MATHEMATICS, F2, T1

REFERENCES: Advancing in Mathematics BK 4 By Longhorn Kenya Publishers, Secondary Mathematics BK 4 By KLB, Macmillan Secondary Maths BK 2

WK	LSN	TOPIC	SUB-TOPIC	OBJECTIVES	L/ACTIVITIES	L/T AIDS	REFERENCE	REMARI
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 multiplication Find the cube roots of numbers from tables	Multiplying numbers Reading mathematical tables Discussions Demonstrations Exercises Exercises in given class	Mathematical tables Real life situation	Discovering secondary mathematics Book 2 Pages 1-3 Secondary mathematics KLB book 2 pages 1 and 2 KLB teachers' guide book 2 page 1 Golden 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 numbers Reading mathematical tables Discussions Demonstrations Exercises Exercises in given class	Mathematical tables Real life situation	Discovering secondary mathematics Book 2 Pages 5-6 Secondary mathematics KLB book 2 page 3 KLB teachers' guide book 2 page 1-2 Golden 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 roots Apply the knowledge of cubes and cube roots in real life situations	Multiplying numbers Reading mathematical tables Discussions Demonstrations Exercises Exercises in given class	Mathematical tables Real life situation	Discovering secondary mathematics Book 2 Pages 5-6 Secondary mathematics KLB book 2 page 3 and 4 KLB teachers' guide book 2 page 2 Golden 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 division Find reciprocals of numbers from tables	Multiplying numbers Dividing numbers Reading mathematical tables Discussions Demonstrations Exercises	Mathematical tables	Discovering secondary mathematics Book 2 Pages 12-13 Secondary mathematics KLB book 2 page 5 KLB teachers' guide book 2 page 5	

					Exercises in given class		Golden 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 numbers Dividing numbers Reading mathematical tables Discussions Demonstrations Exercises Exercises in given class	Mathematical tables	Discovering secondary mathematics Book 2 Pages 12-13 Secondary mathematics KLB book 2 page 6 KLB teachers' guide book 2 page 5-6 Golden 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 indices Express numbers in index form Express indices in number form	Multiplying numbers Dividing numbers Factorizing numbers Reading mathematical tables Discussions Exercises in given class	Logarithm tables Charts illustrations laws of indices	Discovering secondary mathematics Book 2 Page 7 Secondary mathematics KLB book 2 page 7 KLB teachers' guide book 2 page 7-8 Golden 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 indices State laws of indices regarding zero index State laws of indices regarding division of indices	Multiplying numbers Dividing numbers Factorizing numbers Reading mathematical tables Discussions Exercises in given class	Logarithm tables Charts illustrations laws of indices	Discovering secondary mathematics Book 2 Page 7-11 Secondary mathematics KLB book 2 page 7-8 KLB teachers' guide book 2 page 7-8 Golden 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 indices State laws of indices fractional indices Apply the laws of indices in calculation	Multiplying numbers Dividing numbers Factorizing numbers Reading mathematical tables Discussions Exercises in given class	Logarithm tables Charts illustrating laws of indices	Discovering secondary mathematics Book 2 Page 7-11 Secondary mathematics KLB book 2 page 8-13 KLB teachers' guide book 2 page 7-8 Golden 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 logarithms	Multiplying numbers Dividing numbers Factorizing numbers Discussions	Mathematical tables Charts illustrating laws of indices	Discovering secondary mathematics Book 2 Page 15 Secondary mathematics KLB book 2 page 16-17	

				Identify the parts of the logarithms i.e characteristic mantissa	Exercises in given class		KLB teachers' guide book 2 page 7-8 Golden 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 tables Apply the logarithms of numbers less than one in computation	Multiplying numbers Dividing numbers Factorizing numbers Discussions Exercises in given class	Mathematical tables Charts illustrating laws of indices	Discovering secondary mathematics Book 2 Page 15 Secondary mathematics KLB book 2 page 18 KLB teachers' guide book 2 page 7-8 Golden 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 1 Apply the logarithms of numbers less than 10 but greater than 1 in computation	Multiplying numbers Dividing numbers Factorizing numbers Discussions Exercises in given class	Mathematical tables Charts illustrating laws of indices	Discovering secondary mathematics Book 2 Page 16 Secondary mathematics KLB book 2 page 18 KLB teachers' guide book 2 page 7-8 Golden 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 numbers Dividing numbers Factorizing numbers Discussions Exercises in given class	Mathematical tables Charts illustrating laws of indices	Discovering secondary mathematics Book 2 Page 16 Secondary mathematics KLB book 2 page 18 KLB teachers' guide book 2 page 7-8 Golden 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 numbers Dividing numbers Factorizing numbers Discussions Exercises in given class	Mathematical tables Charts illustrating laws of indices	Discovering secondary mathematics Book 2 Page 17 Secondary mathematics KLB book 2 page 19 KLB teachers' guide book 2 page 7-8 Golden tips mathematics pages 54	
	2	Indices And Logarithms	Multiplication of numbers	By the end of the lesson, the learner should be able to:	Multiplying numbers Dividing numbers Factorizing numbers Discussions	Mathematical tables Charts illustrating laws of indices	Discovering secondary mathematics Book 2 Page 18 Secondary mathematics KLB book 2 page 20	

				Use logarithms to work out the multiplication of numbers	Exercises in given class		KLB teachers' guide book 2 page 7-8 Golden 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 numbers Dividing numbers Factorizing numbers Discussions Exercises in given class	Mathematical tables Charts illustrating laws of indices	Discovering secondary mathematics Book 2 Page 19 Secondary mathematics KLB book 2 page 20 KLB teachers' guide book 2 page 7-8 Golden 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 numbers Dividing numbers Factorizing numbers Discussions Exercises in given class	Mathematical tables Charts illustrating laws of indices	Discovering secondary mathematics Book 2 Page 19 Secondary mathematics KLB book 2 page 20 KLB teachers' guide book 2 page 7-8 Golden 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 numbers Dividing numbers Factorizing numbers Discussions Exercises in given class	Mathematical tables Charts illustrating laws of indices	Discovering secondary mathematics Book 2 Page 20 Secondary mathematics KLB book 2 page 18 KLB teachers' guide book 2 page 7-8 Golden 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 computation Find roots and squares of numbers using logarithms	Multiplying numbers Dividing numbers Factorizing numbers Discussions Exercises in given class	Mathematical tables Charts illustrating laws of indices	Discovering secondary mathematics Book 2 Page 21 Secondary mathematics KLB book 2 page 20 KLB teachers' guide book 2 page 7-8 Golden tips mathematics pages 53	
6	1	Gradients And Equations Of	Gradient of a straight line	By the end of the lesson, the learner should be able to:	Drawing linear graphs	Square boards Graph books Straight edged ruler Real life situation	Discovering secondary mathematics Book 2 Page 25-23	

		Straight Lines		Define gradient of a straight line © *Education Plus Agencies* Determine the gradient of a straight line through known points	Plotting co-ordinates on the Cartesian plane Reading co-ordinates of points on the Cartesian plane		Secondary mathematics KLB book 2 page 27-34 KLB teachers' guide book 2 page 14-15 Golden 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 point Determine the equation of a straight line given two points	Drawing linear graphs Plotting co-ordinates on the Cartesian plane Reading co-ordinates of points on the Cartesian plane	Square boards Graph books Straight edge/ruler Real life situation	Discovering secondary mathematics Book 2 Page 25-26 Secondary mathematics KLB book 2 page 34-35 KLB teachers' guide book 2 page 14-15 Golden 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+c Interpret the equation y=mx+c	Drawing linear graphs Plotting co-ordinates on the Cartesian plane Reading co-ordinates of points on the Cartesian plane	Square boards Graph books Straight edge/rulers Real life situation	Discovering secondary mathematics Book 2 Page 27 Secondary mathematics KLB book 2 page 34 KLB teachers' guide book 2 page 14-15 Golden 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 line Express a double intercept equation of a straight line	Drawing linear graphs Plotting co-ordinates on the Cartesian plane Reading co-ordinates of points on the Cartesian plane	Square boards Graph books Straight edge/rulers Real life situation	Discovering secondary mathematics Book 2 Page 28 Secondary mathematics KLB book 2 page 36 KLB teachers' guide book 2 page 14-15 Golden 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 graphs Plotting co-ordinates on the Cartesian plane Reading co-ordinates of points on the Cartesian plane	Square boards Graph books Straight edge/ rulers Real life situation	Discovering secondary mathematics Book 2 Page 29 Secondary mathematics KLB book 2 page 43-44 KLB teachers' guide book 2 page 14-15 Golden 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 lines Relate perpendicular lines in terms of their gradients	Drawing linear graphs Plotting co-ordinates on the Cartesian plane Reading co-ordinates of points on the Cartesian plane	Square boards Graph books Straight edge/ rulers Real life situation	Discovering secondary mathematics Book 2 Page 30 Secondary mathematics KLB book 2 page 41-43 KLB teachers' guide book 2 page 14-15 Golden 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 reflection Construct and identify the images and the objects in a reflection using the properties Make geometrical deductions using reflection	Observing objects in plane mirrors Identifying the objects and their images in a plan mirror Drawing Identifying lines of symmetry Identifying the mirror line in a plane mirror	Mirrors Cartesian plane Various symmetrical objects Tracing and graph papers Real life experiences	Discovering secondary mathematics Book 2 Page 32 Secondary mathematics KLB book 2 page KLB teachers' guide book 2 page 14-20 Golden 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 mirrors Identifying the objects and their images in a plan mirror Drawing Identifying lines of symmetry Identifying the mirror line in a plane mirror	Mirrors Cartesian plane Various symmetrical objects Tracing and graph papers Real life experiences	Discovering secondary mathematics Book 2 Page 32 Secondary mathematics KLB book 2 page 46-48 KLB teachers' guide book 2 page 19-20 Golden 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 mirrors Identifying the objects and their images in a plan mirror Drawing Identifying lines of symmetry Identifying the mirror line in a plane mirror	Mirrors Cartesian plane Various symmetrical objects Tracing and graph papers Real life experiences	Discovering secondary mathematics Book 2 Page 32 Secondary mathematics KLB book 2 page 46-48 KLB teachers' guide book 2 page 19-20 Golden 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:	Observing objects in plane mirrors Identifying the objects and their images in a plan mirror	Mirrors Cartesian plane Various symmetrical objects	Discovering secondary mathematics Book 2 Page 37 Secondary mathematics KLB book 2 page 48	

				Apply the properties of a rotation in the Cartesian plane	Drawing Identifying lines of symmetry Identifying the mirror line in a plane mirror	Tracing and graph papers Real life experiences	KLB teachers' guide book 2 page 19-20 Golden tips mathematics pages 230	
	5-6	Reflection And Congruence	Congruent triangles	By the end of the lesson, the learner should be able to: Identify congruency Solve problems involving congruency	Observing objects in plane mirrors Identifying the objects and their images in a plan mirror Drawing Identifying lines of symmetry Identifying the mirror line in a plane mirror	Mirrors Cartesian plane Various symmetrical objects Tracing and graph papers Real life experiences	Discovering secondary mathematics Book 2 Page 39 Secondary mathematics KLB book 2 page 64-65 KLB teachers' guide book 2 page 19-20 Golden 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 congruency Solve problems involving congruency	Observing objects in plane mirrors Identifying the objects and their images in a plan mirror Drawing Identifying lines of symmetry Identifying the mirror line in a plane mirror	Mirrors Cartesian plane Various symmetrical objects Tracing and graph papers Real life experiences	Discovering secondary mathematics Book 2 Page 39 Secondary mathematics KLB book 2 page 64-65 KLB teachers' guide book 2 page 19-20 Golden 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 mirrors Identifying the objects and their images in a plan mirror Drawing Identifying lines of symmetry Identifying the mirror line in a plane mirror	Mirrors Cartesian plane Various symmetrical objects Tracing and graph papers Real life experiences	Discovering secondary mathematics Book 2 Page 40-41 Secondary mathematics KLB book 2 page 66 KLB teachers' guide book 2 page 19-20 Golden 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 transformation State the properties of a rotation as a transformation	Rotating objects Measuring angles/lengths Drawing objects Identifying the lines of symmetry	Square boards Graph papers Geometrical instruments Tracing paper and real life situations	Discovering secondary mathematics Book 2 Page 44-45 Secondary mathematics KLB book 2 page 73 KLB teachers' guide book 2 page 24-25 Golden 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 rotation Determine the angle of rotation	Rotating objects Measuring angles/lengths Drawing objects Identifying the lines of symmetry	Square boards Graph papers Geometrical instruments Tracing paper real life situations	Discovering secondary mathematics Book 2 Page 46 Secondary mathematics KLB book 2 page 73 KLB teachers' guide book 2 page 24-25 Golden 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 rotation Establish the angle of rotation given an object and its image	Rotating objects Measuring angles/lengths Drawing objects Identifying the lines of symmetry	Square boards Graph papers Geometrical instruments Tracing paper real life situations	Discovering secondary mathematics Book 2 Page 46 Secondary mathematics KLB book 2 page 74 KLB teachers' guide book 2 page 24-25 Golden 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 objects Measuring angles/lengths Drawing objects Identifying the lines of symmetry	Square boards Graph papers Geometrical instruments Tracing paper real life situations	Discovering secondary mathematics Book 2 Page 47 Secondary mathematics KLB book 2 page 75 KLB teachers' guide book 2 page 24-25 Golden 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 symmetry State the order of rotational symmetry of plane figures Identify the axis of rotational symmetry	Rotating objects Measuring angles/lengths Drawing objects Identifying the lines of symmetry	Square boards Graph papers Geometrical instruments Tracing paper real life situations	Discovering secondary mathematics Book 2 Page 49 Secondary mathematics KLB book 2 page 78 KLB teachers' guide book 2 page 24-25 Golden 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 objects Measuring angles/lengths Drawing objects Identifying the lines of symmetry	Square boards Graph papers Geometrical instruments Tracing paper real life situations	Discovering secondary mathematics Book 2 Page 48 Secondary mathematics KLB book 2 page 84 KLB teachers' guide book 2 page 24-25 Golden tips mathematics pages 228	

	3-4	Rotation	REVISION	By the end of the lesson, the learner should be able to: Answer all questions involving rotations Apply rotation in real life situations	Rotating objects Measuring angles/lengths Drawing objects Identifying the lines of symmetry	Square boards Graph papers Geometrical instruments Tracing paper real life situations	Discovering secondary mathematics Book 2 Page 50 Secondary mathematics KLB book 2 page 84-86 KLB teachers' guide book 2 page 24-25 Golden 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 figures Construct similar figures	Identifying similar figures Tracing figures Constructing similar figures enlarging figures Drawing figures on the Cartesian plane measuring lengths/ angles	Geometrical instruments Model maps Photographs Charts illustrating similarity and enlargement	Discovering secondary mathematics Book 2 Page 52 Secondary mathematics KLB book 2 page 87 KLB teachers' guide book 2 page 27-28 Golden 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 transformation Apply the properties of enlargement to construct objects and images	Identifying similar figures Tracing figures Constructing similar figures enlarging figures Drawing figures on the Cartesian plane measuring lengths/ angles	Geometrical instruments Model maps Photographs Charts illustrating similarity and enlargement	Discovering secondary mathematics Book 2 Page 52 Secondary mathematics KLB book 2 page 97 KLB teachers' guide book 2 page 27-28 Golden 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 factor State the center of enlargement	Identifying similar figures Tracing figures Constructing similar figures enlarging figures Drawing figures on the Cartesian plane measuring lengths/ angles	Geometrical instruments Model maps Photographs Charts illustrating similarity and enlargement	Discovering secondary mathematics Book 2 Page 57-58 Secondary mathematics KLB book 2 page 97 KLB teachers' guide book 2 page 27-28 Golden 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:	Identifying similar figures Tracing figures	Geometrical instruments Model maps	Discovering secondary mathematics Book 2 Page 61-62	

				Apply enlargement on Cartesian planes	Constructing similar figures enlarging figures Drawing figures on the Cartesian plane measuring lengths/ angles	Photographs Charts illustrating similarity and enlargement	Secondary mathematics KLB book 2 page 97 KLB teachers' guide book 2 page 27-28 Golden 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 factor Determine area scale factors Determine volume scale factors Relate area scale factor, volume scale factor, and linear scale factor	Identifying similar figures Tracing figures Constructing similar figures enlarging figures Drawing figures on the Cartesian plane measuring lengths/ angles	Geometrical instruments Model maps Photographs Charts illustrating similarity and enlargement	Discovering secondary mathematics Book 2 Page 62-65 Secondary mathematics KLB book 2 page 97-110 KLB teachers' guide book 2 page 27-28 Golden 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 figures Tracing figures Constructing similar figures enlarging figures Drawing figures on the Cartesian plane measuring lengths/ angles	Geometrical instruments Model maps Photographs Charts illustrating similarity and enlargement	Discovering secondary mathematics Book 2 Page 62-64 Secondary mathematics KLB book 2 page 106-108 KLB teachers' guide book 2 page 27-28 Golden 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 figures Tracing figures Constructing similar figures enlarging figures Drawing figures on the Cartesian plane measuring lengths/ angles	Geometrical instruments Model maps Photographs Charts illustrating similarity and enlargement	Discovering secondary mathematics Book 2 Page 64-65 Secondary mathematics KLB book 2 page 109-111 KLB teachers' guide book 2 page 27-28 Golden 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 figures Tracing figures Constructing similar figures enlarging figures Drawing figures on the Cartesian plane measuring lengths/ angles	Geometrical instruments Model maps Photographs Charts illustrating similarity and enlargement	Discovering secondary mathematics Book 2 Page 66 Secondary mathematics KLB book 2 page 109-111-112 KLB teachers' guide book 2 page 27-28 Golden tips mathematics pages 128	
15		**END OF TERM EXAMINATIONS AND CLOSING**						

MATHEMATICS, F2, T2

REFERENCES: Advancing in Mathematics BK 4 By Longhorn Kenya Publishers, Secondary Mathematics BK 4 By KLB, Macmillan Secondary Maths BK 2

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 Pythagoras Theorem	Chalkboard Charts Illustrating derived theorem	KLB BK2 Pg 120 Macmillan BK 2 Pg 105 Advancing in Math BK 2 Pg 86-88	
	2	Solutions of problems Using Pythagoras Theorem	**By the end of the lesson, the learner should be able to:-** Solve problems using Pythagoras Theorem	Solving problems using Pythagoras theorem	Charts illustrating Pythagoras theorem	KLB BK2 Pg 121 Macmillan BK 2 Pg 106 Advancing in Math BK 2 Pg 89-90	
	3	Application to real life Situation	**By the end of the lesson, the learner should be able to:-** Apply Pythagoras theorem to solve problems in real life situations	Solving problems using Pythagoras theorem	Chalkboards Chart illustrating a ladder	KLB BK2Pg121-122 Macmillan BK 2 Pg 109 Advancing in Math BK 2 Pg 89-90	
	4&5	Trigonometry Tangent, sine and cosines	**By the end of the lesson, the learner should be able to:-** Define tangent, sine and cosine ratios from a right angles triangle	Defining what a tangent, Cosine and sine are using a right angled triangle	Charts illustrating tangent, sine and cosine	KLB BK2 Pg 123,132,133 Macmillan BK 2 Pg 112 Advancing in Math BK 2 Pg 94-95	
	6	Trigonometric Table	**By the end of the lesson, the learner should be able to:-** Use trigonometric tables to find the sine, cosine and tangent	Reading trigonometric tables of sines, cosines and tangent	Mathematical table	KLB BK2 Pg 127, 138, 139 Macmillan BK 2 Pg 115 Advancing in Math BK 2 Pg 99	
2	1&2	Angles and sides of a right angled triangle	**By the end of the lesson, the learner should be able to:-** - Use the sine, cosine and tangent calculating the length of a right angled triangle and also finding the angle given two sides and unknown angle	Using mathematical tables Finding the length using sine ratio Finding the length using Cosine and tangent ratio	Mathematical table Charts Chalkboard	KLB BK2 Pg 125, 139, 140 Macmillan BK 2 Pg 118 Advancing in Math	

			- The length can be obtained if o side is given and an angle	Finding the angle using Sine, cosine and tangent		BK 2 Pg 100	
	3	Establishing Relationship of sine and cosine of complimentary angles	**By the end of the lesson, the learner should be able to:-** Establish the relationship of sine and cosine of complimentary angles	Using established relationship to solve problems	Chalkboards	KLB BK2 Pg 145 Macmillan BK 2 Pg 119-120 Advancing in Math BK 2 Pg 101	
	4	Sines and cosines of Complimentary angles	**By the end of the lesson, the learner should be able to:-** Use the relationship of sine and cosine of complimentary angles in solving problems	Solving problems involving the sines and cosines of complimentary angles	Chalkboard Charts illustrating the relationship of sines and cosines of complimentary angles	KLB BK2 Pg 145 Macmillan BK 2 Pg 119-120 Advancing in Math BK 2 Pg 101	
	5	Relationship between tangent, 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 Pg MacmillanBk2Pg121 Advancing in Math BK 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 of special angles without using tables	Determining the trigonometric ratios of special angles 30,45,60 and 90 without using tables	Charts showing isosceles right angled triangle Charts illustrating Equilateral triangle	KLB BK2 Pg 146-147 Macmillan BK 2 Pg 122 Advancing in Math BK 2 Pg 102-103	
3	1	Application of Trigonometric ratios in solving problems	**By the end of the lesson, the learner should be able to:-** Solve trigonometric problems without using tables	Solving trigonometric problems of special angles	Chalkboard	KLB BK2 Pg 148 Macmillan BK 2 Pg 124 Advancing in Math BK 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 by reading logarithm table of sines	Chalkboard Mathematical tables	KLB BK2 Pg 149 Macmillan BK 2 Pg 128 Advancing in Math BK 2 Pg 105	
	3&4	Logarithms of cosines And tangents	**By the end of the lesson, the learner should be able to:-** Read the logarithm of cosines and tangents from mathematical tables	Reading logarithms of cosine and tangent from mathematical table	Chalkboard Mathematical table	KLB BK2 Pg 150-152 Macmillan BK 2 Pg 128 Advancing in Math BK 2 Pg 105	
	5	Reading tables of logarithms of sines,	**By the end of the lesson, the learner should be able to:-**	Solving problems	Chalkboard	KLB BK2 Pg 149-152	

		cosines and tangents	Read the logarithms of sines, cosines and tangents from tables	through reading the table of logarithm of sines, cosines and tangents	Mathematical table	Macmillan BK 2 Pg 128 Advancing in Math BK 2 Pg 106	
	6	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 Macmillan BK 2 Pg 130 Advancing in Math BK 2 Pg 106-109	
4	1	Area of a triangle Area of a triangle given the 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 a triangle given the base and height	Chart illustrating worked problem Chalkboard	KLB BK2 Pg 155 Macmillan BK 2 Pg 135 Advancing in Math BK 2 Pg 110	
	2	Area of a triangle using the formula (A = ½ absinϴ)	**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 formula ½ absinc Using the formula to calculate the area of a triangle given two sides and an included angle	Charts illustrating a triangle with two sides and an included angle Charts showing derived formula	KLB BK2 Pg 156 Macmillan BK 2 Pg 148 Advancing in Math BK 2 Pg 110	
	3	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:-** Solve problems on the area of a triangle Given three sizes using the formula A = √s(s-a)(s-b)(s-c)	Solving problems on the area of triangle given three sides of a triangle	Charts illustrating a triangle with three sides Charts illustrating a worked example i.e. mathematical table	KLB BK2 Pg 157-158 Macmillan BK 2 Pg 143 Advancing in Math BK 2 Pg 111-112	
	4	Application to real life Situation	**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 real life using the formula A = √s(s-a)(s-b)(s-c)	Mathematical table	KLB BK2 Pg 159 Macmillan BK 2 Pg 143 Advancing in Math BK 2 Pg 115	
	5&6	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 Macmillan BK 2 Pg 143 Advancing in Math BK 2 Pg 116-118	
5	1	Area of a kite	**By the end of the lesson, the learner should be able to:-**	Calculating the area of a	Model of a kite	KLB BK2 Pg 163 Macmillan BK 2	

			Find the area of a kite	kite		Pg 144 Advancing in Math BK 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 table Charts illustrating Polygons	KLB BK2 Pg 164 Macmillan BK 2 Pg Advancing in Math BK 2 Pg	
	3	Area of irregular Polygon	**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 polygons Polygonal shapes	KLB BK2 Pg 166 Macmillan BK 2 Pg 146-147 Advancing in Math BK 2 Pg 120	
	4&5	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 a sector given the angle and the radius of a minor sector - Calculate the area of a major se of a circle	Finding the area of a minor and a major sector of a circle	Charts illustrating sectors	KLB BK 2 Pg 167 Macmillan BK 2 Pg 149 Advancing in Math BK 2 Pg 122	
	6	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 Θ	Chart illustrating a Segment	KLB BK2 Pg 169-170 Macmillan BK 2 Pg 151-152 Advancing in Math BK 2 Pg 123	
6	1	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:-** Find the area of common region between two circles given the angles *© Education Plus Agencies*	Calculating the area of a segment	Charts illustrating common region between the circles Use of a mathematical table during calculation	KLB BK 2 Pg 175 Macmillan BK 2 Pg 153-154 Advancing in Math BK 2 Pg 124	
	2	Area 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:-** 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	Finding the area of a common region between two intersecting	Charts illustrating common region between two intersecting circles	KLB BK 2 Pg 176 Macmillan BK 2 Pg 155 Advancing in Math BK 2 Pg 124	
	3&4	Surface area of solids Surface area of prisms - Cylinder	**By the end of the lesson, the learner should be able to:-** Define prism and hence be in a position	Defining a prism	Models of cylinder,	KLB BK 2 Pg 177 Macmillan BK 2	

		(ii) Triangular prism (iii) Hexagonal prism	of calculating the surface area of some prisms like cylinder, triangular prism and hexagonal prism	Calculating the surface area of the prisms	triangular and hexagonal prisms	Pg 156 Advancing in Math BK 2 Pg	
	5	Area of a square based Pyramid	**By the end of the lesson, the learner should be able to:-** Find the total surface area of a square based pyramid	Finding the surface area of a square based pyramid	Models of a square based pyramid	KLB BK 2 Pg 178 Macmillan BK 2 Pg 157 Advancing in Math BK 2 Pg 128	
	6	Surface area of a Rectangular based Pyramid	**By the end of the lesson, the learner should be able to:-** Find the surface area of a rectangular based pyramid	Finding the surface area of a rectangular based pyramid	Models of a Rectangular based pyramid	KLB BK 2 Pg 179-180 Macmillan BK 2 Pg 157	
7	1	Surface area of a cone using the formula $A = \pi r^2 + \pi rl$	**By the end of the lesson, the learner should be able to:-** 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 area of the circular part Finding the area of the curved part Getting the total surface Area	Models of a cone	KLB BK 2 Pg 181 Macmillan BK 2 Pg 159 Advancing in Math BK 2 Pg 129	
	2&3	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 Macmillan BK 2 Pg 160 Advancing in Math BK 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 given the radius of a sphere	Finding the surface area of a sphere	Models of a sphere Charts illustrating formula for finding the surface area of a sphere	KLB BK 2 Pg 183 Macmillan BK 2 Pg 161-162 Advancing in Math BK 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 area of a hemisphere	Models of a hemisphere	KLB BK 2 Pg 184 Macmillan BK 2 Pg 162 Advancing in Math BK 2 Pg 132	
	6	Volume of Solids Volume 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 a triangular based prism	Models of a triangular based prism	KLB BK 2 Pg 186 Macmillan BK 2 Pg 163 Advancing in Math BK 2 Pg 138	
8	1	Volume of prism (hexagonal based prism	**By the end of the lesson, the learner should be able to:-**	Calculating the volume	Models of hexagonal	KLB BK 2 Pg 187 Macmillan BK 2	

		given the sides and angle	Find the volume of a hexagonal based prism	of an hexagonal prism	based prism	Pg 163 Advancing in Math BK 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 area of the base Applying the formula V=½x 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 Macmillan BK 2 Pg 165-166 Advancing in Math BK 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 of a cone	Model of a cone	KLB BK 2 Pg 191 Macmillan BK 2 Pg 167-168 Advancing in Math BK 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 a cone	Finding the volume of a full cone before its cutoff Finding the volume of a cut cone then subtracting	Models of a frustrum of a cone	KLB BK 2 Pg 192 MacmillanBk2Pg169 Advancing in Math BK 2 Pg 141	
	6	Volume of a frustrum of a pyramid	**By the end of the lesson, the learner should be able to:-** Find the volume of a frustrum of a Pyramid	Finding volume of a full pyramid Finding volume of cutoff pyramid Find volume of the remaining fig (frustrum) by subtracting i.e. $V_f = (V - v)$	Models of frustrum of a pyramid	Macmillan BK 2 Pg 169 Advancing in Math BK 2 Pg 142	
9	1	Volume of a sphere ($v = {}^4/_3\pi r^3$)	**By the end of the lesson, the learner should be able to:-** Find the volume of sphere given the radius of the sphere	Finding the volume of a sphere	Model of a sphere Mathematical table	KLB BK 2 Pg 195 Macmillan BK 2 Pg 170-171 Advancing in Math BK 2 Pg 142	
	2	Volume of a Hemisphere {($v = ½ ({}^4/_3\pi r^3)$)}	**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 Advancing in Math BK 2 Pg 143	
	3	**ASSESSMENT ON: PYTHAGORAS THEOREM AND TRIGONOMETRIC RATIOS**					
	4&5	Revision on Pythagoras Theorem and Trigonometric Ratios	**By the end of the lesson, the learner should be able to:-** - Solve problems using Pythagoras			KLB BK 2 Pg 120	

		(Assessment revision)	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	Macmillan BK 2 Pg 112-130 Advancing in Math BK 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 the area of triangles Solve problems on the area of quadrilaterals	Charts illustrating various triangles and quadrilaterals	KLB BK 2 Pg 155-157 Macmillan BK 2 Pg 140-143 Advancing in Math BK 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 assessment on area of part of a circle, 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 part of a circle, surface ar solids and volume of solids	Models of pyramids, cones, intersections	KLB BK 2 Pg 167-196 Macmillan BK 2 Pg Advancing in Math BK 2 Pg 122-142	
	6	Revision on Pythagoras Theorem	**By the end of the lesson, the learner should be able to:-** Use Pythagoras theorem in solving problems like finding the length of one side of a right angled triangle given the other two sides	Finding the length of the unknown side of a right angled triangle given the other two	Charts Chalkboard	KLB BK 2 Pg 121 Macmillan BK 2 Pg 106 Advancing in Math BK 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	Using mathematical table to find the sine, cosine and tangent (their logarithm) Solving problems on complimentary angles of sine, cosine and tangent Working out the Relationship of sine,	Mathematical table	KLB BK 2 Pg 123-154 Macmillan BK 2 Pg 112-130 Advancing in Math BK 2 Pg 94-106	

			- Reading the logarithm of sines, cosines, and tangent from mathematical table	cosine and tangent			
	3&4	Revision on the area Of 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 Three sides	Solving problems on the areas of a triangle given - The base and hei ii) Two sides and an included angle iii) Three sides	Charts illustrating the formulae used	KLB BK 2 Pg 155-158 Macmillan BK 2 Pg 135-143 Advancing in Math BK 2 Pg 110-114	
	5	Application of area of triangles 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 real life situation	Solving problems in real life using the knowledge of the area of triangle	Mathematical table Chart illustrating formula used	KLB BK 2 Pg 159 Macmillan BK 2 Pg 143 Advancing in Math BK 2 Pg 114	
	6	Revision on the area of Quadrilaterals - 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 and trapezium	Finding the area of the quadrilateral in questions	Chalkboard Charts illustrating formula used	KLB BK 2 Pg 161-163 Macmillan BK 2 Pg 144 Advancing in Math BK 2 Pg 116-117	
12	1	Revision on the area of a kite	**By the end of the lesson, the learner should be able to:-** Calculate the area of a kite	Calculate the area of a Kite	Model of a kite	KLB BK 2 Pg 163 Macmillan BK 2 Pg 144 Advancing in Math BK 2 Pg	
	2&3	Revision on the area of other polygons (regular and irregular polygons)	**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 polygon Finding the area of Irregular polygon	Mathematical table	KLB BK 2 Pg 164-166 Macmillan BK 2 Pg 146-147 Advancing in Math BK 2 Pg 119-120	
	4	Revision on area of Part of a circle (area of a sector) both major and minor sector	**By the end of the lesson, the learner should be able to:-** Calculate the area of a sector (major And minor)	Calculating the area of a sector (both major and minor sector)	Chart illustrating sectors	KLB BK 2 Pg 167 Macmillan BK 2 Pg 149 Advancing in Math BK 2 Pg 122	

	5	Revision on the area of a 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 a segment of a circle	Charts illustrating a Segment	KLB BK 2 Pg 169-170 Macmillan BK 2 Pg 151-152 Advancing in Math BK 2 Pg 123	
	6	Revision on the area of a common region between 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 a common region between the intersecting circles	Charts illustrating common region between the intersecting circles	KLB BK 2 Pg 176 Macmillan BK 2 Pg 155 Advancing in Math BK 2 Pg	
13	1	Revision on surface area of solids (surface area 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 surface area of prisms	Models of prisms	KLB BK 2 Pg 177 Macmillan BK 2 Pg 156 Advancing in Math BK 2 Pg 127	
	2&3	Revision on surface area of pyramid, cone and 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 surface area of a cone, pyramid and frustrum	Models of pyramid, Cone and frustrum	KLB BK 2 Pg 178-182 Macmillan BK 2 Pg 157-160 Advancing in Math BK 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 sphere Get the surface area of a hemisphere	Finding the surface area of a sphere and hemisphere	Models of a sphere and hemisphere	KLB BK 2 Pg 183-184 Macmillan BK 2 Pg 161-162 Advancing in Math	
	5	Revision on volume of and cone	**By the end of the lesson, the learner should be able to:-** Solve problems on the volume of prism pyramid and cone	Solving problem on the volume of prism, cone and pyramid	Models of a cone, pyramid and cone	KLBBK2Pg186-191 Macmillan BK 2 Pg 163-168 Advancing in Math BK 2 Pg 138-140	
	6	Revision on volume of Frustrum and a sphere	**By the end of the lesson, the learner should be able to:-** Solve problems on the volume of a sphere and frustrum of a cone and a pyramid	Solving problems on the volume of a sphere and a frustrum of pyramid and cone	Models of pyramid and that of a cone and after they are cut Models of a sphere	KLB BK 2 Pg 192-195 Macmillan BK 2 Pg 169-173 Advancing in Math BK 2 Pg 141-142	
14		**END OF TERM EXAMINATIONS**					

MATHEMATICS, F2, T3

REFERENCES: Advancing in Mathematics BK 4 By Longhorn Kenya Publishers, Secondary Mathematics BK 4 By KLB, Macmillan Secondary Maths BK 2

WK	LSN	TOPIC/S-TOPIC	OBJECTIVES	L/ACTIVITIES	L/T AIDS	REFERENCE	REMARKS
1	1	Quadratic expressions and equations Expansion of algebraic expressions	**By the end of the lesson, the learner should be able to:-** Expand algebraic expressions that form quadratic equations	Expanding algebraic Expressions	Charts illustrating expanded algebraic expressions	KLB BK 2 Pg 203 Macmillan BK 2 Pg 174 Advancing in Math BK 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 $(a + b)^2 = a^2 + 2ab + b^2$ $(a - b)^2 = a^2 - 2ab + b^2$ $(a – b)(a + b) = a^2 – b^2$	Charts illustrating derived quadratic identies	KLB BK 2 Pg 204 Macmillan BK 2 Pg 176 Advancing in Math BK 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 204-205 Macmillan BK 2 Pg 173 Advancing in Math BK 2 Pg 148	
	5	Factorization of quadratic expression (when the coefficient of x^2 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 x^2 being 1	Charts illustrating a factorized quadratic expressions	KLB BK 2 Pg 205-206 Macmillan BK 2 Pg 180 Advancing in Math BK 2 Pg 148	
	6	Factorization of a quadratic expression (when the coefficient of x^2 is greater than 1)	**By the end of the lesson, the learner should be able to:-** Factorize the quadratic expressions with the coefficient of x^2 being greater than 1 e.g. $6x^2 – 13x + 6$	Factorizing a quadratic expression with the coefficient of x^2 being greater than 1	Charts illustrating a factorized quadratic expression	KLB BK 2 Pg 206-208 Macmillan BK 2 Pg 180 Advancing in Math BK 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	Solving quadratic equations by factor method Giving the difference between quadratic	Chart illustrating a solved quadratic equation by factor method	KLB BK 2 Pg 209 Macmillan BK 2 Pg 181	

			quadratic expression and a quadratic equation - Write a general quadratic equation	expression and quadratic equation Writing a general quadratic equation	Charts illustrating a general quadratic equation	Advancing in Math BK 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 $ax^2 + bx + c = 0$ from given roots	Using the given roots to form a quadratic equation in the form $ax^2 + bx + c = 0$	Charts illustrating a formed quadratic equation	KLB BK 2 Pg 210 MacmillanBk2Pg182 Advancing in Math BK 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 roots Solving a formed quadratic equation by factor method	Charts illustrating a formed and solved quadratic equation	KLB BK 2 Pg 211 Macmillan BK 2 Pg 184 Advancing in Math BK 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 212 Macmillan BK 2 Pg 184 Advancing in Math BK 2 Pg 157-158	
	6	Linear Inequalities Inequality symbols Giving 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 symbols Writing down examples of simple statements using inequality symbols	Charts illustrating the four inequality symbols	KLB BK 2 Pg 213 Macmillan BK 2 Pg 190 Advancing in Math BK 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 213 Macmillan BK 2 Pg 191 Advancing in Math BK 2 Pg 160	
	2&3	Writing simple statement as compound statement Illustrating 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 statement Illustrating a compound statement formed on a number line	Combining two simple statements Illustrating a compound statement on the number line	Charts illustrating simple statements and s compound statement	KLB BK 2 Pg 214 Macmillan BK 2 Pg 191 Advancing in Math BK 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	Chalkboard Charts showing a solved simple inequality	KLB BK 2 Pg 215 Macmillan BK 2 Pg 191 Advancing in Math BK 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 216 Macmillan BK 2 Pg Advancing in Math BK 2 Pg 163	
4	1-5	Representing combined inequalities graphically Obtaining inequalities from inequality graph	**By the end of the lesson, the learner should be able to:-** Represent inequalities both in one and two unknowns graphically Obtain inequalities from inequality graphs	Representing inequalities graphically both in one and two unknowns Obtaining inequalities from inequality graph	Square board Graph paper Chalkboard	KLB BK 2 Pg 224-227 Macmillan BK 2 Pg 194-197 Advancing in Math BK 2 Pg 167	
	6	Linear Motion Displacement, 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 acceleration Working out problems on velocity, acceleration, speed and displacement	Chalkboard	KLB BK 2 Pg 2228-229 Macmillan BK 2 Pg 198 Advancing in Math BK 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 acceleration Determine average velocity and deceleration or retardation Distinguish between distance and displacement and speed and velocity	Finding velocity and acceleration Calculating average velocity and retardation Distinguishing distance and displacement, speed and velocity	Chalkboard	KLB BK 2 Pg 230 Macmillan BK 2 Pg 199 Advancing in Math BK 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 graph Interpreting distance time graph	Plotting distance time graph Drawing distance time graph Using distance time graph to solve problems of linear motion	Square board Graph paper	KLB BK 2 Pg 231-233 Macmillan BK 2 Pg 201 Advancing in Math BK 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 paper Square board	KLB BK 2 Pg 234 MacmillanBK2Pg202 Advancing in Math BK 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 drawn	Solving linear motion problems from a velocity time graph	Square board Graph paper	KLB BK 2 Pg 235 Macmillan BK 2 Pg 207	

			Using velocity time graph in solving linear problems	Interpreting a velocity time graph		Advancing in Math BK 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 graph Determining distance from velocity time graph	Square board Graph paper	KLBBK2Pg235-236 MacmillanBK2Pg207 Advancing in Math BK 2 Pg 176	
6	1&2	Relative Speed Bodies moving to same direction	**By the end of the lesson, the learner should be able to:-** Define relative speed Find the relative speed of bodies moving to the same direction © *Education Plus Agencies*	Defining relative speed Calculating relative speed of bodies heading same destination Solving problems involving relative speed	Chalk board	KLB BK 2 Pg 238-239 Macmillan BK 2 Pg 208 Advancing in Math BK 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 239-240 Macmillan BK 2 Pg 210	
	4	Statistics Defining statistics Collection and organization of data	**By the end of the lesson, the learner should be able to:-** Define statistics Distinguish between a raw and a organized data Collect and organize a raw data	Defining statistic Organizing a raw data after collecting	Charts illustrating a raw data	KLB BK 2 Pg 241 Macmillan BK 2 Pg 211-212 Advancing in Math BK 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 242 Macmillan BK 2 Pg 214 Advancing in Math BK 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 249 Macmillan BK 2 Pg 214-216 Advancing in Math BK 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	Charts Chalkboard	KLB BK 2 Pg 248 Macmillan BK 2 Pg 214 Advancing in Math BK 2 Pg 180	
	2	Measures of central tendency	**By the end of the lesson, the learner should be able to:-**	Calculating the mean for ungrouped data	Charts showing calculated mean	KLB BK 2 Pg 243 Macmillan BK 2	

		Mean (X) for ungrouped data	Calculate the mean (X) for ungrouped data Work out the mean by using the formula $X = \frac{\varepsilon x}{N}$ and $X = \frac{\varepsilon fx}{\varepsilon f}$			Pg 218 Advancing in Math BK 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 data Find 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 249 MacmillanBK2Pg219 Advancing in Math BK 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 data Arrange the ungrouped data in either ascending or descending order Get accumulative frequency column	Estimating the median of grouped data Finding the median of ungrouped data	Charts illustrating ascending or descending order data Charts illustrating formula used	KLB BK 2 Pg 244-245, 248 Macmillan BK 2 Pg 220-222 Advancing in Math BK 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 graph Interpret a line graph Solve problems using a line graph plotted	Plotting and drawing a line graph Solving problems using a line graph	Square board Graph papers	KLB BK 2 Pg 255-256 Macmillan BK 2 Pg 226 Advancing in Math BK 2 Pg 190	
	4	Pie chart Bar graph	**By the end of the lesson, the learner should be able to:-** Represent data in form of pie chart and bar graph Give clear distinction of a pie chart and bar graph	Representing data in form of a pie chart and bar graph	Mathematical instrument Graph paper Square board	KLB BK 2 Pg 253-255 Macmillan BK 2 Pg 227 Advancing in Math BK 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 histogram Interpreting the information from the bars of a histogram and pictogram	Representing data in form of pictogram and histogram Drawing the bars of a histogram on a square paper	Square board Graph paper	KLB BK 2 Pg 254-257 Macmillan BK 2 Pg 227 Advancing in Math BK 2 Pg 184,187-188	
	6	Histogram (varying class interval)	**By the end of the lesson, the learner should be able to:-**		Graph paper	KLB BK 2 Pg 258 Macmillan BK 2	

			Represent data in form of a histogram with varying class intervals Calculate frequency densities	Calculating frequency density Representing data in form of a histogram	Square board	Pg 228 Advancing in Math BK 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 polygon Plotting and drawing frequency polygon	Graph paper Square board	KLB BK 2 Pg 259-260 Macmillan BK 2 Pg 231 Advancing in Math BK 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 paper Mathematical instruments	KLB BK 2 Pg 263 Macmillan BK 2 Pg 238 Advancing in Math BK 2 Pg 198	
	3	Angle properties of a circle Arc, chord and segment of a circle	**By the end of the lesson, the learner should be able to:-** Identify an arc, chord and segment Define an arc, chord and segment	Defining arc, chord and segment Identifying arc, chord and segment	Mathematical instruments Charts illustrating arc, chord and segment	KLB BK 2 Pg 264 Macmillan BK 2 Pg 238 Advancing in Math BK 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 265 Macmillan BK 2 Pg 241 Advancing in Math BK 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 267-273 Macmillan BK 2 Pg 241-243 Advancing in Math BK 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 273 Macmillan BK 2 Pg 244-245 Advancing in Math BK 2 Pg 203	
	2	Angle properties of a cyclic quadrilateral	**By the end of the lesson, the learner should be able to:-**	Stating angle properties of a cyclic quadrilateral	Mathematical instruments	KLB BK 2 Pg 278 Macmillan BK 2 Pg 244-246	

			State the angle properties of a cyclic quadrilateral		Models of a cyclic quadrilateral	Advancing in Math BK 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 279 MacmillanBK2Pg250 Advancing in Math BK 2 Pg 204	
	4&5	Vectors Vector and scalar quantities Vector 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 quantities Use vector notation correctly	Defining a vector and scalar Writing down examples of a vector and a scalar Using a vector or notation	Cahlk board	KLB BK 2 Pg 284 Macmillan BK 2 Pg 252 Advancing in Math BK 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 board Graph paper	KLB BK 2 Pg 284-285 Macmillan BK 2 Pg 253	
11	1	Equivalent vectors Addition of vectors	**By the end of the lesson, the learner should be able to:-** Identify equivalent vectors Add vectors	Identifying equivalent vectors Adding vectors	Square board Graph paper Chalkboard	KLB BK 2 Pg 285-288 Macmillan BK 2 Pg 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 290 Macmillan BK 2 Pg 258 Advancing in Math BK 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 board Graph paper	KLB BK2Pg 296-300 MacmillanBK2Pg260 Advancing in Math BK 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 301-302 MacmillanBK2Pg262 Advancing in Math BK 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 BK2Pg302-303 Macmillan BK 2 Pg 262	
	6	Translation vector	**By the end of the lesson, the learner should be able to:-** Define translation as a transformation	Defining translation Solving problems on translation	Chalkboard Square board Graph paper	KLB BK2Pg 304-308 MacmillanBK2Pg263 Advancing in Math BK 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 problems Working out problems from linear inequality	Chalkboard	KLB BK 2 Pg 203-221 Macmillan BK 2 Pg 197 Advancing in Math BK 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 correctly Applying the knowledge learnt to solve linear motion problems and statistic questions	Solving problems on linear motion and statistics	Chalkboard	KLB BK 2 Pg 228-252 Macmillan BK 2 Pg 198-238 Advancing in Math BK 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 paper Square board Chalkboard	KLB BK 2 Pg 264-304 Macmillan BK 2 Pg 238-263 Advancing in Math BK 2 Pg 199-217	