basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

2023/24 ANNUAL TEACHING PLANS: MATHEMATICS: GRADE 7 (TERM 1)

TERM 1	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	**13,5 hrs**			**2 hrs**	**9 hrs**		**11,5 hrs**			**4,5 (3,5) hrs**	**3,5 (4,5) hrs**

TOPICS, CONCEPTS AND SKILLS	**WHOLE NUMBERS**
	• Revise the following:
	  ○ Ordering and comparing whole numbers
	  ○ Properties of operations with whole numbers
	  ○ Calculations using all operations with whole numbers
	Calculation techniques
	• Use any strategy to perform and check written and mental calculations of whole numbers including:
	  – Long division
	  – Adding, subtracting and multiplying in columns
	  – Estimation
	  – Rounding off and compensating
	  – Using a calculator
	N.B. Calculator is only used to check the correctness of the answer
	Multiples and factors
	• List prime factors of numbers to at least 3-digit whole numbers
	• Find the LCM and HCF of whole numbers by inspection or factorisation
	Solving problems
	• Solve problems involving whole numbers, including:
	  – Comparing of 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
	• Solve problems that involve whole numbers, percentages and decimal fractions in financial contexts such as:
	  – Profit, loss and discount
	  – Budgets
	  – Accounts
	  – Loans
	  – Simple interest
		FORMAL ASSESSMENT TASK ASSIGNMENT
		• Whole numbers
		N.B. Assignment to be done in class over 2 hrs
			COMMON FRACTIONS:
			Ordering, comparing and simplifying common fractions
			• Extend to thousandths
			Calculations with fractions
			• Addition and subtraction of fractions including mixed numbers where one denominator is not a multiple of the other
			• Multiplication common fractions, including mixed numbers, not limited to fractions where one denominator is a multiple of another
			Calculation techniques
			• Convert mixed numbers to common fractions in order to perform calculations with them
			• 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
			Percentages
			• Calculate the percentage of part of a whole
			• Calculate percentage increase or decrease of whole numbers
			Solving problems
			• Solve problems in contexts involving common fractions and mixed numbers, including grouping and sharing; and finding fractions of whole numbers
			• Solve problems in contexts
			• involving percentages
				DECIMAL FRACTIONS:
				Ordering and comparing decimal fractions
				• Count forwards and backwards in decimal fractions to at least 3 decimal places
				• Place value of decimals to at least 3 decimal places
				• Order and compare decimal fractions to at least 3 decimals
				• Rounding off decimal fractions to at least 2 decimal places
				Calculations with decimal fractions
				• Addition and subtraction to decimal fractions of at least three decimal places
				• Multiply decimal fractions to include:
				  – Decimal fractions to at least 3 decimal places by whole numbers
				  – Decimal fractions to at least 2 decimal places by decimal fractions to at least 1 decimal place
				• Divide decimal fractions to include decimal fractions to at least 3 decimal places by whole numbers
				Calculation techniques
				• Use knowledge of place value to estimate the number of decimal places in the result before
				• Use rounding off and a calculator to check results where appropriate
				Solving problems
				• Solve problems in context involving decimal fractions
				Equivalent forms
				• Recognise equivalence between common fraction and decimal fraction forms of the same number
				• Recognise **equivalence** between common fraction, decimal fraction and percentage forms of the same number
					REVISION	**FORMAL ASSESSMENT TASK TEST**
						All topics

PREREQUISITE SKILL OR PRE-KNOWLEDGE	• Order, compare, represent and place value of 9-digit numbers • Rounding off to the nearest 5, 10, 100, 1000, 10 000, etc. • All operations with whole numbers • Multiples and factors of 3-digit whole numbers • Prime factors of 2-digit whole numbers up to 100 • Properties of operations with whole numbers • Identity element of 0 and 1				• Ordering and comparing fractions specifically tenths and hundredths • Addition and subtraction of common fractions, including mixed numbers where one denominator is a multiple of another • Recognise and use equivalent forms of common fractions with 1-digit or 2-digit denominators • Finding fractions of whole numbers • Finding percentages of whole numbers • Equivalence between fractions and percentage forms of the same number	• Count forwards and backwards in decimal fractions to at least two decimal places • Compare and order decimal fractions to at least two decimal places • Place value of digits to at least two decimal places • Rounding off decimal fractions to at least 1 decimal place • Addition and subtraction of decimal fractions of at least two decimal places • Multiplication of decimal fractions by 10 and 100 • Equivalence between fractions and percentage forms of the same number		

NATIONAL ANNUAL TEACHING PLANS: MATHEMATICS: GRADE 7 (TERM 2)

TERM 2		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		**4,5 hrs**		**9 hrs**			**9 hrs**		**9 hrs**		**4 hrs**	**3 hrs**
TOPICS, CONCEPTS AND SKILLS	**FORMAL ASSESSMENT TASK** **INVESTIGATION** N.B. Administer an investigation on any ONE of the term 2 topics before teaching it	**EXPONENTS:** **Mental calculations** • Determine squares to at least 12^2 and their square roots • Determine cubes to at least 6^3 and their cube roots **Comparing and representing numbers in exponential form** • Compare and represent whole numbers in exponential form: a^b = a $\times$ a $\times$ a $\times$ ... for b number of factors **Calculations using numbers in exponential form** • Recognise and use the appropriate laws of operations with numbers involving exponents and square and cube roots • Calculations involving all four operations using numbers in exponential form, limited exponents up to 5, and square and cube roots		**INTEGERS:** **Counting, ordering and comparing integers** • Count forwards and backwards in integers for any interval • Recognise, order and compare integers **Calculations with integers** • Add and subtract with integers **Properties of integers** • Recognise and use commutative and associative properties of addition for integers			**NUMERIC AND GEOMETRIC PATTERNS** **Investigate and extend patterns** • 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 • Describe and justify the general rules for observed relationships between numbers in own words		**FUNCTIONS AND RELATIONSHIPS** **Input and output values** • Determine input values, output values or rules for patterns and relationships using: – Flow diagrams – Tables – Formulae **Equivalent forms** • 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		**REVISION**	**FORMAL ASSESSMENT TASK** **TEST** All term 1 & 2 topics
PREREQUISITE SKILL OR PRE-KNOWLEDGE		• All four operations with whole numbers • Comparing **whole numbers**		• Number line • Addition and subtraction with whole numbers			• All operations with whole numbers • Addition and subtraction as inverse operations • Multiplication and division as inverse operations (with whole numbers) • Addition and subtraction of integers • Investigate and extend numeric and geometric patterns looking for relationships in patterns not limited to constant difference or ratio • Describe the general rules for the observed relationships with patterns limited to constant difference or ratio		• Input and output values with whole numbers • Equivalent representations of different descriptions of the same relationship or rule presented – Verbally – In a flow diagram – In a table – By a number sentence • Rules for calculating the areas of squares and rectangles • Rules for calculating the volume of rectangular prisms			

2023/24 ANNUAL TEACHING PLANS: MATHEMATICS: GRADE 7 (TERM 3)

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		**13,5 hrs**				**9 hrs**		**9 hrs**		**9 hrs**		**3hrs**
TOPICS, CONCEPTS AND SKILLS	N.B. The project must cover a combination of topics from term 1 to term 3 and must be completed before the end of term 3	**CONSTRUCTION OF GEOMETRIC FIGURES** **Measuring angles** • Accurately use a protractor to measure and classify angles: – < 90° (acute angles) – Right-angles – >90° (obtuse angles) – Straight angles – >180° but less than 360° (reflex angles) **Constructions** • Accurately construct the following using a compass, ruler and protractor, limited to: – Angles, to one degree of accuracy – Parallel lines – Perpendicular lines • Describe and name parts of a circle **GEOMETRY OF STRAIGHT LINES** **Define** • Line segment • Ray • Straight line • Parallel lines • Perpendicular lines	**GEOMETRY OF 2D SHAPES** **Classifying 2D shapes** • Describe, sort, name and compare triangles according to their sides and angles, focussing 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) **Similar and congruent 2D shapes** • Recognise and describe similar and congruent figures by comparing: – Shape – Size **Solving problems** • Solve simple geometric problems involving unknown sides and angles in triangles and quadrilaterals, using known properties	**TRANSFORMATION GEOMETRY** **Transformations** • Recognise, describe and perform translations, reflections and rotations with geometric figures and shapes on squared paper • Identify and draw lines of symmetry in geometric figures **Enlargements and reductions** • Draw enlargements and reductions of geometric figures on squared paper and compare them in terms of shape and size	**REVISION**	**FORMAL ASSESSMENT TASK** **TEST** All topics
PREREQUISITE SKILL OR PRE-KNOWLEDGE		• Straight sides and curved sides • Types of angles and their definitions	• Naming of shapes according to the number of sides • Difference between a rectangle and a parallelogram • Types of angles	• Symmetry • Use transformation terms to describe patterns in shapes • Increase/decrease the sides of 2D shapes by the same ratio		

2023/24 ANNUAL TEACHING PLANS: MATHEMATICS: GRADE 7 (TERM 4)

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	**8 hrs**		**9 hrs**		**9 hrs**		**9 hrs**		**8 hrs**	
TOPICS, CONCEPTS AND SKILLS	**AREA AND PERIMETER OF 2D SHAPES** **Area and perimeter** • Calculate the perimeter of regular and irregular polygons • Use appropriate formulae to calculate perimeter and area of: – Squares – Rectangles – Triangles **Calculations and solving problems** • Solve problems involving perimeter and area of polygons • Calculate to at least 1 decimal place • Use and convert between appropriate SI units, including: – $mm^2 \leftrightarrow cm^2$ – $cm^2 \leftrightarrow m^2$		**SURFACE AREA AND VOLUME OF 3D OBJECTS** **Surface area and volume** • Use appropriate formulae to calculate the surface area, volume and capacity of: – Cubes – Rectangular prisms • Describe the interrelationship between surface area and volume of the objects mentioned above **Calculations and solving problems** • Solve problems involving surface area, volume and capacity • Use and convert between appropriate SI units, including: – $mm^2 \leftrightarrow cm^2$ – $cm^2 \leftrightarrow m^2$ – $mm^3 \leftrightarrow cm^3$ – $cm^3 \leftrightarrow m^3$ • Use equivalence between units when solving problems: – $1\ cm^3 \leftrightarrow 1$ ml – $1\ m^3 \leftrightarrow 1\ kl$		**DATA HANDLING: Collect data** **PROVIDE LEARNERS WITH DATA TO SAVE TIME** • Pose questions relating to social, economic, and environmental issues in own environment • Select appropriate sources for the collection of data (including peers, family, newspapers, books, magazines) • Distinguish between samples and populations and suggest appropriate samples for investigation • Design and use simple questionnaires to answer questions with: – yes/no type responses – multiple choice responses **Organise and summarise data** • Organise (including grouping where appropriate) and record data using – Tally marks – Tables – Stem-and-leaf displays • Group data into intervals • Summarise and distinguishing between ungrouped numerical data by determining: – Mean – Median – Mode • Identify the largest and smallest scores in a data set and determine the difference between them in order to determine the spread of the data (range) **Represent data** • Draw a variety of graphs by hand/technology to display and interpret data (grouped and ungrouped) including: – Bar graphs and double bar graphs – Histograms with given intervals – Pie charts **Interpret data** • Critically read and interpret data represented in: – Words – Bar graphs – Double bar graphs – Pie charts – Histograms **Analyse data** • Critically analyse data by answering questions related to: – Data categories, including data intervals – Data sources and contexts – Central tendencies (mean, mode, median) – Scales used on graphs **Report data** • Summarise data in short paragraphs that include – Drawing conclusions about the data – Making predictions based on the data – Identifying sources of error and bias in the data – Choosing appropriate summary statistics for the data (mean, median, mode)		**REVISION**		**FORMAL ASSESSMENT TASK** **EXAMINATION** **PAPER 1 AND PAPER 2** All topics from term 1-4	

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	**8 hrs**		**9 hrs**		**9 hrs**		**9 hrs**		**8 hrs**	
PREREQUISITE SKILL OR PRE-KNOWLEDGE	• Perimeter using rulers or measuring tapes • Find areas of regular and irregular shapes by counting squares on grids • Relationship between perimeter and area of rectangles and squares		• Conversions between SI units of length • Area of 2D shapes by counting the number of squares • 3D objects: Volume of 3D objects by counting the number of cubes		Complete data cycle					