

2025 ANNUAL TEACHING PLANS: MATHEMATICS: GRADE 8

TERM 1	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10
HOURS PER TOPIC	9 HOURS		9 HOURS		9 HOURS		4,5 HOURS	13,5 HOURS		
ASSESSMENT TASKS	ASSIGNMENT (Minimum of 3 topics) & TEST									
TOPIC, CONCEPTS, SKILLS AND VALUES	WHOLE NUMBERS Properties of whole numbers - Revise the properties done in the previous grades - Recognise the division property of 0, whereby any number divided by 0 is undefined Calculations using whole numbers Revise: - Calculations using all four operations on whole numbers, estimating and using calculators where appropriate Calculation techniques - Use a range of strategies to perform and check written and mental calculations with whole numbers including: - Estimation - Adding, subtracting and multiplying in columns - Long division - Rounding off and compensating - Using a calculator Multiples and factors Revise - Prime factors of numbers to at least 3-digit whole numbers - LCM and HCF of whole numbers, by inspection or factorisation Solving problems Revise - Solve problems involving whole numbers, including: - Comparing two or more quantities of the same kind (ratio) - Comparing two quantities of different kinds (rate) - Sharing in a given ratio where the whole is given - Extend to increasing or decreasing of a number in a given ratio - Solve problems that involve whole numbers, percentages and decimal fractions in financial contexts such as: - VAT - Hire purchase - Exchange rates	INTEGERS Calculations with integers Revise addition and subtraction with integers - Multiply and divide with integers - Perform calculations involving all four operations with integers - Perform calculations involving all four operations with numbers that involve squares, cubes, square roots and cube roots of integers Properties of integers - Recognise and use commutative, associative and distributive properties of addition and multiplication for integers - Recognise and use additive and multiplicative inverses for integers	COMMON FRACTIONS Calculations with fractions - Divide whole numbers and common fractions by common fractions - Calculate the squares, cubes, square roots and cube roots of common fractions - Calculate amounts if given percentage increase or decrease - Calculations and solving problems Calculation techniques - Use knowledge of reciprocal relationships to divide common fractions Percentage - Calculate amounts if given percentage increase or decrease Solving problems - Solve problems in contexts involving common fractions and mixed numbers, including grouping, sharing and finding fractions of whole numbers - Solve problems in contexts involving percentages	DECIMAL FRACTIONS Calculations with decimal fractions - Multiplication of decimal fractions by decimal fractions not limited to one decimal place - Division of decimal fractions by decimal fractions - Calculate the squares, cubes, square roots and cube roots of decimal fractions Calculation techniques - Use knowledge of place value to estimate the number of decimal places in the result before performing calculations - Use rounding off and a calculator to check results where appropriate Solving problems - Solve problems in context involving decimal fractions	EXPONENTS Comparing and representing numbers in exponential form - Revise compare and represent whole numbers in exponential form - Compare and represent integers in exponential form - Compare and represent numbers in scientific notation, limited to positive exponents Calculations using numbers in exponential form - Establish general laws of exponents, limited to: $a^m \times a^n = a^{m+n}$ $a^m \div a^n = a^{m-n}$ $(a^m)^n = a^{m \times n}$ $(a \times t)^n = a^n \times t^n$ $a^0 = 1$ - Recognise and use the appropriate laws of operations using numbers involving exponents and square and cube roots - Perform calculations involving all four operations with numbers that involve squares, cubes, square and cube roots of integers - Calculate the squares, cubes, square and cube roots of rational numbers Solving problems - Solve problems in contexts involving numbers in exponential form					

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HOURS PER TOPIC	9 HOURS		9 HOURS		9 HOURS		4,5 HOURS	13,5 HOURS		
PREREQUISITE SKILL/ PRE-KNOWLEDGE	• Multiplication of whole numbers to at least 12×12 • Order and compare prime numbers to at least 100 • Calculations using all four operations on whole numbers, estimating and using calculators where appropriate • Prime factors of numbers to at least 3-digit whole numbers • LCM and HCF of numbers to at least 3-digit whole numbers, by inspection or factorisation • Solve problems involving whole numbers, including: – Comparing two or more quantities of the same kind (ratio) – Comparing two quantities of different kinds (rate) – Sharing in a given ratio where the whole is given		• Count forwards and backwards in integers for any interval • Recognise, order and compare integers • Add and subtract with integers • Recognise and use commutative and associative properties of addition and multiplication for integers • Solve problems in contexts involving addition and subtraction of integers		• Addition and subtraction to fractions where one denominator is not a multiple of the other • Multiplication of common fractions, including mixed numbers, not limited to fractions where one denominator is a multiple of another • Converting mixed numbers to common fractions • Use knowledge of multiples and factors to write fractions in the simplest form before or after calculations • Use knowledge of equivalent fractions to add and subtract common fractions in order to perform calculations with them • Calculate the percentage of part of a whole • Calculate percentage increase or decrease of whole numbers		• Count forwards and backwards in decimals • Compare and order decimal fractions • Rounding off decimal fractions • Addition and subtraction of decimal fractions of at least three decimal places • Multiplication of decimal fractions by whole numbers and decimals • Division of decimal fractions by whole numbers • Use knowledge of Place value to estimate the number of decimal places in the result before performing calculations • Use rounding off and a calculator to check results where appropriate	• Compare and represent whole numbers in exponential form: $a^b = a \times a \times a \times \dots$ for b number of factors • Recognise and use the appropriate laws of operations with numbers involving exponents and square and cube roots • Perform calculations involving all four operations using numbers in exponential form, limited to exponents up to 5, and square and cube roots • Solve problems in contexts involving numbers in exponential form		

TERM 2	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12
HOURS PER TOPIC	9 HOURS		9 HOURS		9 HOURS		9 HOURS		9 HOURS			
ASSESSMENT TASKS	INVESTIGATION (Topics not yet taught) & JUNE TEST											
TOPIC, CONCEPTS AND SKILLS	ALGEBRAIC EXPRESSIONS Algebraic language - Recognise and identify conventions for writing algebraic expressions Identify and classify like and unlike terms in algebraic expressions - Recognise and identify coefficients and exponents in algebraic expressions Expand and simplify algebraic expressions Use commutative, associative and distributive laws for rational numbers and laws of exponents to: - Add and subtract like terms in algebraic expressions - Multiply integers and monomials by: - Monomials - Binomials - Trinomials - Divide the following by integers or monomials: - Monomials - Binomials - Trinomials - Simplify algebraic expressions involving the above operations - Determine the squares, cubes, square roots and cube roots of single algebraic terms or like algebraic terms Determine the numerical value of algebraic expressions by substitution		ALGEBRAIC EQUATIONS Equations - Use substitution in equations to generate tables of ordered pairs - Extend solving equations to include: - Using additive and multiplicative Inverses - Using laws of exponents		FUNCTIONS AND RELATIONSHIPS - Input and output values - Revise, determine input values, output values or rules for patterns and relationships using: - Flow diagrams - Tables - Formulae - Extend determine input values, output values or rules for patterns and relationships using equations Equivalent forms - Revise, determine, interpret and justify equivalence of different descriptions of the same relationship or rule presented: - Verbally - In flow diagrams - In tables - By formulae - By number sentences - Extend determine, interpret and justify equivalence of different descriptions of the same relationship or rule presented by equations		GRAPHS Interpreting graphs - Analyse and interpret global graphs of problem situations, with special focus on the following trends and features: - Linear or non-linear - Constant, increasing or decreasing - Maximum or minimum - Discrete or continuous Drawing graphs - Draw global graphs from given descriptions of a problem situation, identifying features listed above - Use tables or ordered pairs to plot points and draw graphs on the Cartesian plane		REVISION		FORMAL ASSESSMENT TASK TEST All term 1 & 2 topics	
	PREREQUISITE SKILL/ PREKNOWLEDGE - Recognise and interpret rules or relationships represented in symbolic form - Identify variables and constants in given formulae and/or equations		- Write number sentences to describe problem situations - Analyse and interpret number sentences that describe a given situation - Solve and complete number sentences by: - Inspection - Trial and improvement - Determine the numerical value of an expression by substitution - Identify variables and constants in given formulae or equations		- Determine input values, output values or rules for patterns and relationships using flow diagrams, tables and formulae - Determine, interpret and justify equivalence of different descriptions of the same relationship or rule presented verbally, in flow diagrams, in tables by formulae and by number sentences							

TERM 3	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
HOURS PER TOPIC	9 HOURS		13,5 HOURS			9 HOURS		9 HOURS		9 HOURS	
ASSESSMENT TASKS	PROJECT & TEST										
TOPIC, CONCEPTS, SKILLS AND VALUES	GEOMETRY OF STRAIGHT LINES Angle relationships - Recognise and describe pairs of angles formed by: - Perpendicular lines - Intersecting lines parallel lines cut by a transversal Solving problems - Solve geometric problems using the relationships between pairs of angles described above		GEOMETRY OF 2D SHAPES Classifying 2D shapes - Identify and write clear definitions of triangles in terms of their sides and angles, distinguishing between: - Equilateral triangles - Isosceles triangles - Right-angled triangles Constructions PROVIDE LEARNERS WITH ACCURATELY CONSTRUCTED FIGURES TO INVESTIGATE THE PROPERTIES OF TRIANGLES Investigating properties of geometric figures - Investigate the angles in a triangle, focusing on: - The sum of the interior angles of triangles - The size of angles in an equilateral triangle - The sides and base angles of an isosceles triangle Classifying 2D shapes - Identify and write clear definitions of quadrilaterals in terms of their sides and angles, distinguishing between: - Parallelogram - Rectangle - Square - Rhombus - Trapezium - Kite Constructions PROVIDE LEARNERS WITH ACCURATELY CONSTRUCTED FIGURES TO INVESTIGATE THE PROPERTIES OF QUADRILATERALS Investigating properties of geometric figures - Investigate sides and angles in quadrilaterals, focusing on: - The sum of the interior angles of quadrilaterals - The sides and opposite angles of parallelograms Solving problems - Solve geometric problems involving unknown sides and angles in triangles and quadrilaterals, using known properties and definitions Similar and congruent 2D shapes - Identify and describe the properties of congruent shapes - Identify and describe the properties of similar shapes Solving problems - Solve geometric problems involving unknown sides and angles in triangles and quadrilaterals, using known properties and definitions			THEOREM OF PYTHAGORAS Develop and use the Theorem of Pythagoras - Investigate the relationship between the lengths of the sides of a right-angled triangle to develop the Theorem of Pythagoras - Determine whether a triangle is right-angled triangle or not if the lengths of the three sides of the triangle is known - Use the Theorem of Pythagoras to calculate the missing length in a right-angled triangle, leaving irrational answers in surd form		AREA AND PERIMETER OF 2-D SHAPES Area and perimeter - Use appropriate formulae to calculate perimeter and area of: circles - Calculate the areas of polygons, to at least 2 decimal places, by decomposing them into rectangles and/or triangles - Use and describe the relationship between the radius, diameter and circumference of a circle in calculations - Use and describe the relationship between the radius and area of a circle in calculations Calculations and solving problems - Solve problems, with or without a calculator, involving perimeter and area of polygons and circles to at least 2 decimal places - Use and describe the meaning of the irrational number Pi (π) in calculations involving circles - Use and convert between appropriate SI units, including: $mm^2 \leftrightarrow cm^2 \leftrightarrow m^2 \leftrightarrow km^2$		REVISION	FORMAL ASSESSMENT TASK TEST All term 3 topics

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HOURS PER TOPIC	9 HOURS		13,5 HOURS			9 HOURS		9 HOURS			
PREREQUISITE SKILL/ PREKNOWLEDGE	- Definitions of: – Line segment – Ray – Straight lines – Parallel lines – Perpendicular lines		- Describe, sort, name and compare triangles according to their sides and angles, focusing on: – Equilateral triangles – Isosceles triangles – Right-angled triangles - Describe, sort, name and compare quadrilaterals in terms of: – Length of sides – Parallel and perpendicular sides – Size of angles (right-angles or not) - Describe and name parts of a circle - Recognise and describe similar and congruent figures by comparing: – Shape – Size			Knowledge of squares and square roots of whole numbers		- Geometry of 2D shapes - Algebraic equations - Calculate the squares, cubes, square roots and cube roots of rational numbers			

TERM 4	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10
HOURS PER TOPIC	9 HOURS		9 HOURS		9 HOURS			4,5 HOURS	13,5 HOURS	
ASSESSMENT TASKS	EXAMINATION: PAPER 1 & PAPER 2									
TOPIC, CONCEPTS, SKILLS AND VALUES	NUMERIC AND GEOMETRIC PATTERNS Investigate and extend patterns - Revise investigate and extend numeric and geometric patterns looking for relationships between numbers, including patterns: - Represented in physical or diagram form - Not limited to sequences involving a constant difference or ratio - Of learner's own creation - Represented in tables - Extend investigate and extend numeric and geometric patterns looking for relationships between numbers, including patterns represented algebraically - Describe and justify the general rules for observed relationships between numbers in own words or in algebraic language		REVISION OF TERM 1 – 4 WORK						FORMAL ASSESSMENT TASK EXAMINATION PAPER 1 AND PAPER 2 All topics from term 1-4	
PREREQUISITE SKILL/ PREKNOWLEDGE	- Investigate and extend numeric and geometric patterns looking for relationships between numbers - Describe and justify the general rules for observed relationships between numbers in own words									