SCHEME OF WORK MATHEMATICS FORM 2 2022

TERM II ENDARASHA BOYS

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| **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 example  i.e. mathematical table  Charts 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 kite  Find 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 Polygon  Area 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 circle  Area 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 Segment  Charts 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 chord  Surface area of solids Surface area of prisms Cylinder (ii) Triangular prism (iii) Hexagonal prism  Area 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 prism  Find 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 prisms  Finding 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 pyramid  Find 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 pyramid  Models 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 pyramid  Find the surface area of a sphere given the radius of a sphere | Finding the surface area of a frustrum of a cone and a pyramid  Finding 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 hemisphere  Find 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 prism  Find 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 prism  Models 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 cone  Find the volume of a frustrum of a cone | Finding the volume of a cone  Finding 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 Pyramid  Find 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 pyramid  Model of a sphere Mathematical table  Models of hemisphere | Macmillan BK 2  Pg 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 situation  name 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 angles  Reading mathematical tables | Mathematical table Chart illustrating formula used Protractor Ruler  Right corners Mathematical tables | KLB BK 2 Pg 159 |  |
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|  | 3 | Trigonometric Ratios | Tangent of an angle  Using tangents in calculations | By the end of the lesson, the learner should be able to: find the tangent of an angle from tables  calculate the size of an angle given two sides and an angle from tables | Measuring lengths/angles Dividing numbers Drawing right angles  Reading mathematical tables | Protractor Ruler  Right corners Mathematical tables | KLB Maths Bk2 Pg. 119-122 |  |
| 4 | Trigonometric Ratios | Application of tangents  The 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 angles  Reading mathematical tables | Protractor Ruler  Right 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 angles  Reading mathematical tables | Protractor Ruler  Right corners Mathematical tables | KLB Maths Bk2 Pg. 119-122 |  |
| 6 | Trigonometric Ratios | Complementary angles  Special 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 versa  find the sine, cos, and tan of 300,600,450,00,900, without using tables | Measuring lengths/angles Dividing numbers Drawing right angles  Reading mathematical tables | Protractor Ruler  Right 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 problems  solve problems using logarithms of sines cosines and tangents relatesin,cosandtanthatistan?=sin?  cos? Solveproblemsusingtherelationship | Measuring lengths/angles Dividing numbers Drawing right angles  Reading mathematical tables Measuring lengths/angles | Protractor Ruler  Right 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 angles  Reading mathematical tables Problem solving | Protractor Ruler  Right 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 Ruler  Right 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 sides  solve problems on area of a triangle given the three sides | Discussions Drawing triangles Measuring lengths/angles Calculating area | Protractor Ruler  Right 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 triangles  findtheareaofaregularpolygon. | 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 kite  Area of regular polygons | By the end of the lesson, the learner should be able to: solve problems on the area of a regular polygon  find 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 solving  Area 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 findareaofasector  find area of a segment | Learners solve problems Drawing circles Measuring radii/diameters Measuring angles  Calculating the area of a circle Discussions | Parallelograms Trapeziums Polygons Squares/rectangles Mathematical tables  Circles  Chart illustrating the area of a sector  Chart 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 | Circles  Chart 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 form  nets  Calculating area | Circles  Chart 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/ angles  Opening pyramids to  form 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/ angles  Discussions Discussions Learners find the surface area | Chart illustrating the surface area of a frustrum  Chart illustrating frustrum with a square base | KLB Maths Bk2 Pg. 181-283  KLBMathematics Bk2  Discovering Secondary Mathematics Bk2 |  |
| 6 | Surface Area of Solids | Surface area of frustrum with rectangular base  Surface 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/ angles  Discussions 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 prisms  Drawing pyramids Making pyramids Opening pyramids to  form 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 cone  findthevolumeofasphere | Making cones/frustums Opening cones/frustums to form nets  Identifying 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 base  apply 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 solids  expand algebraic expressions | Making cones/frustums Opening cones/frustums to form nets Discussions Multiplying numbers  Dividing 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 identities  identify and use the three Algebraic identities | Discussions Multiplying numbers  Dividing 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 identities  factorise quadratic expressions factorise a difference of two squares | Discussions Multiplying numbers  Dividing 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 factorisation  solve quadratic equations | Discussions Multiplying numbers  Dividing 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 information  form and solve quadratic equations from word problems | Discussions Multiplying numbers  Dividing 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 equations  form quadratic equations given the roots of the equation | Discussions Multiplying numbers  Dividing 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 symbols  illustrate 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 positive  numbers | 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 graphically  solve 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 | | | | | | | |