SCHEME OF WORK MATHEMATICS FORM 2 2022

TERM II ENDARASHA BOYS

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| **WK** | **LSN** | **TOPIC** | **SUB-TOPIC** | **OBJECTIVES** | **T/L ACTIVITIES** | **T/L AIDS** | **REFERENCE** | **REMARKS** |
| **2** | 1 | Trigonometry | Application of trigonometry to real life situations | By the end of the lesson, the learner should be able to: Solve problems in real life using trigonometry | Solving problems using trigonometry in real life | Mathematical table | KLB BK2 Pg 153-154 |  |
| 2 | Trigonometry | Area of a triangle Area of a triangle given the base and height (A = ? bh)Area of a triangle using the formula (A= ? absin?) | By the end of the lesson, the learner should be able to: Calculate the are of a triangle given the base and height- Derive the formula ? absinc - Using the formula derived in calculating the area of a triangle given two sides and an included angle | Calculating the area of a triangle given the base and height Deriving the formula ? absinc Using the formula to calculate the area of a triangle given two sides and an included angle | Chart illustrating worked problem Chalkboard Charts illustrating a triangle with two sides and an included angle Charts showing derived formula | KLB BK2 Pg 155 |  |
| 3 | Trigonometry | Area of a triangle using the formula A =?s(s-a)(s-b)(s-c) 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:Solve problems on the area of a triangle Given three sizes using the formula A = ?s(s-a)(s-b)(s-c)Calculate the are of a triangle, square, rectangle, rhombus, parallelogram and trapezium | Solving problems on the area of triangle given three sides of a triangle Calculating the area of a triangle, square, rectangle, rhombus, parallelogram and trapezium | Charts illustrating a triangle with three sides Charts illustrating a worked examplei.e. mathematical tableCharts illustrating formula used in calculating the areas of the quadrilateral | KLB BK2 Pg 157-158 |  |
| 4 | Trigonometry | Area of a kite 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 kiteFind the area of a regular polygon | Calculating the area of a Kite Calculating the area of a regular polygon | Model of a kite Mathematical 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 polygons Finding the area of a minor and a major sector of a circle | Charts illustrating various irregular polygons Polygonal shapes Charts illustrating sectors | KLB BK2 Pg 166 |  |
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|  | 6 | Trigonometry | Defining a segment of a circle Finding the area of a segment of a circleArea of a common region between two circles given the angles and the radii | 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 Find the area of common region between two circles given the angles ?Education Plus Agencies | 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 ?Calculating the area of a segment | Chart illustrating a SegmentCharts illustrating common region between the circles Use of a mathematical table during calculation | KLB BK2 Pg 169-170 |  |
| **3** | 1 | Trigonometry | Area of a common region between two circles given only the radii of the two circles and a common chordSurface 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:Calculate 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 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 | Finding the area of a common region between two intersecting Defining a prism Calculating the surface area of the prismsFinding the surface area of a square based pyramid | Charts illustrating common region between two intersecting circles Models of cylinder, triangular and hexagonal prisms Models of a square based pyramid | KLB BK 2 Pg 176 |  |
| 2 | Trigonometry | Surface area of a Rectangular based Pyramid Surface 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 pyramid Finding 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 |  |
| 3 | Trigonometry | Surface area of a frustrum of a cone and a pyramid 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 frustrum of a cone and pyramidFind the surface area of a sphere given the radius of a sphere | Finding the surface area of a frustrum of a cone and a pyramidFinding the surface area of a sphere | Models of frustrum of a cone and a pyramid Models of a sphere Charts illustrating formula for finding the surface area of a sphere | KLB BK 2 Pg 182 |  |
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|  | 4 | Trigonometry | Surface area of a Hemispheres Volume of Solids Volume of prism (triangular based prism) | By the end of the lesson, the learner should be able to: Find the surface area of a hemisphereFind the volume of a triangular based prism | Finding the surface area of a hemisphere Finding the volume of a triangular based prism | Models of a hemisphere Models of a triangular based prism | KLB BK 2 Pg 184 |  |
| 5 | Trigonometry | Volume of prism (hexagonal based prism) given the sides and angle 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 hexagonal based prismFind the volume of a square based pyramid and rectangular based pyramid | Calculating the volume of an hexagonal prism 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 hexagonal based prismModels of square and Rectangular based Pyramids | KLB BK 2 Pg 187 |  |
| 6 | Trigonometry | Volume of a cone Volume 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 cone Models of a frustrum of a cone | KLB BK 2 Pg 191 |  |
| **4** | 1 | Trigonometry | Volume of a frustrum of a pyramid Volume of a sphere (v = 4/3? r3)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 frustrum of a PyramidFind the volume of sphere given the radius of the sphere Find the volume of a hemisphere | 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 Working out the volume of a hemisphere | Models of frustrum of a pyramidModel of a sphere Mathematical tableModels of hemisphere | Macmillan BK 2Pg 169 |  |
| 2 | Trigonometry Trigonometric Ratios | Application of area of triangles to real life Tangent 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 triangle Measuring lengths/angles Dividing numbers Drawing right anglesReading mathematical tables | Mathematical table Chart illustrating formula used Protractor RulerRight corners Mathematical tables | KLB BK 2 Pg 159 |  |
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|  | 3 | 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/angles Dividing numbers Drawing right anglesReading mathematical tables | Protractor RulerRight corners Mathematical tables | KLB Maths Bk2 Pg. 119-122 |  |
| 4 | Trigonometric Ratios | Application of tangentsThe sine of an angle | By the end of the lesson, the learner should be able to:work out further problems using tangents findthesineofananglebycalculationsandthroughtables | Measuring lengths/angles Dividing numbers Drawing right anglesReading mathematical tables | Protractor RulerRight corners Mathematical tables | KLB Maths Bk2 Pg. 119-122 |  |
| 5 | Trigonometric Ratios | The cosine of an angle Application of sine and cosine | By the end of the lesson, the learner should be able to:find the cosine of an angle by calculations and through tables applysinestoworkoutlengthsandangles.Applycosinetoworkoutlengthandangles | Measuring lengths/angles Dividing numbers Drawing right anglesReading mathematical tables | Protractor RulerRight corners Mathematical tables | KLB Maths Bk2 Pg. 119-122 |  |
| 6 | Trigonometric Ratios | Complementary anglesSpecial angles | By the end of the lesson, the learner should be able to:define complementary angles. Work out sines of an angle given the cosine of its complimentary and vice versafind the sine, cos, and tan of 300,600,450,00,900, without using tables | Measuring lengths/angles Dividing numbers Drawing right anglesReading mathematical tables | Protractor RulerRight corners Mathematical tables | KLB Maths Bk2 Pg. 119-122 |  |
| **5** | MID TERM EXAMS AND BREAK |
| **6** | 1 | Trigonometric Ratios | Application of Special angles Logarithms of sines, cosines and tangents Relationship between sin, cos and tan | 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 relatesin,cosandtanthatistan?=sin?cos? Solveproblemsusingtherelationship | Measuring lengths/angles Dividing numbers Drawing right anglesReading mathematical tables Measuring lengths/angles | Protractor RulerRight corners Mathematical tables | KLB Maths Bk2 Pg. 119-122 |  |
| 2 | Trigonometric Ratios | Application to real life situation Problem solving | By the end of the lesson, the learner should be able to:apply the knowledge of trigonometry to real life situations solveproblemsontrigonometry | Measuring lengths/angles Dividing numbers Drawing right anglesReading mathematical tables Problem solving | Protractor RulerRight corners Mathematical tables | KLB Maths Bk2 Pg. 119-122 |  |
| 3 | 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= | Discussions Drawing triangles Measuring lengths/angles Calculating area | Protractor RulerRight corners Mathematical tables | KLB Maths Bk2 Pg. 155-157 |  |

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|  | 4 | 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 | Discussions Drawing triangles Measuring lengths/angles Calculating area | Protractor RulerRight corners Mathematical tables | KLB Maths Bk2 Pg. 155-157 |  |
| 5 | Area of Quadrilaterals | Area of parallelogram Area 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/polygons Measuring lengths/angles Reading mathematical tables Discussions | Parallelograms Trapeziums Polygons Squares/rectangles Mathematical tables | KLB Maths Bk2 Pg. 160 |  |
| 6 | Area of Quadrilaterals | Area of trapezium and kiteArea of regular polygons | By the end of the lesson, the learner should be able to: solve problems on the area of a regular polygonfind the area of a regular polygon by using the formula A= | Drawing trapeziums/polygons Measuring lengths/angles Reading mathematical tables Discussions | Parallelograms Trapeziums Polygons Squares/rectangles Mathematical tables Mathematical tables Chalkboard illustrations | KLB Maths Bk2 Pg. 162-163 |  |
| **7** | 1 | Area of Quadrilaterals Area of Part of a Circle Area of Part of a Circle | Problem solvingArea of a sector Area of a segment | By the end of the lesson, the learner should be able to:solve problems on area of quadrilaterals and other polygons findareaofasectorfind area of a segment | Learners solve problems Drawing circles Measuring radii/diameters Measuring anglesCalculating the area of a circle Discussions | Parallelograms Trapeziums Polygons Squares/rectangles Mathematical tablesCirclesChart illustrating the area of a sectorChart illustrating the area of a minor segment | KLB Maths Bk2 Pg. 165-166 |  |
| 2 | Area of Part of a Circle | Common region between two circles 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.find the area of the common region between two circles and solve problems related to that | Drawing circles Measuring radii/diameters Measuring angles Calculating the area of a circle Discussions | CirclesChart illustrating the area of a minor segment | KLB Maths Bk2 Pg. 167-169 |  |
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|  | 3 | Area of Part of a Circle Surface Area of Solids | Problem solving Surface area of prisms | By the end of the lesson, the learner should be able to:solve problems involving the area of part of a circle find the surface area of a prism. | Drawing circles Measuring radii/diameters Measuring angles Calculating the area of a circle Discussions Drawing prisms Measuring lengths Opening prisms to formnetsCalculating area | CirclesChart illustrating the area of a minor segment Chalkboard illustrations Prism Chalkboard illustrations | KLB Maths Bk2 Pg. 167-169 |  |
| 4 | Surface Area of Solids | Surface area of pyramid Surface area of a cone | By the end of the lesson, the learner should be able to:find the surface area of a pyramid findthesurfaceareaofacone | Drawing pyramids Measuring lengths/ anglesOpening pyramids toform nets Discussions Calculating area Drawing cones/frustums Making cones/frustums | Pyramids with square base, rectangular base, triangular base Cone | KLB Maths Bk2 Pg. 178 |  |
| 5 | Surface Area of Solids | Surface area of frustrum with circular base Surface 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 base findthesurfaceareaoffrustrumwithsquarebase | Drawing cones/frustums Making cones/frustums Measuring lengths/ anglesDiscussions Discussions 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 |  |
| 6 | 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/frustums Making cones/frustums Measuring lengths/ anglesDiscussions Sketching spheres Making spheres Measuring diameters/radii of spheres | Chart illustrating frustrum with a rectangular base Chalkboard illustrations | KLB Maths Bk2 Pg. 181-183 |  |
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| **8** | 1 | Surface Area of Solids Volume of Solids Volume of Solids | Problem solving Volume of prism Volume of pyramid | By the end of the lesson, the learner should be able to:solve problems on surface area of solids findthevolumeofaprism findthevolumeofapyramid | Learners solve problems Identifying prisms Identifying the cross-sectional area Drawing/sketching prismsDrawing pyramids Making pyramids Opening pyramids toform nets Discussions | Past paper questions Prism Pyramid | KLB Maths Bk2 Pg. 183 |  |
| 2 | Volume of Solids | Volume of a cone Volume of a sphere | By the end of the lesson, the learner should be able to: find the volume of a conefindthevolumeofasphere | Making cones/frustums Opening cones/frustums to form netsIdentifying spheres Sketching spheres Measuring radii/ diameters Discussions | Cone Sphere | KLB Maths Bk2 Pg. 191 |  |
| 3 | Volume of Solids | Volume of frustrum Volume of frustrum with a square base | By the end of the lesson, the learner should be able to:find the volume of a frustrum with a circular base findthevolumeofafrustrumwithasquarebase | Making cones/frustums Opening cones/frustums to form nets | Frustrum with circular base Frustrum with square base | KLB Maths Bk2 Pg. 192-193 |  |
| 4 | Volume of Solids | Volume of frustrum with a rectangular base Application to real life situation | By the end of the lesson, the learner should be able to: find the volume of a frustrum with a rectangular baseapply the knowledge of volume of solids to real life situations. | Making cones/frustums Opening cones/frustums to form nets | Frustrum with rectangular base Models of pyramids, prism, cones and spheres | KLB Maths Bk2 Pg. 192-193 |  |
| 5 | Volume of Solids Quadratic Expressions and Equations | Problem solving Expansion of Algebraic Expressions | By the end of the lesson, the learner should be able to: solve problems on volume of solidsexpand algebraic expressions | Making cones/frustums Opening cones/frustums to form nets Discussions Multiplying numbersDividing numbers Adding numbers Subtracting numbers Exercises | Past paper questions Real-life experiences Worked out expressions | KLB Maths Bk2 Pg. 196 |  |
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|  | 6 | Quadratic Expressions and Equations | Quadratic identities Application 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 | Discussions Multiplying numbersDividing numbers Adding numbers Subtracting numbers Exercises | Real-life experiences Worked out expressions | KLB Maths Bk2 Pg. 204-205 |  |
| **9** | 1 | Quadratic Expressions and Equations | Factorise the Identities Factorise other quadratic expressions Factorisation of expressions of the form k2- 9y2 | By the end of the lesson, the learner should be able to: factorise the identitiesfactorise quadratic expressions factorise a difference of two squares | Discussions Multiplying numbersDividing numbers Adding numbers Subtracting numbers Exercises | Real-life experiences Worked out expressions Chart illustrating factorization of a quadratic expression | KLB Maths Bk2 Pg. 205-208 |  |
| 2 | Quadratic Expressions and Equations | Simplification of an expression by factorisation Solving quadratic equations | By the end of the lesson, the learner should be able to: simplify a quadratic expression by factorisationsolve quadratic equations | Discussions Multiplying numbersDividing numbers Adding numbers Subtracting numbers Exercises | Real-life experiences Worked out expressions | KLB Maths Bk2 Pg. 205-208 |  |
| 3 | Quadratic Expressions and Equations | The formation of quadratic equations Formation 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 | Discussions Multiplying numbersDividing numbers Adding numbers Subtracting numbers Exercises | Real-life experiences Worked out expressions | KLB Maths Bk2 Pg. 208 |  |
| 4 | Quadratic Expressions and Equations | Solving on quadratic equations Forming 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 | Discussions Multiplying numbersDividing numbers Adding numbers Subtracting numbers Exercises | Real-life experiences Worked out expressions | KLB Maths Bk2 Pg. 208-210 |  |
| 5 | Linear Inequalities | Inequalities symbols Number line | By the end of the lesson, the learner should be able to: identify and use inequality symbolsillustrate inequalities on a number line | Drawing graphs of inequalities Determining the scale of a graph Shading unwanted regions Discussions | Number lines Graph papers Square boards Negative and positive numbers Negative and positivenumbers | KLB Maths Bk2 Pg. 213-224 |  |
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|  | 6 | Linear Inequalities | Inequalities in one unknown Graphical representation Graphical solutions of simultaneous linear inequalities Graphical solutions of simultaneous linear inequalities | By the end of the lesson, the learner should be able to:solve linear inequalities in one unknown and state the integral values represent linear inequalities in one unknown graphicallysolve the linear inequalities in two unknowns graphically solve simultaneous linear inequalities graphically | Drawing graphs of inequalities Determining the scale of a graph Shading unwanted regions Discussions | Number lines Graph papers Square boards Negative and positive numbers Number lines Graph papers | KLB Maths Bk2 Pg. 213-224 |  |
| **10** | END OF TERM EXAMS AND CLOSING OF SCHOOL |