**MATHEMATICS SCHEMES OF FORM 2**

**TERM 2**

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| **WK** | **LSN** | **TOPIC** | **SUB-TOPIC** | **OBJECTIVES** | **T/L ACTIVITIES** | **T/L AIDS** | **REFERENCE** | **REMARKS** |
| 1 | **Opening and Revision** |
| 2 | 1 | Trigonometry   | Application of trigonometry to real life situationsArea of a triangle Area of a triangle given the base and height (A = ? bh)  | By the end of the lesson, the learner should be able to: Solve problems in real life using trigonometryCalculate the are of a triangle given the base and height  | Solving problems using trigonometry in real lifeCalculating the area of a triangle given the base and height  | Mathematical tableChart illustrating worked problem Chalkboard  | KLB BK2 Pg 153-154  |  |
| 2 | Trigonometry   | Area of a triangle using the formula (A = ? absin?)Area of a triangle using the formula A = ?s(s-a)(s-b)(s-c)  | By the end of the lesson, the learner should be able to: - Derive the formula ? absinc - Using the formula derived in calculating the area of a triangle given two sides and an included angleSolve problems on the area of a triangle Given three sizes using the formula A = ?s(s-a)(s-b)(s-c)  | Deriving the formula ? absinc Using the formula to calculate the area of a triangle given two sides and an included angleSolving problems on the area of triangle given three sides of a triangle  | Charts illustrating a triangle with two sides and an included angle Charts showing derived formulaCharts illustrating a triangle with three sides Charts illustrating a worked example i.e. mathematical table  | KLB BK2 Pg 156  |  |
| 3 | Trigonometry   | Area of Quadrilateral and Polygons Area of a square, rectangle, rhombus, parallelogram and trapezium  | By the end of the lesson, the learner should be able to: Calculate the are of a triangle, square, rectangle, rhombus, parallelogram and trapezium  | Calculating the area of a triangle, square, rectangle, rhombus, parallelogram and trapezium  | Charts illustrating formula used in calculating the areas of the quadrilateral  | KLB BK2 Pg 161-163  |  |
| 4 | Trigonometry   | Area of a kiteArea 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 kiteFind the area of a regular polygon  | Calculating the area of a KiteCalculating the area of a regular polygon  | Model of a kiteMathematical table Charts illustrating Polygons  | KLB BK2 Pg 163  |  |
| 5 | Trigonometry   | Area of irregular PolygonArea of part of a circle Area of a sector (minor sector and a major sector)  | By the end of the lesson, the learner should be able to: Find the area of irregular polygons- 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 irregular polygonsFinding the area of a minor and a major sector of a circle  | Charts illustrating various irregular polygons Polygonal shapesCharts illustrating sectors  | KLB BK2 Pg 166  |  |
| 6 | Trigonometry   | Defining a segment of a circle Finding 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 less the area of a smaller sector given R and r and angle ?  | Chart illustrating a Segment  | KLB BK2 Pg 169-170  |  |
| 3 | 1 | Trigonometry   | Area of a common region between two circles given the angles and the radiiArea of a common region between two circles given only the radii of the two circles and a common chord  | 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 AgenciesCalculate the area of common region between two circle given the radii of the two intersecting circles and the length of a common chord of the two circles  | Calculating the area of a segmentFinding the area of a common region between two intersecting  | Charts illustrating common region between the circles Use of a mathematical table during calculationCharts illustrating common region between two intersecting circles  | KLB BK 2 Pg 175  |  |
| 2 | Trigonometry   | Surface area of solids Surface area of prisms Cylinder (ii) Triangular prism (iii) Hexagonal prismArea of a square based Pyramid  | By the end of the lesson, the learner should be able to: Define prism and hence be in a position of calculating the surface area of some prisms like cylinder, triangular prism and hexagonal prismFind the total surface area of a square based pyramid  | Defining a prism Calculating the surface area of the prismsFinding the surface area of a square based pyramid  | Models of cylinder, triangular and hexagonal prismsModels of a square based pyramid  | KLB BK 2 Pg 177  |  |
| 3 | Trigonometry   | Surface area of a Rectangular based PyramidSurface area of a cone using the formula A = ?r2 + ?rl  | By the end of the lesson, the learner should be able to: Find the surface area of a rectangular based pyramidFind the total surface area of the cone by first finding the area of the circular base and then the area of the curved surface  | Finding the surface area of a rectangular based pyramidFinding the area of the circular part Finding the area of the curved part Getting the total surface Area  | Models of a Rectangular based pyramidModels of a cone  | KLB BK 2 Pg 179-180  |  |
| 4 | Trigonometry   | Surface area of a frustrum of a cone and a pyramid  | By the end of the lesson, the learner should be able to: Find the surface area of a frustrum of a cone and pyramid  | Finding the surface area of a frustrum of a cone and a pyramid  | Models of frustrum of a cone and a pyramid  | KLB BK 2 Pg 182  |  |
| 5 | Trigonometry   | Finding the surface area of a sphereSurface area of a Hemispheres  | By the end of the lesson, the learner should be able to: Find the surface area of a sphere given the radius of a sphereFind the surface area of a hemisphere  | Finding the surface area of a sphereFinding the surface area of a hemisphere  | Models of a sphere Charts illustrating formula for finding the surface area of a sphereModels of a hemisphere  | KLB BK 2 Pg 183  |  |
| 6 | Trigonometry   | Volume of Solids Volume of prism (triangular based prism)Volume of prism (hexagonal based prism) given the sides and angle  | By the end of the lesson, the learner should be able to: Find the volume of a triangular based prismFind the volume of a hexagonal based prism  | Finding the volume of a triangular based prismCalculating the volume of an hexagonal prism  | Models of a triangular based prismModels of hexagonal based prism  | KLB BK 2 Pg 186  |  |
| 4 | 1 | Trigonometry   | 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 area of the base Applying the formula V=?x base area x height to get the volume of the pyramids (square and rectangular based)  | Models of square and Rectangular based Pyramids  | KLB BK 2 Pg 189-190  |  |
| 2 | Trigonometry   | Volume of a coneVolume of a frustrum of a cone  | By the end of the lesson, the learner should be able to: Find the volume of a coneFind the volume of a frustrum of a cone  | Finding the volume of a coneFinding the volume of a full cone before its cutoff Finding the volume of a cut cone then subtracting  | Model of a coneModels of a frustrum of a cone  | KLB BK 2 Pg 191  |  |
| 3 | Trigonometry   | Volume of a frustrum of a pyramidVolume of a sphere (v = 4/3?r3)  | By the end of the lesson, the learner should be able to: Find the volume of a frustrum of a PyramidFind the volume of sphere given the radius of the sphere  | Finding volume of a full pyramid Finding volume of cutoff pyramid Find volume of the remaining fig (frustrum) by subtracting i.e. Vf = (V ? v)Finding the volume of a Sphere  | Models of frustrum of a pyramidModel of a sphere Mathematical table  | Macmillan BK 2 Pg 169  |  |
| 4 | Trigonometry   | Volume of a Hemisphere {(v = ? (4/3?r3)}  | 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 2 Pg 173  |  |
| 5 | Trigonometry Trigonometric Ratios  | Application of area of triangles to real lifeTangent of an angle  | By the end of the lesson, the learner should be able to: Use the knowledge of the area of triangles in solving problems in real life situationname the sides of a right-angled triangle as opposite, adjacent and hypotenuse. Find the tangent of an angle by calculation  | Solving problems in real life using the knowledge of the area of triangleMeasuring lengths/anglesDividing numbersDrawing right anglesReading mathematical tables  | Mathematical table Chart illustrating formula usedProtractor RulerRight cornersMathematical tables  | KLB BK 2 Pg 159  |  |
| 6 | Trigonometric Ratios  | Tangent of an angleUsing tangents in calculations  | By the end of the lesson, the learner should be able to: find the tangent of an angle from tablescalculate the size of an angle given two sides and an angle from tables  | Measuring lengths/anglesDividing numbersDrawing right anglesReading mathematical tables  | Protractor RulerRight cornersMathematical tables  | KLB Maths Bk2 Pg. 119-122 |  |
| 5 | 1 | Trigonometric Ratios  | Application of tangents  | By the end of the lesson, the learner should be able to: work out further problems using tangents  | Measuring lengths/anglesDividing numbersDrawing right anglesReading mathematical tables  | Protractor RulerRight cornersMathematical tables  | KLB Maths Bk2 Pg. 119-122 |  |
| 2 | Trigonometric Ratios  | The sine of an angleThe cosine of an angle  | By the end of the lesson, the learner should be able to: find the sine of an angle by calculations and through tablesfindthecosineofananglebycalculationsandthroughtables  | Measuring lengths/anglesDividing numbersDrawing right anglesReading mathematical tables  | Protractor RulerRight cornersMathematical tables  | KLB Maths Bk2 Pg. 119-122 |  |
| 3 | Trigonometric Ratios  | Application of sine and cosineComplementary angles  | By the end of the lesson, the learner should be able to: apply sines to work out lengths and angles. Apply cosine to work out length and anglesdefine complementary angles. Work out sines of an angle given the cosine of its complimentary and vice versa  | Measuring lengths/anglesDividing numbersDrawing right anglesReading mathematical tables  | Protractor RulerRight cornersMathematical tables  | KLB Maths Bk2 Pg. 119-122 |  |
| 4 | Trigonometric Ratios  | Special angles  | By the end of the lesson, the learner should be able to: find the sine, cos, and tan of 300,600,450,00,900, without using tables  | Measuring lengths/anglesDividing numbersDrawing right anglesReading mathematical tables  | Protractor RulerRight cornersMathematical tables  | KLB Maths Bk2 Pg. 119-122 |  |
| 5 | Trigonometric Ratios  | Application of Special anglesLogarithms of sines, cosines and tangents  | By the end of the lesson, the learner should be able to: apply the knowledge of special angles to solve problemssolve problems using logarithms of sines cosines and tangents  | Measuring lengths/anglesDividing numbersDrawing right anglesReading mathematical tablesMeasuring lengths/angles  | Protractor RulerRight cornersMathematical tables  | KLB Maths Bk2 Pg. 119-122 |  |
| 6 | Trigonometric Ratios  | Relationship between sin, cos and tanApplication to real life situation  | By the end of the lesson, the learner should be able to: relate sin, cos and tan that is tan?=sin?cos?Solve problems using the relationshipapplytheknowledgeoftrigonometrytoreallifesituations  | Measuring lengths/anglesDividing numbersDrawing right anglesReading mathematical tables  | Protractor RulerRight cornersMathematical tables  | KLB Maths Bk2 Pg. 119-122 |  |
| 6 | 1 | Trigonometric Ratios  | Problem solving  | By the end of the lesson, the learner should be able to: solve problems on trigonometry  | Problem solving  | Protractor RulerRight cornersMathematical tables  | KLB Maths Bk2 Pg. 119-122 |  |
| 2 | Area of A Triangle  | Area = Solve problems involving =  | By the end of the lesson, the learner should be able to: derive the formula Area = solveproblemsinvolvingareaoftrianglesusingtheformulaArea=  | DiscussionsDrawing trianglesMeasuring lengths/anglesCalculating area  | Protractor RulerRight cornersMathematical tables  | KLB Maths Bk2 Pg. 155-157 |  |
| 3 | Area of A Triangle  | A =?s(s-a) (s-b) (s-c)Problem solving  | By the end of the lesson, the learner should be able to: find the area of a triangle given the three sidessolve problems on area of a triangle given the three sides  | DiscussionsDrawing trianglesMeasuring lengths/anglesCalculating area  | Protractor RulerRight cornersMathematical tables  | KLB Maths Bk2 Pg. 155-157 |  |
| 4 | Area of Quadrilaterals  | Area of parallelogramArea of Rhombus  | By the end of the lesson, the learner should be able to: find the area of quadrilaterals like trapeziums, parallelogram etc. by dividing the shape of trianglesfindtheareaofaregularpolygon.  | Drawing trapeziums/polygonsMeasuring lengths/anglesReading mathematical tablesDiscussions  | ParallelogramsTrapeziumsPolygonsSquares/rectanglesMathematical tables  | KLB Maths Bk2 Pg. 160 |  |
| 5 | Area of Quadrilaterals  | Area of trapezium and kite  | By the end of the lesson, the learner should be able to: solve problems on the area of a regular polygon  | Drawing trapeziums/polygonsMeasuring lengths/anglesReading mathematical tablesDiscussions  | ParallelogramsTrapeziumsPolygonsSquares/rectanglesMathematical tables  | KLB Maths Bk2 Pg. 162-163 |  |
| 6 | Area of Quadrilaterals  | Area of regular polygonsProblem solving  | By the end of the lesson, the learner should be able to: find the area of a regular polygon by using the formula A=solve problems on area of quadrilaterals and other polygons  | Drawing trapeziums/polygonsMeasuring lengths/anglesReading mathematical tablesDiscussionsLearners solve problems  | ParallelogramsTrapeziumsPolygonsSquares/rectanglesMathematical tables Chalkboard illustrationsMathematical tables  | KLB Maths Bk2 Pg. 119-122 |  |
| 7 | 1 | Area of Part of a Circle  | Area of a sectorArea of a segment  | By the end of the lesson, the learner should be able to: find area of a sectorfind area of a segment  | Drawing circlesMeasuring radii/diametersMeasuring anglesCalculating the area of a circleDiscussions  | CirclesChart illustrating the area of a sectorChart illustrating the area of a minor segment  | KLB Maths Bk2 Pg. 167-169 |  |
| 2 | Area of Part of a Circle  | Common region between two circles  | By the end of the lesson, the learner should be able to: find the area of the common region between two circles.  | Drawing circlesMeasuring radii/diametersMeasuring anglesCalculating the area of a circleDiscussions  | CirclesChart illustrating the area of a minor segment  | KLB Maths Bk2 Pg. 167-169 |  |
| 3 | Area of Part of a Circle  | Common region between two circles Problem solving  | By the end of the lesson, the learner should be able to: find the area of the common region between two circles and solve problems related to thatsolveproblemsinvolvingtheareaofpartofacircle  | Drawing circlesMeasuring radii/diametersMeasuring anglesCalculating the area of a circleDiscussions  | CirclesChart illustrating the area of a minor segmentChart illustrating the area of a minor segment Chalkboard illustrations  | KLB Maths Bk2 Pg. 167-169 |  |
| 4 | Surface Area of Solids  | Surface area of prisms Surface area of pyramid  | By the end of the lesson, the learner should be able to: find the surface area of a prism.find the surface area of a pyramid  | Drawing prismsMeasuring lengthsOpening prisms to form netsDiscussionsCalculating areaDrawing pyramidsMeasuring lengths/anglesOpening pyramids to form nets  | Prism Chalkboard illustrationsPyramids with square base, rectangular base, triangular base  | KLB Maths Bk2 Pg. 177 |  |
| 5 | Surface Area of Solids  | Surface area of a cone  | By the end of the lesson, the learner should be able to: find the surface area of a cone  | Drawing cones/frustumsMaking cones/frustumsMeasuring lengths/anglesDiscussions  | Cone  | KLB Maths Bk2 Pg. 180KLBMathematics Bk2Discovering Secondary Mathematics Bk2  |  |
| 6 | Surface Area of Solids  | Surface area of frustrum with circular baseSurface area of frustrum with square base  | By the end of the lesson, the learner should be able to: find the surface area of frustrum with circular basefindthesurfaceareaoffrustrumwithsquarebase  | Drawing cones/frustumsMaking cones/frustumsMeasuring lengths/anglesDiscussionsDiscussions Learners find the surface area  | Chart illustrating the surface area of a frustrumChart illustrating frustrum with a square base  | KLB Maths Bk2 Pg. 181-283KLBMathematics Bk2Discovering Secondary Mathematics Bk2  |  |
| 8 | **Mid Term Exams and Break** |
| 9 | 1 | Surface Area of Solids  | Surface area of frustrum with rectangular baseSurface area of spheres  | By the end of the lesson, the learner should be able to: find the surface area of frustrum with rectangular base findthesurfaceareaofasphere  | Drawing cones/frustumsMaking cones/frustumsMeasuring lengths/anglesDiscussionsSketching spheresMaking spheresMeasuring diameters/radii of spheres  | Chart illustrating frustrum with a rectangular baseChalkboard illustrations  | KLB Maths Bk2 Pg. 181-183 |  |
| 2 | Surface Area of Solids  | Problem solving  | By the end of the lesson, the learner should be able to: solve problems on surface area of solids  | Learners solve problems  | Past paper questions  | KLB Maths Bk2 Pg. 183 |  |
| 3 | Volume of Solids  | Volume of prismVolume of pyramid  | By the end of the lesson, the learner should be able to: find the volume of a prismfindthevolumeofapyramid  | Identifying prismsIdentifying the cross-sectional areaDrawing/sketching prismsDrawing pyramidsMaking pyramidsOpening pyramids to form netsDiscussions  | PrismPyramid  | KLB Maths Bk2 Pg. 186-188 |  |
| 4 | Volume of Solids  | Volume of a coneVolume of a sphere  | By the end of the lesson, the learner should be able to: find the volume of a conefindthevolumeofasphere  | Making cones/frustumsOpening cones/frustums to form netsIdentifying spheresSketching spheresMeasuring radii/diametersDiscussions  | ConeSphere  | KLB Maths Bk2 Pg. 191 |  |
| 5 | Volume of Solids  | Volume of frustrum  | By the end of the lesson, the learner should be able to: find the volume of a frustrum with a circular base  | Making cones/frustumsOpening cones/frustums to form nets  | Frustrum with circular base  | KLB Maths Bk2 Pg. 192-193 |  |
| 6 | Volume of Solids  | Volume of frustrum with a square baseVolume of frustrum with a rectangular base  | By the end of the lesson, the learner should be able to: find the volume of a frustrum with a square basefindthevolumeofafrustrumwitharectangularbase  | Making cones/frustumsOpening cones/frustums to form nets  | Frustrum with square baseFrustrum with rectangular base  | KLB Maths Bk2 Pg. 192-193 |  |
| 10 | 1 | Volume of Solids  | Application to real life situation Problem solving  | By the end of the lesson, the learner should be able to: apply the knowledge of volume of solids to real life situations.solve problems on volume of solids  | Making cones/frustumsOpening cones/frustums to form nets  | Models of pyramids, prism, cones and spheresPast paper questions  | KLB Maths Bk2 Pg. 193-194 |  |
| 2 | Quadratic Expressions and Equations  | Expansion of Algebraic Expressions  | By the end of the lesson, the learner should be able to: expand algebraic expressions  | DiscussionsMultiplying numbersDividing numbersAdding numbersSubtracting numbersExercises  | Real-life experiencesWorked out expressions  | KLB Maths Bk2 Pg. 203 |  |
| 3 | Quadratic Expressions and Equations  | Quadratic identitiesApplication of identities  | By the end of the lesson, the learner should be able to: derive the three Algebraic identitiesidentify and use the three Algebraic identities  | DiscussionsMultiplying numbersDividing numbersAdding numbersSubtracting numbersExercises  | Real-life experiencesWorked out expressions  | KLB Maths Bk2 Pg. 204-205 |  |
| 4 | Quadratic Expressions and Equations  | Factorise the IdentitiesFactorise other quadratic expressions  | By the end of the lesson, the learner should be able to: factorise the identitiesfactorise quadratic expressions  | DiscussionsMultiplying numbersDividing numbersAdding numbersSubtracting numbersExercises  | Real-life experiencesWorked out expressionsChart illustrating factorization of a quadratic expression  | KLB Maths Bk2 Pg. 205-208 |  |
| 5 | Quadratic Expressions and Equations  | Factorisation of expressions of the form k2-9y2 Simplification of an expression by factorisation  | By the end of the lesson, the learner should be able to: factorise a difference of two squaressimplify a quadratic expression by factorisation  | DiscussionsMultiplying numbersDividing numbersAdding numbersSubtracting numbersExercises  | Real-life experiencesWorked out expressions  | KLB Maths Bk2 Pg. 205-208 |  |
| 6 | Quadratic Expressions and Equations  | Solving quadratic equations  | By the end of the lesson, the learner should be able to: solve quadratic equations  | DiscussionsMultiplying numbersDividing numbersAdding numbersSubtracting numbersExercises  | Real-life experiencesWorked out expressions  | KLB Maths Bk2 Pg. 208 |  |
| 11 | 1 | Quadratic Expressions and Equations  | The formation of quadratic equationsFormation and solving of quadratic equations from word problems  | By the end of the lesson, the learner should be able to: form quadratic equations from informationform and solve quadratic equations from word problems  | DiscussionsMultiplying numbersDividing numbersAdding numbersSubtracting numbersExercises  | Real-life experiencesWorked out expressions  | KLB Maths Bk2 Pg. 208 |  |
| 2 | Quadratic Expressions and Equations  | Solving on quadratic equationsForming quadratic equations from the roots  | By the end of the lesson, the learner should be able to: solve problems on quadratic equationsform quadratic equations given the roots of the equation  | DiscussionsMultiplying numbersDividing numbersAdding numbersSubtracting numbersExercises  | Real-life experiencesWorked out expressions  | KLB Maths Bk2 Pg. 208-210 |  |
| 3 | Linear Inequalities  | Inequalities symbols  | By the end of the lesson, the learner should be able to: identify and use inequality symbols  | Drawing graphs of inequalitiesDetermining the scale of a graphShading unwanted regionsDiscussions  | Number lines Graph papersSquare boardsNegative and positive numbers  | KLB Maths Bk2 Pg. 213-224 |  |
| 4 | Linear Inequalities  | Number lineInequalities in one unknown  | By the end of the lesson, the learner should be able to: illustrate inequalities on a number line solve linear inequalities in one unknown and state the integral values  | Drawing graphs of inequalitiesDetermining the scale of a graphShading unwanted regionsDiscussions  | Number lines Graph papersSquare boardsNegative and positive numbers  | KLB Maths Bk2 Pg. 213-224 |  |
| 5 | Linear Inequalities  | Graphical representationGraphical solutions of simultaneous linear inequalities  | By the end of the lesson, the learner should be able to: represent linear inequalities in one unknown graphicallysolve the linear inequalities in two unknowns graphically  | Drawing graphs of inequalitiesDetermining the scale of a graphShading unwanted regionsDiscussions  | Number lines Graph papersSquare boardsNegative and positive numbersNumber lines Graph papers  | KLB Maths Bk2 Pg. 213-224 |  |
| 6 | Linear Inequalities  | Graphical solutions of simultaneous linear inequalities  | By the end of the lesson, the learner should be able to: solve simultaneous linear inequalities graphically  | Drawing graphs of inequalitiesDetermining the scale of a graphShading unwanted regionsDiscussions  | Number lines Graph papersSquare boardsNegative and positive numbers  | KLB Maths Bk2 Pg. 213-224 |  |
| 13-14 | **End Term Exams and closing** |