basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

2021 MULTI-GRADE TEACHING PLAN

SUBJECT: MATHEMATICS GRADE 4 – 6

TERM 1				
TOPICS AND CONTENT				
WEEKS/ HOURS		GRADE 4	GRADE 5	GRADE 6
1	3 hours	**REVISION**	**REVISION**	**REVISION**
2 & 3	12 hours	**WHOLE NUMBERS:** **Number range for counting, ordering, comparing and representing, and place value of digits** • Count forwards and backwards (in 2s, 3s, 5s, 10s, 25s, 50s, 100s) between 0 and at least 10 000 • Order, compare and represent numbers to at least 4-digit numbers • Represent odd and even numbers to at least 1 000. • Recognize the place value of digits in whole numbers to at least 4-digit numbers • Round off to the nearest 10, 100 and 1 000.	**WHOLE NUMBERS:** **Number range for counting, ordering, comparing and representing, and place value of digits** • Count forwards and backwards in whole number intervals to at least 10 000 • Order, compare and represent numbers to at least 6-digit numbers • Represent odd and even numbers to at least 1 000. • Recognize the place value of digits in whole numbers to at least 6 digit numbers • Round off to the nearest 5, 10, 100 and 1 000	**WHOLE NUMBERS:** **Counting, ordering, comparing, representing and place value** **(6 – 9 digit numbers)** • Order, compare and represent numbers up to at least 9-digit numbers • Represent prime numbers to at least 100 • Recognize the place value of digits in whole numbers to at least 9-digit numbers • Round off to the nearest 5, 10, 100 and 1 000

4 & 5	9 hours	**NUMBER SENTENCES**
		• Write number sentences to describe problem situations
		• Solve and complete number sentences by
		  – inspection
		  – trial and improvement
		• Check solution by substitution
			NUMBER SENTENCES
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				NUMBER SENTENCES
				• Write number sentences to describe problem situations
				• Solve and complete number sentences by
				  – inspection
				  – trial and improvement
				• Check solution by substitution

		Properties of whole numbers • Recognize and use the commutative; associative and distributive properties of operations with whole numbers. • 0 in terms of its additive property	**Properties of whole numbers** • Recognize and use the commutative; associative and distributive properties of operations with whole numbers. • 0 in terms of its additive property • 1 in terms of its multiplicative property	**Properties of whole numbers** • Recognize and use the commutative; associative and distributive properties of operations with whole numbers. • 0 in terms of its additive property • 1 in terms of its multiplicative property
5	2 hours	**FORMAL ASSESSMENT TASK – ASSIGNMENT** • Whole numbers • Number sentences	**FORMAL ASSESSMENT TASK – ASSIGNMENT** • Whole numbers • Number sentences	**FORMAL ASSESSMENT TASK – ASSIGNMENT** • Whole numbers • Number sentences
6, 7 & 8	18 hours	**WHOLE NUMBERS:** **Number range for calculations** • Addition and subtraction of whole numbers of at least 4 digits **Calculation techniques** • Use a range of techniques to perform and check written and mental calculations with whole numbers including; – estimation – building up and breaking down numbers – rounding off and compensating – using a number line – using addition and subtraction as inverse operations. **Properties of whole numbers** • Recognize and use the commutative and associative properties of whole numbers • 0 in terms of its additive property **Solving problems** • Solve problems in contexts involving whole numbers, including – financial contexts – measurement contexts	**WHOLE NUMBERS:** **Number range for calculations** • Addition and subtraction of whole numbers of at least 5-digit numbers **Calculation techniques** • Using a range of techniques to perform and check written and mental calculations of whole numbers including: – estimation – building up and breaking down numbers – using a number line – rounding off and compensating – using addition and subtraction as inverse operations – adding and subtracting in columns **Properties of whole numbers** • Recognize and use the commutative and associative properties of whole numbers • 0 in terms of its additive property **Solving problems** • Solve problems in contexts involving whole numbers, including – financial contexts – measurement contexts	**WHOLE NUMBERS:** **Number range for calculations** • Addition and subtraction of whole numbers of at least 6-digit numbers **Calculation techniques** • Using a range of techniques to perform and check written and mental calculations with whole numbers including: – estimation – building up and breaking down numbers – using a number line – rounding off and compensating – using addition and subtraction as inverse operations – adding, subtracting in columns – using a calculator **Properties of whole numbers** • Recognize and use the commutative and associative properties of whole numbers • 0 in terms of its additive property **Solving problems** • Solve problems in contexts involving whole numbers, including – financial contexts – measurement contexts
9	5 hours	**REVISION**	**REVISION**	**REVISION**
10	3 hours	**FORMAL ASSESSMENT TASK – TEST** All topics	**FORMAL ASSESSMENT TASK – TEST** All topics	**FORMAL ASSESSMENT TASK – TEST** All topics

TERM 2		
TOPICS AND CONTENT		
WEEKS/ HOURS	**GRADE 4**	**GRADE 5**	**GRADE 6**

WEEKS/ HOURS		GRADE 4	GRADE 5	GRADE 6

1, 2 & 3	14 hours	**WHOLE NUMBERS:**
		
		Number range for calculations
		• Multiply at least 2-digit by 1- digit
		• Multiplication of at least whole 2-digit by 2-digit numbers
		
		Calculation techniques
		• Use a range of techniques to perform and check written and mental calculations of whole numbers including:
		  – estimation
		  – building up and breaking down numbers
		  – doubling and halving
		  – using multiplication and division as inverse operations.
		
		Multiples and factors
		• Multiples of 1-digit whole numbers to at least 100
		
		Properties of whole numbers
		• Recognize and use the commutative; associative and distributive properties of whole numbers.
		
		Solving problems
		• Solve problems in contexts involving whole numbers, including:
		  – financial contexts
		  – measurement contexts
		  – comparing two or more quantities of the same kind (ratio)
		  – comparing two quantities of different kinds (rate).
			WHOLE NUMBERS:
			
			Number range for calculations
			• Multiplication of at least whole 3-digit by 2-digit numbers
			
			Calculation techniques
			• Use a range of techniques to perform and check written and mental calculations of whole numbers including:
			  – estimation
			  – building up and breaking down numbers
			  – doubling and halving
			  – using multiplication and division as inverse operations
			
			Number range for multiples and factors
			• Multiples of 2-digit whole numbers to at least 100
			• Factors of 2-digit whole numbers to at least 100
			
			Properties of whole numbers
			• Recognize and use the commutative; associative and distributive properties of whole numbers
			• 1 in terms of its multiplicative property
			
			Solving problems
			• Solve problems involving whole numbers, including
			  – financial contexts
			  – measurement contexts
			  – comparing two or more quantities of the same kind (ratio)
			  – comparing two quantities of different kinds (rate)
				WHOLE NUMBERS:
				
				Number range for calculations
				• Multiplication of at least whole 4-digit by 3-digit numbers
				• Multiple operations on whole numbers with or without brackets
				
				Calculation techniques
				• Use a range of techniques to perform and check written and mental calculations with whole numbers including:
				  – estimation
				  – building up and breaking down numbers
				  – doubling and halving
				  – using multiplication and division as inverse operations
				  – multiplying in columns
				  – using a calculator
				
				Number range for multiples and factors
				• Multiples of 2-digit and 3-digit numbers
				• Factors of 2-digit and 3-digit whole numbers
				• Prime factors of numbers to at least 100
				
				Properties of whole numbers
				• Recognize and use the commutative; associative; distributive properties of whole numbers
				• 1 in terms of its multiplicative property
				
				Solving problems
				• Solve problems involving whole numbers, including:
				  – financial contexts
				  – measurement contexts
				  – comparing two or more quantities of the same kind (ratio)
				  – comparing two quantities of different kinds (rate)

4 & 5	12 hours	**WHOLE NUMBERS**:	**WHOLE NUMBERS:**	**WHOLE NUMBERS:**
		Number range for calculations • Division of 2- digit by 1 - digit • Division of at least whole 3-digit by 1-digit numbers	**Number range for calculations** • Division of at least whole 3-digit by 2-digit numbers	**Number range for calculations** • Division of at least whole 4-digit by 3-digit numbers • Multiple operations on whole numbers with or without brackets
		Calculation techniques • Use a range of techniques to perform and check written and mental calculations of whole numbers including: – estimation – building up and breaking down numbers – using multiplication and division as inverse operations.	**Calculation techniques** • Use a range of techniques to perform and check written and mental calculations with whole numbers including – estimation – building up and breaking down numbers – using multiplication and division as inverse operations	**Calculation techniques** • Using a range of techniques to perform and check written and mental calculations with whole numbers including: – estimation – building up and breaking down numbers – using multiplication and division as inverse operations – long division – using a calculator
		Properties of whole numbers • Recognize and use the distributive property of whole numbers.	**Properties of whole numbers** • Recognize and use the distributive property of whole numbers • 1 in terms of its multiplicative property	**Properties of whole numbers** • Recognize and use the distributive property of whole numbers • 1 in terms of its multiplicative property
		Solving problems • Solve problems in contexts involving whole numbers, including: – financial contexts – measurement contexts – comparing two or more quantities of the same kind (ratio) – comparing two quantities of different kinds (rate). – grouping and equal sharing with remainders	**Solving problems** • Solve problems in contexts involving whole numbers, including – financial contexts – measurement contexts – comparing two or more quantities of the same kind (ratio) – comparing two quantities of different kinds (rate) – grouping and equal sharing with remainders	**Solving problems** • Solve problems involving whole numbers, including: – financial contexts – measurement contexts – comparing two or more quantities of the same kind (ratio) – comparing two quantities of different kinds (rate) – grouping and equal sharing with remainders

6 & 7	9 hours	**NUMERIC PATTERNS:**
		
		Investigate and extend patterns
		• Investigate and extend numeric patterns looking for relationships or rules of patterns
		   – sequences involving a constant difference or ratio
		   – of learner's own creation
		
		• Describe observed relationships or rules for sequences involving constant difference or ratio in learner's own words
		
		Input and output values
		• Determine input values, output values and rules for patterns and relationships:
		   – flow diagrams
		   – tables
		
		Equivalent forms
		• Determine equivalence of different descriptions of the same relationship or rule presented:
		   – verbally
		   – in a flow diagram
		   – in a table
		   – by a number sentence
			NUMERIC PATTERNS:
			
			Investigate and extend patterns
			• Investigate and extend numeric patterns looking for relationships or rules of patterns
			   – sequences not limited to constant difference or ratio
			   – of learner's own creation
			
			• Describe observed relationships or rules for sequences involving constant difference or ratio in learner's own words
			
			Input and output values
			• Determine input values, output values and rules for patterns and relationships:
			   – flow diagrams
			   – tables
			
			Equivalent forms
			• Determine equivalence of different descriptions of the same relationship or rule presented:
			   – verbally
			   – in a flow diagram
			   – in a table
			   – by a number sentence
				NUMERIC PATTERNS:
				
				Investigate and extend patterns
				• Investigate and extend numeric patterns looking for relationships or rules of patterns:
				   – sequences involving a constant difference or ratio
				   – of learner's own creation
				   – represented in tables
				• Describe observed relationships or rules in learner's own words
				
				Input and output values
				• Determine input values, output values and rules for the patterns and relationships using:
				   – flow diagrams
				   – tables
				
				Equivalent forms
				• Determine equivalence of different descriptions of the same relationship or rule presented:
				   – verbally
				   – in a flow diagram
				   – in a table
				   – by a number sentence

7	2 hours	**FORMAL ASSESSMENT TASK – INVESTIGATION** • Multiplication • Division • Numeric Patterns	**FORMAL ASSESSMENT TASK – INVESTIGATION** • Multiplication • Division • Numeric Patterns	**FORMAL ASSESSMENT TASK – INVESTIGATION** • Multiplication • Division • Numeric Patterns

8	6 hours	**GEOMETRIC PATTERNS**
		
		Investigate and extend patterns
		• Investigate and extend geometric patterns looking for relationships or rules of patterns:
		   – represented in physical or diagram form
		   – sequences not limited to a constant difference or ratio
		   – of learner's own creation
		   – Describe observed relationships or rules in learner's own words
			GEOMETRIC PATTERNS
			
			Investigate and extend patterns
			• Investigate and extend geometric patterns looking for relationships or rules of patterns:
			   – represented in physical or diagram form
			   – sequences not limited to a constant difference or ratio
			   – of learner's own creation
			• Describe observed relationships or rules in learner's own words
				GEOMETRIC PATTERNS
				
				Investigate and extend patterns
				• Investigate and extend numeric patterns looking for relationships or rules of patterns:
				   – represented in physical or diagram form
				   – sequences not limited to a constant difference or ratio
				   – of learner's own creation
				• Describe observed relationships or rules in learner's own words

		Input and output values
		 • Determine input values, output values and rules for the patterns and relationships using flow diagrams
		
		 Equivalent forms
		 • Determine equivalence of different descriptions of the same relationship or rule presented:
		   – verbally
		   – in a flow diagram
		   – by a number sentence
			Input and output values
			 • Determine input values, output values and rules for the patterns and relationships using flow diagrams
			
			 Equivalent forms
			 • Determine equivalence of different descriptions of the same relationship or rule presented:
			   – verbally
			   – in a flow diagram
			   – by a number sentence
				Input and output values
				 • Determine input values, output values and rules for the patterns and relationships using:
				   – flow diagrams
				   – tables
				
				 Equivalent forms
				 • Determine equivalence of different descriptions of the same relationship or rule presented:
				   – verbally
				   – in a flow diagram
				   – in tables
				   – by a number sentence

9	6 hours	**TIME:**
		
		 Reading time and time instruments
		 • Read, tell and write time in 12-hour and 24-hour formats on both analogue and digital instruments in:
		   – hours
		   – minutes
		   – seconds
		 • Instruments include clocks and watches
		
		 Reading calendars
		
		 Calculations and problem solving time include:
		 • problems in contexts involving time
		 • calculation of the number of days between any two dates within the same or consecutive years
		 • calculation of time intervals where time is given in minutes or hours only
			TIME:
			
			 Reading time and time instruments
			 • Read, tell and write time in 12-hour and 24-hour formats on both analogue and digital instruments in:
			   – hours
			   – minutes
			   – seconds
			 • Instruments include clocks, watches and stopwatches
			
			 Reading calendars
			
			 Calculations and problem solving time include:
			 • problems in contexts involving time
			 • calculation of time intervals where time is given in
			   – seconds and/or minutes
			     minutes and/or hours
			   – hours and/or days
			   – days, weeks and/or months
			   – years and/or decades
				TIME:
				
				 Reading time and time instruments
				 • Read, tell and write time in 12-hour and 24-hour formats on both analogue and digital instruments in:
				   – hours
				   – minutes
				   – seconds
				 • Instruments include clocks, watches and stopwatches
				
				 Reading calendars
				
				 Calculations and problem-solving related to time
				 • problems in contexts involving time
				 • reading time zone maps and calculating time differences based on time zones
				 • calculation of time intervals where time is given in:
				   – seconds and/or minutes;
				   – minutes and/or hours
				   – hours and /or days
				   – days and/or weeks and/or months
				   – years and/or decades
				   – centuries and/or decades and/or years

10	5 hours	**REVISION OF TERM 1 & 2 WORK**	**REVISION OF TERM 1 & 2 WORK**	**REVISION OF TERM 1 & 2 WORK**
11	6 hours	**FORMAL ASSESSMENT TASK – TEST** All Term 1 and Term 2 topics	**FORMAL ASSESSMENT TASK – TEST** All Term 1 and Term 2 topics	**FORMAL ASSESSMENT TASK – TEST** All Term 1 and Term 2 topics

TERM 3		
TOPICS AND CONTENT		
WEEKS/ HOURS	**GRADE 4**	**GRADE 5**	**GRADE 6**

WEEKS/ HOURS		**GRADE 4**	**GRADE 5**	**GRADE 6**
1,2 & 3	15 hours	**COMMON FRACTIONS:** **Describing and ordering fractions** • Count forwards and backwards in fractions • Compare and order common fractions of different denominators (halves, thirds, quarters, fifths, sixths, sevenths, eighths) in diagrammatic form **Calculations with fractions** • Recognize, describe and use the equivalence of division and fractions • Addition of common fractions with same denominators. **Solving problems** • Solve problems in contexts involving fractions, including grouping and equal sharing. **Equivalent forms** • Recognize and use equivalent forms of common fractions (denominators which are multiples of each other)	**COMMON FRACTIONS:** **Describing and ordering fractions:** • Count forwards and backwards in fractions • Compare and order common fractions to at least twelfths **Calculations with fractions:** • Addition and subtraction of common fractions with same denominator • Addition and subtraction of mixed numbers • Fractions of whole which result in whole numbers • Recognize, describe and use the equivalence of division and fractions **Solving problems** • Solve problems in contexts involving common fractions, including grouping and sharing **Equivalent forms**: • Recognize and use equivalent forms of common fractions with denominators which are multiples of each other	**COMMON FRACTIONS:** **Describing and ordering fractions:** • Compare and order common fractions, including specifically tenths and hundredths **Calculations with fractions:** • Addition and subtraction of common fractions in which one denominator is a multiple of another • Addition and subtraction of mixed numbers • Fractions of whole numbers **Solving problems** • Solve problems in contexts involving common fractions, including grouping and sharing **Percentages** • Find percentages of whole numbers **Equivalent forms:** • Recognize and use equivalent forms of common fractions with 1-digit or 2-digit denominators (fractions in which one denominator is a multiple of another) • Recognize equivalence between common fraction, decimal fraction and percentage forms of the same number

3,4 &5	12 hours	**REVISION ON PATTERNS, COMMON FRACTIONS AND TIME**	**REVISION ON PATTERNS, COMMON FRACTIONS AND TIME**	**DECIMAL FRACTIONS** **Recognizing, ordering and place value of decimal fractions** • 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 **Calculations with decimal fractions** • Addition and subtraction of decimal fractions of at least two decimal places • Multiply decimal fractions by 10 and 100 **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

6	6 hours	**LENGTH:**
		Practical measuring
		• Estimate and practically measure 2-D shapes and 3-D objects using measuring instruments such as:
		   – rulers
		   – metre sticks
		   – tape measures
		   – trundle wheels
		• Record, compare and order lengths of shapes and objects in millimetres (mm), centimetres (cm), metres (m), kilometres (km)
		
		Calculations and problem-solving
		• Solve problems in contexts involving length
		• Convert between:
		   – millimetres (mm) and centimetres (cm),
		   – centimetres (cm) and metres (m)
		   – metres (m) and kilometres (km)
		
		• Conversions limited to whole numbers and common fractions
			LENGTH:
			Practical measuring
			• Estimate and practically measure 2-D shapes and 3-D objects using measuring instruments such as:
			   – rulers
			   – metre sticks
			   – tape measures
			   – trundle wheels
			• Record, compare and order lengths of shapes and objects in millimetres (mm), centimetres (cm), metres (m), kilometres (km)
			
			Calculations and problem-solving
			• Solve problems in contexts involving length
			• Convert between any of the following units.
			   – millimetres (mm),
			   – centimetres (cm),
			   – metres (m) and
			   – kilometres (km)
			• Conversions limited to whole numbers and common fractions
				LENGTH
				Practical measuring
				• Estimate and practically measure 2-D shapes and 3-D objects using measuring instruments such as:
				   – rulers
				   – metre sticks
				   – tape measures
				   – trundle wheels
				• Record, compare and order lengths of shapes and objects in millimetres (mm), centimetres (cm), metres (m), kilometres (km)
				
				Calculations and problem-solving
				• Solve problems in contexts involving length
				• Convert between any of the following units:
				   – millimetres (mm),
				   – centimetres (cm),
				   – metres (m) and
				   – kilometres (km)
				• Conversions should include common fractions and decimal fractions forms to 2 decimal places

7 & 8	12 hours	**PROPERTIES OF 2D SHAPES:**
		Range of shapes
		• Recognize, visualize and name 2-D shapes in the environment and geometric setting, focusing on:
		   – regular and irregular polygons- triangles, squares, rectangles, other quadrilaterals, pentagons, hexagons,
		   – circles
			PROPERTIES OF 2D SHAPES:
			Range of shapes
			• Recognize, visualize and name 2-D shapes in the environment and geometric setting, focusing on:
			   – regular and irregular polygons - triangles, squares, rectangles, other quadrilaterals, pentagons, hexagons, heptagons
			   – circles
			• similarities and differences between squares and rectangles
				PROPERTIES OF 2D SHAPES:
				Range of shapes
				• Recognize, visualize and name 2-D shapes in the environment and geometric setting, focusing on:
				   – regular and irregular polygons - triangles,
				   – squares, rectangles, parallelograms, other quadrilaterals,
				   – pentagons, hexagons, heptagons, octagons
				• circles
				• similarities and differences between rectangles and parallelograms

		Characteristics of shapes
		• Describe, sort and compare 2-D shapes in terms of:
		   – straight and curved sides
		   – number of sides
		Further activities
		Draw 2-D shapes on grid paper
			Characteristics of shapes
			• Describe, sort and compare 2-D shapes in terms of:
			   – straight and curved sides
			   – number of sides
			   – lengths of sides
			   – angles in shapes, limited to:
			     ✓ right angles
			     ✓ angles smaller than right angles
			     ✓ angles greater than right angles
			
			Further activities
			Draw 2-D shapes on grid paper
			
			Angles
			• Recognize and describe angles in 2-D shapes:
			   – right angles
			   – angles smaller than right angles
			   – angles greater than right angles
				Characteristics of shapes
				• Describe, sort and compare 2-D shapes in terms of:
				   – number of sides
				   – length of sides
				   – size of angles
				     ✓ acute
				     ✓ right
				     ✓ obtuse
				     ✓ straight
				     ✓ reflex
				     ✓ revolution
				
				Further activities
				• Draw 2-D shapes on grid paper
				• Draw circles, patterns in circles and patterns with circles using a pair of compasses
				
				Angles
				• Recognize and describe angles in 2-D shapes:
				   – acute
				   – right
				   – obtuse
				   – straight
				   – reflex
				   – revolution

9	3 hours	**SYMMETRY:** Recognize, draw and describe line(s) of symmetry in 2-D shapes	**SYMMETRY:** Recognize, draw and describe line(s) of symmetry in 2-D shapes	**SYMMETRY:** Recognize, draw and describe line(s) of symmetry in 2-D shapes

9	3 hours	**TRANSFORMATIONS**
		
		Build composite shapes
		• Put 2-D shapes together to make different composite 2-D shapes including some shapes with line symmetry
			TRANSFORMATIONS:
			
			Use transformations to make composite shapes
			• Make composite 2-D shapes including shapes with line symmetry by tracing and moving a 2-D shape in one or more of the following ways:
			   – by rotation
			   – by translation
			   – by reflection
				TRANSFORMATIONS:

		Tessellations
		 • Pack out 2-D shapes to make tessellated patterns including some patterns with line symmetry.
		
		 Describe patterns
		 • Refer to lines, 2-D shapes, 3-D objects and lines of symmetry when describing patterns:
		    – in nature
		    – from modern everyday life
		    – from our cultural heritage
			Use transformations to make tessellations
			 • Make tessellated patterns including some patterns with line symmetry by tracing and moving 2-D in one or more of the following ways:
			    – by rotation
			    – by translation
			    – by reflection
			
			 Describe patterns
			 • Refer to lines, 2-D shapes, 3-D objects, lines of symmetry, rotations, reflections and translations when describing patterns:
			    – in nature
			    – from modern everyday life
			    – from our cultural heritage
				Enlargement and reductions
				 • Draw enlargement and reductions of 2-D shapes to compare size and shape of:
				    – triangles
				    – quadrilaterals
				
				 Describe patterns
				 • Refer to lines, 2-D shapes, 3-D objects and/or lines of symmetry and/ or rotations and/or reflections and/or translations when describing patterns:
				    – in nature
				    – from modern everyday life
				    – from our cultural heritage

10 & 11	3 hours	**REVISION**	**REVISION**	**REVISION**
10 & 11	8 hours	**FORMAL ASSESSMENT TASK – TEST** All Term 3 work	**FORMAL ASSESSMENT TASK – TEST** All Term 3 work	**FORMAL ASSESSMENT TASK – TEST** All Term 3 work

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 OF CAPS.

TERM 4		
TOPICS AND CONTENT		
WEEKS/ HOURS	**GRADE 4**	**GRADE 5**	**GRADE 6**

WEEKS/ HOURS		GRADE 4	GRADE 5	GRADE 6

1 & 2	6 hours	**PROPERTIES OF 3-D OBJECTS:**
		
		Range of objects
		• Recognize, visualize and name 3-D objects in the environment and geometric settings, focusing on:
		  – rectangular prisms
		  – cubes
		  – cylinders
		  – cones
		  – pyramids
		
		Characteristics of objects
		• Describe, sort and compare 3-D objects in terms of:
		  – shape of faces
		  – flat and curved surfaces
		
		Further activities
		• Make 3-D models using cut out polygons
			PROPERTIES OF 3-D OBJECTS:
			
			Range of objects
			• Recognize, visualize and name 3-D objects in the environment and geometric settings, focusing on:
			  – rectangular prisms and other prisms
			  – cubes
			  – cylinders
			  – cones
			  – pyramids
			  – similarities and differences between cubes and rectangular prisms
			
			Characteristics of objects
			• Describe, sort and compare 3-D objects in terms of:
			  – shape of faces
			  – number of faces
			  – flat and curved surfaces
			
			Further activities
			• Make 3-D models using cut out polygons
			• Cut open boxes to trace and describe their nets
				PROPERTIES OF 3-D OBJECTS
				
				Range of objects
				• Recognize, visualize and name 3-D objects in the environment and geometric settings, focusing on:
				  – rectangular prisms
				  – cubes
				  – tetrahedrons
				  – pyramids
				  – similarities and differences between tetrahedrons and other pyramids
				
				Characteristics of objects
				• Describe, sort and compare 3-D objects in terms of:
				  – number and shape of faces
				  – number of vertices
				  – number of edges
				
				Further activities
				• Make 3-D models using:
				  – drinking straws, toothpicks etc.
				  – nets

2 & 3	9 hours	**PERIMETER AND AREA** **Perimeter** • Measure perimeter using rulers or measuring tapes **Measurement of area** • Find areas of regular and irregular shapes by counting squares on grids in order to develop an understanding of square units **Measurement of volume** • Find volume/capacity of objects by packing or filling them in order to develop an understanding of cubic units	**PERIMETER, AREA AND VOLUME** **Perimeter** • Measure perimeter using rulers or measuring tapes **Measurement of area** • Find areas of regular and irregular shapes by counting squares on grids in order to develop an understanding of square units **Measurement of volume** • Find volume/capacity of objects by packing or filling them in order to develop an understanding of cubic units	**AREA, PERIMETER AND VOLUME** **Perimeter** • Measure perimeter using rulers or measuring tapes **Measurement of area** • Continue to find areas of regular and irregular shapes by counting squares on grids • Develop rules for calculating the areas of squares and rectangles **Measurement of volume** • Continue to find volume/capacity of objects by packing or filling them • Develop an understanding of why the volume of rectangular prisms is given by length multiplied by width multiplied by height **Investigate:** • Relationship between perimeter and area of rectangles and squares. • Relationship between surface area and volume of rectangular prisms
4	6 hours	**CAPACITY/VOLUME** **Practical Measuring** • Estimate and practically measure 3-D objects using measuring instruments such as: – measuring spoons – measuring cups, – measuring jugs • Record, compare and order capacity and volume of 3D objects in millilitres (ml) and litres (l) **Calculations and problem- solving** • Solve problems in contexts involving capacity/volume • Convert between millilitres and litres limited to examples with whole numbers and fractions	**CAPACITY/VOLUME** **Practical Measuring** • Estimate and practically measure 3-D objects using measuring instruments such as: – measuring spoons – measuring cups, – measuring jugs • Record, compare and order capacity and volume of 3D objects in millilitres (ml) and litres (l) **Calculations and problem- solving** • Solve problems in contexts involving capacity/volume • Convert between millilitres and litres limited to examples with whole numbers and fractions	**CAPACITY AND VOLUME** **Practical Measuring** • Estimate and practically measure 3-D objects using measuring instruments such as: – measuring spoons – measuring cups, – measuring jugs • Record, compare and order capacity and volume of 3D objects in millilitres (ml), litres (l) and kilolitres (*kl*) **Calculations and problem- solving** • Solve problems in contexts involving capacity/volume • Convert between kilolitres, litres and millilitres to include fraction and decimal forms (to 2 decimal places)

5	6 hours	**MASS**
		
		Practical measuring
		• Estimate and practically measure 3-D objects using measuring instruments such as:
		  – bathroom scales (analogue and digital);
		  – kitchen scales (analogue and digital)
		  – balances
		• Record, compare and order mass of objects in grams (g) and kilograms (kg).
		
		Calculations and problem-solving
		• Solve problems in contexts involving mass
		• Convert between grams and kilograms limited to examples with whole numbers and fractions
			MASS
			
			Practical measuring
			• Estimate and practically measure 3-D objects using measuring instruments such as:
			  – bathroom scales (analogue and digital);
			  – kitchen scales (analogue and digital)
			  – balances
			• Record, compare and order mass of objects in grams (g) and kilograms (kg).
			
			Calculations and problem-solving
			• Solve problems in contexts involving mass
			• Convert between grams and kilograms limited to examples with whole numbers and fractions
				MASS
				
				Practical measuring
				• Estimate and practically measure 3-D objects using measuring instruments such as:
				  – bathroom scales (analogue and digital);
				  – kitchen scales (analogue and digital)
				  – balances
				• Record, compare and order mass of objects in grams (g) and kilograms (kg).
				
				Calculations and problem-solving
				• Solve problems in contexts involving mass
				• Convert between grams and kilograms to include fraction and decimal forms (to 2 decimal places)

6 & 7	9 hours	**DATA HANDLING**
		
		Collecting and organising data
		
		Collect data
		• Use tally marks and tables for recording
		
		N.B PROVIDE LEARNERS WITH DATA TO SAVE TIME
		
		Representing data
		• Draw a variety of graphs to display and interpret data including:
		  – pictographs with one-to-one representations
		  – bar graphs
		
		Analysing, interpreting and reporting data
		• Critically read and interpret data represented in:
		  – words
		  – pictographs
		  – bar graphs
		  – pie charts
		
		• Analyse data by answering questions related to data categories
			DATA HANDLING
			
			Collecting and organising data
			
			Collect data
			• Use tally marks and tables for recording
			• Order data from smallest group to largest group
			
			N.B PROVIDE LEARNERS WITH DATA TO SAVE TIME
			
			Representing data
			• Draw a variety of graphs to display and interpret data including:
			  – pictographs with many-to-one representations
			  – bar graphs
			
			Analysing, interpreting and reporting data
			• Critically read and interpret data represented in:
			  – words
			  – pictographs
			  – bar graphs
			  – pie charts
			
			• Analyse data by answering questions related to:
			  – data categories, including data intervals
				DATA HANDLING
				
				Collecting and organising data
				
				Collect data
				• Use tally marks and tables for recording
				• Use simple questionnaires (yes/no type response)
				• Order data from smallest group to largest group
				
				N.B PROVIDE LEARNERS WITH DATA TO SAVE TIME
				
				Representing data
				• Draw a variety of graphs to display and interpret data including:
				  – pictographs with many-to-one representations
				  – bar graphs and double bar graphs
				
				Analysing, interpreting and reporting data
				• Critically read and interpret data represented in:
				  – words
				  – pictographs
				  – bar graphs
				  – double bar graphs
				  – pie charts
				• Analyse data by answering questions related to:
				  – data categories, including data intervals

		• Summarise data verbally and in short written paragraphs that include
		   – drawing conclusions about the data
		   – making predictions based on the data
			– data sources and contexts
			   – central tendencies – (mode)
			• Summarise data verbally and in short written paragraphs that include
			   – drawing conclusions about the data
			   – making predictions based on the data
				– data sources and contexts
				   – central tendencies – (mode and median)
				• Summarise data verbally and in short written paragraphs that include
				   – drawing conclusions about the data
				   – making predictions based on the data

7 & 8	6 hours	**FOUR BASIC OPERATIONS** **USE ALL FOUR BASIC OPERATIONS TO SOLVE PROBLEMS IN CONTEXT**	**FOUR BASIC OPERATIONS** **USE ALL FOUR BASIC OPERATIONS TO SOLVE PROBLEMS IN CONTEXT**	**FOUR BASIC OPERATIONS** **USE ALL FOUR BASIC OPERATIONS TO SOLVE PROBLEMS IN CONTEXT**
8	3 hours	**REVISION**	**REVISION**	**REVISION**
9	6 hours	**FORMAL ASSESSMENT TASK – TEST**	**FORMAL ASSESSMENT TASK – TEST**	**FORMAL ASSESSMENT TASK – TEST**
10	3 hours	**ADMINISTRATION AND REPORTING**	**ADMINISTRATION AND REPORTING**	**ADMINISTRATION AND REPORTING**