRIC CURRENT	Construction of a simple electric motor	By the end of the lesson, the learner should be able to; (i) Construct a simple electric motor	• Constructing an electronic motor	• Source of current • Wire • magnets	• Comprehensive secondary physics students book 2 pages 49-51 • Comprehensive secondary physics teachers book 2 pages 25-28 • Secondary physics KLB students book 2 page 150-151 • Principles of physics (M.Nelkom) pages • Golden tips physics page 130	
8	**1-2**	THE MAGNETIC EFFECT OF ELECTRO-CURRENT	Revision	By the end of the lesson, the learner should be able to (i) Answer questions on magnetic effects of an electric current	• Questions and answers • Doing research/projects	Information and exercise in the students book 2	• Comprehensive secondary physics students book 2 pages 58-59 • Comprehensive secondary physics teachers book 2 pages 28-29 • Secondary physics KLB students book 2 page 152-153 • Principles of physics (M.Nelkom) pages • Golden tips physics page 131-132	

9	**1-2**	HOOK'S LAW	Hook's law	By the end of the lesson, the learner should be able to: (i) State and derive the Hook's law	• Defining Hook's law • Deriving Hook's law	• Wire springs • Masses • Spring balance • Graph paper	• Comprehensive secondary physics students book 2 pages 60-61 • Comprehensive secondary physics teachers book 2 pages 30-32 • Secondary physics KLB students book 2 page 158 • Principles of physics (M.Nelkom) pages 439-440 • Golden tips physics page 17	
	3-4	HOOK'S LAW	Spring constant	By the end of the lesson, the learner should be able to: (i) Determine spring constant of a given spring	• Determining the spring constant of a given spring • Suspending masses of springs	• Springs • Meter rule • Graph papers • Masses	• Comprehensive secondary physics students book 2 pages 61-63 • Comprehensive secondary physics teachers book 2 pages 30-31 • Secondary physics KLB students book 2 page 158-164 • Principles of physics (M.Nelkom) pages • Golden tips physics page 18	
10	**1-2**	HOOK'S LAW	The spring balance	By the end of the lesson, the learner should be able to: (i) Construct and calibrate a spring balance	• Making and calibrating a spring balance	• Wires • Wood • Meter rule • Masses	• Comprehensive secondary physics students book 2 pages 63-65 • Comprehensive	

							secondary physics teachers book 2 pages 30-32 • Secondary physics KLB students book 2 page 165 • Principles of physics (M.Nelkom) pages • Golden tips physics page 18	
	3-4	HOOK'S LAW	Revision	By the end of the lesson, the learner should be able to: (i) Solve problems on Hook's law	• Questions and answers • Problem solving	• Questions in the students book 2	• Comprehensive secondary physics students book 2 pages 65-66 • Comprehensive secondary physics teachers book 2 pages 32-33 • Secondary physics KLB students book 2 page 166-169 • Principles of physics (M.Nelkom) pages • Golden tips physics page 19-20	
11	**1-2**	WAVES I	Pulses and waves	By the end of the lesson, the learner should be able to (i) Describe the information of pulses and waves	• Describing the formation of pulses and waves	• Strings/ropes • Ripple frank • Water • Stones • Basins	• Comprehensive secondary physics students book 2 pages 67 • Comprehensive secondary physics teachers book 2 pages 34-35 • Secondary physics KLB students book 2 page 173-176 • Principles of physics	

							(M.Nelkom) pages • Golden tips physics page 87	
	3-4	WAVES I	Transverse and longitudinal pulse and waves	By the end of the lesson, the learner should be able to (i) Describe transverse and longitudinal pulses and waves	• Distinguishing between transverse and longitudinal pulses and waves • Forming pulse and waves	• Sources of transverse and longitudinal waves	• Comprehensive secondary physics students book 2 pages 67-69 • Comprehensive secondary physics teachers book 2 pages 34-35 • Secondary physics KLB students book 2 page 170-173 • Principles of physics (M.Nelkom) pages • Golden tips physics page 87	
12	**1-2**	WAVES I	Characteristics of waves	By the end of the lesson, the learner should be able to: (i) Define amplitude (a), the wave length (l) the frequency (f) and the period (T) of a wave	• Describing and defining the characteristics of waves	• Ripple tank • Rollers • Springs • Chart showing the characteristics of waves	• Comprehensive secondary physics students book 2 pages 69-71 • Comprehensive secondary physics teachers book 2 pages 34-35 • Secondary physics KLB students book 2 page 174-183 • Principles of physics (M.Nelkom) pages • Golden tips physics page 89	
	3-4	WAVES I	Revision	By the end of the lesson, the learner should be able to:	• Deriving the equation v=fx • Solving problems	• Set questions	• Comprehensive secondary physics	

				(i) Derive and solve problems using the formula v=fx	using the formula v=fx		students book 2 pages 70-71 • Comprehensive secondary physics teachers book 2 pages 335 • Secondary physics KLB students book 2 page 183 • Principles of physics (M.Nelkom) pages • Golden tips physics page 96	

PHYSICS FORM 2 SCHEMES OF WORK – TERM 3

WEEK	LESSON	TOPIC	SUB - TOPIC	OBJECTIVES	LEARNING/TEACHING ACTIVITIES	LEARNING/TEACHING RESOURCES	REFERENCES	REMARKS
1	**1-2**	EVALUATION	Revision	By the end of the lesson, the learner should be able to: (i) Get the correct responses to the holiday assignments	• Discussions on correct answers to holiday assignment	• Marking scheme for holiday assignment	• Comprehensive secondary physics students book 2 pages 69-71 • Comprehensive secondary physics teachers book 2 pages 34-35 • Secondary physics KLB students book 2 page 183-185 • Principles of physics (M.Nelkom) pages • Golden tips physics page 89	

	3-4	SOUNDS	Production of sounds	By the end of the lesson, the learner should be able to: (i) Demonstrate that sound is produced by vibrating objects	• Producing sound by vibrating strings, tins and bottles	• Strings • Tins • Bottles • Stick • Tuning forks • Nails • shakers	• Comprehensive secondary physics students book 2 pages 73 • Comprehensive secondary physics teachers book 2 pages 37-39 • Secondary physics KLB students book 2 page 186-189 • Principles of physics (M.Nelkom) pages • Golden tips physics page 93	
2	**1-2**	SOUNDS	Propagation of sounds	By the end of the the lesson, the learner should be able to: (i) Show that light does not travel in vacuum	• Demonstrating that sound requires a materials random for perpetration	• Bell jar • Vacuum pump • Electric bell	• Comprehensive secondary physics students book 2 pages 74 • Comprehensive secondary physics teachers book 2 pages 37-39 • Secondary physics KLB students book 2 page 190-193 • Principles of physics (M.Nelkom) pages • Golden tips physics page 94	
	3-4	SOUNDS	Nature of sound waves	By the end of the lesson, the learner should be able to: (i) Describe the nature of sound waves	• Describing and observing the characteristics of sound waves using the echo methods to find the speed of sound	• Open tube • Closed tube • Strings • bottles	• Comprehensive secondary physics students book 2 pages 74-76 • Comprehensive secondary physics	

					• Discussions		teachers book 2 pages 37-39 • Secondary physics KLB students book 2 page 194 • Principles of physics (M.Nelkom) pages • Golden tips physics page 93	
3	**1-2**	SOUND	Speed of sound	By the end of the lesson, the learner should be able to: (i) Determine the speed of sound in air by echo methods	• Investigating the factors determining the speed of sound	• Stop clock/watch • Chart on procedure for formulating the speed of sound	• Comprehensive secondary physics students book 2 pages 77-78 • Comprehensive secondary physics teachers book 2 pages 37-39 • Secondary physics KLB students book 2 page 190-193 • Principles of physics (M.Nelkom) pages • Golden tips physics page 95	
	3-4	SOUND	Factors affecting the speed of sound	By the end of the lesson, the learner should be able to: (i) State factors that affect the speed of sound	• Discussing how different aspects of nature affects the speed of sound	• Sources of sound • Solid • Water • Air	• Comprehensive secondary physics students book 2 pages 78-79 • Comprehensive secondary physics teachers book 2 pages 38-39 • Secondary physics KLB students book 2 page 193 • Principles of physics	

							(M.Nelkom) pages • Golden tips physics page 95	
4	**1-4**	SOUND	Revision	By the end of the lesson, the learner should be able to: (i) Solve problems involving sound	• Questions and answers • Carrying out projects	• Exercise in the students book 2	• Comprehensive secondary physics students book 2 pages 79-80 • Comprehensive secondary physics teachers book 2 pages 39 • Secondary physics KLB students book 2 page 198-203 • Principles of physics (M.Nelkom) pages • Golden tips physics page 96	
5	**1-2**	FLUID FLOW	Structure and turbulent flow	By the end of the lesson, the learner should be able to (i) Describe the streamline and turbulent flow	• Discussions • Observing and defining • Streamline and turbulent flow	• Water • Pipes of varying diameter • Sheet of paper	• Comprehensive secondary physics students book 2 pages 81 • Comprehensive secondary physics teachers book 2 pages 40-42 • Secondary physics KLB students book 2 page 204-208 • Principles of physics (M.Nelkom) pages • Golden tips physics page 48	
	3-4	FLUID FLOW	Equation of continuity	By the end of the lesson, the learner should be able to (i) Derive the	• Deriving the equation of continuity • Discussions	• pipes of varying diameter • charts on equation of	• Comprehensive secondary physics students book 2	

				equation of continuity		continuity	pages 82 • Comprehensive secondary physics teachers book 2 pages 40-42 • Secondary physics KLB students book 2 page 210-215 • Principles of physics (M.Nelkom) pages • Golden tips physics page 49	
6	**1-2**	FLUID FLOW	Bernoulli's effect	By the end of the lesson, the learner should be able to (i) Describe experiments to illustrate Benoullli's effect	• Illustrating Bernoulli's effect by experiments	• Paper funnel • Plane paper	• Comprehensive secondary physics students book 2 pages 83-84 • Comprehensive secondary physics teachers book 2 pages 40-42 • Secondary physics KLB students book 2 page 215-221 • Principles of physics (M.Nelkom) pages • Golden tips physics page 49	
	3-4	FLUID FLOW	Application of Bernoulli's effect	By the end of the lesson, the learner should be able to: (i) Describe where Bernoulli's effect is applied such as in the	• Describing the application of Bernoulli's principle	• Bunsen burner	• Comprehensive secondary physics students book 2 pages 84-87 • Comprehensive secondary physics teachers book 2	

				Bunsen burner, spray gun, carburetor, aerofoil and spinning ball			pages 40-42 • Secondary physics KLB students book 2 page 221-231 • Principles of physics (M.Nelkom) pages • Golden tips physics page 49-50	
7	**1-4**	FLUID FLOW	Revision	By the end of the lesson the learner should be able to: (i) Solve problems involving the equilibrium of continuity	• Answering the questions • Discussing answers to assignment	• Exercise in the students' book 2 • assignment	• Comprehensive secondary physics students book 2 pages 88 • Comprehensive secondary physics teachers book 2 pages 42 • Secondary physics KLB students book 2 page 231-234 • Principles of physics (M.Nelkom) pages • Golden tips physics page 50	

PHYSICS FORM 3 SCHEMES OF WORK – TERM 1

WEEK	LESSO	TOPIC	SUB - TOPIC	OBJECTIVES	LEARNING/TEACHING ACTIVITIES	LEARNING/TEACHING RESOURCES	REFERENCES	REMARKS

	N							
1	**1-3**	LINEAR MOTION	Introduction of linear motion	By the end of the lesson, the learner should be able to: (i) Define distance, displacement, speed, velocity and acceleration	• Defining distance, speed, displacement, velocity and acceleration	• Charts on motion • Trolleys • Inclined planes	• Comprehensive secondary physics students book 3 pages 1 • Comprehensive secondary physics teachers book 3 pages 1-3 • Secondary physics KLB students book 2 page 1-7 • Physics made easier vol. 2 pages 1-2 • Secondary physics (M.N Patel) pages 5-8	
	4-5	LINEAR MOTION	Determining velocity	By the end of the lesson, the learner should be able to: (i) Describe experiments to determine velocity	• Describing experiments on velocity	• Trolleys • Stop watches • Graph paper • Ticker timer	• Comprehensive secondary physics students book 3 pages 2-3 • Comprehensive secondary physics teachers book 3 pages 1-3 • Secondary physics KLB students book 3 page 4-6 • Physics made easier vol. 2 pages 2 • Secondary physics (M.N Patel) pages 9-14	
2	**1-2**	LINEAR MOTION	Motion time graphs	By the end of the lesson, the learner should be able to (i) Plot and	• Plotting and interpreting motion-time graphs	• Appropriate charts on velocity time and distance graphs	• Comprehensive secondary physics students book 3	

				explain motion time graphs		• Graph paper • Data showing different distance, velocity and time	pages 5-9 • Comprehensive secondary physics teachers book 3 pages 8-18 • Secondary physics KLB students book 3 page 4-6 • Physics made easier vol. 2 pages 3-5 • Secondary physics (M.N Patel) pages 21-25	
	3-4	LINEAR MOTION	Measuring speed, velocity and acceleration	By the end of the lesson, the learner should be able to: (i) Describe experiments to measure speed, velocity and acceleration	• Describing experiments to measure speed, velocity and acceleration • Solving problems	• Trolleys • Tapes • Ticker timer • Graphs	• Comprehensive secondary physics students book 3 pages 2-3 • Comprehensive secondary physics teachers book 3 pages 1-3 • Secondary physics KLB students book 3 page 18-26 • Physics made easier vol. 2 pages 1-5 • Secondary physics (M.N Patel) pages 9-14	
	5	LINEAR MOTION	Acceleration	By the end of the lesson, the learner should be able to: (i) Describe acceleration	• Describing acceleration • Problem solving	• Charts on acceleration • Graphs • Data on velocity and time	• Comprehensive secondary physics students book 3 pages 2-3 • Comprehensive secondary physics teachers book 3 pages 1-3	

							• Secondary physics KLB students book 3 page 7-8 • Physics made easier vol. 2 pages 1-5 • Secondary physics (M.N Patel) pages 7-8	
3	**1-2**	LINEAR MOTION	Measuring speed, velocity and acceleration	By the end of the lesson, the learner should be able to: (i) Describe experiments to determine and measure speed, velocity and acceleration	• Describing experiments to determine and measure speed velocity & acceleration	• Graphs • Ticker timer • Tapes • Graphs	• Comprehensive secondary physics students book 3 pages 2-3 • Comprehensive secondary physics teachers book 3 pages 1-3 • Secondary physics KLB students book 3 page 18-25 • Physics made easier vol. 2 pages 1-5 • Secondary physics (M.N Patel) pages 9-14	
	3-4	LINEAR MOTION	Equations of motion	By the end of the lesson, the learner should be able to: (i) Derive and apply the equations of uniform acceleration	• Stating the equations of motion • Deriving the equations of motion • Applying the equations of motion	• Graphs • Worked examples on motion	• Comprehensive secondary physics students book 3 pages 7-9 • Comprehensive secondary physics teachers book 3 pages3-5 • Secondary physics KLB students book 3 page 26-29 • Physics made easier vol. 2 pages 6-7	

							• Secondary physics (M.N Patel) pages 25-27	
	5	LINEAR MOTION	Revision	By the end of the lesson, the learner should be able to: (i) Solve problems involving uniform acceleration	• Questions and answers • Exercises	• Test paper • Marking scheme	• Comprehensive secondary physics students book 3 pages 9-10 • Comprehensive secondary physics teachers book 3 pages4-5 • Secondary physics KLB students book 3 page 37-39 • Physics made easier vol. 2 pages 12-14 • Secondary physics (M.N Patel) pages 30-36	
4	**1-5**	LINEAR MOTION	Acceleration due to gravity	By the end of the lesson, the learner should be able to; (i) Determine acceleration due to gravity by free-fall and simple pendulum	• Determining acceleration by tree-fall and pendulum method	• Pendulum bob • String • Stop watches • Ticker-timer	• Comprehensive secondary physics students book 3 pages 3-5 • Comprehensive secondary physics teachers book 3 pages1-3 • Secondary physics KLB students book 3 page 29-36 • Physics made easier vol. 2 pages 7-10 • Secondary physics (M.N Patel) pages 15-21	
5	**1-2**	REFRACTION OF LIGHT	The meaning of refraction	By the end of the lesson, the learner should be able	• Experiments demonstrating	• Beakers • Water	• Comprehensive secondary physics	

				to (i) Describe simple experiments to illustrate refraction of light	refraction of light	• Stick or glass rod • Basins • Coins • Glass blocks • Pin	students book 3 pages 11-12 • Comprehensive secondary physics teachers book 3 pages6-9 • Secondary physics KLB students book 3 page 41-46 • Physics made easier vol. 2 pages 15-16 • Secondary physics (M.N Patel) pages 37-40	
	3-5	REFRACTION OF LIGHT	Laws of refraction	By the end of the lesson, the learner should be able to: (i) State the laws of refraction and define refractive index	• Discovering Snell's law of refraction through experiments • Defining refractive index • Stating the laws of refraction	• Glass blocks • Pins • Soft board • Plain paper • Geometric set	• Comprehensive secondary physics students book 3 pages 12-14 • Comprehensive secondary physics teachers book 3 pages6-9 • Secondary physics KLB students book 3 page 47-61 • Physics made easier vol. 2 pages 16-18 • Secondary physics (M.N Patel) pages 40-42	
6	**1-2**	REFRACTION OF LIGHT	Refractive index	By the end of the lesson, the learner should be able to: (i) Determine the refractive index of a given substance	• Experiments to determine the refractive index of rates and glass by real and apparent depth method	• Water • Pins • Plain papers • Coins • Beakers	• Comprehensive secondary physics students book 3 pages 14-15 • Comprehensive secondary physics teachers book 3 pages6-9	

							• Secondary physics KLB students book 3 page 61-68 • Physics made easier vol. 2 pages 17-19 • Secondary physics (M.N Patel) pages 42-45	
	3-5	REFRACTION OF LIGHT	• Total material reflection and its effect • Critical angle	By the end of the lesson, the learner should be able to (i) Describe an experiment to explain the total internal reflection and its effects (ii) Define critical angle	• Experiments to explain the total internal reflection and its effects • Defining critical angle • Observations and discussions on critical angle • Total internal reflection	• Glass blocks • Soft boards • Pins • Geometrical set • Source of light	• Comprehensive secondary physics students book 3 pages 16-17 • Comprehensive secondary physics teachers book 3 pages6-9 • Secondary physics KLB students book 3 page 68-76 • Physics made easier vol. 2 pages 19-20 • Secondary physics (M.N Patel) pages 46-49	
7	**1-3**	REFRACTION OF LIGHT	Application of a total internal reflection in a prism periscope, optical fibre	By the end of the lesson, the learner should be able to: (i) Explain the working of a prisms and optical fibres among other applications	• Making a periscope • Discussion on working of an optical fibre	• Charts on total internal reflection and applications	• Comprehensive secondary physics students book 3 pages 18-19 • Comprehensive secondary physics teachers book 3 pages6-9 • Secondary physics KLB students book 3 page 76-79 • Physics made easier vol. 2 pages 20-23 • Secondary physics (M.N Patel) pages	

							49-52	
	4-5	REFRACTION OF LIGHT	Dispersion of white light and recombination of colors of the spectrum	By the end of the lesson, the learner should be able to: (i) Describe an experiment to illustrate the dispersion of light	• Experiment on dispersion of light using glass prisms	• Triangular glass prisms • Source of light • Screen	• Comprehensive secondary physics students book 3 pages 19-20 • Comprehensive secondary physics teachers book 3 pages6-9 • Secondary physics KLB students book 3 page 79-89 • Physics made easier vol. 2 pages 21-22 • Secondary physics (M.N Patel) pages 45-46	
8	**1-5**	REFRACTION OF LIGHT	Problems of refractive index and critical angle	By the end of the lesson, the learner should be able to: (i) Solve problems involving the refractive index and critical angle	• Discussions and problem solving in critical angle using the formulae sin $C=^{i}/n$ and $n=\sin {}^{i}/\sin r$	Review questions Past exams Examples in the topic	• Comprehensive secondary physics students book 3 pages 21-22 • Comprehensive secondary physics teachers book 3 pages6-9 • Secondary physics KLB students book 3 page 82-86 • Physics made easier vol. 2 pages 24-25 • Secondary physics (M.N Patel) pages 53-55	
9	**1-5**	NEWTON'S LAW'S OF MOTION	Newton's Laws of motion	By the end of the lesson, the learner should be able to (i) State the Newton's laws	• Discussion on Newton's laws • Experiments to illustrate Newton's laws of motion	• Inclined plane • Trolley • Marbles • Spring balances	• Comprehensive secondary physics students book 3 pages 23-27 • Comprehensive	

				(ii) State and explain the significance of a Newton's laws of motion (iii) Describe simple experiments to illustrate inertion of motion			• Secondary physics teachers book 3 pages 13-17 • Secondary physics KLB students book 3 page 87-102 • Physics made easier vol. 2 pages 26-27 • Secondary physics (M.N Patel) pages 56-65	
10	**1-3**	NEWTON'S LAW OF MOTION	• Conservation of linear momentum • Elastic collision • Inelastic collision • Recoil velocity	By the end of the lesson, the leaner should be able to: (i) State the law of conservation of momentum (ii) Define elastic and inelastic collisions (iii) Determine recoil velocity	• Discussions of the laws of conservation of linear momentum • Determining recoil velocity	• Marbles • Trolleys • Meter rules • Stop watches • Plasticine	• Comprehensive secondary physics students book 3 pages 28-30 • Comprehensive secondary physics teachers book 3 pages 13-17 • Secondary physics KLB students book 3 page 103-108 • Physics made easier vol. 2 pages 28-30 • Secondary physics (M.N Patel) pages 66-72	
	4-5	NEWTON'S LAW OF MOTION	Friction	By the end of the lesson, the learner should be able to: (i) Define friction (ii) State and explain types of frictions (iii) Describe and experiment to illustrate friction and state the applications of	• Defining friction • Stating and explaining types of frictions • Describing an experiment to illustrate friction • Stating the applications of the frictions • Stating laws of friction	• Block of wood • Spring balance • Pulley • Flat surface	• Comprehensive secondary physics students book 3 pages 28-39 • Comprehensive secondary physics teachers book 3 pages 13-17 • Secondary physics KLB students book 3 page 109-115	

				(iv) friction State laws of friction			• Physics made easier vol. 2 pages 30-31 • Secondary physics (M.N Patel) pages 73-76	
11	**1-5**	NEWTON'S LAWS OF MOTION	Viscosity	By the end of the lesson, the leaner should be able to: (i) Define viscosity (ii) Explain the concept of terminal velocity	• Distinguishing viscous from- non-viscous liquids • Defining viscous liquids • Defining and explaining terminal viscosity	• Glycerin • Paraffin • Water • Ball bearings • Stat watches • Meter rule • Measuring cylinders	• Comprehensive secondary physics students book 3 pages33 • Comprehensive secondary physics teachers book 3 pages 13-17 • Secondary physics KLB students book 3 page 115-119 • Physics made easier vol. 2 pages 31-33 • Secondary physics (M.N Patel) pages 76-78	
12	**1-5**	NEWTON'S LAWS OF MOTION	Revision	By the end of the lesson, the learner should be able to: (i) Solve problems on Newton's law of motion and law of conservation of linear momentum	• Discussions and problem solving	• Quizzes • Assignment • Review questions	• Comprehensive secondary physics students book 3 pages34-35 • Comprehensive secondary physics teachers book 3 pages 17-18 • Secondary physics KLB students book 3 page 119-120 • Physics made easier vol. 2 pages 34-38 • Secondary physics (M.N Patel) pages 78-82	
END OF TERM ONE EXAMINATION								

PHYSICS FORM 3 SCHEMES OF WORK – TERM 2

WEEK	LESSON	TOPIC	SUB - TOPIC	OBJECTIVES	LEARNING/TEACHING ACTIVITIES	LEARNING/TEACHING RESOURCES	REFERENCES	REMARKS
2	**1-3**	ENERGY, WORK, POWER AND MACHINES	Energy	By the end of the lesson, the learner should be able to (i) Define energy (ii) Describe various forms of energy	• Defining energy • Stating the forms of energy • Identifying and describing energy transformation	• Chart on the forms of energy and transformation	• Comprehensive secondary physics students book 3 pages34-35 • Comprehensive secondary physics teachers book 3 pages 17-18 • Secondary physics KLB students book 3 page 121,122-125 • Physics made easier vol. 2 pages 39 • Secondary physics (M.N Patel) pages 83-86	
	4-5	ENERGY, WORK, POWER AND MACHINES	Sources of energy • Renewable • Non-renewable	By the end of the lesson, the learner should be able to: (i) Describe renewable and non-renewable sources of energy	• Discussion on the sources of energy • Descriptions of renewable and non-renewable sources of energy	Chart on the sources of energy	• Comprehensive secondary physics students book 3 pages41 • Comprehensive secondary physics teachers book 3 pages 19-21 • Secondary physics KLB students book 3 page 121,122-125 • Physics made easier	

							vol. 2 pages 39 • Secondary physics (M.N Patel) pages 83,85-86	
3	**1-3**	ENERGY, WORK, POWER AND MACHINES	The law of conservation of energy	By the end of the lesson, the learner should be able to: (i) State the laws of conservation of energy (ii) Explain the applications of the laws of conservations of energy	• Discussion on the law of conservation of energy	• Chart on the laws of conservation of energy	• Comprehensive secondary physics students book 3 pages 41-42 • Comprehensive secondary physics teachers book 3 pages 20-21 • Secondary physics KLB students book 3 page 132-134 • Physics made easier vol. 2 pages 39 • Secondary physics (M.N Patel) pages 86-88	
	4-5	ENERGY, WORK, POWER AND MACHINES	Work	By the end of the lesson, the learner should be able to: (i) Define work (ii) Explain the concept of work and energy	• Experiment on work done by moving objects through a distance • Problem solving	• Masses • Wooden block • Spring balance	• Comprehensive secondary physics students book 3 pages 42-43 • Comprehensive secondary physics teachers book 3 pages 18-22 • Secondary physics KLB students book 3 page 125-132 • Physics made easier vol. 2 pages 39-40 • Secondary physics (M.N Patel) pages 88-90	
	1-2	ENERGY, WORK, POWER	• Kinetic energy	By the end of the lesson, the learner should be able	• Discussion and the meanings of kinetic	• Object that can be lifted	• Comprehensive secondary physics	

		AND MACHINES	• Potential energy • power	to (i) define power (ii) explain the meaning of power potential and kinetic energies (iii) distinguish between kinetic energy and potential energy	energy and potential energy • Defining power • Distinguishing between kinetic energy and potential energy	• Spring balance	students book 3 pages 43-45 • Comprehensive secondary physics teachers book 3 pages 18-22 • Secondary physics KLB students book 3 page 126-132,134-136 • Physics made easier vol. 2 pages 40-41 • Secondary physics (M.N Patel) pages 90-96	
	3-4	ENERGY, WORK, POWER AND MACHINES	Simple machines	By the end of the lesson, the bearer should be able to: (i) State the mechanical advantage (ii) State the velocity ratio (V.R) of different machines	• Discussions on the M.A and V.R of different machines • Experiments in illustrate M.A and V.R of machines • Problem solving	• Levers • Pulleys • Inclined planes • Strings • Masses	• Comprehensive secondary physics students book 3 pages 41-45 • Comprehensive secondary physics teachers book 3 pages 18-22 • Secondary physics KLB students book 3 page 126-132,134-136 • Physics made easier vol. 2 pages 40-441 • Secondary physics (M.N Patel) pages 96-97	
	5	ENERGY, WORK, POWER AND MACHINES	Simple machines	By the end of the lesson, the learner should be able to (i) State and describe the efficiency of various	• Discussion on efficiency of different machines • Experiments to illustrate efficiency of various machines	• Levers • Pulleys • Inclined planes • Strings • Masses	• Comprehensive secondary physics students book 3 pages 45-51 • Comprehensive secondary physics teachers book 3	

				machines	• Problem solving		pages 18-22 • Secondary physics KLB students book 3 page 137-159 • Physics made easier vol. 2 pages 44-50 • Secondary physics (M.N Patel) pages 97-111	
4	**1-5**	ENERGY, WORK, POWER AND MACHINES	Revision	By the end of the lesson, the learner should be able to (i) Solve problems involving work, energy, power and machines	• Problems solving • Questions and answers • Discussion on the problems involving work, power, energy and machines	• Quizzes • Exercises • Project work	• Comprehensive secondary physics students book 3 pages 52-53 • Comprehensive secondary physics teachers book 3 pages 23-24 • Secondary physics KLB students book 3 page 159-161 • Physics made easier vol. 2 pages 50-52 • Secondary physics (M.N Patel) pages 111-115	
5	**1-2**	CURRENT ELECTRICITY II	• Electric current • Scale reading	By the end of the lesson, the learner should be able to: (i) Define potential (ii) Differentiate and state its SI units (iii) Measure potential difference and current in a circuit	• Defining potential difference • Measuring P.d • Discussion on p.d and current • Experiments to illustrate p.d and current	• Ammeter • Voltmeter • Battery • Connecting wires	• Comprehensive secondary physics students book 3 pages 54-55 • Comprehensive secondary physics teachers book 3 pages 24-28 • Secondary physics KLB students book 3 page 161-164 • Physics made easier vol. 2 pages 53	

							• Secondary physics (M.N Patel) pages 116-117	
	3-4	CURRENT ELECTRICITY	Ammeters and voltmeters	By the end of the lesson, the learner should be able to: (i) Measure potential difference and current in a circuit using the ammeters	• Scale reading • Converting units of measurements • Discussing simple electric circuits	• Ammeters • Voltmeters • Battery • Wires • Rheostat	• Comprehensive secondary physics students book 3 pages 54-55 • Comprehensive secondary physics teachers book 3 pages 24-28 • Secondary physics KLB students book 3 page 164-168 • Physics made easier vol. 2 pages 53 • Secondary physics (M.N Patel) pages 118-119	
	5	CURRENT ELECTRICITY II	Ohm's Law	By the end of the lesson, the learner should be able to: (i) Derive and verify ohm's law (ii) State ohm's law	• Experiments verifying ohm's law Stating ohm's law	• Ammeter • Voltmeter • Rheostat • Wires • Dry cells	• Comprehensive secondary physics students book 3 pages 55-57 • Comprehensive secondary physics teachers book 3 pages 24-28 • Secondary physics KLB students book 3 page 168-171 • Physics made easier vol. 2 pages 53-54 • Secondary physics (M.N Patel) pages 120-124	
6	**1-2**	CURRENT ELECTRICITY	Voltage-current relationships	By the end of the lesson, the learner should be able to:	• Defining resistance • Experiments to determine the	• Resistance wire • Rheostat • Battery	• Comprehensive secondary physics students book 3	

				(i) Define resistance and state its SI unit (ii) Determine experientially the voltage current (iii) Relationship for resistance in series and parallel	relationship between voltage-current	• Voltmeter • Ammeter • Connecting wires	pages 57-59 • Comprehensive secondary physics teachers book 3 pages 26-28 • Secondary physics KLB students book 3 page 171-177 • Physics made easier vol. 2 pages 53-54 • Secondary physics (M.N Patel) pages 122-124	
	3-5	CURRENT ELECTRICITY II	Measurement of resistance	By the end of the lesson, the learner should be able to: (i) Describe experiment to measure resistance using – voltmeter method - The Wheatstone bridge method - The meter bridge	• Experiments to measure resistance of materials	• Ammeters • Voltmeters • Rheostats • Connecting wires • Resistance wire • Dry cells • Switches • Meter bridge • Wheatstone bridge • Resisters with known resistance	• Comprehensive secondary physics students book 3 pages 57-59 • Comprehensive secondary physics teachers book 3 pages 26-28 • Secondary physics KLB students book 3 page 177-180 • Physics made easier vol. 2 pages 54-55 • Secondary physics (M.N Patel) pages 122-124	
7	**1-3**	CURRENT ELECTRICITY	Effective resistance for registers in series and parallel	By the end of the lesson, the learner should be able to: (i) Derive effective resistance	• Discussions on deriving the effective resistance • Deriving effective resistance of registers in parallel and series	• Cells • Resistors • Ammeters • Voltmeters • wires	• Comprehensive secondary physics students book 3 pages 60-66 • Comprehensive secondary physics teachers book 3 pages 24-28 • Secondary physics KLB students book 3	

							page 180-189 • Physics made easier vol. 2 pages 56-57 • Secondary physics (M.N Patel) pages 124-131	
	4-5	CURRENT ELECTRICITY	E.m.f and internal resistance (E=V+1r)	By the end of the lesson, the learner should be able to (i) Determine e.m.f (ii) Explain the internal resistance of a cell	• Explanation on internal resistance • Demonstration on e.m.f and internal resistance • Discussion on e.m.f	• Voltmeters • Ammeter • Cells • Connecting wires	• Comprehensive secondary physics students book 3 pages 62-63 • Comprehensive secondary physics teachers book 3 pages 24-28 • Secondary physics KLB students book 3 page 190-195 • Physics made easier vol. 2 pages 56-59 • Secondary physics (M.N Patel) pages 124	
8	**1-5**	CURRENT ELECTRICITY	Revision	By the end of the lesson, the learner should be able to: (i) Solve numerical problems involving the ohm's law (ii) Resistors in series and parallel	• Problem solving • Questions and answers • Discussions on the questions asked • Experiments to solve questions of sound	• Exercise in the students book 3 • Marking scheme • Past paper containing questions on current electricity	• Comprehensive secondary physics students book 3 pages 64-66 • Comprehensive secondary physics teachers book 3 pages 24-28 • Secondary physics KLB students book 3 page 195-197 • Physics made easier vol. 2 pages 60-63 • Secondary physics (M.N Patel) pages 131-133	

9	**1-2**	WAVES II	Properties of waves	By the end of the lesson, the learner should be able to: (i) State and explain the properties of waves experimentally (ii) Sketch wave fronts to illustrate the reflections	• Stating and explaining the properties of waves • Sketching wave fronts illustrate reflection	• Rope/wire • Various reflections	• Comprehensive secondary physics students book 3 pages 67-69 • Comprehensive secondary physics teachers book 3 pages 29-32 • Secondary physics KLB students book 3 page 198-203 • Physics made easier vol. 2 pages 64-65 • Secondary physics (M.N Patel) pages 134-142	
	3-5	WAVES II	Diffraction, refraction and interference of waves	By the end of the lesson, the learner should be able to: (i) Sketch various wave fonts to illustrate their diffraction, refraction and interference	• Sketching various wave fonts • Experiments to illustrate refraction, diffraction and interference	• Water • Basin • Ripple • Tank	• Comprehensive secondary physics students book 3 pages 70-73 • Comprehensive secondary physics teachers book 3 pages 29-32 • Secondary physics KLB students book 3 page 203-212 • Physics made easier vol. 2 pages 65-66 • Secondary physics (M.N Patel) pages 142-144	
10	**1-2**	WAVES II	Constructive and distractive waves	By the end of the lesson, the learner should be able to: (i) Explain constructive and destructive	• Discussion on constructive and destructive interference • Experiments constructive and destructive	• Ripple tank • Rope/wire	• Comprehensive secondary physics students book 3 pages 73-74 • Comprehensive secondary physics teachers book 3	

				interference	interference		pages 29-32 • Secondary physics KLB students book 3 page 203-212 • Physics made easier vol. 2 pages 65-66 • Secondary physics (M.N Patel) pages 144-147	
	3-5	WAVES II	Stationary waves	By the end of the lesson, the learner should be able to: (i) Describe experiments to illustrate stationary waves	• Demonstration and explaining ofstationery waves	• Wires under tension	• Comprehensive secondary physics students book 3 pages 74 • Comprehensive secondary physics teachers book 3 pages 29-32 • Secondary physics KLB students book 3 page 212-215 • Physics made easier vol. 2 pages 66-67 • Secondary physics (M.N Patel) pages 147-148	
11	**1-5**	WAVES II	Vibrating air columns	By the end of the lesson, the learner should be able to: (i) Describe and explain closed pipe and open pipe	• Describing vibrations in close and open pipes	• Open and closed pipes	• Comprehensive secondary physics students book 3 pages 74 • Comprehensive secondary physics teachers book 3 pages 29-32 • Secondary physics KLB students book 3 page 218-220 • Physics made easier vol. 2 pages 67-73	

							• Secondary physics (M.N Patel) pages 148-149	
REVISION AND END TERM TWO EXAMINATIONS								
PHYSICS FORM 3 SCHEMES OF WORK – TERM 3								
WEEK	**LESSON**	**TOPIC**	**SUB - TOPIC**	**OBJECTIVES**	**LEARNING/TEACHING ACTIVITIES**	**LEARNING/TEACHING RESOURCES**	**REFERENCES**	**REMARKS**
1	**1-2**	ELECTROSTATICS II	Electric field patterns	By the end of the lesson, the learner should be able to (i) Sketch electric field patterns around charged bodies	• Discussion on electric field patterns • Observing and plotting field patterns	• Charts on magnetic fields	• Comprehensive secondary physics students book 3 pages 76-77 • Comprehensive secondary physics teachers book 3 pages 34-39 • Secondary physics KLB students book 3 page 222-225 • Physics made easier vol. 2 pages 76-77 • Secondary physics (M.N Patel) pages 151-152	
	3-5	ELECTROSTATICS II	Charge distribution on conductors	By the end of the lesson, the learner should be able to (i) Describe charge distribution on conductors: (ii) Spherical and pear shaped conductors	• Discussions on charge distribution on conductors • Experiment is demonstrated/illustrate charge distribution on conductors	• Vande Graaf generator • Chart showing charge distribution on different conductors • Gold leaf electroscope	• Comprehensive secondary physics students book 3 pages 77-78 • Comprehensive secondary physics teachers book 3 pages 34-39 • Secondary physics KLB students book 3	

							page 225-228 • Physics made easier vol. 2 pages 77-78 • Secondary physics (M.N Patel) pages 153-154	
2	**1-2**	ELECTROSTATICS II	Lighting arrestor	By the end of the lesson, the learner should be able to: (i) Explain how lightning arrestor works	• Discussions on the lighting arrestor • Explanations on the lighting arrestor	• Improvised lighting arrestor • Photographs of lightning arrestor	• Comprehensive secondary physics students book 3 pages 79-80 • Comprehensive secondary physics teachers book 3 pages 34-39 • Secondary physics KLB students book 3 page 229-230 • Physics made easier vol. 2 pages 79 • Secondary physics (M.N Patel) pages 155	
	3-5	ELECTROSTATICS II	Capacitance	By the end of the lesson, the learner should be able to: (i) Define capacitance and state its SI units (ii) Describe the charging and discharging of a capacitor (iii) State and explain the factors that affect the capacitance of a parallel plate capacitor	• Experiments on charging and discharging capacitor • Discussion on factors affecting capacitance • Defining capacitance	• Complete circuits • capacitors	• Comprehensive secondary physics students book 3 pages 80-82 • Comprehensive secondary physics teachers book 3 pages 34-39 • Secondary physics KLB students book 3 page 230-237 • Physics made easier vol. 2 pages 79-80 • Secondary physics (M.N Patel) pages 155-158	

3	**1-2**	ELECTROSTATICS II	Combinations of capacitors	By the end of the lesson, the learner should be able to: (i) Derive the effective capacitance of capacitors in series and parallel	• Deriving effective capacitance of capacitors in series and parallel • Solving problems • Discussion in the effective capacitance	• Capacitors in series and parallel connections • Charts showing complete circuits	• Comprehensive secondary physics students book 3 pages 80-82 • Comprehensive secondary physics teachers book 3 pages 34-39 • Secondary physics KLB students book 3 page 237-241 • Physics made easier vol. 2 pages 81-82 • Secondary physics (M.N Patel) pages 155-158	
	3	ELECTROSTATICS II	Energy stored in a charged capacitor	By the end of the lesson, the learner should be able to: (i) Describe the energy stored in a charged capacitor	• Describing the energy stored in a charged capacitor	• Capacitors • Dry cells • Charts on capacitors used	• Comprehensive secondary physics students book 3 pages 82 • Comprehensive secondary physics teachers book 3 pages 34-39 • Secondary physics KLB students book 3 page 244 • Physics made easier vol. 2 pages 82 • Secondary physics (M.N Patel) pages 159-160	
	4	ELECTROSTATICS	Application of capacitors	By the end of the lesson, the learner should be able to (i) State and explain the applications of	• Discussions on applications of capacitors • Stating and explaining applications of	• Charts on the use of capacitors • capacitors	• Comprehensive secondary physics students book 3 pages 82-84 • Comprehensive secondary physics	

				capacitors	capacitors		teachers book 3 pages 34-39 • Secondary physics KLB students book 3 page 244 • Physics made easier vol. 2 pages 82-83 • Secondary physics (M.N Patel) pages 161	
	5	ELECTROSTATICS II	Revision	By the end of the lesson, the learner should be able to solve numerical problems involving capacitors using the formulae • Q= CV • $C_1=C_1+C_1$ • $^1/C_{1=}\ ^1/C_1+1/C_2$	• Problem solving	• Questions in the students Book 3	• Comprehensive secondary physics students book 3 pages 84-87 • Comprehensive secondary physics teachers book 3 pages 38-39 • Secondary physics KLB students book 3 page 244-245 • Physics made easier vol. 2 pages 85-88 • Secondary physics (M.N Patel) pages 161	
4	**1-3**	THE HEATING EFFECT OF ELECTRIC CURRENT	Electric current heating effect	By the end of the lesson, the learner should be able to: (i) Perform and describe experiments to illustrate the heating effect of electric current	• Experiments to illustrate heating effect of electric current • Discussions on heating effect of electric current	• Complete circuit • Water in a beaker • Metallic rod • Thermometer	• Comprehensive secondary physics students book 3 pages 88 • Comprehensive secondary physics teachers book 3 pages 39-41 • Secondary physics KLB students book 3 page 246-247 • Physics made easier	

							vol. 2 pages 89 • Secondary physics (M.N Patel) pages 162-165	
	4-5	THE HEATING EFFECT OF AN ELECTRIC CURRENT	Factors affecting electric current	By the end of the lesson, the learner should be able to: (i) State and explain the factors affecting electrical energy	• Discussions on the factors affecting electrical energy • Experiments on electrical energy • Stating and explaining factors affecting the electrical energy	• Complete circuit • Wires • Rheostat • Ammeter • battery	• Comprehensive secondary physics students book 3 pages 88-90 • Comprehensive secondary physics teachers book 3 pages 39-41 • Secondary physics KLB students book 3 page 247-255 • Physics made easier vol. 2 pages 89-90 • Secondary physics (M.N Patel) pages 165-166	
5	**1-2**	THE HEATING EFFECT OF ELECTRIC CURRENT	• Heating devices • fuses	By the end of the lesson, the learner should be able to: (i) describe the working of electric iron, bulb filament and an electric water	• discussion on electric devices • observations and experiments on heating devices	• electric irons • electric bulb • electric kettle • electric heater • fuses	• Comprehensive secondary physics students book 3 pages 90-91 • Comprehensive secondary physics teachers book 3 pages 39-41 • Secondary physics KLB students book 3 page 255-258 • Physics made easier vol. 2 pages 90-91 • Secondary physics (M.N Patel) pages 166-170	
	3-5	THE HEATING EFFECT OF	Revision	By the end of the lesson, the learner should be able	• Problem solving • Exercises	• Set questions • Marking scheme	• Comprehensive secondary physics	

		ELECTRIC CURRENT		to (i) Solve problems involving electrical energy and electric power	assignment • Discussion on problems involving electrical energy and electrical power		students book 3 pages 90-92 • Comprehensive secondary physics teachers book 3 pages 41 • Secondary physics KLB students book 3 page 246-258-259 • Physics made easier vol. 2 pages 92 • Secondary physics (M.N Patel) pages 171	
6	**1-2**	QUANTITY OF HEAT	• Heat capacity • Specific heat capacity • Units of heat capacity	By the end of the lesson the learner should be able to (i) Define heat capacity and specific heat capacity and derive their SI units	• Experiments on heat capacity and specific heat capacity • Discussion on heat capacity and specific h eat capacity • Defining heat capacity and heat specific heat capacity	• Source of heat • Water • Lagged can • Thermometer	• Comprehensive secondary physics students book 3 pages 93-96 • Comprehensive secondary physics teachers book 3 pages 42-46 • Secondary physics KLB students book 3 page 246-260-271 • Physics made easier vol. 2 pages 93-94 • Secondary physics (M.N Patel) pages 172-174	
	3-4	QUANTITY OF HEAT	Change of state	By the end of the lesson the learner should be able to define and explain latent heat of fusion, specific latent heat of fusion Define and explain latent heat of vaporization, specific latent heat of vaporization	• Experiments on latent heat of fusion and latent heat of vaporization • Discussion on latent heat of fusion and latent heat of	• File • Water • Thermometer • Weighing balance • Source of heat	• Comprehensive secondary physics students book 3 pages 96-97 • Comprehensive secondary physics teachers book 3 pages 42-46 • Secondary physics	

				State the SI units of latent heat of fusion and latent heat of vaporization	vaporization		KLB students book 3 page 246-271-281 • Physics made easier vol. 2 pages 95-96 • Secondary physics (M.N Patel) pages 188-199	
	5	QUANTITY OF HEAT	Boiling and melting	By the end of the lesson, the learner should be able to: (i) Distinguish between boiling and melting (ii) State the factors affecting melting points and boiling points of a substance (iii) Describe the working of a pressure cooker and a refrigerator	• Distinguishing between boiling and melting points • Stating factors affecting boiling and melting points • Experiments to illustrate boiling and melting point	• Pressure cooker • Refrigerator • Charts on melting and boiling points • Ice • Heat • Sufuria • water	• Comprehensive secondary physics students book 3 pages 97-101 • Comprehensive secondary physics teachers book 3 pages 42-46 • Secondary physics KLB students book 3 page 246-282-288 • Physics made easier vol. 2 pages 96-98 • Secondary physics (M.N Patel) pages 186-187	
7	**1-5**	QUANTITY OF HEAT	Revision	By the end of the lesson, the learner should be able to: (i) Solve problems involving quantity of heat	• Problem solving	• Quizzes • Past exams • Exercises • Calculators • Mathematical tables	• Comprehensive secondary physics students book 3 pages 101-102 • Comprehensive secondary physics teachers book 3 pages 42-46 • Secondary physics KLB students book 3 page 288-289 • Physics made easier vol. 2 pages 100-104 • Secondary physics	

							(M.N Patel) pages 183-185, 200-202	
8	**1-2**	THE GAS LAWS	Pressure law	By the end of the lesson, the learner should be able to: (i) State and verify the gas laws for an ideal gas experimentally	• Experiments to verify pressure law • Demonstrations on pressure law • Discussion on pressure law	• Water • Thermometer • Measuring cylinder • Syringe • Narrow glass tube	• Comprehensive secondary physics students book 3 pages 103-104 • Comprehensive secondary physics teachers book 3 pages 47-50 • Secondary physics KLB students book 3 page 299-302 • Physics made easier vol. 2 pages 106 • Secondary physics (M.N Patel) pages 203-207	
	3-4	THE GAS LAWS	Charles's law	By the end of the lesson, the learner should be able to: (i) State and verify Charles's law experimentally	• Experiments to verify Charles's law • Discussion on Charles's law	• Water • Thermometer • Measuring cylinder • Syringe • Narrow glass tube	• Comprehensive secondary physics students book 3 pages 105-106 • Comprehensive secondary physics teachers book 3 pages 47-50 • Secondary physics KLB students book 3 page 295-298 • Physics made easier vol. 2 pages 107 • Secondary physics (M.N Patel) pages 203	
	5	THE GAS LAWS	Boyle's law	By the end of the lesson, the learner should be able to: (i) State and	• Experiments verifying and explain Boyle's law • Discussion on	• Water • Thermometer • Syringe • Measuring	• Comprehensive secondary physics students book 3 pages 106-107	

				verify Boyle's law experimentally	Boyle's law	cylinder • Narrow glass tube	• Comprehensive secondary physics teachers book 3 pages 47-50 • Secondary physics KLB students book 3 page 290-294 • Physics made easier vol. 2 pages 107 • Secondary physics (M.N Patel) pages 203	
9	**1-2**	THE GAS LAW'S	The kinetic theory of gases	By the end of the lesson, the learner should be able to: • Explain law absolute zero temperature may be obtained from pressure and temp. graphs	• Discussions on the absolute zero temperature from pressure using kinetic theory of gases	• Graph paper • Clinical thermometer • Working out sums	• Comprehensive secondary physics students book 3 pages 108-110 • Comprehensive secondary physics teachers book 3 pages 47-50 • Secondary physics KLB students book 3 page 303 • Physics made easier vol. 2 pages 107 • Secondary physics (M.N Patel) pages 207-209	
	3-4	THE GAS LAWS	The kinetic theory of gases	By the end of the lesson, the learner should be able to (i) Explain the gas laws using the kinetic theory of gases	• Discussion on gas laws using kinetic theory of gases • Working out sums	• Graph papers • Clinical thermometers	• Comprehensive secondary physics students book 3 pages 68-110 • Comprehensive secondary physics teachers book 3 pages 49 • Secondary physics KLB students book 3	

							page 303 • Physics made easier vol. 2 pages 107 • Secondary physics (M.N Patel) pages 209-210	
	5	THE GAS LAWS	The kinetic theory of gases	By the end of the lesson, the learner should be able to: (i) Convert Celsius scales to Kelvin scale of temperature and state basic assumptions of kinetic theory of gases	• Discussion on basic assumptions of kinetic theory of gases • Conversion of Celsius to Kelvin scales	• Graph paper • Clinical thermometer	• Comprehensive secondary physics students book 3 pages 110-111 • Comprehensive secondary physics teachers book 3 pages 50-51 • Secondary physics KLB students book 3 page 107 • Physics made easier vol. 2 pages 107 • Secondary physics (M.N Patel) pages 214	
10	**1-5**	THE GAS LAWS	Revision	By the end of the lesson, the learner should be able to: (i) Solve numerical problems involving gas laws	• Solving problems involving gas laws • Discussion on the problems involving gas laws	• Quizzes • Past examination • Exercise in the Book 3	• Comprehensive secondary physics students book 3 pages 110-111 • Comprehensive secondary physics teachers book 3 pages 50-51 • Secondary physics KLB students book 3 page 303-305 • Physics made easier vol. 2 pages 109-110 • Secondary physics (M.N Patel) pages 215-217	
REVISION AND END OF TERM THREE EXAMINATIONS								

PHYSICS FORM 4 SCHEMES OF WORK – TERM 1

WEEK	LESSON	TOPIC	SUB - TOPIC	OBJECTIVES	LEARNING/TEACHING ACTIVITIES	LEARNING/TEACHING RESOURCES	REFERENCES	REMARKS
1	**1**	LENSES	Conveying and diverging lenses	By the end of the lesson the learner should be able to (i) Describe converging lenses (ii) Describe diverging lenses	• Using light beams to distinguish between diverging and converging lenses	• Diverging lenses • Converging lenses • Source of light beam • screen	• Comprehensive secondary physics students book 4 pages 1-2 teachers book 3 pages 1-5 • Secondary physics KLB students book 4 page 1 • Principles of physics (M.Nelkon(pages 300-301 • Golden tips Physics pages 113-114	
	2-3	LENSES	Parts of fair lenses	By the end of the lesson, the learner should be able to (i) Describe the principal focus using ray diagram (ii) Describe the optical center using ray diagram (iii) Describe the focal length of thin lenses using ray	• Description of principal focus, optical centre and focal length of a thin lens	• Chart showing the parts of thin lens • Graph paper • Diverging lens • Converging lens	• Comprehensive secondary physics students book 4 pages 1-3 teachers book 3 pages 1-5 • Secondary physics KLB students book 4 page 6-7 • Principles of physics (M.Nelkon(pages 301-304 • Golden tips Physics pages 114-116	

				diagram				
	4-5	LENSES	Focal length	By the end of the lesson, the learner should be able to (i) Determine experimentally the focal length of a converging lens (ii) Determine the focal length of a converging lens using estimation method	• Experiment to determine the focal length of a fair lens	• Converging lenses • Screen • Pins • candle	• Comprehensive secondary physics students book 4 pages 2-3 teachers book 3 pages 1-5 • Secondary physics KLB students book 4 page 17-20 • Principles of physics (M.Nelkon(pages 303 • Golden tips Physics pages 116	
2	**1**	LENSES	Images in fair lenses	By the end of the lesson, the learner should be able to: (i) Construct the principal rays for converging lens (ii) Construct the principal rays for diverging lenses	• Constructing the principal rays for diverging lenses • Constructing the principal rays for converging lenses	• Converging lenses • Diverging lenses • Graph papers • Ruler	• Comprehensive secondary physics students book 4 pages 3-6 teachers book 3 pages 1-5 • Secondary physics KLB students book 4 page 7-12 • Principles of physics (M.Nelkon(pages 304-306 • Golden tips Physics pages 114-116	
3	**2-3**	LENSES	Images in converging lenses	By the end of the lesson, the learner should be able to: (i) Locate imaged formed by converging lenses using	• Describing the characteristics of images formed in converging lenses	• Graph paper • Geometrical set • Converging lenses • screen	• Comprehensive secondary physics students book 4 pages 5-6 teachers book 3 pages 1-5	

				ray construction method (ii) Describe the images formed in converging lenses			• Secondary physics KLB students book 4 page 7-10 • Principles of physics (M.Nelkon(pages 304-305 • Golden tips Physics pages 114-116	
	4-5	LENSES	Images in diverging lenses	By the end of the lesson, the learner should be able to (i) Locate imaged formed by diverging lenses using ray construction method (ii) Describe the images formed in diverging lenses	• Describe the characteristics of the formed in diverging lenses	• Graph paper • Geometrical set • Diverging lenses • Screen	• Comprehensive secondary physics students book 4 pages 5 teachers book 3 pages 1-5 • Secondary physics KLB students book 4 page 11 • Principles of physics (M.Nelkon(pages 307-308 • Golden tips Physics pages 114-116	
4	**1**	LENSES	The microscope	By the end of the lesson, the learner should be able to (i) Explain the working of a simple microscope (ii) Explain the working of a compound microscope	• Drawing and labeling the parts of a microscope • Describing the work of a microscope	• Simple microscope • Compound microscope • Magnifying lens	• Comprehensive secondary physics students book 4 pages 10-11 teachers book 4 pages 1-5 • Principles of physics 27-29(M.Nelkon) pages 320-323 • Golden tips Physics pages 119-120	
	2-3	LENSES	The telescope	By the end of the lesson,	• Drawing and	• Telescope	• Comprehensive	

				the learner should be able to (i) Describe the structure of a telescope (ii) Describe the working of a telescope	labeling the parts of a telescope • Describing how a telescope works	• Lenses • Manilla paper	secondary physics students book 4 pages 11 teachers book 4 pages 1-5 • Principles of physics (M.Nelkon(pages 322-323 • Golden tips Physics pages 121	
	4-5	LENSES	The camera	By the end of the lesson, the learner should be able to: (i) Describe the parts of a camera (ii) Explain the working of a camera (iii) Explain the use of lenses in a camera	• Describing the parts of a camera • Explaining the use of lenses in a camera	• Camera • Charts showing the parts of a camera	• Comprehensive secondary physics students book 4 pages 11-12 teachers book 4 pages 1-5 • Secondary physics KLB students book 4 page 33 • Principles of physics (M.Nelkon(pages 316-317 • Golden tips Physics pages 120-121	
5	**1**	LENSES	Image formation in the human eye	By the end of the lesson, the learner should be able to: (i) Describe the parts of a human eye (ii) Explain the function of each part of the human eye	• Describing the parts of the human eye • Explaining the function of each part of the human eye	• Chart showing the parts of human eye • Model of the human eye	• Comprehensive secondary physics students book 4 pages 12-13 teachers book 34pages 1-5 • Secondary physics KLB students book 4 page 29-31 • Principles of physics (M.Nelkon) pages	

							313-314 • Golden tips Physics pages 120-121	
	2-3	LENSES	Working of the human eye	By the end of the lesson, the learner should be able to (i) Explain the image formation in the human eye	• Explaining the image formation in the eye	• Chart showing the image formation in the human eye	• Comprehensive secondary physics students book 4 pages 13-14 teachers book 34pages 1-5 • Secondary physics KLB students book 4 page 29-31 • Principles of physics (M.Nelkon) pages 313-314 • Golden tips Physics pages 120-121	
	4-5	LENSES	Defects of vision	By the end of the lesson, the learner should be able to: (i) Describe the defects of the human eye (ii) Explain the corrections of human eye defects	• Describing the defects of the human eye • Explaining the eye defects are corrected	• Charts showing eye defects and how they are corrected	• Comprehensive secondary physics students book 4 pages 13-14 teachers book 34pages 1-5 • Secondary physics KLB students book 4 page 31-32 • Principles of physics (M.Nelkon) pages 315-316 • Golden tips Physics pages 118-119	
6	**1-2**	LENSES	Revision	By the end of the lesson, the learner should be able: (i) Describe the	• Problem solving • Exercises • Assignments	• Questions from past papers	• Comprehensive secondary physics students book 4	

				uses of lens in various optical devises (ii) Solve problems involving thin lenses formula (iii) Solve numerical problem involving the magnification formula			pages 15-17 teachers book 34pages 5-10 • Secondary physics KLB students book 4 page 33-36 • Principles of physics (M.Nelkon) pages 310-312,326-327 • Golden tips Physics pages 121-123	
	3	UNIFORM CIRCULAR MOTION	Circular motion	By the end of the lesson, the learner should be able to: (i) Define circular motion	(i) Observing and running a hoop (ii) Rotate a stone tied to the end of a rope	• Hoop • String/rope • store	• Comprehensive secondary physics students book 4 pages 18 teachers book 34pages 10-12 • Secondary physics KLB students book 4 page 37-45 • Principles of physics (M.Nelkon) pages 42-44 • Golden tips Physics pages 34	
	4-5	UNIFORM CIRCULAR MOTION	Radiant, angular displacement and angular velocity	By the end of the lesson, the learner should be able to: (i) Define the radiant measure (ii) Define the angular displacement and velocity (iii) Explain the angular displacement	• Discussions • Experiment	• Illustration of angular displacement and angular velocity on a chart	• Comprehensive secondary physics students book 4 pages 18-20 teachers book 34pages 10-12 • Secondary physics KLB students book 4 page 37-42 • Golden tips Physics pages 34-35	

				and velocity				
7	**1-2**	UNIFORM CIRCULAR MOTION	Centripetal force	By the end of the lesson, the learner should be able to (i) Describe simple experiment on centripetal force (ii) Illustrate centripetal force (iii) Determine the magnitude of centripetal force experimentally	• Experiments • Discussions • observations	• Pendulum • String • Stone • Round table • Ball/bob • Stop clock	• Comprehensive secondary physics students book 4 pages 20-21 teachers book 34pages 10-12 • Secondary physics KLB students book 4 page 42-47 • Principles of physics (M.Nelkon) pages 42-45 • Golden tips Physics pages 37	
	3-4	UNIFORM CIRCULAR MOTION	Application of uniform circular motion	By the end of the lesson, the learner should be able to: (i) State various uniform circular motion (ii) Explain various uniform circular motion	• Discussions • Explanations • Experiments	• String • Stone • Ruler	• Comprehensive secondary physics students book 4 pages 22-25 teachers book 34pages 10-12 • Secondary physics KLB students book 4 page 37 • Golden tips Physics pages 39-40	
	5	UNIFORM CIRCULAR MOTION	Application of uniform circular motion	By the end of the lesson, the learner should be able to: (i) Explain centrifuge (ii) Explain vertical and horizontal circles (iii) Explain banked tracks	• Discussions • Explanations • Experiments	• String • Stone • Ruler	• Comprehensive secondary physics students book 4 pages 22-25 teachers book 34pages 10-12 • Secondary physics KLB students book 4 page 47-53 • Golden tips Physics	

							pages 41	
8	**1**	UNIFORM CIRCULAR MOTION	Revision	By the end of the lesson, the learner should b e able to solve problems involving circular motion	• Problem solving • Questions and answers	• Questions from past papers • Exercises	• Comprehensive secondary physics students book 4 pages 26-27 teachers book 34pages 12-14 • Secondary physics KLB students book 4 page 55-45 • Principles of physics (M.Nelkon) pages 61-63 • Golden tips Physics pages 42-43	
	2-3	FLOATING AND SINKING	Archimedes' principle	By the end of the lesson, the learner should be able to (i) State Archimedes' principle (ii) Verify Archimedes principle (iii) Use of Archimedes principle to solve problems	• Experiments • Discussions • Calculations based on Archimedes Principle	• Water • Measuring cylinder • Weighing balance • Overflow can • Objects denser than water	• Comprehensive secondary physics students book 4 pages 28-29 teachers book 34pages 14-17 • Secondary physics KLB students book 4 page 58-60 • Principles of physics (M.Nelkon) pages 106-108 • Golden tips Physics pages 53-54	
	4-5	FLOATING AND SINKING	The laws of floatation Relative density	By the end of the lesson, the learner should be able to (i) State the law of floatation (ii) Define relative density	• Discussions • Measuring	• Density bottle • Overflow can • Spring balance • measuring cylinder	• Comprehensive secondary physics students book 4 pages 29-33 teachers book 34pages 14-17 • Secondary physics	

							KLB students book 4 page 64-70 • Principles of physics (M.Nelkon) pages 101,108-110	
9	**1-3**	FLOATING AND SINKING	Applications of floating and sinking	By the end of the lesson, the learner should be able to: (i) Describe the applications of Archimedes Principle (ii) Describe the applications of relative density (hydrometer)	• Discussions • experiments	• charts depicting the uses of Archimedes principle and the law of floatation • A hydrometer	• Comprehensive secondary physics students book 4 pages 33-35 teachers book 34pages 14-17 • Secondary physics KLB students book 4 page 75-77 • Principles of physics (M.Nelkon) pages 113-115 • Golden tips Physics pages 53	
	4-5	FLOATING AND SINKING	Revision	By the end of the lesson, the learner should be able to: (i) Solve problems involving Archimedes principle (ii) Solve problems involving relative density	• Questions and answers • Discussions • Exercises • assignments	• test papers • questions from exercises	• Comprehensive secondary physics students book 4 pages 35-36 teachers book 34pages 18 • Secondary physics KLB students book 4 page 77-78 • Principles of physics (M.Nelkon) pages 116-118 • Golden tips Physics pages 54-55	
10	**1**	ELECTROMAGNETIC SPECTRUM	The electromagnetic spectrum	By the end of the lesson, the learner should be able to:	• Discussions on the charge in wave length of	• charts showing the components of the	• Comprehensive secondary physics	

				(i) Describe a complete electromagnetic spectrum	electromagnetic radiations • explanations	electromagnetic spectrum	students book 4 pages 37 teachers book 34pages 18-20 • Secondary physics KLB students book 4 page 79 • Principles of physics (M.Nelkon) pages 345 • Golden tips Physics pages 174	
	2-3	ELECTROMAGNETIC SPECTRUM	The properties of electromagnetic waves	By the end of the lesson, the learner should be able to (i) State the properties of electromagnetic waves	• Explaining the properties of each component of the electromagnetic spectrum	• Charts showing the properties of electromagnetic waves	• Comprehensive secondary physics students book 4 pages 37-38 teachers book 34pages 18-20 • Secondary physics KLB students book 4 page 80-81 • Principles of physics (M.Nelkon) pages 345 • Golden tips Physics pages 175	
	4-5	ELECTROMAGNETIC SPECTRUM	Detection of electromagnetic radiations	By the end of the lesson, the learner should be able to: (i) Describe the methods of detective electromagnetic radiations	• Demonstrating and explaining how to detect electromagnetic radiations	• Radiation detectors • Charts showing detectors of electromagnetic radiation	• Comprehensive secondary physics students book 4 pages 38-39 teachers book 34pages 18-20 • Secondary physics KLB students book 4 page 81 • Golden tips Physics pages	

							• 175-176	
11	**1-2**	ELECTROMAGNETIC SPECTRUM	Applications of electromagnetic radiations	By the end of the lesson, the learner should be able to (i) Describe the applications of electromagnetic radiations including green house effect	• Discussions of application of electromagnetic radiations	• Pictures and chart on application of electromagnetic radiations	• Comprehensive secondary physics students book 4 pages 42-45 teachers book 34pages 18-20 • Secondary physics KLB students book 4 page 82 • Principles of physics (M.Nelkon) pages 336 • Golden tips Physics pages 175-176	
	3-4	ELECTROMAGNETIC SPECTRUM	Problems on C=FX	By the end of the lesson, the learner should be able to (i) Solve numerical problems involving C=fx	• Problem solving • Discussions • Explanations • Questions and answers	• Questions and answers • exercises	• Comprehensive secondary physics students book 4 pages 45 teachers book 34pages 20-21 • Secondary physics KLB students book 4 page 80	
	5	ELECTROMAGNETIC SPECTRUM	Revision	By the end of the lesson, the learner should be able to: (i) Solve problems involving electromagnetic spectrum	• Problem solving • Questions and answers	• Exercises in students book 4 • Past papers questions	• Comprehensive secondary physics students book 4 pages 45 teachers book 34pages 20-21	
12	**1-2**	ELECTROMAGNETIC INDUCTION	Induced e.m.f	By the end of the lesson, the learner should be able to:	• Experiments • discussions	• magnets • complete • electric circuit	• Comprehensive secondary physics students book 4	

				(i) Perform and describe simple experiments to illustrate electromagnetic induction (ii) State the factors affecting the magnitude of an induced e.m.f (iii) State the factors affecting the direction induced by e.m.f			pages 46-48 teachers book 34pages 21-25 • Secondary physics KLB students book 4 page 86-91 • Principles of physics (M.Nelkon) pages 478-479 • Golden tips Physics pages 152-154	
	3-4	ELECTROMAGNETIC INDUCTION	Faraday's law and Lenz's law	By the end of the lesson, the learner should be able to (i) State Faraday's law (ii) State Lenz's law (iii) Illustrate Faraday law and Lens's law	• Discussions • Experiments to illustrate Faraday's law and Lenz's law	• Magnets • Solenoid • Source of current	• Comprehensive secondary physics students book 4 pages 48-50 teachers book 34pages 21-25 • Secondary physics KLB students book 4 page 91-93 • Principles of physics (M.Nelkon) pages 483-484 • Golden tips Physics pages 153	
	5	ELECTROMAGNETIC INDUCTION	Fleming's right hand rule	By the end of the lesson, the learner should be able to: (i) State Fleming's right hand rule (ii) Apply	• Explanation of the motor rule • Discussion of the application of electromagnetic induction	• Magnets • Wire • Source of current	• Comprehensive secondary physics students book 4 pages 49-50 teachers book 34pages 21-25 • Secondary physics	

				Fleming's right hand rule			KLB students book 4 page 93-97 • Principles of physics (M.Nelkon) pages 481-482 • Golden tips Physics pages 153	
13	**1-2**	ELECTROMAGNETIC INDUCTION	Generators	By the end of the lesson, the learner should be able to (i) Explain the working of an a.c generator (ii) Explain the working of a d.c generator	• Drawing the arrangement for a.c and d.c generators • Demonstration of motor principle	• Coil • Pins • Source of current • Magnets	• Comprehensive secondary physics students book 4 pages 50-53 teachers book 34pages 21-25 • Secondary physics KLB students book 4 page 100-104 • Principles of physics (M.Nelkon) pages 488-490 • Golden tips Physics pages 156-157	
	3-4	ELECTROMAGNETIC INDUCTION	Generators	By the end of the lesson, the learner should be able to (i) Explain the working of an a.c generator (ii) Explain the working of a d.c generator	• Drawing the arrangement for a.c and a d.c generators • Demonstration of motor principle	• Coil • Pins • Source of current • magnets	• Comprehensive secondary physics students book 4 pages 50-53 teachers book 34pages 21-25 • Secondary physics KLB students book 4 page • Principles of physics (M.Nelkon) pages • Golden tips Physics pages 154	
14	**1-2**	ELECTROMAGNETIC INDUCTION	Eddy currents	By the end of the lesson, the learner should be able to	• Discussions • Experiments • Explanations	• Pendulum • Copper wire • Magnets	• Comprehensive secondary physics students book 4	

				(i) Explain eddy currents (ii) Demonstrate the effects of eddy currents			pages 53-54 teachers book 4 pages 24	
	3	ELECTROMAGNETIC INDUCTION	Eddy currents	By the end of the lesson, the learner should be able to (i) Explain eddy currents (ii) Demonstrate the effects of eddy currents	• Discussions • Experiments • Explanations	• Pendulum • Copper wire • Magnets	• Comprehensive secondary physics students book 4 pages 53-54 teachers book 34pages 24 • Secondary physics KLB students book 4 pages,104 • Principles of physics (M.Nelkon) pages 483-484 • Golden tips Physics pages 158	
	4-5	ELECTROMAGNETIC INDUCTION	Mutual inductance	By the end of the lesson, the learner should be able to (i) Describe simple experiments to illustrate mutual inductance	• Discussions • Experiments • Explanations	• Iron care with primary and secondary coil	• Comprehensive secondary physics students book 4 pages 54-55 teachers book 34pages 21-25 • Secondary physics KLB students book 4 pages 97-101 • Golden tips Physics pages 158	
15	**1-2**	ELECTROMAGNETIC INDUCTION	Transformers	By the end of the lesson, the learner should be able to (i) Explain the working of a transformer	• Discussions • Experiments	• Transformer • Magnets • Wires • Metallic rods	• Comprehensive secondary physics students book 4 pages 54-59 teachers book	

							34pages 21-25 • Secondary physics KLB students book 4 page 100-104 • Principles of physics (M.Nelkon) pages 488-490 • Golden tips Physics pages 156-157	
	3-4	ELECTROMAGNETIC INDUCTION	Applications of electromagnetic induction	By the end of the lesson, the learner should be able to (i) Explain the application of electromagnetic induction (ii) Solve problems on transformers	• Discussions • Explanations • Questions and answers	• Induction coil • Moving coil/loud speaker	• Comprehensive secondary physics students book 4 pages 54-59 teachers book 34pages 21-25 • Secondary physics KLB students book 4 page 107-112 • Principles of physics (M.Nelkon) pages 468,473 • Golden tips Physics pages 158	
	5	ELECTROMAGNETIC INDUCTION	Revision	By the end of the lesson the learner should be able to solve problems involving electromagnetic induction	• Questions and answers • Discussions	• Questions from past papers	• Comprehensive secondary physics students book 4 pages 59-60 teachers book 34pages 26-27 • Secondary physics KLB students book 4 page 112-116 • Principles of physics (M.Nelkon) page 494-495 • Golden tips Physics pages 159	

PHYSICS FORM 4 SCHEMES OF WORK – TERM 2

WEEK	LESSON	TOPIC	SUB - TOPIC	OBJECTIVES	LEARNING/TEACHING ACTIVITIES	LEARNING/TEACHING RESOURCES	REFERENCES	REMARKS
1	**1**	MAIN ELECTRICITY	Source of main electricity	By the end of the lesson, the learner should be able to: (i) State sources of main electricity (ii) Explain the sources of main electricity	• Discussions • Educational trips	• Pictures and charts showing sources of main electricity	• Comprehensive secondary physics students book 4 pages 61 teachers book 3 pages 27-29 • Secondary physics KLB students book 4 page 117 • Golden tips Physics pages 160	
	2-3	MAIN ELECTRICITY	Power transmission	By the end of the lesson the learner should be able to (i) Describe the transmission of electric power from the generating station (ii) Explain the domestic wiring system	• Discussions • Questions and answers	Photos of power transmission Lines and power substations	• Comprehensive secondary physics students book 4 pages 62 teachers book 3 pages 27-29 • Secondary physics KLB students book 4 page 117-122 • Principles of physics (M.Nelkon(pages 433-434 • Golden tips Physics pages 160-163	
	4-5	MAIN ELECTRICITY	Power consumption	By the end of the lesson, the learner should be able to: (i) Define kilowatt hour	• Discussions • calculations	Chats on power consumptions	• Comprehensive secondary physics students book 4 pages 63-66 teachers book 3	

				(ii) Determine the electrical energy consumption and cost			pages 27-29 • Secondary physics KLB students book 4 page 125-128 • Principles of physics (M.Nelkon(pages 428 • Golden tips Physics pages 164	
2	**1-2**	MAINS ELECTRICITY	Domestic wiring	By the end of the lesson, the learner should be able to (i) Explain the domestic wiring system (ii) Describe the domestic wiring system	• Discussions • Demonstrations on building wiring • Drawing circuits	• Fuses • Wires • Switches • Electrical appliances	• Comprehensive secondary physics students book 4 pages 66-69 teachers book 4 pages 27-29 • Secondary physics KLB students book 4 page 125-121-122 • Principles of physics (M.Nelkon(pages 433-435 • Golden tips Physics pages 162	
	3	MAINS ELECTRICITY	Domestic electrical appliances	By the end of the lesson, the learner should be able to: (i) Explain the function of fuse in domestic wiring (ii) Explain the function of a two-way switch in domestic wiring	• Discussions • demonstration	• domestic electrical appliances	• Comprehensive secondary physics students book 4 pages 66-69 teachers book 4 pages 27-29 • Secondary physics KLB students book 4 page 125-122-124 • Principles of physics (M.Nelkon(pages 433,435 • Golden tips Physics pages 162	
	4-5	MAINS	Revision	By the end of the lesson,	• Problem solving	• Questions from	• Comprehensive	

		ELECTRICITY		the learner should be able to solve problems involving mains electricity	• Discussions • Questions and answers	past papers • Quizzes • Exercises	secondary physics students book 4 pages 70-71 teachers book 4 pages 29-30 • Secondary physics KLB students book 4 page 125-128-130 • Principles of physics (M.Nelkon) pages 436-438 • Golden tips Physics pages 164-165	
3	**1-2**	CATHODE RAYS	Production of cathode rays	By the end of the lesson, the learner should be able to: (i) Describe the production of cathode rays (ii) State and explain the properties of cathode rays	• Describing the production of cathode rays • Stating the properties of cathode rays	• Chart on the properties of cathode rays	• Comprehensive secondary physics students book 4 pages 72-73 teachers book 4 pages 30-32 • Secondary physics KLB students book 4 page 131-133 • Principles of physics (M.Nelkon) pages 532,535-536 • Golden tips Physics pages 166-167	
	3-4	CATHODE RAYS	The cathode rays Oscilloscope	By the end of the lesson, the learner should be able to (i) Explain the functioning of the cathode ray oscilloscope (ii) Explain the functioning of a T.V tube	• Discussions of parts and functions of C.R.O	• Chart of parts and functions of C.R.O	• Comprehensive secondary physics students book 4 pages 73-75 teachers book 4 pages 30-32 • Secondary physics KLB students book 4 page 133-134 • Principles of physics (M.Nelkon) pages	

							541-545 • Golden tips Physics pages 167-169	
	5	CATHODE RAYS	The cathode rays of Oscilloscope	By the end of the lesson, the learner should be able to (i) Explain the uses of a C.R.O	• Describing the working of a T.V tube	• T.V tube	• Comprehensive secondary physics students book 4 pages 73-75 teachers book 4 pages 30-32 • Secondary physics KLB students book 4 page 139 • Principles of physics (M.Nelkon) pages 541-544 • Golden tips Physics pages 169	
4	**1-2**	CATHODE RAYS	Revision	By the end of the lesson, the learner should be able to solve problems involving cathode rays	• Problem solving • discussions	• Quizzes • Exercises	• Comprehensive secondary physics students book 4 pages 77-79 teachers book 4 pages 32-34 • Secondary physics KLB students book 4 page 142-143 • Principles of physics (M.Nelkon) pages 554-555 • Golden tips Physics pages 170-171	
	3-5	X-RAYS	Production of X-rays	By the end of the lesson, the learner should be able to: (i) Explain the production of x-rays (ii) State and explain the	• Demonstrations • Discussions • Calculations involving x-rays	• X-ray tube • Charts	• Comprehensive secondary physics students book 4 pages 80-84 teachers book 4 pages 35-36 • Secondary physics	

				properties of X-rays (iii) Distinguish between hard and soft x-rays			KLB students book 4 page 144-148 • Principles of physics (M.Nelkon) pages 545-547 • Golden tips Physics pages 171-173	
5	**1-2**	X-RAYS	Dangers of x-rays	By the end of the lesson, the learner should be able to: (i) Explain and state the dangers of X-rays (ii) Highlight the precautions to be undertaken when handling x-rays	• Discussions • Explanations	• Charts showing the dangers of x-rays • Hospital with x-ray equipment	• Comprehensive secondary physics students book 4 pages 84 teachers book 4 pages 35-36 • Secondary physics KLB students book 4 page 149 • Principles of physics (M.Nelkon) pages 546 • Golden tips Physics pages 173	
	3	X-RAYS	Uses of x-rays	By the end of the lesson the learner should be able to (i) State the uses of X-rays (ii) Explain the uses of X-rays	• Discussions	• Hospital with X-ray equipment	• Comprehensive secondary physics students book 4 pages 84 teachers book 4 pages 35-36 • Secondary physics KLB students book 4 page 148 • Golden tips Physics pages 174	
	4-5	X-RAYS	Revision	By the end of the lesson, the learner should be able to: (i) Solve problems involving X-	• Discussions • Problem solving	• Quizzes • Exercise • Past papers questions	• Comprehensive secondary physics students book 4 pages 85-86 teachers book 4	

				rays			pages 36-37 • Secondary physics KLB students book 4 page 146-147 • Golden tips Physics pages 172-173	
6	**1-2**	PHOTO ELECTRIC EFFECT	Photo electric emissions	By the end of the lesson ,the learner should be able to (i) Perform simple experiments to illustrate photo electric effect (ii) Describe simple experiments to illustrate photoelectric effect	• Experiments • discussions	• source of light • Metallic surfaces • Photo cell	• Comprehensive secondary physics students book 4 pages 87-88 teachers book 4 pages 38-40 • Secondary physics KLB students book 4 page 151-152 • Principles of physics (M.Nelkon) pages 547 • Golden tips Physics pages 177	
	3	PHOTO-ELECTRIC	Factors effecting photoelectric emissions	By the end of the lesson, the learner should be able to (i) State the factors affecting photo-electric emission (ii) Explain the factors affecting the photoelectric emissions	• Discussions • Demonstrations	• charts	• Comprehensive secondary physics students book 4 pages 88-90 teachers book 4 pages 38-40 • Secondary physics KLB students book 4 page 156-158 • Golden tips Physics pages 179	
	4-5	PHOTO-ELECTRIC	Plank's constant	By the end of the lesson, the learner should be able to (i) Define plank's constant threshold	• Discussions • Demonstration	• charts	• Comprehensive secondary physics students book 4 pages 90-91 teachers book 4	

				frequency work function and photoelectric effect (ii) Explain threshold frequency, work function and photoelectric effect			pages 38-40 • Secondary physics KLB students book 4 page 153-156 • Golden tips Physics pages 177-179	
7	**1-5**	PHOTO-ELECTRIC	The quantum theory of light	By the end of the lesson, the learner should be able to: (i) Determine the energy of p photos (ii) Apply the equation E=hf to calculate the energy of photos (iii) Explain photoelectric effect using Einstein's equation=hf $+{}^{1}/_{2}mv^{2}$	• Discussions • Calculations	• Chart on the use of Einstein's equation	• Comprehensive secondary physics students book 4 pages 90-92 teachers book 4 pages 38-40 • Secondary physics KLB students book 4 page 153-156 • Golden tips Physics pages 178-180	
8	**1-3**	PHOTO-ELECTRIC	Application of photoelectric effect	By the end of the lesson, the learner should be able to (i) Explain the working of a - Photo emissive cell - Photo conductive cell - Photo voltaic cell	• Demonstrations • Discussions	• Charts on the photo cell and how it works • Solar panels • Watch cells	• Comprehensive secondary physics students book 4 pages 92-93 teachers book 4 pages 38-40 • Secondary physics KLB students book 4 page 160-163 • Golden tips Physics pages 180-181	

	4-5	PHOTO-ELECTRIC EFFECT	Revision	By the end of the lesson, the learner should be able to: (i) Solve problems involving photo-electric effect	• Questions and answers	• Set questions • Projects • Questions from past papers	• Comprehensive secondary physics students book 4 pages 94-95 teachers book 4 pages 40-42 • Secondary physics KLB students book 4 page 163-165 • Golden tips Physics p • Questions from past papers	
9	**1-2**	RADIO ACTIVITY	Types of radiation	By the end of the lesson, the learner should be able to (i) Describe the three types of radiations produced by radioactive elements	• Discussions	• Radiation detectors	• Comprehensive secondary physics students book 4 pages 96-100 teachers book 4 pages 42-45 • Secondary physics KLB students book 4 page 167-171 • Principles of physics (M.Nelkon) pages 556-564 • Golden tips Physics pages 184-185	
	3-4	RADIO-ACTIVITY	Detecting nuclear radiations	By the end of the lesson, the learner should be able to explain how to detect radio-active emissions	• Demonstrations • Discussions	Radiation detectors	• Comprehensive secondary physics students book 4 pages 96-100 teachers book 4 pages 42-45 • Secondary physics KLB students book 4	

							page 172-175 • Principles of physics (M.Nelkon) pages 556-564 Golden tips Physics pages 185-186	
	5	RADIO-ACTIVITY	Detecting nuclear radiations	By the end of the lesson, the learner should be able to explain how a diffusion cloud chamber works	• Demonstrations • discussions	Radiation detectors	• Comprehensive secondary physics students book 4 pages 100 teachers book 4 pages 42-45 • Secondary physics KLB students book 4 page 173-174 • Principles of physics (M.Nelkon) pages 557-558 • Golden tips Physics pages 189	
10	**1-2**	RADIO-ACTIVITY	Radio-active decay	By the end of the lesson, the learner should be able to define radio-active decay and half life	• discussion	• Charts on radio-active decay	• Comprehensive secondary physics students book 4 pages 100-102 teachers book 4 pages 42-45 • Secondary physics KLB students book 4 page 176-181 • Principles of physics (M.Nelkon) pages 566-568 • Golden tips Physics pages 186-187	
	3-5	RADIOACTIVITY	Nuclear fission and fusion	By the end of the lesson, the learner should be able	• Discussions • Problem solving	• Periodic table	• Comprehensive secondary physics	

				to (i) Define nuclear fission and nuclear fusion (ii) Write balanced nuclear equations (iii) State the application of radioactivity			• students book 4 pages 100-108 teachers book 4 pages 42-45 • Secondary physics KLB students book 4 page 181-184 • Principles of physics (M.Nelkon) pages 573-578 • Golden tips Physics pages 190	
11	**1-3**	RADIO-ACTIVITY	Hazards of radioactivity	By the end of the lesson, the learner should be able to (i) Explain the dangers of radioactive emissions	• discussions	• diffusion cloud chamber	• Comprehensive secondary physics students book 4 pages 105-106 teachers book 4 pages 42-45 • Secondary physics KLB students book 4 page 182 • Principles of physics (M.Nelkon) pages 565-566 • Golden tips Physics pages 190	
	4-5	RADIO-ACTIVITY	Revision	By the end of the lesson, the learner should be able to solve problems involving radioactivity and half life	• Questions and answers	• Set questions • Past papers questions • Exercises	• Comprehensive secondary physics students book 4 pages 105-106 teachers book 4 pages 45-48 • Secondary physics KLB students book 4 page 184-185 • Principles of physics	

							(M.Nelkon) pages 579-581 • Golden tips Physics pages 191	

PHYSICS FORM 4 SCHEMES OF WORK – TERM 3

WEEK	LESSON	TOPIC	SUB - TOPIC	OBJECTIVES	LEARNING/TEACHING ACTIVITIES	LEARNING/TEACHING RESOURCES	REFERENCES	REMARKS
1	**1-2**	ELECTRONICS	Conductors and semi-conductors	By the end of the lesson, the learner should be able to (i) Differentiate between conductors and semi-conductors	• Discussions • Experiments	• Some semi-conductors • Some insulator	• Comprehensive secondary physics students book 4 pages 110-111 teachers book 4 pages 45-48 • Secondary physics KLB students book 4 page 187-189 • Golden tips Physics pages 192-193	
	3-5	ELECTRONICS	Intrinsic and extrinsic semi-conductors	By the end of the lesson, the learner should be able to: (i) Explain doping in semi-conductors (ii) Explain the working of p-n junction diode (iii) Distinguish between intrinsic and	• Discussions • Experiments	• Samples of semi-conductors • Complete circuit • Transistors • Junction diode	• Comprehensive secondary physics students book 4 pages 111-112 teachers book 4 pages 48-52 • Secondary physics KLB students book 4 page 189-194 • Principles of physics (M.Nelkon) pages	

				extrinsic semi-conductors			547-550 • Golden tips Physics pages 193-196	
2	**1-5**	ELECTRONICS	Characteristics of p-n junction	By the end of the lesson, the learner should be able to (i) sketch the current voltage characteristics for a diode	• experiments	• junction diode	• Comprehensive secondary physics students book 4 pages 161-117 teachers book 4 pages 48-52 • Secondary physics KLB students book 4 page 189-194 • Golden tips Physics pages 194-196	
3	**1-5**	ELECTRONICS	Applications of diodes	By the end of the lesson, the learner should be able to (i) explain the application of diodes in rectifications	• Discussions • Questions and answers	• Chart showing the application of diode	• Comprehensive secondary physics students book 4 pages 117-120 teachers book 4 pages 48-52 • Secondary physics KLB students book 4 page 198-201 • Principles of physics (M.Nelkon) pages 198-201 • Golden tips Physics pages 196-198	
4	**1-5**		Revision and exams	By the end of the lesson, the learner should be able to (i) ensure that he/she is well	• Discussions • Questions and answers technical questions • Problem solving	• Revision exercises • Test papers • Mock examinations • Marking schemes	• Comprehensive secondary physics students book form 1-4 teachers book 4	

				prepared to sit for the national exams	• Assignment and tests		form 1-4 • Secondary physics KLB students book 4 page 1-4 • Principles of physics (M.Nelkon) pages 198-201 • Golden tips Physics pages • Past papers (mocks)	
5-9 REVISION FOR THE FINAL EXAMINATIONS								