**MATHEMATICS SCHEMES OF WORK**

**FORM TWO 2016**

**TERM I**

**REFERENCES:**

1. Advancing in Mathematics BK 4 By Longhorn Kenya Publishers
2. Secondary Mathematics BK 4 By KLB
3. Macmillan Secondary Maths BK 2

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WK** | **LSN** | **TOPIC** | **SUB-TOPIC** | **OBJECTIVES** | **L/ACTIVITIES** | **L/T AIDS** | **REFERENCE** | **REMARKS** |
| 1 | 1-6 | **REPOTING AND REVISION** |  |
| 2 | 1-2 | Cubes And Cube Roots | Cubes of numbers by multiplication and from tables | By the end of the lesson, the learner should be able to:Find the cubes of numbers by multiplicationFind the cube roots of numbers from tables | Multiplying numbersReading mathematical tablesDiscussionsDemonstrationsExercisesExercises in given class | Mathematical tablesReal life situation | Discovering secondary mathematics Book 2 Pages 1-3Secondary mathematics KLB book 2 pages 1 and 2KLB teachers’ guide book 2 page 1Golden tips mathematics pages 6 and 63 |  |
|  | 3 | Cubes And Cube Roots | Cube roots of numbers by factor method | By the end of the lesson, the learner should be able to:Find the cube roots of numbers by factor method | Multiplying numbersReading mathematical tablesDiscussionsDemonstrationsExercisesExercises in given class | Mathematical tablesReal life situation | Discovering secondary mathematics Book 2 Pages 5-6Secondary mathematics KLB book 2 page 3KLB teachers’ guide book 2 page 1-2Golden tips mathematics pages 62 |  |
|  | 4 | Cubes And Cube Roots  | Evaluation of cube and cube roots expressions and application of cubes and cube roots in real life situation | By the end of the lesson, the learner should be able to:Evaluate expressions involving cubes and cube rootsApply the knowledge of cubes and cube roots in real life situations | Multiplying numbersReading mathematical tablesDiscussionsDemonstrationsExercisesExercises in given class | Mathematical tablesReal life situation | Discovering secondary mathematics Book 2 Pages 5-6Secondary mathematics KLB book 2 page 3 and 4KLB teachers’ guide book 2 page 2Golden tips mathematics pages 63 and 64 |  |
|  | 5-6 | Reciprocals | Reciprocals of numbers by division and from tables | By the end of the lesson, the learner should be able to:Find reciprocals of numbers by divisionFind reciprocals of numbers from tables | Multiplying numbersDividing numbersReading mathematical tablesDiscussionsDemonstrationsExercisesExercises in given class | Mathematical tables | Discovering secondary mathematics Book 2 Pages 12-13Secondary mathematics KLB book 2 page 5KLB teachers’ guide book 2 page 5Golden tips mathematics pages 64 |  |
| 3 | 1-2 | Reciprocals | Computation using reciprocals | By the end of the lesson, the learner should be able to:Use reciprocals of numbers in computation | Multiplying numbersDividing numbersReading mathematical tablesDiscussionsDemonstrationsExercisesExercises in given class | Mathematical tables | Discovering secondary mathematics Book 2 Pages 12-13Secondary mathematics KLB book 2 page 6KLB teachers’ guide book 2 page 5-6Golden tips mathematics pages 64 |  |
|  | 3 | Indices And Logarithms | Indices (powers) and base | By the end of the lesson, the learner should be able to:Define indicesExpress numbers in index formExpress indices in number form | Multiplying numbersDividing numbersFactorizing numbersReading mathematical tablesDiscussionsExercises in given class | Logarithm tablesCharts illustrations laws of indices | Discovering secondary mathematics Book 2 Page 7Secondary mathematics KLB book 2 page 7KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 44-46 |  |
|  | 4 | Indices And Logarithms | Laws of Indices  | By the end of the lesson, the learner should be able to:State laws of indices regarding multiplication of indicesState laws of indices regarding zero indexState laws of indices regarding division of indices | Multiplying numbersDividing numbersFactorizing numbersReading mathematical tablesDiscussionsExercises in given class | Logarithm tablesCharts illustrations laws of indices | Discovering secondary mathematics Book 2 Page 7-11Secondary mathematics KLB book 2 page 7-8KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 44-46 |  |
|  | 5-6 | Indices And Logarithms | Laws of Indices  | By the end of the lesson, the learner should be able to:State laws of indices regarding negative indicesState laws of indices fractional indicesApply the laws of indices in calculation | Multiplying numbersDividing numbersFactorizing numbersReading mathematical tablesDiscussionsExercises in given class | Logarithm tablesCharts illustrating laws of indices | Discovering secondary mathematics Book 2 Page 7-11Secondary mathematics KLB book 2 page 8-13KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 44-46 |  |
| 4 | 1-2 | Indices And Logarithms | Powers of 10 and common logarithms  | By the end of the lesson, the learner should be able to:Relate the powers of 10 to common logarithmsIdentify the parts of the logarithms i.e characteristic mantissa | Multiplying numbersDividing numbersFactorizing numbersDiscussionsExercises in given class | Mathematical tablesCharts illustrating laws of indices | Discovering secondary mathematics Book 2 Page 15Secondary mathematics KLB book 2 page 16-17KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 52 |  |
|  | 3-4 | Indices And Logarithms | Logarithms of positive numbers less than one  | By the end of the lesson, the learner should be able to:Find the logarithm of a number less than 1 from mathematical tablesApply the logarithms of numbers less than one in computation | Multiplying numbersDividing numbersFactorizing numbersDiscussionsExercises in given class | Mathematical tablesCharts illustrating laws of indices | Discovering secondary mathematics Book 2 Page 15Secondary mathematics KLB book 2 page 18KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 52 |  |
|  | 5 | Indices And Logarithms | Logarithms of numbers less than ten (X<10) | By the end of the lesson, the learner should be able to:Find the logarithm numbers less than 10 but greater than 1Apply the logarithms of numbers less than 10 but greater than 1 in computation | Multiplying numbersDividing numbersFactorizing numbersDiscussionsExercises in given class | Mathematical tablesCharts illustrating laws of indices | Discovering secondary mathematics Book 2 Page 16Secondary mathematics KLB book 2 page 18KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 54 |  |
|  | 6 | Indices And Logarithms | Logarithms of numbers greater than ten  | By the end of the lesson, the learner should be able to:Find the logarithm numbers greater than 10 Apply the logarithms of numbers l greater than 10 in computation | Multiplying numbersDividing numbersFactorizing numbersDiscussionsExercises in given class | Mathematical tablesCharts illustrating laws of indices | Discovering secondary mathematics Book 2 Page 16Secondary mathematics KLB book 2 page 18KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 54 |  |
| 5 | 1 | Indices And Logarithms | Antilogarithms  | By the end of the lesson, the learner should be able to:Find antilogarithms of numbers Apply the antilogarithms of numbers in numericals | Multiplying numbersDividing numbersFactorizing numbersDiscussionsExercises in given class | Mathematical tablesCharts illustrating laws of indices | Discovering secondary mathematics Book 2 Page 17Secondary mathematics KLB book 2 page 19KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 54 |  |
|  | 2 | Indices And Logarithms | Multiplication of numbers | By the end of the lesson, the learner should be able to:Use logarithms to work out the multiplication of numbers | Multiplying numbersDividing numbersFactorizing numbersDiscussionsExercises in given class | Mathematical tablesCharts illustrating laws of indices | Discovering secondary mathematics Book 2 Page 18Secondary mathematics KLB book 2 page 20KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 55 |  |
|  | 3 | Indices And Logarithms | division of numbers | By the end of the lesson, the learner should be able to:Use logarithms to work out the division of numbers | Multiplying numbersDividing numbersFactorizing numbersDiscussionsExercises in given class | Mathematical tablesCharts illustrating laws of indices | Discovering secondary mathematics Book 2 Page 19Secondary mathematics KLB book 2 page 20KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 56 |  |
|  | 4 | Indices And Logarithms | Combines multiplication and division of numbers | By the end of the lesson, the learner should be able to:Combine multiplication and division of numbers to work out logarithm problems | Multiplying numbersDividing numbersFactorizing numbersDiscussionsExercises in given class | Mathematical tablesCharts illustrating laws of indices | Discovering secondary mathematics Book 2 Page 19Secondary mathematics KLB book 2 page 20KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 56 |  |
|  | 5 | Indices And Logarithms | Negative characteristics | By the end of the lesson, the learner should be able to:Use negative logarithms | Multiplying numbersDividing numbersFactorizing numbersDiscussionsExercises in given class | Mathematical tablesCharts illustrating laws of indices | Discovering secondary mathematics Book 2 Page 20Secondary mathematics KLB book 2 page 18KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 55 |  |
|  | 6 | Indices And Logarithms | Application of logarithms | By the end of the lesson, the learner should be able to:Apply the knowledge of logarithms and indices in daily computationFind roots and squares of numbers using logarithms | Multiplying numbersDividing numbersFactorizing numbersDiscussionsExercises in given class | Mathematical tablesCharts illustrating laws of indices | Discovering secondary mathematics Book 2 Page 21Secondary mathematics KLB book 2 page 20KLB teachers’ guide book 2 page 7-8Golden tips mathematics pages 53 |  |
| 6 | 1 | Gradients And Equations Of Straight Lines | Gradient of a straight line | By the end of the lesson, the learner should be able to:Define gradient of a straight line *© Education Plus Agencies*Determine the gradient of a straight line through known points | Drawing linear graphsPlotting co-ordinates on the Cartesian planeReading co-ordinates of points on the Cartesian plane | Square boardsGraph booksStraight edged rulerReal life situation | Discovering secondary mathematics Book 2 Page 25-23Secondary mathematics KLB book 2 page 27-34KLB teachers’ guide book 2 page 14-15Golden tips mathematics pages 174 |  |
|  | 2 | Gradients And Equations Of Straight Lines | equation of a straight line | By the end of the lesson, the learner should be able to:Determine the equation f a straight line using gradient and a known pointDetermine the equation of a straight line given two points | Drawing linear graphsPlotting co-ordinates on the Cartesian planeReading co-ordinates of points on the Cartesian plane | Square boardsGraph booksStraight edge/rulerReal life situation | Discovering secondary mathematics Book 2 Page 25-26Secondary mathematics KLB book 2 page 34-35KLB teachers’ guide book 2 page 14-15Golden tips mathematics pages 171 |  |
|  | 3-4 | Gradients And Equations Of Straight Lines | General equation of a straight line | By the end of the lesson, the learner should be able to:Express the equation of a straight line in the form of y=mx+cInterpret the equation y=mx+c | Drawing linear graphsPlotting co-ordinates on the Cartesian planeReading co-ordinates of points on the Cartesian plane | Square boardsGraph booksStraight edge/rulersReal life situation | Discovering secondary mathematics Book 2 Page 27Secondary mathematics KLB book 2 page 34KLB teachers’ guide book 2 page 14-15Golden tips mathematics pages 171 |  |
|  | 5-6 | Gradients And Equations Of Straight Lines | The intercept of a straight line | By the end of the lesson, the learner should be able to:Find the x and the y intercept of a straight lineExpress a double intercept equation of a straight line | Drawing linear graphsPlotting co-ordinates on the Cartesian planeReading co-ordinates of points on the Cartesian plane | Square boardsGraph booksStraight edge/rulersReal life situation | Discovering secondary mathematics Book 2 Page 28Secondary mathematics KLB book 2 page 36KLB teachers’ guide book 2 page 14-15Golden tips mathematics pages 171 |  |
| 7 | 1-2 | Gradients And Equations Of Straight Lines | The gradient of parallel lines | By the end of the lesson, the learner should be able to:Find the gradient of parallel lines Relate parallel lines in terms of their gradients | Drawing linear graphsPlotting co-ordinates on the Cartesian planeReading co-ordinates of points on the Cartesian plane | Square boardsGraph booksStraight edge/ rulersReal life situation | Discovering secondary mathematics Book 2 Page 29Secondary mathematics KLB book 2 page 43-44KLB teachers’ guide book 2 page 14-15Golden tips mathematics pages 175 |  |
|  | 3-4 | Gradients And Equations Of Straight Lines | The gradient of perpendicular lines | By the end of the lesson, the learner should be able to:Find the gradient of perpendicular l linesRelate perpendicular lines in terms of their gradients | Drawing linear graphsPlotting co-ordinates on the Cartesian planeReading co-ordinates of points on the Cartesian plane | Square boardsGraph booksStraight edge/ rulersReal life situation | Discovering secondary mathematics Book 2 Page 30Secondary mathematics KLB book 2 page 41-43KLB teachers’ guide book 2 page 14-15Golden tips mathematics pages 172 |  |
|  | 5-6 | Reflection And Congruence | Geometric transformation (reflection) | By the end of the lesson, the learner should be able to:State the properties of reflectionConstruct and identify the images and the objects in a reflection using the propertiesMake geometrical deductions using reflection | Observing objects in plane mirrorsIdentifying the objects and their images in a plan mirrorDrawingIdentifying lines of symmetryIdentifying the mirror line in a plane mirror | Mirrors Cartesian planeVarious symmetrical objectsTracing and graph papersReal life experiences | Discovering secondary mathematics Book 2 Page 32Secondary mathematics KLB book 2 page KLB teachers’ guide book 2 page 14-20Golden tips mathematics pages 230 |  |
| 8 | 1 | Reflection And Congruence | Lines and planes of symmetry | By the end of the lesson, the learner should be able to:Identify the line of symmetry in a reflection given the image and the object | Observing objects in plane mirrorsIdentifying the objects and their images in a plan mirrorDrawingIdentifying lines of symmetryIdentifying the mirror line in a plane mirror | Mirrors Cartesian planeVarious symmetrical objectsTracing and graph papersReal life experiences | Discovering secondary mathematics Book 2 Page 32Secondary mathematics KLB book 2 page 46-48KLB teachers’ guide book 2 page 19-20Golden tips mathematics pages 230 |  |
|  | 2 | Reflection And Congruence | Lines and planes of symmetry | By the end of the lesson, the learner should be able to:Identify the line of symmetry in a reflection Relate lines and planes of symmetry | Observing objects in plane mirrorsIdentifying the objects and their images in a plan mirrorDrawingIdentifying lines of symmetryIdentifying the mirror line in a plane mirror | Mirrors Cartesian planeVarious symmetrical objectsTracing and graph papersReal life experiences | Discovering secondary mathematics Book 2 Page 32Secondary mathematics KLB book 2 page 46-48KLB teachers’ guide book 2 page 19-20Golden tips mathematics pages 230 |  |
|  | 3-4 | Reflection And Congruence | Reflection in the Cartesian plane | By the end of the lesson, the learner should be able to:Apply the properties of a rotation in the Cartesian plane | Observing objects in plane mirrorsIdentifying the objects and their images in a plan mirrorDrawingIdentifying lines of symmetryIdentifying the mirror line in a plane mirror | Mirrors Cartesian planeVarious symmetrical objectsTracing and graph papersReal life experiences | Discovering secondary mathematics Book 2 Page 37Secondary mathematics KLB book 2 page 48KLB teachers’ guide book 2 page 19-20Golden tips mathematics pages 230 |  |
|  | 5-6 | Reflection And Congruence | Congruent triangles | By the end of the lesson, the learner should be able to:Identify congruencySolve problems involving congruency | Observing objects in plane mirrorsIdentifying the objects and their images in a plan mirrorDrawingIdentifying lines of symmetryIdentifying the mirror line in a plane mirror | Mirrors Cartesian planeVarious symmetrical objectsTracing and graph papersReal life experiences | Discovering secondary mathematics Book 2 Page 39Secondary mathematics KLB book 2 page 64-65KLB teachers’ guide book 2 page 19-20Golden tips mathematics pages 230 |  |
| 9 | 1-2 | Reflection And Congruence | Congruent triangles | By the end of the lesson, the learner should be able to:Identify congruencySolve problems involving congruency | Observing objects in plane mirrorsIdentifying the objects and their images in a plan mirrorDrawingIdentifying lines of symmetryIdentifying the mirror line in a plane mirror | Mirrors Cartesian planeVarious symmetrical objectsTracing and graph papersReal life experiences | Discovering secondary mathematics Book 2 Page 39Secondary mathematics KLB book 2 page 64-65KLB teachers’ guide book 2 page 19-20Golden tips mathematics pages 230 |  |
|  | 3 | Reflection And Congruence | Congruent figures | By the end of the lesson, the learner should be able to:Identify figures which are congruent through reflection | Observing objects in plane mirrorsIdentifying the objects and their images in a plan mirrorDrawingIdentifying lines of symmetryIdentifying the mirror line in a plane mirror | Mirrors Cartesian planeVarious symmetrical objectsTracing and graph papersReal life experiences | Discovering secondary mathematics Book 2 Page 40-41Secondary mathematics KLB book 2 page 66KLB teachers’ guide book 2 page 19-20Golden tips mathematics pages 230 |  |
|  | 4-5 | Rotation | The properties s of rotation | By the end of the lesson, the learner should be able to:Define rotation as a transformationState the properties of a rotation as a transformation | Rotating objectsMeasuring angles/lengths Drawing objectsIdentifying the lines of symmetry | Square boardsGraph papersGeometrical instrumentsTracing paper and real life situations | Discovering secondary mathematics Book 2 Page 44-45Secondary mathematics KLB book 2 page 73KLB teachers’ guide book 2 page 24-25Golden tips mathematics pages 228 |  |
|  | 6 | Rotation | Center of angle of rotation | By the end of the lesson, the learner should be able to:Determine the center of rotationDetermine the angle of rotation | Rotating objectsMeasuring angles/lengths Drawing objectsIdentifying the lines of symmetry | Square boardsGraph papersGeometrical instrumentsTracing paperreal life situations | Discovering secondary mathematics Book 2 Page 46Secondary mathematics KLB book 2 page 73KLB teachers’ guide book 2 page 24-25Golden tips mathematics pages 228 |  |
| 10 | 1-2 | Rotation | Center of angle of rotation | By the end of the lesson, the learner should be able to:Rotate objects through a given angle of rotation and center of rotationEstablish the angle of rotation given an object and its image | Rotating objectsMeasuring angles/lengths Drawing objectsIdentifying the lines of symmetry | Square boardsGraph papersGeometrical instrumentsTracing paperreal life situations | Discovering secondary mathematics Book 2 Page 46Secondary mathematics KLB book 2 page 74KLB teachers’ guide book 2 page 24-25Golden tips mathematics pages 228 |  |
|  | 3-4 | Rotation | Rotation in a Cartesian plane | By the end of the lesson, the learner should be able to:Apply the properties of rotation in the Cartesian plane | Rotating objectsMeasuring angles/lengths Drawing objectsIdentifying the lines of symmetry | Square boardsGraph papersGeometrical instrumentsTracing paperreal life situations | Discovering secondary mathematics Book 2 Page 47Secondary mathematics KLB book 2 page 75KLB teachers’ guide book 2 page 24-25Golden tips mathematics pages 228 |  |
|  | 5-6 | Rotation | Rotational symmetry | By the end of the lesson, the learner should be able to:Identify point of rotational symmetryState the order of rotational symmetry of plane figuresIdentify the axis of rotational symmetry | Rotating objectsMeasuring angles/lengths Drawing objectsIdentifying the lines of symmetry | Square boardsGraph papersGeometrical instrumentsTracing paperreal life situations | Discovering secondary mathematics Book 2 Page 49Secondary mathematics KLB book 2 page 78KLB teachers’ guide book 2 page 24-25Golden tips mathematics pages 228 |  |
| 11 | 1-2 | Rotation | Congruence and Rotation | By the end of the lesson, the learner should be able to:Deduce congruence from rotation | Rotating objectsMeasuring angles/lengths Drawing objectsIdentifying the lines of symmetry | Square boardsGraph papersGeometrical instrumentsTracing paperreal life situations | Discovering secondary mathematics Book 2 Page 48Secondary mathematics KLB book 2 page 84KLB teachers’ guide book 2 page 24-25Golden tips mathematics pages 228 |  |
|  | 3-4 | Rotation | REVISION | By the end of the lesson, the learner should be able to:Answer all questions involving rotationsApply rotation in real life situations | Rotating objectsMeasuring angles/lengths Drawing objectsIdentifying the lines of symmetry | Square boardsGraph papersGeometrical instrumentsTracing paperreal life situations | Discovering secondary mathematics Book 2 Page 50Secondary mathematics KLB book 2 page 84-86KLB teachers’ guide book 2 page 24-25Golden tips mathematics pages 228 |  |
|  | 5-6 | Similarity And Enlargement | Similar figures | By the end of the lesson, the learner should be able to:Identify similar figuresConstruct similar figures | Identifying similar figuresTracing figuresConstructing similar figuresenlarging figuresDrawing figures on the Cartesian plane measuring lengths/ angles | Geometrical instrumentsModel mapsPhotographsCharts illustrating similarity and enlargement | Discovering secondary mathematics Book 2 Page 52Secondary mathematics KLB book 2 page 87KLB teachers’ guide book 2 page 27-28Golden tips mathematics pages 125 |  |
| 12 | 1-2 | Similarity And Enlargement | Properties of enlargement | By the end of the lesson, the learner should be able to:State the properties of enlargement as a transformationApply the properties of enlargement to construct objects and images | Identifying similar figuresTracing figuresConstructing similar figuresenlarging figuresDrawing figures on the Cartesian plane measuring lengths/ angles | Geometrical instrumentsModel mapsPhotographsCharts illustrating similarity and enlargement | Discovering secondary mathematics Book 2 Page 52Secondary mathematics KLB book 2 page 97KLB teachers’ guide book 2 page 27-28Golden tips mathematics pages 125 |  |
|  | 3-4 | Similarity And Enlargement | Enlargement | By the end of the lesson, the learner should be able to:State the scale factorState the center of enlargement | Identifying similar figuresTracing figuresConstructing similar figuresenlarging figuresDrawing figures on the Cartesian plane measuring lengths/ angles | Geometrical instrumentsModel mapsPhotographsCharts illustrating similarity and enlargement | Discovering secondary mathematics Book 2 Page 57-58Secondary mathematics KLB book 2 page 97KLB teachers’ guide book 2 page 27-28Golden tips mathematics pages 125 |  |
|  | 5-6 | Similarity And Enlargement | Enlargement on the Cartesian plane | By the end of the lesson, the learner should be able to:Apply enlargement on Cartesian planes | Identifying similar figuresTracing figuresConstructing similar figuresenlarging figuresDrawing figures on the Cartesian plane measuring lengths/ angles | Geometrical instrumentsModel mapsPhotographsCharts illustrating similarity and enlargement | Discovering secondary mathematics Book 2 Page 61-62Secondary mathematics KLB book 2 page 97KLB teachers’ guide book 2 page 27-28Golden tips mathematics pages 125 |  |
| 13 | 1-2 | Similarity And Enlargement | Linear, area and volume scale factors | By the end of the lesson, the learner should be able to:Determine linear scale factorDetermine area scale factorsDetermine volume scale factorsRelate area scale factor, volume scale factor, and linear scale factor | Identifying similar figuresTracing figuresConstructing similar figuresenlarging figuresDrawing figures on the Cartesian plane measuring lengths/ angles | Geometrical instrumentsModel mapsPhotographsCharts illustrating similarity and enlargement | Discovering secondary mathematics Book 2 Page 62-65Secondary mathematics KLB book 2 page 97-110KLB teachers’ guide book 2 page 27-28Golden tips mathematics pages 125 |  |
|  | 3-4 | Similarity And Enlargement | Areas of similar figures | By the end of the lesson, the learner should be able to:Apply volume area and linear scale factors in establishing areas of similar figures | Identifying similar figuresTracing figuresConstructing similar figuresenlarging figuresDrawing figures on the Cartesian plane measuring lengths/ angles | Geometrical instrumentsModel mapsPhotographsCharts illustrating similarity and enlargement | Discovering secondary mathematics Book 2 Page 62-64Secondary mathematics KLB book 2 page 106-108KLB teachers’ guide book 2 page 27-28Golden tips mathematics pages 125 |  |
|  | 5-6 | Similarity And Enlargement | Volume of similar figures | By the end of the lesson, the learner should be able to:Apply knowledge of linear scale factor and volume scale factor to determine values of similar figures | Identifying similar figuresTracing figuresConstructing similar figuresenlarging figuresDrawing figures on the Cartesian plane measuring lengths/ angles | Geometrical instrumentsModel mapsPhotographsCharts illustrating similarity and enlargement | Discovering secondary mathematics Book 2 Page 64-65Secondary mathematics KLB book 2 page 109-111KLB teachers’ guide book 2 page 27-28Golden tips mathematics pages 125 |  |
| 14 | 1-2 | Similarity And Enlargement | Application of scale factors in real life situations | By the end of the lesson, the learner should be able to:Apply knowledge of linear scale factor and volume scale factor to determine values of similar figures | Identifying similar figuresTracing figuresConstructing similar figuresenlarging figuresDrawing figures on the Cartesian plane measuring lengths/ angles | Geometrical instrumentsModel mapsPhotographsCharts illustrating similarity and enlargement | Discovering secondary mathematics Book 2 Page 66Secondary mathematics KLB book 2 page 109-111-112KLB teachers’ guide book 2 page 27-28Golden tips mathematics pages 128 |  |
| 15 |  | **END OF TERM EXAMINATIONS AND CLOSING** |  |

**MATHEMATICS SCHEMES OF WORK**

**FORM TWO 2016**

**TERM II**

**REFERENCES:**

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| **WK** | **LSN** | **TOPIC/S-TOPIC** | **OBJECTIVES** | **L/ACTIVITIES** | **L/T AIDS** | **REFERENCE** | **REMARKS** |
|  |  | **SCHOOL OPENING** |  |
| 1 | 1 | Pythagoras Theorem- Pythagoras Theorem | **By the end of the lesson, the learner** **should be able to:-**Derive Pythagoras Theorem | Deriving PythagorasTheorem  | ChalkboardChartsIllustrating derivedtheorem | KLB BK2 Pg 120Macmillan BK 2Pg 105 Advancing in MathBK 2 Pg 86-88  |  |
|  | 2 | Solutions of problemsUsing PythagorasTheorem  | **By the end of the lesson, the learner** **should be able to:-**Solve problems using Pythagoras Theorem | Solving problems usingPythagoras theorem  | Charts illustratingPythagoras theorem | KLB BK2 Pg 121Macmillan BK 2Pg 106Advancing in MathBK 2 Pg 89-90 |  |
|  | 3 | Application to real lifeSituation | **By the end of the lesson, the learner** **should be able to:-**Apply Pythagoras theorem to solveproblems in real life situations | Solving problems usingPythagoras theorem  | ChalkboardsChart illustrating aladder  | KLB BK2Pg121-122Macmillan BK 2Pg 109Advancing in MathBK 2 Pg 89-90 |  |
|  | 4&5 | TrigonometryTangent, sine andcosines | **By the end of the lesson, the learner** **should be able to:-**Define tangent, sine and cosine ratiosfrom a right angles triangle | Defining what a tangent,Cosine and sine areusing a right angled triangle | Charts illustratingtangent, sine and cosine | KLB BK2 Pg 123,132,133Macmillan BK 2Pg 112Advancing in MathBK 2 Pg 94-95 |  |
|  | 6 | Trigonometric Table | **By the end of the lesson, the learner** **should be able to:-**Use trigonometric tables to find thesine, cosine and tangent | Reading trigonometrictables of sines, cosinesand tangent | Mathematical table | KLB BK2 Pg 127, 138, 139Macmillan BK 2Pg 115Advancing in MathBK 2 Pg 99 |  |
| 2 | 1&2 | Angles and sides of aright angled triangle | **By the end of the lesson, the learner** **should be able to:-*** Use the sine, cosine and tangent in

 calculating the length of a right angled triangle and also finding the angle  given two sides and unknown angle* The length can be obtained if one

 side is given and an angle | Using mathematical tablesFinding the length usingsine ratioFinding the length usingCosine and tangent ratioFinding the angle usingSine, cosine and tangent | Mathematical tableChartsChalkboard  | KLB BK2 Pg 125, 139, 140Macmillan BK 2Pg 118Advancing in MathBK 2 Pg 100 |  |
|  | 3 | Establishing Relationship of sine and cosine ofcomplimentary angles | **By the end of the lesson, the learner** **should be able to:-**Establish the relationship of sine andcosine of complimentary angles | Using established relationship to solveproblems | Chalkboards | KLB BK2 Pg 145Macmillan BK 2Pg 119-120Advancing in MathBK 2 Pg 101 |  |
|  | 4 | Sines and cosines ofComplimentary angles | **By the end of the lesson, the learner** **should be able to:-**Use the relationship of sine and cosineof complimentary angles in solvingproblems | Solving problems involving the sines andcosines of complimentaryangles | ChalkboardCharts illustrating therelationship of sinesand cosines of complimentary angles | KLB BK2 Pg 145Macmillan BK 2Pg 119-120Advancing in MathBK 2 Pg 101 |  |
|  | 5 | Relationship betweentangent, sine and cosine | **By the end of the lesson, the learner** **should be able to:-**Relate the three trigonometric ratios,the sine, cosine and tangent | Relating the three trigonometric ratios | Charts showing the three related trigonometric ratio | KLB BK2 PgMacmillanBk2Pg121Advancing in MathBK 2 Pg  |  |
|  | 6 | Trigonometric ratios of special angles 30, 45, 60 and 90 | **By the end of the lesson, the learner** **should be able to:-**Determine the trigonometric ratios ofspecial angles without using tables | Determining the trigonometric ratios ofspecial angles 30,45,60and 90 without using tables | Charts showing isosceles right angledtriangleCharts illustratingEquilateral triangle | KLB BK2 Pg 146-147Macmillan BK 2Pg 122Advancing in MathBK 2 Pg 102-103 |  |
| 3 | 1 | Application of Trigonometric ratiosin solving problems | **By the end of the lesson, the learner** **should be able to:-**Solve trigonometric problems withoutusing tables | Solving trigonometric problems of special angles | Chalkboard | KLB BK2 Pg 148Macmillan BK 2Pg 124Advancing in MathBK 2 Pg 102 |  |
|  | 2 | Logarithms of Sines | **By the end of the lesson, the learner** **should be able to:-**Read the logarithms of sines | Solving problems byreading logarithm tableof sines | ChalkboardMathematical tables | KLB BK2 Pg 149Macmillan BK 2Pg 128Advancing in MathBK 2 Pg 105 |  |
|  | 3&4 | Logarithms of cosinesAnd tangents | **By the end of the lesson, the learner** **should be able to:-**Read the logarithm of cosines andtangents from mathematical tables | Reading logarithms ofcosine and tangent frommathematical table | ChalkboardMathematical table | KLB BK2 Pg 150-152Macmillan BK 2Pg 128Advancing in MathBK 2 Pg 105 |  |
|  | 5 | Reading tables oflogarithms of sines,cosines and tangents | **By the end of the lesson, the learner** **should be able to:-**Read the logarithms of sines, cosinesand tangents from tables | Solving problems through reading the tableof logarithm of sines,cosines and tangents | ChalkboardMathematical table | KLB BK2 Pg 149-152Macmillan BK 2Pg 128Advancing in MathBK 2 Pg 106 |  |
|  | 6 | Application of trigonometry to reallife situations | **By the end of the lesson, the learner** **should be able to:-**Solve problems in real life usingtrigonometry | Solving problems usingtrigonometry in real life | Mathematical table | KLB BK2 Pg 153-154Macmillan BK 2Pg 130Advancing in MathBK 2 Pg 106-109 |  |
| 4 | 1 | Area of a triangleArea of a triangle giventhe base and height(A = ½ bh) | **By the end of the lesson, the learner** **should be able to:-**Calculate the are of a triangle given the base and height | Calculating the area of atriangle given the baseand height | Chart illustrating worked problemChalkboard | KLB BK2 Pg 155Macmillan BK 2Pg 135Advancing in MathBK 2 Pg 110 |  |
|  | 2 | Area of a triangle usingthe formula(A = ½ absinӨ) | **By the end of the lesson, the learner** **should be able to:-**- Derive the formula ½ absinc- Using the formula derived in  calculating the area of a triangle given two sides and an included angle | Deriving the formula½ absincUsing the formula tocalculate the area of a triangle given two sides and an included angle | Charts illustrating atriangle with two sidesand an included angleCharts showing derived formula | KLB BK2 Pg 156Macmillan BK 2Pg 148Advancing in MathBK 2 Pg 110 |  |
|  | 3 | Area of a triangle usingthe formulaA = √s(s-a)(s-b)(s-c) | **By the end of the lesson, the learner** **should be able to:-**Solve problems on the area of a triangleGiven three sizes using the formulaA = √s(s-a)(s-b)(s-c) | Solving problems on thearea of triangle giventhree sides of a triangle | Charts illustrating a triangle with three sidesCharts illustrating aworked example i.e.mathematical table | KLB BK2 Pg 157-158Macmillan BK 2Pg 143Advancing in MathBK 2 Pg 111-112 |  |
|  | 4 | Application to real lifeSituation | **By the end of the lesson, the learner** **should be able to:-**Use the formula A = √s(s-a)(s-b)(s-c) to solve problems in real life | Solving problems in reallife using the formulaA = √s(s-a)(s-b)(s-c) | Mathematical table | KLB BK2 Pg 159Macmillan BK 2Pg 143Advancing in MathBK 2 Pg 115 |  |
|  | 5&6 | Area of Quadrilateral and PolygonsArea of a square,rectangle, rhombus, parallelogram andtrapezium | **By the end of the lesson, the learner** **should be able to:-**Calculate the are of a triangle, square,rectangle, rhombus, parallelogram andtrapezium | Calculating the area of atriangle, square, rectangle, rhombus, parallelogram andtrapezium | Charts illustrating formula used in calculating the areas ofthe quadrilateral | KLB BK2 Pg 161-163Macmillan BK 2Pg 143Advancing in MathBK 2 Pg 116-118 |  |
| 5 | 1 | Area of a kite | **By the end of the lesson, the learner** **should be able to:-**Find the area of a kite | Calculating the area of akite | Model of a kite | KLB BK2 Pg 163Macmillan BK 2Pg 144Advancing in MathBK 2 Pg 119 |  |
|  | 2 | Area of other polygons(regular polygon) e.g.Pentagon | **By the end of the lesson, the learner** **should be able to:-**Find the area of a regular polygon | Calculating the area of a regular polygon | Mathematical tableCharts illustrating Polygons | KLB BK2 Pg 164Macmillan BK 2 Pg Advancing in MathBK 2 Pg  |  |
|  | 3 | Area of irregularPolygon | **By the end of the lesson, the learner** **should be able to:-**Find the area of irregular polygons | Finding the area of irregular polygons | Charts illustrating various irregular polygonsPolygonal shapes | KLB BK2 Pg 166Macmillan BK 2Pg 146-147Advancing in MathBK 2 Pg 120 |  |
|  | 4&5 | Area of part of a circleArea of a sector (minor sector and amajor sector) | **By the end of the lesson, the learner** **should be able to:-**- Find the area of a sector given the angle and the radius of a minor sector* Calculate the area of a major sector

 of a circle | Finding the area of aminor and a major sectorof a circle | Charts illustrating sectors | KLB BK 2 Pg 167Macmillan BK 2Pg 149Advancing in MathBK 2 Pg 122 |  |
|  | 6 | Defining a segment of a circleFinding the area of a segment of a circle | **By the end of the lesson, the learner** **should be able to:-**- Define what a segment of a circle is- Find the area of a segment of a circle | Finding the area of a segment by first finding the area of a sector lessthe area of a smaller sector given R and r andangle Ө | Chart illustrating aSegment | KLB BK2 Pg 169-170Macmillan BK 2Pg 151-152Advancing in MathBK 2 Pg 123 |  |
| 6 | 1 | Area of a commonregion between twocircles given the anglesand the radii | **By the end of the lesson, the learner** **should be able to:-**Find the area of common region between two circles given the angles *© Education Plus Agencies* | Calculating the area of asegment | Charts illustratingcommon region between the circlesUse of a mathematicaltable during calculation | KLB BK 2 Pg 175Macmillan BK 2Pg 153-154Advancing in MathBK 2 Pg 124 |  |
|  | 2 | Area of a commonregion between twocircles given only theradii of the two circlesand a common chord | **By the end of the lesson, the learner** **should be able to:-**Calculate the area of common region between two circle given the radii ofthe two intersecting circles and the length of a common chord of the twocircles | Finding the area of a common region betweentwo intersecting  | Charts illustrating common region between two intersecting circles | KLB BK 2 Pg 176Macmillan BK 2Pg 155Advancing in MathBK 2 Pg 124 |  |
|  | 3&4 | Surface area of solidsSurface area of prisms* Cylinder

(ii) Triangular prism(iii) Hexagonal prism | **By the end of the lesson, the learner** **should be able to:-**Define prism and hence be in a positionof calculating the surface area of someprisms like cylinder, triangular prismand hexagonal prism | Defining a prismCalculating the surfacearea of the prisms | Models of cylinder,triangular andhexagonal prisms | KLB BK 2 Pg 177Macmillan BK 2Pg 156Advancing in MathBK 2 Pg  |  |
|  | 5 | Area of a square basedPyramid | **By the end of the lesson, the learner** **should be able to:-**Find the total surface area of a squarebased pyramid | Finding the surface areaof a square based pyramid | Models of a square based pyramid | KLB BK 2 Pg 178Macmillan BK 2Pg 157Advancing in MathBK 2 Pg 128 |  |
|  | 6 | Surface area of a Rectangular basedPyramid | **By the end of the lesson, the learner** **should be able to:-**Find the surface area of a rectangularbased pyramid | Finding the surface areaof a rectangular based pyramid | Models of a Rectangular based pyramid | KLB BK 2 Pg 179-180Macmillan BK 2Pg 157 |  |
| 7 | 1 | Surface area of a cone using the formulaA = πr2 + πrl | **By the end of the lesson, the learner** **should be able to:-**Find the total surface area of the coneby first finding the area of the circularbase and then the area of the curvedsurface  | Finding the area of thecircular partFinding the area of thecurved partGetting the total surfaceArea | Models of a cone | KLB BK 2 Pg 181Macmillan BK 2Pg 159Advancing in MathBK 2 Pg 129 |  |
|  | 2&3 | Surface area of afrustrum of a cone anda pyramid | **By the end of the lesson, the learner** **should be able to:-**Find the surface area of a frustrum of acone and pyramid | Finding the surface areaof a frustrum of a coneand a pyramid | Models of frustrum ofa cone and a pyramid | KLB BK 2 Pg 182Macmillan BK 2Pg 160Advancing in MathBK 2 Pg 131 |  |
|  | 4 | Finding the surface area of a sphere | **By the end of the lesson, the learner** **should be able to:-**Find the surface area of a sphere giventhe radius of a sphere | Finding the surface areaof a sphere | Models of a sphereCharts illustrating formula for finding thesurface area of a sphere | KLB BK 2 Pg 183Macmillan BK 2Pg 161-162Advancing in MathBK 2 Pg 132 |  |
|  | 5 | Surface area of a Hemispheres | **By the end of the lesson, the learner** **should be able to:-**Find the surface area of a hemisphere  | Finding the surface areaof a hemisphere | Models of a hemisphere | KLB BK 2 Pg 184Macmillan BK 2Pg 162Advancing in MathBK 2 Pg 132 |  |
|  | 6 | Volume of SolidsVolume of prism(triangular based prism) | **By the end of the lesson, the learner** **should be able to:-**Find the volume of a triangular based prism | Finding the volume of atriangular based prism | Models of a triangularbased prism | KLB BK 2 Pg 186Macmillan BK 2Pg 163Advancing in MathBK 2 Pg 138 |  |
| 8 | 1 | Volume of prism(hexagonal based prism)given the sides andangle | **By the end of the lesson, the learner** **should be able to:-**Find the volume of a hexagonal basedprism | Calculating the volume of an hexagonal prism | Models of hexagonal based prism  | KLB BK 2 Pg 187Macmillan BK 2Pg 163Advancing in MathBK 2 Pg 139 |  |
|  | 2&3 | Volume of a pyramid(square based and rectangular based) | **By the end of the lesson, the learner** **should be able to:-**Find the volume of a square based pyramid and rectangular based pyramid | Finding the surface areaof the baseApplying the formulaV=½x base area x heightto get the volume of thepyramids (square andrectangular based) | Models of square andRectangular basedPyramids | KLB BK 2 Pg 189-190Macmillan BK 2Pg 165-166Advancing in MathBK 2 Pg 140 |  |
|  | 4 | Volume of a cone | **By the end of the lesson, the learner** **should be able to:-**Find the volume of a cone | Finding the volume ofa cone | Model of a cone | KLB BK 2 Pg 191Macmillan BK 2Pg 167-168Advancing in MathBK 2 Pg 140 |  |
|  | 5 | Volume of a frustrum of a cone | **By the end of the lesson, the learner** **should be able to:-**Find the volume of a frustrum of acone | Finding the volume of a full cone before its cutoffFinding the volume of a cut cone then subtracting | Models of a frustrum of a cone | KLB BK 2 Pg 192MacmillanBk2Pg169Advancing in MathBK 2 Pg 141 |  |
|  | 6 | Volume of a frustrumof a pyramid | **By the end of the lesson, the learner** **should be able to:-**Find the volume of a frustrum of aPyramid | Finding volume of a fullpyramidFinding volume of cutoffpyramidFind volume of the remaining fig (frustrum)by subtracting i.e.Vf = (V – v) | Models of frustrum ofa pyramid | Macmillan BK 2Pg 169Advancing in MathBK 2 Pg 142 |  |
| 9 | 1 | Volume of a sphere(v = 4/3πr3)  | **By the end of the lesson, the learner** **should be able to:-**Find the volume of sphere given theradius of the sphere | Finding the volume of asphere | Model of a sphereMathematical table | KLB BK 2 Pg 195Macmillan BK 2Pg 170-171Advancing in MathBK 2 Pg 142 |  |
|  | 2 | Volume of a Hemisphere {(v = ½ (4/3πr3)} | **By the end of the lesson, the learner** **should be able to:-**Find the volume of a hemisphere | Working out the volume of a hemisphere | Models of hemisphere | Macmillan BK 2Pg 173Advancing in MathBK 2 Pg 143 |  |
|  | 3 | **ASSESSMENT ON: PYTHAGORAS THEOREM AND TRIGONOMETRIC RATIOS** |  |
|  | 4&5 | Revision on PythagorasTheorem and Trigonometric Ratios(Assessment revision) | **By the end of the lesson, the learner** **should be able to:-**- Solve problems using Pythagoras  Theorem- Find the sines, cosines and tangents- Solving problems without using mathematical table i.e. use of special angles in solving trigonometric  problems | Solving problems involving Pythagoras theorem and trigonometric ratios | Mathematical table | KLB BK 2 Pg 120Macmillan BK 2Pg 112-130Advancing in MathBK 2 Pg 86-106 |  |
|  | 6 | **ASSESSMENT ON: AREA OF A TRIANGLE AND AREA OF QUADRILATERALS**  |  |
| 10 | 1 | Revision of the assessment on areas of a triangle and area of quadrilaterals | **By the end of the lesson, the learner** **should be able to:-*** Use the knowledge of the area of a

 triangle to solve problems on the area  of triangles* Use the knowledge of the area of

 quadrilaterals to solve problems from the same area | Solving problems on thearea of triangles Solve problems on the area of quadrilaterals | Charts illustrating various triangles and quadrilaterals | KLB BK 2 Pg 155-157Macmillan BK 2Pg 140-143Advancing in MathBK 2 Pg 110-120 |  |
|  | 2&3 | **ASSESSMENT ON: AREA OF PART OF A CIRCLE, SURFACE AREA OF SOLIDS AND VOLUME OF SOLIDS**  |  |
|  | 4&5 | Revision on assessmenton area of part of acircle, surface are of solids and volume of solids | **By the end of the lesson, the learner** **should be able to:-**Solve problems set from the area of part of a circle, surface are of solids and volume of solids | Solving problems of area of part of a circle, surface are of solids and volume of solids | Models of pyramids,cones, intersections | KLB BK 2 Pg 167-196Macmillan BK 2Pg Advancing in MathBK 2 Pg 122-142 |  |
|  | 6 | Revision on PythagorasTheorem | **By the end of the lesson, the learner** **should be able to:-**Use Pythagoras theorem in solvingproblems like finding the length of oneside of a right angled triangle giventhe other two sides | Finding the length of the unknown side of a rightangled triangle given theother two | ChartsChalkboard | KLB BK 2 Pg 121Macmillan BK 2Pg 106Advancing in MathBK 2 Pg 86-91 |  |
| 11 | 1&2 | Revision on Trigonometric ratios | **By the end of the lesson, the learner** **should be able to:-**- Use trigonometric tables to find the sines, cosines and tangent* Solving problems using the

 knowledge of complimentary angles of sines, cosines - Relating the three trigonometric ratios sines, cosines and tangent* Reading the logarithm of sines, cosines,

 and tangent from mathematical table | Using mathematical tableto find the sine, cosineand tangent (their logarithm) Solving problems on complimentary angles ofsine, cosine and tangentWorking out theRelationship of sine,cosine and tangent | Mathematical table | KLB BK 2 Pg 123-154Macmillan BK 2Pg 112-130Advancing in MathBK 2 Pg 94-106 |  |
|  | 3&4 | Revision on the areaOf triangles | **By the end of the lesson, the learner** **should be able to:-**- Find the area of triangle given the  base and the height- Find the area of a triangle given two  sides and an included angle* Find the area of a triangle given the

 Three sides | Solving problems on the areas of a triangle given* The base and height

ii) Two sides and an included angleiii) Three sides | Charts illustrating theformulae used | KLB BK 2 Pg 155-158Macmillan BK 2Pg 135-143Advancing in MathBK 2 Pg 110-114 |  |
|  | 5 | Application of area oftriangles to real life | **By the end of the lesson, the learner** **should be able to:-**Use the knowledge of the area of triangles in solving problems in reallife situation | Solving problems in real life using the knowledgeof the area of triangle | Mathematical tableChart illustratingformula used | KLB BK 2 Pg 159Macmillan BK 2Pg 143Advancing in MathBK 2 Pg 114 |  |
|  | 6 | Revision on the area ofQuadrilaterals- Area of square- Area of rectangle- Area of rhombus- Area of parallelogram- Area of trapezium | **By the end of the lesson, the learner** **should be able to:-**Find the area of a square, rectangle,parallelogram, rhombus andtrapezium | Finding the area of thequadrilateral in questions | ChalkboardCharts illustratingformula used | KLB BK 2 Pg 161-163Macmillan BK 2Pg 144Advancing in MathBK 2 Pg 116-117 |  |
| 12 | 1 | Revision on the areaof a kite | **By the end of the lesson, the learner** **should be able to:-**Calculate the area of a kite | Calculate the area of aKite | Model of a kite | KLB BK 2 Pg 163Macmillan BK 2Pg 144Advancing in MathBK 2 Pg  |  |
|  | 2&3 | Revision on the area ofother polygons(regular and irregularpolygons) | **By the end of the lesson, the learner** **should be able to:-**- Find the area of a regular pentagon, hexagon, heptagon- Find area of irregular polygon | Finding the area of Regular polygonFinding the area of Irregular polygon | Mathematical table | KLB BK 2 Pg 164-166Macmillan BK 2Pg 146-147Advancing in MathBK 2 Pg 119-120 |  |
|  | 4 | Revision on area ofPart of a circle (areaof a sector) both majorand minor sector | **By the end of the lesson, the learner** **should be able to:-**Calculate the area of a sector (majorAnd minor) | Calculating the area of asector (both major andminor sector) | Chart illustrating sectors | KLB BK 2 Pg 167Macmillan BK 2Pg 149Advancing in MathBK 2 Pg 122 |  |
|  | 5 | Revision on the area ofa segment of a circle | **By the end of the lesson, the learner** **should be able to:-**Find the area of a segment of a circle | Calculating the area of asegment of a circle | Charts illustrating aSegment | KLB BK 2 Pg 169-170Macmillan BK 2Pg 151-152Advancing in MathBK 2 Pg 123 |  |
|  | 6 | Revision on the area ofa common regionbetween two intersecting circles | **By the end of the lesson, the learner** **should be able to:-**Find the area of a common region between two intersecting circles | Calculating the area of acommon region betweenthe intersecting circles | Charts illustrating common region between the intersecting circles | KLB BK 2 Pg 176Macmillan BK 2Pg 155Advancing in MathBK 2 Pg |  |
| 13 | 1 | Revision on surfacearea of solids (surfacearea of prism; cylinder,triangular prism,hexagonal prism | **By the end of the lesson, the learner** **should be able to:-**Calculate the surface area of a cylinder,triangular prism, hexagonal prism | Calculating the surfacearea of prisms | Models of prisms | KLB BK 2 Pg 177Macmillan BK 2Pg 156Advancing in MathBK 2 Pg 127 |  |
|  | 2&3 | Revision on surface area of pyramid, coneand frustrum | **By the end of the lesson, the learner** **should be able to:-**Find the surface area of a pyramid, Cone and frustrum | Calculating the surfacearea of a cone, pyramidand frustrum | Models of pyramid,Cone and frustrum | KLB BK 2 Pg 178-182Macmillan BK 2Pg 157-160Advancing in MathBK 2 Pg 128-131 |  |
|  | 4 | Revision on the Surface area of a Sphere and hemisphere | **By the end of the lesson, the learner** **should be able to:-**Find the area of a sphere given the radius of the sphereGet the surface area of a hemisphere | Finding the surface areaof a sphere and hemisphere | Models of a sphereand hemisphere | KLB BK 2 Pg 183-184Macmillan BK 2Pg 161-162Advancing in Math |  |
|  | 5 | Revision on volumeof and cone | **By the end of the lesson, the learner** **should be able to:-**Solve problems on the volume of prismpyramid and cone | Solving problem on the volume of prism, cone and pyramid | Models of a cone, pyramid and cone | KLBBK2Pg186-191Macmillan BK 2Pg 163-168Advancing in MathBK 2 Pg 138-140 |  |
|  | 6 | Revision on volume ofFrustrum and a sphere | **By the end of the lesson, the learner** **should be able to:-**Solve problems on the volume of asphere and frustrum of a cone and apyramid | Solving problems on the volume of a sphere anda frustrum of pyramidand cone | Models of pyramid andthat of a cone and afterthey are cutModels of a sphere | KLB BK 2 Pg 192-195Macmillan BK 2Pg 169-173Advancing in MathBK 2 Pg 141-142 |  |
| 14 |  | **END OF TERM EXAMINATIONS** |  |

**MATHEMATICS SCHEMES OF WORK**

**FORM TWO 2016**

**TERM III**

**REFERENCES:**

1. Advancing in Mathematics BK 4 By Longhorn Kenya Publishers
2. Secondary Mathematics BK 4 By KLB
3. Macmillan Secondary Maths BK 2

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| **WK** | **LSN** | **TOPIC/S-TOPIC** | **OBJECTIVES** | **L/ACTIVITIES** | **L/T AIDS** | **REFERENCE** | **REMARKS** |
| 1 | 1 | Quadratic expressionsand equationsExpansion of algebraicexpressions | **By the end of the lesson, the learner** **should be able to:-**Expand algebraic expressions that formquadratic equations | Expanding algebraicExpressions | Charts illustrating expanded algebraic expressions | KLB BK 2 Pg 203Macmillan BK 2Pg 174Advancing in MathBK 2 Pg 144 |  |
|  | 2&3 | Three quadratic identities | **By the end of the lesson, the learner** **should be able to:-**Derive the three quadratic identities | Deriving the quadratic identities (a + b)2 = a2 + 2ab + b2(a - b)2 =a2 - 2ab + b2(a – b) (a + b) = a2 – b2 | Charts illustrating derived quadratic identies | KLB BK 2 Pg 204Macmillan BK 2Pg 176Advancing in MathBK 2 Pg 145 |  |
|  | 4 | Expanding using the quadratic identities | **By the end of the lesson, the learner** **should be able to:-**Use the three quadratic identities in expansion of an algebraic expression.Give a clear distinction of the three identities. | Expanding an algebraic expression using the quadratic identities | Chart illustrating expanded problem using identities | KLB BK 2 Pg 204-205Macmillan BK 2Pg 173Advancing in MathBK 2 Pg 148 |  |
|  | 5 | Factorization of quadratic expression (when the coefficient of x2 is 1) | **By the end of the lesson, the learner** **should be able to:-**Factorize the quadratic expressions | Factorizing a quadratic expression with the coefficient of x2 being 1 | Charts illustrating a factorized quadratic expressions | KLB BK 2 Pg 205-206Macmillan BK 2Pg 180Advancing in MathBK 2 Pg 148 |  |
|  | 6 | Factorization of a quadratic expression (when the coefficient of x2 is greater than 1) | **By the end of the lesson, the learner** **should be able to:-**Factorize the quadratic expressions with the coefficient of x2 being greater than 1 e.g. 6x2 – 13x + 6 | Factorizing a quadratic expression with the coefficient of x2 being greater than 1 | Charts illustrating a factorized quadratic expression | KLB BK 2 Pg 206-208Macmillan BK 2Pg 180Advancing in MathBK 2 Pg 150 |  |
| 2 | 1 | Solutions of quadratic equations by factor method | **By the end of the lesson, the learner** **should be able to:-**- Solve a quadratic equation by factor  method- Give the difference between a  quadratic expression and a quadratic  equation- Write a general quadratic equation | Solving quadratic equations by factor methodGiving the difference between quadratic expression and quadratic equationWriting a general quadratic equation | Chart illustrating a solved quadratic equation by factor methodCharts illustrating a general quadratic equation | KLB BK 2 Pg 209Macmillan BK 2Pg 181Advancing in MathBK 2 Pg 151-153 |  |
|  | 2 | Formation of a quadratic equation from given roots | **By the end of the lesson, the learner** **should be able to:-**Form a quadratic equation in the form ax2 + bx + c = 0 from given roots | Using the given roots to form a quadratic equation in the formax2 + bx + c = 0 | Charts illustrating a formed quadratic equation | KLB BK 2 Pg 210MacmillanBk2Pg182Advancing in MathBK 2 Pg 155-156 |  |
|  | 3&4 | Formation and solutions of quadratic equations | **By the end of the lesson, the learner** **should be able to:-**Form and solve quadratic equations | Forming a quadratic equation from given rootsSolving a formed quadratic equation by factor method | Charts illustrating a formed and solved quadratic equation | KLB BK 2 Pg 211Macmillan BK 2Pg 184Advancing in MathBK 2 Pg |  |
|  | 5 | Application of quadratic equations | **By the end of the lesson, the learner** **should be able to:-**Use the knowledge of quadratic in solving problems from quadratic equations | Solving quadratic equations by factor method | Chart illustrating solved quadratic equation | KLB BK 2 Pg 212Macmillan BK 2Pg 184Advancing in MathBK 2 Pg 157-158 |  |
|  | 6 | Linear InequalitiesInequality symbolsGiving examples of simple statements using inequality symbols | **By the end of the lesson, the learner** **should be able to:-**- Give the difference between the four  inequality symbols used- Write down examples of simple  statements using inequality symbols | Giving a clear distinction of the four inequality symbolsWriting down examples of simple statements using inequality symbols | Charts illustrating the four inequality symbols | KLB BK 2 Pg 213Macmillan BK 2Pg 190Advancing in MathBK 2 Pg 160-161 |  |
| 3 | 1 | Inequalities on a number line(simple statement) | **By the end of the lesson, the learner** **should be able to:-**Correctly illustrate inequalities on the number line | Illustrating inequalities on the number line | Charts illustrating inequalities on a number line | KLB BK 2 Pg 213Macmillan BK 2Pg 191Advancing in MathBK 2 Pg 160 |  |
|  | 2&3 | Writing simple statement as compound statementIllustrating compound statement formed on the number line | **By the end of the lesson, the learner** **should be able to:-**Write down two simple statements as a compound statementIllustrating a compound statement formed on a number line | Combining two simple statementsIllustrating a compound statement on the number line | Charts illustrating simple statements and s compound statement | KLB BK 2 Pg 214Macmillan BK 2Pg 191Advancing in MathBK 2 Pg 161 |  |
|  | 4 | Solutions of simple inequality (linear inequality in one unknown) | **By the end of the lesson, the learner** **should be able to:-**Solve a linear inequality in one unknown | Solving a linear inequality in one unknown | ChalkboardCharts showing a solved simple inequality | KLB BK 2 Pg 215Macmillan BK 2Pg 191Advancing in MathBK 2 Pg 162 |  |
|  | 5 | Multiplication and division by a negative number and a positive number | **By the end of the lesson, the learner** **should be able to:-**Note the effect of multiplying and dividing an inequality by a negative number and a positive number | Multiplying and diving an inequality by a negative number and a positive number | Charts illustrating worked example | KLB BK 2 Pg 216Macmillan BK 2Pg Advancing in MathBK 2 Pg 163 |  |

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| 4 | 1-5 | Representing combined inequalities graphicallyObtaining inequalities from inequality graph | **By the end of the lesson, the learner** **should be able to:-**Represent inequalities both in one and two unknowns graphicallyObtain inequalities from inequality graphs | Representing inequalities graphically both in one and two unknownsObtaining inequalities from inequality graph | Square boardGraph paperChalkboard | KLB BK 2 Pg 224-227Macmillan BK 2Pg 194-197Advancing in MathBK 2 Pg 167 |  |
|  | 6 | Linear MotionDisplacement, velocity, speed and acceleration | **By the end of the lesson, the learner** **should be able to define:-**(i) Displacement(ii) velocity(iii) Speed(iv) Acceleration- Use displacement, velocity, speed  and acceleration in solving problems | Defining displacement, velocity, speed and accelerationWorking out problems on velocity, acceleration, speed and displacement  | Chalkboard | KLB BK 2 Pg 2228-229Macmillan BK 2Pg 198Advancing in MathBK 2 Pg 168 |  |
| 5 | 1&2 | Determining velocity and acceleration | **By the end of the lesson, the learner** **should be able to:-**Determine velocity and accelerationDetermine average velocity and deceleration or retardationDistinguish between distance and displacement and speed and velocity | Finding velocity and accelerationCalculating average velocity and retardationDistinguishing distance and displacement, speed and velocity | Chalkboard | KLB BK 2 Pg 230Macmillan BK 2Pg 199Advancing in MathBK 2 Pg 170-171 |  |
|  | 3 | Distance - Time graph | **By the end of the lesson, the learner** **should be able to:-**Plot and draw a distance time graphInterpreting distance time graph | Plotting distance time graph Drawing distance time graphUsing distance time graph to solve problems of linear motion | Square boardGraph paper | KLB BK 2 Pg 231-233Macmillan BK 2Pg 201Advancing in MathBK 2 Pg 172-173 |  |
|  | 4 | Velocity – Time graph | **By the end of the lesson, the learner** **should be able to:-**Plot and draw velocity time graph | Plotting and drawing a velocity time graph | Graph paperSquare board | KLB BK 2 Pg 234MacmillanBK2Pg202Advancing in MathBK 2 Pg 174-175 |  |
|  | 5 | Interpreting Velocity – Time Graph | **By the end of the lesson, the learner** **should be able to:-**Interpret velocity – time graph drawnUsing velocity time graph in solving linear problems | Solving linear motion problems from a velocity time graphInterpreting a velocity time graph | Square boardGraph paper | KLB BK 2 Pg 235Macmillan BK 2Pg 207Advancing in MathBK 2 Pg 176 |  |
|  | 6 | Determining distance using velocity – time graph | **By the end of the lesson, the learner** **should be able to:-**Determine distance from a velocity time graph | Plotting and drawing velocity time graphDetermining distance from velocity time graph | Square boardGraph paper | KLBBK2Pg235-236MacmillanBK2Pg207Advancing in MathBK 2 Pg 176 |  |
| 6 | 1&2 | Relative SpeedBodies moving to same direction | **By the end of the lesson, the learner** **should be able to:-**Define relative speedFind the relative speed of bodies moving to the same direction *© Education Plus Agencies* | Defining relative speedCalculating relative speed of bodies heading same destinationSolving problems involving relative speed | Chalk board | KLB BK 2 Pg 238-239Macmillan BK 2Pg 208Advancing in MathBK 2 Pg 177 |  |
|  | 3 | Relative Speed(Bodies moving in different direction)Approaching bodies | **By the end of the lesson, the learner** **should be able to:-**Find the relative speed of approaching bodies | Finding relative speed of approaching bodies | Chalkboard | KLB BK 2 Pg 239-240Macmillan BK 2Pg 210 |  |
|  | 4 | StatisticsDefining statisticsCollection and organization of data | **By the end of the lesson, the learner** **should be able to:-**Define statisticsDistinguish between a raw and a organized dataCollect and organize a raw data | Defining statisticOrganizing a raw data after collecting | Charts illustrating a raw data | KLB BK 2 Pg 241Macmillan BK 2Pg 211-212Advancing in MathBK 2 Pg 179 |  |
|  | 5 | Frequency distribution table for ungrouped data | **By the end of the lesson, the learner** **should be able to:-**Draw a frequency distribution table for ungrouped data | Drawing frequency distribution table for ungrouped data | Charts illustrating a frequency distribution table | KLB BK 2 Pg 242Macmillan BK 2Pg 214Advancing in MathBK 2 Pg 180 |  |
|  | 6 | Frequency distribution table for grouped data | **By the end of the lesson, the learner** **should be able to:-**Draw a frequency distribution table for the grouped data | Drawing a frequency distribution table for grouped data | Charts illustrating a frequency distribution table for grouped data | KLB BK 2 Pg 249Macmillan BK 2Pg 214-216Advancing in MathBK 2 Pg 182 |  |
| 7 | 1 | Grouping data | **By the end of the lesson, the learner** **should be able to:-**Group data into reasonable units | Grouping a raw data into reasonable units | ChartsChalkboard | KLB BK 2 Pg 248Macmillan BK 2Pg 214Advancing in MathBK 2 Pg 180 |  |
|  | 2 | Measures of central tendencyMean (X) for ungrouped data | **By the end of the lesson, the learner** **should be able to:-**Calculate the mean (X) for ungrouped dataWork out the mean by using the formula X = εx and X = εfx N εf | Calculating the mean for ungrouped data | Charts showing calculated mean | KLB BK 2 Pg 243Macmillan BK 2Pg 218Advancing in MathBK 2 Pg 192 |  |
|  | 3&4 | Mean (X) for grouped data | **By the end of the lesson, the learner** **should be able to:-**Find the mean of a grouped dataFind the midpoint of a given class | Calculating the mean of a grouped data | Charts illustrating a grouped data on a frequency distribution table | KLB BK 2 Pg 249MacmillanBK2Pg219Advancing in MathBK 2 Pg 192 |  |
|  | 5&6 | Mode | **By the end of the lesson, the learner** **should be able to:-**Find mode from ungrouped and grouped data | Finding the mode | Chalkboard | KLB BK 2 Pg 244-249 |  |
| 8 | 1&2 | Median | **By the end of the lesson, the learner** **should be able to:-**Find the median of a grouped and ungrouped dataArrange the ungrouped data in either ascending or descending orderGet accumulative frequency column | Estimating the median of grouped dataFinding the median of ungrouped data | Charts illustrating ascending or descending order dataCharts illustrating formula used | KLB BK 2 Pg 244-245, 248Macmillan BK 2Pg 220-222Advancing in MathBK 2 Pg 194 |  |
|  | 3 | Representation of data(i) Line graph | **By the end of the lesson, the learner** **should be able to:-**Represent data in form of a line graphInterpret a line graphSolve problems using a line graph plotted | Plotting and drawing a line graphSolving problems using a line graph | Square boardGraph papers | KLB BK 2 Pg 255-256Macmillan BK 2Pg 226Advancing in MathBK 2 Pg 190 |  |
|  | 4 | Pie chartBar graph | **By the end of the lesson, the learner** **should be able to:-**Represent data in form of pie chart and bar graphGive clear distinction of a pie chart and bar graph | Representing data in form of a pie chart and bar graph | Mathematical instrument Graph paperSquare board | KLB BK 2 Pg 253-255Macmillan BK 2Pg 227Advancing in MathBK 2 Pg  |  |
|  | 5 | Pictogram and histogram (with equal class intervals) | **By the end of the lesson, the learner** **should be able to:-**Represent data in form of pictogram and histogramInterpreting the information from the bars of a histogram and pictogram  | Representing data in form of pictogram and histogramDrawing the bars of a histogram on a square paper | Square boardGraph paper | KLB BK 2 Pg 254-257Macmillan BK 2Pg 227Advancing in MathBK 2 Pg 184,187-188 |  |
|  | 6 | Histogram (varying class interval) | **By the end of the lesson, the learner** **should be able to:-**Represent data in form of a histogram with varying class intervalsCalculate frequency densities | Calculating frequency densityRepresenting data in form of a histogram | Graph paperSquare board | KLB BK 2 Pg 258Macmillan BK 2Pg 228Advancing in MathBK 2 Pg 189 |  |
| 9 | 1 | Frequency polygons | **By the end of the lesson, the learner** **should be able to:-**Represent data in form of a frequency polygon | Representing data in form of a frequency polygonPlotting and drawing frequency polygon | Graph paperSquare board | KLB BK 2 Pg 259-260Macmillan BK 2Pg 231Advancing in MathBK 2 Pg 189 |  |
|  | 2 | Interpretation of data from real life situation | **By the end of the lesson, the learner** **should be able to:-**Interpret data from real life situation using the knowledge of line graph, bar graph, pie chart, histogram, pictogram and frequency polygon | Interpreting of data in real life situation by using the previously learnt knowledge | Graph paperMathematical instruments | KLB BK 2 Pg 263Macmillan BK 2Pg 238Advancing in MathBK 2 Pg 198 |  |
|  | 3 | Angle properties of a circleArc, chord and segment of a circle | **By the end of the lesson, the learner** **should be able to:-**Identify an arc, chord and segmentDefine an arc, chord and segment | Defining arc, chord and segmentIdentifying arc, chord and segment | Mathematical instrumentsCharts illustrating arc, chord and segment | KLB BK 2 Pg 264Macmillan BK 2Pg 238Advancing in MathBK 2 Pg 199 |  |
|  | 4 | Angle subtended by the same arc at the circumference | **By the end of the lesson, the learner** **should be able to:-**Relate and compute angle subtended by an arc at the circumference | Computing angle subtended by an arc at the circumference | Mathematical instruments | KLB BK 2 Pg 265Macmillan BK 2Pg 241Advancing in MathBK 2 Pg 200-201 |  |
|  | 5&6 | Relationship between angle subtended at the centre and angle subtended on the circumference by the same arc | **By the end of the lesson, the learner** **should be able to:-**Relate and compute angle subtended by an arc at the centre and at the circumference | Computing angle subtended by an arc at the centre and at the circumference | Mathematical instruments | KLB BK 2 Pg 267-273Macmillan BK 2Pg 241-243Advancing in MathBK 2 Pg 202 |  |
| 10 | 1 | Angle in a semi-circle | **By the end of the lesson, the learner** **should be able to:-**State the angles in the semi-circle | Stating the angles in a semi-circle | Chalk board | KLB BK 2 Pg 273Macmillan BK 2Pg 244-245Advancing in MathBK 2 Pg 203 |  |
|  | 2 | Angle properties of a cyclic quadrilateral | **By the end of the lesson, the learner** **should be able to:-**State the angle properties of a cyclic quadrilateral | Stating angle properties of a cyclic quadrilateral | Mathematical instrumentsModels of a cyclic quadrilateral | KLB BK 2 Pg 278Macmillan BK 2Pg 244-246Advancing in MathBK 2 Pg 204 |  |
|  | 3 | Finding angles of a cyclic quadrilateral | **By the end of the lesson, the learner** **should be able to:-**Find and complete angles of a cyclic quadrilaterals | Computing angles of a cyclic quadrilateral | Charts illustrating angles in a cyclic quadrilateral | KLB BK 2 Pg 279MacmillanBK2Pg250Advancing in MathBK 2 Pg 204 |  |
|  | 4&5 | VectorsVector and scalar quantitiesVector notation | **By the end of the lesson, the learner** **should be able to:-**Define a vector and scalar quantity and write down examples of a vector and scalar quantitiesUse vector notation correctly | Defining a vector and scalarWriting down examples of a vector and a scalarUsing a vector or notation | Cahlk board | KLB BK 2 Pg 284Macmillan BK 2Pg 252Advancing in MathBK 2 Pg 206-207 |  |
|  | 6 | Representation of vectors | **By the end of the lesson, the learner** **should be able to:-**Represent vectors both singles and combined geometrically | Representing a vector both single and combine geometrically | Square boardGraph paper | KLB BK 2 Pg 284-285Macmillan BK 2Pg 253 |  |
| 11 | 1 | Equivalent vectorsAddition of vectors | **By the end of the lesson, the learner** **should be able to:-**Identify equivalent vectorsAdd vectors | Identifying equivalent vectorsAdding vectors | Square boardGraph paperChalkboard | KLB BK 2 Pg 285-288Macmillan BK 2Pg 256 |  |
|  | 2 | Multiplication of a vector by a scalar | **By the end of the lesson, the learner** **should be able to:-**Multiply vectors by scalar (positive and negative) | Multiplying vectors by a positive and negative scalar | Chalkboard | KLB BK 2 Pg 290Macmillan BK 2Pg 258Advancing in MathBK 2 Pg 209 |  |
|  | 3 | Column vector and position vector | **By the end of the lesson, the learner** **should be able to:-**Define position vector and column vector | Defining column vector and position vector | Square boardGraph paper | KLB BK2Pg 296-300MacmillanBK2Pg260Advancing in MathBK 2 Pg 213 |  |
|  | 4 | Magnitude of a vector | **By the end of the lesson, the learner** **should be able to:-**Find the magnitude of a vector | Finding the magnitude of a vector | Mathematical table | KLB BK2Pg 301-302MacmillanBK2Pg262Advancing in MathBK 2 Pg 216 |  |
|  | 5 | Mid-point of a vector | **By the end of the lesson, the learner** **should be able to:-**Find the midpoint of a vector | Calculating the midpoint of a vector | Chalkboard | KLB BK2Pg302-303Macmillan BK 2Pg 262 |  |
|  | 6 | Translation vector | **By the end of the lesson, the learner** **should be able to:-**Define translation as a transformation | Defining translationSolving problems on translation | ChalkboardSquare boardGraph paper | KLB BK2Pg 304-308MacmillanBK2Pg263Advancing in MathBK 2 Pg 217 |  |
| 12 | 1 | **ASSESSMENT ON QUADRATIC EXPRESSIONS AND EQUATIONS AND LINEAR INEQUALITIES**  |  |  |
|  | 2 | Revision on the assessment of quadratic expressions and linear inequalities | **By the end of the lesson, the learner** **should be able to:-**Solve quadratic problems correctly and also be able to work out problems on linear inequalities correctly | Solving quadratic problemsWorking out problems from linear inequality | Chalkboard | KLB BK 2 Pg 203-221Macmillan BK 2Pg 197Advancing in MathBK 2 Pg 140-166 |  |
|  | 3 | **ASSESSMENT ON LINEAR MOTION** |  |  |
|  | 4 | Revision on the assessment of linear motion and statistics | **By the end of the lesson, the learner** **should be able to:-**Solve problems on linear motion and statistics correctlyApplying the knowledge learnt to solve linear motion problems and statistic questions | Solving problems on linear motion and statistics | Chalkboard | KLB BK 2 Pg 228-252Macmillan BK 2Pg 198-238Advancing in MathBK 2 Pg 168-199 |  |
|  | 5 | **ASSESSMENT ON ANGLE PROPERTIES OF A CIRCLE AND VECTORS** |  |  |
|  | 6 | Revision on the assessment of angle properties of a circle and vectors | **By the end of the lesson, the learner** **should be able to:-**Work out problems of angle properties and vectors by use of previously learnt knowledge | Solve problems of statistics and angle properties | Graph paperSquare boardChalkboard | KLB BK 2 Pg 264-304Macmillan BK 2Pg 238-263Advancing in MathBK 2 Pg 199-217 |  |