

PHYSICS SCHEMES OF WORK
FORM FOUR 2012
TERM I

REFERENCES:

1. Secondary Physics KLB
2. Comprehensive Secondary Physics
3. Principles of Physics
4. Golden Tips
5. Physics by Nelkon
6. Teacher's Book

W K	Lesson	TOPIC	SUB-TOPIC	OBJECTIVES	L/ACTIVITIES	L/T AIDS	REFERENCE	REMARKS
1	1-5	REPORTING AND REVISION OF LAST TERM'S EXAMS						
2	1	Thin Lenses	Converging and diverging lenses	By the end of the lesson, the learner should be able to:- -Describe converging lenses. -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 4 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	Thin Lenses	Parts of lenses	By the end of the lesson, the learner should be able to:- -Describe the principal focus using ray diagram. -Describe the optical center using ray diagram. -Describe the focal length of thin lenses using ray diagram.	Description of principal focus, optical centre and focal length of a thin lenses	-Chart showing the parts of thin lens -Graph paper -Diverging lens -Converging lens	Comprehensive secondary physics students book 4 pages 1-3 teachers book 4 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	
	4-5	Thin Lenses	Focal length	By the end of the lesson, the learner should be able to:- -Determine experimentally the focal length of a converging lens. -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 -Metre rule	Comprehensive secondary physics students book 4 pages 2-3 teachers book 4 pages 1-5 Secondary physics KLB students book 4 page 17-20 Principles of physics (M.Nelkon(pages 303 Golden tips Physics pages 116	
3	1	Thin Lenses	Images in thin lenses	By the end of the lesson, the learner should be able to:- -Construct the principal rays for converging lens. -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 4 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	

	2-3	Thin Lenses	Images formed by converging lenses	By the end of the lesson, the learner should be able to:- -Locate images formed by converging lenses using ray construction method. -Describe the images formed by converging lenses.	Describing the characteristics of images formed by converging lenses	-Graph paper -Geometrical set -Converging lenses -Screen -Candle -Metre rule	Comprehensive secondary physics students book 4 pages 5-6 teachers book 4 pages 1-5 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	Thin Lenses	Images formed by diverging lenses	By the end of the lesson, the learner should be able to:- -Locate images formed by diverging lenses using ray construction method. -Describe the images formed by diverging lenses.	Describe the characteristics of the image formed by diverging lenses	-Graph paper -Geometrical set -Diverging lenses -Screen -Metre rule	Comprehensive secondary physics students book 4 pages 5 teachers book 4 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	Thin Lenses	The microscope	By the end of the lesson, the learner should be able to:- -Explain the working of a simple microscope. -Explain the working of a compound microscope.	-Drawing and labeling the parts of a microscope. -Describe the working 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	Thin Lenses	The telescope	By the end of the lesson, the learner should be able to:- -Describe the structure of a telescope. -Describe the working of a telescope.	-Drawing and labeling the parts of a telescope. -Describing how a telescope works.	-Telescope -Lenses -Manilla paper	Comprehensive secondary physics students book 4 pages 11 Principles of physics (M.Nelkon(pages 322-323 Golden tips Physics pages 121	
	4-5	Thin Lenses	The camera	By the end of the lesson, the learner should be able to:- -Describe the parts of a camera. -Explain the working of a camera. -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 Secondary physics KLB students book 4 page 33 Principles of physics (M.Nelkon(pages 316-317 Golden tips Physics pages 120-121	

5	1	Thin Lenses	Image formation in the human eye	By the end of the lesson, the learner should be able to:- -Describe the parts of a human eye. -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 4 pages 1-5 Secondary physics KLB students book 4 page 29-31 Principles of physics (M.Nelkon) pages 313-314	
	2-3	Thin Lenses	Working of the human eye	By the end of the lesson, the learner should be able to:- -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 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	Thin Lenses	Defects of vision	By the end of the lesson, the learner should be able to:- -Describe the defects of the human eye. -Explain the corrections of human eye defects.	-Describing the defects of the human eye. -Explaining how the human eye defects are corrected.	-Charts showing eye defects and how they are corrected	Comprehensive secondary physics students book 4 pages 13-14 teachers book 4 pages 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	Thin Lenses	Revision	By the end of the lesson, the learner should be able to:- -Describe the uses of lens in various optical devices. -Solve problems involving thin lenses formula. -Solve numerical problem involving the magnification formula.	-Problem solving -Exercises -Assignments	-Questions from past papers	Comprehensive secondary physics students book 4 pages 15-17 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: -Define circular motion.	-Observing and running a hoop. -Rotate a stone tied to the end of a rope.	-Hoop -String/rope -store	Comprehensive secondary physics students book 4 pages 18 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:- -Define the radiant measure. -Define the angular displacement and velocity. -Explain the angular displacement and velocity.	-Discussions -Experiment	-Illustration of angular displacement and angular velocity on a chart	Comprehensive secondary physics students book 4 pages 18-20 Secondary physics KLB students book 4 page 37-42 Golden tips Physics pages 34-35	

7	1-2	Uniform Circular Motion	Centripetal force	By the end of the lesson, the learner should be able to:- -Describe simple experiment on centripetal force. -Illustrate centripetal force. -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 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: State various uniform circular motion Explain various uniform circular motion	Discussions Explanations Experiments	String Stone Ruler	Comprehensive secondary physics students book 4 pages 22-25 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:- -Explain centrifuge. -Explain vertical and horizontal circles. -Explain banked tracks.	-Discussions -Explanations -Experiments	-String -Stone -Ruler	Comprehensive secondary physics students book 4 pages 22-25 teachers book 34 pages 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 be 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:- -State Archimedes' principle. -Verify Archimedes principle. -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 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:- -State the law of floatation. -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 -110	

9	1-3	Floating And Sinking	Applications of floating and sinking	By the end of the lesson, the learner should be able to:- -Describe the applications of Archimedes Principle. -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 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:- -Solve problems involving Archimedes principle. -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 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:- -Describe a complete electromagnetic spectrum.	-Discussions on the charge in wave length of electromagnetic radiations Explanations.	-charts showing the components of the electromagnetic spectrum	Comprehensive secondary physics students book 4 pages 37 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:- -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:- -Describe the methods of detecting 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:- -Describe the applications of electromagnetic radiations including greenhouse effect.	-Discussions of application of electromagnetic radiations	-Pictures and chart on application of electromagnetic radiations	Comprehensive secondary physics students book 4 pages 42-45 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 $C=F\lambda$	By the end of the lesson, the learner should be able to:- -Solve numerical problems involving $C=f\lambda$.	-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:- -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:- -Perform and describe simple experiments to illustrate electromagnetic induction. -State the factors affecting the magnitude of an induced e.m.f. -State the factors affecting the direction induced by e.m.f.	-Experiments -discussions	-magnets -complete electric circuit	Comprehensive secondary physics students book 4 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 - Fleming's right hand rule	By the end of the lesson, the learner should be able to:- -State Faraday's law. -State Lenz's law. -Illustrate Faraday law and Lenz's law. - State Fleming's right hand rule. -Apply Fleming's right hand rule.	-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	Generators	By the end of the lesson, the learner should be able to:- -Explain the working of an a.c generator. -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	
13		END YEAR EXAMINATIONS						

PHYSICS SCHEMES OF WORK

FORM FOUR 2012

TERM II

REFERENCES:

1. Secondary Physics KLB
2. Comprehensive Secondary Physics
3. Principles of Physics
4. Golden Tips
5. Teacher's Book

W K	LS N	TOPIC	SUB-TOPIC	OBJECTIVES	L/ACTIVITIES	L/T AIDS	REFERENCE	REMARK
1	1-5	REPORTING AND REVISION OF LAST TERM'S EXAMS						
2	1-2	Electromagnetic Induction	Eddy currents	By the end of the lesson, the learner should be able to:- -Explain eddy currents. -Demonstrate the effects of eddy currents.	-Discussions -Experiments -Explanations	-Pendulum -Copper wire -Magnets	Comprehensive secondary physics students book 4 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:- -Explain eddy currents. -Demonstrate the effects of eddy currents.	-Discussions -Experiments -Explanations	-Pendulum -Copper wire -Magnets	Comprehensive secondary physics students book 4 pages 53-54 Secondary physics KLB students book 4 pages,104 Principles of physics (M.Nelkon) pages 483-484	
	4-5	Electromagnetic Induction	Mutual inductance	By the end of the lesson, the learner should be able to:- -Describe simple experiments to illustrate mutual inductance.	-Discussions -Experiments -Explanations	-Iron core with primary and secondary coil	Comprehensive secondary physics students book 4 pages 54-55 Secondary physics KLB students book 4 pages 97-101	
3	1-2	Electromagnetic Induction	Transformers	By the end of the lesson, the learner should be able to:- -Explain the working of a transformer.	-Discussions -Experiments	-Transformer -Magnets -Wires -Metallic rods	Comprehensive secondary physics students book 4 pages 54-59 Secondary physics KLB students book 4 page 100-104	
	3-4	Electromagnetic Induction	Applications of electromagnetic induction	By the end of the lesson, the learner should be able to:- -Explain the application of electromagnetic induction. -Solve problems on transformers.	-Discussions -Explanations -Questions and answers	-Induction coil -Moving coil/loud speaker	Comprehensive secondary physics students book 4 pages 54-59 Secondary physics KLB students book 4 page 107-112 Principles of physics (M.Nelkon) pages 468,473	
	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	

4	1	Main Electricity	Source of main electricity	By the end of the lesson, the learner should be able to:- -State sources of main electricity. -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 Secondary physics KLB students book 4 page 117	
	2-3	Main Electricity	Power transmission	By the end of the lesson, the learner should be able to:- -Describe the transmission of electric power from the generating station. -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 Secondary physics KLB students book 4 page 117-122 Principles of physics (M.Nelkon(pages 433-434	
	4-5	Main Electricity	Power consumption	By the end of the lesson, the learner should be able to:- -Define kilowatt hour. -Determine the electrical energy consumption and cost.	-Discussions -calculations	-Charts on power consumptions.	Comprehensive secondary physics students book 4 pages 63-66 teachers book 3 pages 27-29 Secondary physics KLB students book 4 page 125-128 Principles of physics (M.Nelkon(pages 428	
5	1-2	Mains Electricity	Domestic wiring	By the end of the lesson, the learner should be able to:- -Explain the domestic wiring system. -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	
	3	Mains Electricity	Domestic electrical appliances	-Explain the function of fuse in domestic wiring. -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	
	4-5	Mains Electricity	Revision	By the end of the lesson, the learner should be able to:- -solve problems involving mains electricity.	-Problem solving -Discussions -Questions and answers	-Questions from past papers -Quizzes -Exercises	Comprehensive 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	

6	1-2	Cathode Rays	Production of cathode rays	By the end of the lesson, the learner should be able to:- -Describe the production of cathode rays. -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:- -Explain the functioning of the cathode ray oscilloscope. -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;- -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	
7	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:- -Explain the production of x-rays. -State and explain the properties of X-rays. -Distinguish between hard and soft x-rays.	-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 KLB students book 4 page 144-148 Principles of physics (M.Nelkon) pages 545-547 Golden tips Physics pages 171-173	
8	1-2	X-Rays	Dangers of x-rays	By the end of the lesson, the learner should be able to:- -Explain and state the dangers of X-rays . -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:- -State the uses of X-rays. -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:- -Solve problems involving X-rays.	-Discussions -Problem solving	-Quizzes -Exercise -Past papers questions	Comprehensive secondary physics students book 4 pages 85-86 teachers book 4 pages 36-37 Secondary physics KLB students book 4 page 146-147 Golden tips Physics pages 172-173	

9	1-2	Photo Electric Effect	Photo electric emissions	By the end of the lesson ,the learner should be able to:- -Perform simple experiments to illustrate photo electric effect. -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:- -State the factors affecting photo-electric emission. -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:- -Define plank's constant, threshold frequency, work function and photoelectric effect. -Explain threshold frequency, work function and photoelectric effect.	-Discussions -Demonstration	-charts	Comprehensive secondary physics students book 4 pages 90-91 teachers book 4 pages 38-40 Secondary physics KLB students book 4 page 153-156 Golden tips Physics pages 177-179	
10	1-5	Photo-Electric	The quantum theory of light	By the end of the lesson, the learner should be able to:- -Determine the energy of photons -Apply the equation $E=hf$ to calculate the energy of photons. -Explain photoelectric effect using Einstein's equation $=hf + \frac{1}{2}mv^2$.	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	
11	1-3	Photo-Electric	Application of photoelectric effect	By the end of the lesson, the learner should be able to:- -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: -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	
12	1-2	Radio Activity	Types of radiation	By the end of the lesson, the learner should be able to:- -Describe the three types of radiations produced by radioactive elements.	-Discussions	-Radiation detectors	Comprehensive secondary physics students book 4 pages 96-100 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 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 Secondary physics KLB students book 4 page 173-174 Principles of physics (M.Nelkon) pages 557-558 Golden tips Physics pages 189	
13		EXAMS						
14		PREPARATION OF REPORTS AND CLOSING						

PHYSICS SCHEMES OF WORK

FORM FOUR 2012

TERM III

REFERENCES:

1. Secondary Physics KLB
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W K	LS N	TOPIC	SUB-TOPIC	OBJECTIVES	L/ACTIVITIES	L/T AIDS	REFERENCE	REMARK
1	1-5	REPORTING AND REVISION OF LAST TERM'S EXAMS						
2	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 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	-Define nuclear fission and nuclear fusion. -Write balanced nuclear equations. -State the application of radioactivity.	-Discussions -Problem solving	-Periodic table	Comprehensive secondary physics students book 4 pages 100-108 Secondary physics KLB students book 4 page 181-184	
3	1-3	Radio-Activity	Hazards of radioactivity	By the end of the lesson, the learner should be able to;- -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 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	

4	1-2	Electronics	Conductors and semi-conductors	By the end of the lesson, the learner should be able to:- -Differentiate between conductors and semi-conductors.	-Discussions -Experiments	-Some semi-conductors -Some insulator	Comprehensive secondary physics students book 4 pages 110-111 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:- -Explain doping in semi-conductors. -Explain the working of p-n junction diode. -Distinguish between intrinsic and extrinsic semi-conductors.	-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 Golden tips Physics pages 193-196	
5	1-5	Electronics	Characteristics of p-n junction	By the end of the lesson, the learner should be able to:- -sketch the current voltage characteristics for a diode	-experiments	-junction diode -connecting wire -dry cells	Comprehensive secondary physics students book 4 pages 161-117 Secondary physics KLB students book 4 page 189-194 Golden tips Physics pages 194-196	
6	1-5	Electronics	Applications of diodes	By the end of the lesson, the learner should be able to:- -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 Secondary physics KLB students book 4 page 198-201 Principles of physics (M.Nelkon) pages 198-201 Golden tips Physics pages 196-198	
7		REVISION FOR KCSE						
8		KCSE EXAMS						