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:
	  ○ 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
				• 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 × a × a × ... 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		

<table>
<tr><td>TERM 3</td><td></td><td>Week 1
4 days</td><td>Week 2
5 days</td><td>Week 3
5 days</td><td>Week 4
4 days</td><td>Week 5
5 days</td><td>Week 6
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5 days</td><td>Week 8
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5 days</td><td>Week 10
5 days</td><td>Week 11
4 days</td></tr>
<tr><td>Hours per topic</td><td></td><td colspan="4">13.5 hrs.</td><td colspan="2">9 hrs.</td><td colspan="2">9 hrs</td><td colspan="2">9 hrs.</td><td>3hrs</td></tr>
<tr><td>Topics, concepts and skills</td><td>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</td><td colspan="4">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</td><td colspan="2">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</td><td colspan="2">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</td><td>REVISION</td><td colspan="2">FORMAL ASSESSMENT TASK

TEST

All topics</td></tr>
<tr><td>Prerequisite skill or pre-knowledge</td><td></td><td colspan="4">• Straight sides and curved sides
• Types of angles and their definitions</td><td colspan="2">• Naming of shapes according to the number of sides
• Difference between a rectangle and a parallelogram
• Types of angles</td><td colspan="2">• Symmetry
• Use transformation terms to describe patterns in shapes
• Increase/ decrease the sides of 2D shapes by the same ratio</td><td></td><td colspan="2"></td></tr>
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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		