SCHEME OF WORK PHYSICS

FORM 4 2022 TERM I

ENDARASHA BOYS

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| **WK** | **LSN** | **TOPIC** | **SUB-TOPIC** | **OBJECTIVES** | **T/L ACTIVITIES** | **T/L AIDS** | **REFERENCE** | **REMARKS** |
| **2** | 1 | Lenses | Conveying and diverging lenses | By the end of the lesson, the learner should be able to:  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 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:  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 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 |  |
| 4 | 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 | 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 |  |
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|  | 5 | 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 | 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 |  |
| **3** | 1 | Lenses | Images in fair 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 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 |  |
| 2-3 | Lenses | Images in fair lenses Images in converging 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  Locate imaged formed by converging lenses using ray construction method Describe the images formed in converging lenses | Constructing the principal rays for diverging lenses Constructing the principal rays for converging lenses  Describing the characteristics of images formed in converging lenses | Converging lenses Diverging lenses Graph papers Ruler  Graph paper Geometrical set Converging lenses screen | 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  Comprehensive secondary physics students book 4 pages 5-6  teachers book 3 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 |  |
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|  | 4 | Lenses | Images in converging lenses | By the end of the lesson, the learner should be able to:  Locate imaged formed by converging lenses using ray construction method Describe the images formed in converging lenses | 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 Secondary physics KLB students book 4 page 7-10 Principles of physics (M.Nelkon( pages 304-305 Golden tips Physics pages 114-116 |  |
| 5 | Lenses | Images in diverging lenses | By the end of the lesson, the learner should be able to:  Locate imaged formed by diverging lenses using ray construction method 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:  Explain the working of a simple microscope 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 |  |
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|  | 2-3 | Lenses | The microscope The telescope | 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  Describe the structure of a telescope  Describe the working of a telescope | Drawing and labeling the parts of a microscope Describing the work of a microscope  Drawing and labeling the parts of a telescope Describing how a telescope works | Simple microscope Compound microscope Magnifying lens  Telescope Lenses Manilla paper | 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  Comprehensive 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 | 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  teachers book 4 pages 1-5 Principles of physics (M.Nelkon( pages 322-323 Golden tips Physics pages 121 |  |
| 5 | 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  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** | MID TERM EXAMS AND BREAK | | | | | | | |

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| **6** | 1 | 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 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 | 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 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 | 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  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 |  |
| 5 | 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  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 |  |
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| **7** | 1 | 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 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 |  |
| 2-3 | Lenses Uniform Circular Motion | Defects of vision Circular motion | 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  Define circular motion | Describing the defects of the human eye  Explaining the eye defects are corrected  Observing and running a hoop  Rotate a stone tied to the end of a rope | Charts showing eye defects and how they are corrected  Hoop String/rope store | 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  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 | 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  teachers book 34pages 10- 12  Secondary physics KLB students book 4 page 37-42 Golden tips Physics pages 34-35 |  |

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|  | 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  teachers book 34pages 10- 12  Secondary physics KLB students book 4 page 37-42 Golden tips Physics pages 34-35 |  |
| **8** | 1 | 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  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 |  |
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|  | 2-3 | Uniform Circular Motion | Centripetal force Application of uniform circular motion | 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  Explain centrifuge Explain vertical and horizontal circles Explain banked tracks | Experiments Discussions observations  Discussions Explanations Experiments | Pendulum String Stone Round table Ball/bob Stop clock  String Stone Ruler | 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  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 |  |
| 4 | 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  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 |  |
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|  | 5 | 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  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 |  |
| **9** | 1 | 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 101,108-  110 |  |
| 2-3 | 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 101,108-  110 |  |
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|  | 4 | 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  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 | 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  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 |  |
| **10** | END OF TERM EXAMS | | | | | | | |

Dennis