SUGGESTED PLANNING of TEACHING and ASSESSMENT

Grade 10 Mathematics 2022

TERM 1 (47 days)	WEEK 1 (3)	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10 (4)
% completed	W: 1,5%	W: 4,3%	W: 6,9%	W: 9,6%	W: 12,3%	W:15,0%	W: 17,5%	W: 20%	W: 24,0%	W: 28,0%
CAPS Topic	ALGEBRAIC EXPRESSIONS		CAPS pg. 10, 13 &21	EXPONENTS, EQUATIONS AND INEQUALITIES		CAPS pg. 10, 13 & 22	Revision & Consolidation	EUCLIDEAN GEOMETRY		CAPS pg. 10, 14, 15, 25 & 28
Topic, concepts, skills and values	• Revise product of binomial • Multiply binomial with trinomial • Revise factorization done in grade 9	**Factorization** • Grouping • Quadratic • Sum & Difference of cubes	Simplify Algebraic Fraction expressions Consolidated exercises on this section	• Revise the number system real, rational, integers and non-real **Exponents** • Laws • Simplify expressions • Solve equations	• Revise linear equations • Quadratic equations • Simultaneous equations – linear	• Word problems • Literal equations Linear inequalities	Focus on Examination type questions. Give learners questions to do restricting the time. Focus on reading with understanding	• Investigate and form conjectures about the properties of special triangles, quadrilaterals and other polygons. Try to validate or prove conjectures using any logical method (Euclidean, co-ordinate or transformation geometry from Grade 9) • Disprove false conjectures by producing counter-examples • Investigate alternative definitions of various polygons (including the isosceles, equilateral and right-angled triangle, the kite, parallelogram, rectangle, rhombus, square and trapezium)		
Date Completed										
Requisite pre-knowledge	Operations with integers and variables Binomial X binomial, distributive law	Factorization: Common factors, difference of squares and trinomial Algebraic fractions	Products and factorization done	Exponent laws BODMAS Factorisation Solving equations	Product of binomials Factorising a quadratic Solve algebraic equations	Solving and simplifying equations Factorization Number line, set builder/ interval notation	All content done	Properties of quadrilaterals	Properties of quadrilaterals	Properties of quadrilaterals
Siyavula										
Resources to enhance learning	https://www.tutonic.org ; https://vodacom.mytopdog.co.za/users/login ; https://www.khanacademy.org/ ; https://papervideo.co.za/ ; https://papervideo.co.za/free-resources?category=Solution&grade=3&subject=1&language=1 ; HeyMath App from Playstore ; Calculator App from Playstore; https://www.geogebra.org/?lang=en ; https://www.padowan.dk/download/ ; https://www.desmos.com/ ; https://nrich.maths.org/ ; National Exemplars ; National Examination Papers; http://bit.ly/GR10-MATHS_PAPERS ; http://wcedportal.co.za/ ; https://www.siyavula.com/									
Informal assessment	Google form; Cumulative Assignment; Class Activity; Short class test; Class Discussions; Presentation of solutions; Vodacom revision exercises; Khan Academy Revision									
SBA (Formal Assessment)	Investigation on any Topic						Control Test			

TERM 2 (53 days)	WEEK 1 (4)	WEEK 2 (4)	WEEK 3 (4)	WEEK 4 (4)	WEEK 5 (4)	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEKS 11 (3) & 12
% completed	W: 31,8 %	W: 34,5 %	W: 35,5 %	W: 35,6 %	W: 39,6%	W: 43,6%	W: 47,6%	W: 51,6 %	W: 55,6 %	W: 59,3%	W:63,0%
CAPS Topic		TRIGONOMETRY			NUMBER PATTERNS		FUNCTIONS				ANALYTICAL GEOMETRY
		CAPS pg. 10, 15, 23 & 28			CAPS pg. 10, 12, 22 & 29		CAPS pg. 10, 12 & 24				CAPS pg. 10, 15, 26 & 29
Topic, concepts, skills and values	1. Define the trigonometric ratios $\sin\theta$, $\cos\theta$ and $\tan\theta$, using right-angled triangles. 2. Extend the definitions of $\sin\theta$, $\cos\theta$ and $\tan\theta$ for $0^0 \le \theta \le 360^0$. 3. Define the reciprocals of the trigonometric ratios $\csc\theta$, $\sec\theta$ and $\cot\theta$, using right-angled triangles (these three reciprocals should be examined in grade 10 only).	4. Derive values of the trigonometric ratios for the special angles without using a calculator. $\theta \in \{0°; 30°; 45°; 60°; 90°\}$ 5. Solve simple trigonometric equations for angles between 0^0 and $90°$.	6. Use diagrams to determine the numerical values of ratios for angles from 0° to 360°.	Patterns: Investigate number patterns leading to those where there is a constant difference between consecutive terms, and the general term (without using a formula-see content overview) is therefore linear.	• Concept of function • Basic graphs: $f(x) = x^2$; $f(x) = \frac{1}{x}$; $f(x) = b^x$ • The effects of a and q in: $y = a.f(x) + q$ Discuss and clarify: Domain, Range, characteristics of graphs, turning points, Axes of Symmetry, Lines of Symmetry, Asymptotes	Techniques for sketching the different functions in the form: $y = a.f(x) + q$ **where** $f(x) = x^2$; $f(x) = \frac{1}{x}$ and $f(x) = b^x$ **Sketch and interpret functions** Finding the equation of the above functions.	Finding the equation of the different functions in the form: $y = a.f(x) + q$ **where** $f(x) = x^2$; $f(x) = \frac{1}{x}$ and $f(x) = b^x$ Examination Type questions on functions.	**Trig graphs:** • Point-by-point plotting of $\sin\theta$, $\cos\theta$, $\tan\theta$ • Study the effect of a and q on the graphs defined by: $y = a\sin\theta + q$; $y = a\cos\theta + q$ and $y = a\tan\theta$ where $a, q \in \mathbb{Q}$ for $\theta \in [0°; 360°]$ Sketch graphs, find the equations of given graphs and interpret graphs. **Note**: Sketching of graphs must be based on the effect of a and q, which was observed.	**Revision & Consolidation** Focus on Examination type questions. Give learners questions to do restricting the time. Focus on reading with understanding	• Distance formulae • Gradient of line between two points • Coordinates of mid-point	Integrated application involving distance, gradient and midpoint of a line segment
Date Completed											
Requisite pre-knowledge	Pythagoras Plot points on the cartesian plane.	Pythagoras Plot points on the cartesian plane.		Arithmetic skills and observation of patterns	Equation of line and how to sketch it Point-by-point plotting	Techniques for sketching a straight line without point-by-point plotting.	Techniques for finding the equation of a straight line.	Point-by-point plotting Techniques for sketching a trig graph without point by point plotting.	All content done	Pythagoras, Coordinates of points on the cartesian plane Substitution BODMAS	Pythagoras, Coordinates of points on the cartesian plane Substitution BODMAS
Siyavula											
Resources to enhance learning	https://www.tutonic.org ; https://vodacom.mytopdog.co.za/users/login ; https://www.khanacademy.org/ ; https://papervideo.co.za/ ; https://papervideo.co.za/free-resources?category=Solution&grade=3&subject=1&language=1 ; HeyMath App from Playstore ; Calculator App from Playstore; https://www.geogebra.org/?lang=en ; https://www.padowan.dk/download/ ; https://www.desmos.com/ ; https://nrich.maths.org/ ; National Exemplars ; National Examination Papers; http://bit.ly/GR10-MATHS_PAPERS ; http://wcedeportal.co.za/ ; https://www.siyavula.com/										
Informal assessment	Google form; Cumulative Assignment; Class Activity; Short class test; Class Discussions; Presentation of solutions; Vodacom revision exercises; Khan Academy Revision										
SBA (Formal Assessment)	Assignment							Control Test			

SUGGESTED PLANNING of TEACHING and ASSESSMENT

TERM 3 (52 days)	WEEK 1 (4)	WEEK 2	WEEK 3	WEEK 4 (3)	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEKS 10 & 11
% completed	W: 66,5 %	W: 70,0 %	W: 73,8 %	W: 77,5 %	W: 81,3 %	W: 85,0 %	W: 87,5 %	W: 90,0 %	W: 92,5 %	W: 95,0 %
CAPS Topic	TRIGONOMETRY	CAPS pg. 10, 15, 23 & 28	STATISTICS	CAPS pg. 10, 15 & 27	PROBABILITY	CAPS pg. 10, 14 & 29	FINANCE GROWTH	CAPS pg. 10, 12 & 26	MEASUREMENT	CAPS pg. 10, 14 & 28
Topic, concepts, skills and values	Trig graphs continued Problems in 2 dimensions	Problems in 2 dimensions	• Central tendency – grouped data • Range; percentiles; quartiles…	STATISTICS • Five number summary • Box and whisker	• Use of Venn diagrams • Mutually exclusive events • Complementary events	• Use of Venn diagrams • Mutually exclusive events • Complementary events	• Simple and Compound growth • Annual Interest	• Hire purchase • Inflation • Population growth	• Volume and surface areas • Effect on volume and surface area if multiplied by k	• Effect on volume and surface area if multiplied by k • Volume and surface area of spheres, right pyramids; right cones
Date Completed										
Requisite pre-knowledge	Pythagoras, Trig functions, Angles of Triangle is 180^0.	Pythagoras, Trig functions, Angles of Triangle is 180^0.	Mean, Mode, Median for ungrouped data.	Mean, Mode, Median for ungrouped data.	How to calculate probability. Use of stem and leave.	How to calculate probability. Use of stem and leave.	Calculations involving percentages. Substitutions, making a variable the subject of formula.	Calculations involving percentages. Substitutions, making a variable the subject of formula.	How to calculate the perimeter and area of basic shapes e.g circle, triangle, square, rectangle, trapezium & trapezium.	How to calculate the perimeter and area of basic shapes e.g circle, triangle, square, rectangle, trapezium & trapezium.
Siyavula										
Resources to enhance learning	https://www.tutonic.org ; https://vodacom.mytopdog.co.za/users/login ; https://www.khanacademy.org/ ; https://papervideo.co.za/ ; https://papervideo.co.za/free-resources?category=Solution&grade=3&subject=1&language=1 ; HeyMath App from Playstore ; Calculator App from Playstore; https://www.geogebra.org/?lang=en ; https://www.padowan.dk/download/ ; https://www.desmos.com/ ; https://nrich.maths.org/ ; National Exemplars ; National Examination Papers; http://bit.ly/GR10-MATHS_PAPERS ; http://wcedeportal.co.za/ ; https://www.siyavula.com/									
Informal assessment	Google form; Cumulative Assignment; Class Activity; Short class test; Class Discussions; Presentation of solutions; Vodacom revision exercises; Khan Academy Revision									
SBA (Formal Assessment)	Control Test								Control Test	

TERM 4 (47 days)	WEEK 1 (4)	WEEK 2	WEEK 3	WEEK 4	WEEK 5	
% completed	W: 97,5 %	W: 100 %				
CAPS Topic	EUCLIDEAN GEOMETRY	CAPS pg. 10, 14, 25 & 28	Revision	Revision	Revision	Internal Examinations
Topic, concepts, skills and values	Application of the quadrilateral theorems.	Application of the quadrilateral theorems.				
Date Completed						
Requisite pre-knowledge	Definitions and Properties of the different quadrilaterals.	Definitions and Properties of the different quadrilaterals.				
Siyavula						
Resources to enhance learning	https://www.tutonic.org ; https://vodacom.mytopdog.co.za/users/login ; https://www.khanacademy.org/ ; https://papervideo.co.za/ ; https://papervideo.co.za/free-resources?category=Solution&grade=3&subject=1&language=1 ; HeyMath App from Playstore ; Calculator App from Playstore; https://www.geogebra.org/?lang=en ; https://www.padowan.dk/download/ ; https://www.desmos.com/ ; https://nrich.maths.org/ ; National Exemplars ; National Examination Papers; http://bit.ly/GR10-MATHS_PAPERS ; http://wcedeportal.co.za/ ; https://www.siyavula.com/					
Informal assessment	Google form; Cumulative Assignment; Class Activity; Short class test; Class Discussions; Presentation of solutions; Vodacom revision exercises; Khan Academy Revision					
SBA (Formal Assessment)			Control Test			

SBA Weighting

TOTAL NUMBER OF SBA TASKS 7

Term 1   Investigation / Project (15%) and Test (14%)

Term 2   Assignment (15%) and Test (14%)

Term 3   Test (14%) and Test (14%)

Term 4   Test (14%)

Notes on or guidelines for final examinations:

Paper 1 2 hours		Paper 2 2 hours	
Algebraic expressions and equations (and inequalities)	30	Euclidean geometry and measurement	30
Exponents		Analytical geometry	15
Number Patterns	15	Trigonometry	40
Functions and graphs	30	Statistics	15
Finance and growth	10		
Probability	15		
TOTAL MARK	**100**	**TOTAL MARK**	**100**