MATHEMATICS _2022 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 4 days
Hours per week	2.5 hrs	4.5 hrs	4.5 hrs	4.5 hrs	4.5 hrs	4.5 hrs	4.5 hrs	4.5 hrs	4.5 hrs	3.5 hrs
Hours per topic	2.5 hrs	13.5 hrs			4.5 hrs	2 hrs	9 hrs	5 hrs	2 hrs	3.5 hrs
% Coverage	1.2%	9.2 = 10.4%			3.1 = 13.5%		6.2 = 19.7%	3.4 = 23.1%	1.4 = 25%	
Topics, concepts and skills	**Base Line Assessment** **REVISION**	**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 a range of strategies 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 **Multiples and factors** • List prime factors of numbers to at least 3-digit whole numbers **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	**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	**FORMAL ASSESSMENT TASK** **ASSIGNMENT** • Whole numbers • Exponents	**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	**REVISION**	**FORMAL ASSESSMENT TASK** **TEST** All term 1 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, limited to fractions with the same denominator or 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 percentage forms of the same number		

TERM 2	Week 1 4 days	Week 2 4 days	Week 3 4 days	Week 4 4 days	Week 5 4 days	Week 6 5 days	Week 7 5 days	Week 8 5 days	Week 9 5 days	Week 10 3 days	Week 11 5 days
Hours per week	**3.5 hrs**	**3.5 hrs**	**3.5 hrs**	**3.5 hrs**	**3.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**2.5 hrs**	**4.5 hrs**
Hours per topic	**7 hrs**		**9 hrs**		**1.5 hrs**	**9 hrs**		**9 hrs**		**2.5 hrs**	**4.5 hrs**
% Coverage	**4.8 = 29.8%**		**6.2 = 36%**			**5.1 = 40.3%**		**5.1 = 45.4%**		**1.7 = 50%**	
Topics, concepts and skills	**DECIMAL FRACTIONS:** **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		**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		**FORMAL ASSESSMENT TASK** **INVESTIGATION** • Decimal Fractions • 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 /EXAMINATION** All Term 1 & 2 topics

Prerequisite skill or pre-knowledge	• 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	Number line		• 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 the above		

TERM 3	Week 1 4 days	Week 2 5 days	Week 3 5 days	Week 4 3 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 week	**3.5 hrs**	**4.5 hrs**	**4.5 hrs**	**2.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**3.5 hrs**
Hours per topic	**6.25 hrs**	**6.25 hrs**		**7 hrs**		**9 hrs**		**9 hrs**		**4.5 hrs**	**3.5 hrs**
% Coverage	**3.7 = 53.7%**	**3.7 = 57.4%**		**4.2 = 61.6%**		**5.4 = 67%**		**5.4 = 72.4%**		**2.7 = 75%**	
Topics, concepts and skills	**ALGEBRAIC EXPRESSIONS** • Recognise and interpret rules or relationships represented in symbolic form • Identify variables and constants in given formulae and equations	**ALGEBRAIC EQUATIONS** **Number sentences** • Write number sentences to describe problem situations • Analyse and interpret number sentences that describe a given situation • Identify variables and constants in given formulae or equations • Solve and complete number sentences by: – inspection – trial and improvement • Solve equations by substitution		**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** **PROVIDE LEARNERS WITH ACCURATELY CONSTRUCTED FIGURES** • Accurately construct geometric figures appropriately using a compass, ruler and protractor, including: – angles, to one degree of accuracy – circles – 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 term 3 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			

N.B. BY THE END OF TERM 3, LEARNERS SHOULD HAVE COMPLETED A PROJECT AND A TEST. SEE NOTES ON PROJECT FROM ABRIDGED SECTION 4.

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 week	**3.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**4.5 hrs**	**3.5 hrs**
Hours per topic	**8 hrs**		**9 hrs**		**9 hrs**		**9 hrs**		**8 hrs**	
% Coverage	**5.7 = 80.7%**		**6.4 = 87.1%**		**6.4 = 93.5%**		**6.4 = 100%**			
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** **TEST/EXAMINATION**	

			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		