ENGLISH MATHEMATICS _2023 WEEKLY TEACHING PLAN _ GRADE 7

TERM 1	Week 1 3 days	Week 2 5 days	Week 3 5 days	Week 4 5 days:	Week 5 5 days	Week 6 5 days	Week 7 5 days	Week 8 5 days	Week 9 5 days	Week 10 5 (3) days	Week 11 3 (5) days
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:
	  o Ordering and comparing whole numbers
	  o Properties of operations with whole numbers
	  o 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
								• Recognize equivalence between common fraction and decimal fraction forms of the same number
								• Recognize **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 • Recognize 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	

TERM 2		Week 1 3 days	Week 2 5 days	Week 3 3 days	Week 4 4 days	Week 5 5 days	Week 6 5 days	Week 7 5 days	Week 8 5 days	Week 9 5 days	Week 10 4 days	Week 11 5 days
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** • Recognize 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 • Recognize, order and compare integers **Calculations with integers** • Add and subtract with integers **Properties of integers** • Recognize 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			

TERM 3		Week 1 4 days	Week 2 5 days	Week 3 5 days	Week 4 4 days	Week 5 5 days	Week 6 5 days	Week 7 5 days	Week 8 5 days	Week 9 5 days	Week 10 5 days	Week 11 4 days
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: – < 90º (acute angles) – Right-angles – >90º (obtuse angles) – Straight angles – >180º but less than 360 º (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** • Recognize, 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				

TERM 4	Week 1 4 days	Week 2 5 days	Week 3 5 days	Week 4 5 days:	Week 5 5 days	Week 6 5 days	Week 7 5 days	Week 8 5 days	Week 9 5 days	Week 10 4 days
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
					
					Organize and summarize data
					• Organize (including grouping where appropriate) and record data using
					  – tally marks
					  – tables
					  – stem-and-leaf displays
					• Group data into intervals
					• Summarize 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
							REVISION		**FORMAL ASSESSMENT TASK**
									
									EXAMINATION PAPER 1 AND PAPER 2
									
									All topics from Term 1-4	

		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
		• Summarize 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)		

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 • 3 D objects Volume of 3D objects by counting the number of cubes	Complete Data cycle		