



CAMI Education linked to CAPS: Mathematics: Grade 6

GRADE 6 CAPS Curriculum		
Term 1		
TOPICS	CONCEPTS	CAMI Keys
Mental Mathematics	Mental calculations involving:	3.3.3.10
	• Addition and subtraction facts of:	3.3.4.9
	❖ Units	3.3.5.9
	❖ Multiples of 10	3.3.5.4
	❖ Multiples of 100	3.3.6.9
	❖ Multiples of 1 000	3.3.6.4
	• Multiplication of whole numbers to at least 12×12	1.2.8.2
		1.2.8.3
	• Multiplication facts of:	3.5.4.1
	❖ Units by multiples of 10	3.5.4.2
❖ Units by multiples of 100	3.5.4.3	
❖ Units by multiples of 1 000	3.5.6.1	
❖ Units by multiples of 10 000	3.5.6.2	
	3.5.6.3	
	3.5.5.3	
	Number range for counting, ordering, comparing and representing numbers and for the place value of digits	
	• Order, compare and represent numbers to at least 9-digit numbers	1.1.8.7
		1.8.2.1
	• Represent prime numbers to at least 100	1.8.2.2
		1.8.2.3
		1.8.2.4
		1.8.1.2
	• Recognize the place value of digits in whole numbers to at least 9-digit numbers	1.1.9.10
	• Rounding off to the nearest 5, 10, 100 and 1 000	1.7.1.5
		1.7.1.6
	Calculation techniques	
	Use a range of techniques to perform and check written and mental calculations of whole numbers including:	1.7.6.3
	• Estimation	1.7.6.4
	• Adding, subtracting and multiplying in columns	
	• Long division	
	• Building up and breaking down	



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	<p>numbers</p> <ul style="list-style-type: none"> Using addition and subtraction as inverse operations Using multiplication and division as inverse operations <p>Number range for multiples and factors</p> <ul style="list-style-type: none"> Multiples of 2-digit and 3-digit numbers Factors of 2-digit and 3-digit numbers <p>Properties of whole numbers</p> <ul style="list-style-type: none"> Recognize and use the commutative, associative and distributive properties of whole numbers 0 in terms of its additive property 1 in terms of its multiplicative property 	<p>1.7.7.2</p> <p>1.7.7.3</p> <p>1.7.7.4</p> <p>1.7.7.5</p> <p>1.7.7.6</p> <p>1.2.8.1</p>
<p>1.1 Whole numbers Counting, ordering representing and place value of digits</p>	<p>Number range for counting, ordering and representing, and place value of digits</p> <ul style="list-style-type: none"> 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 	<p>1.7.8.5</p> <p>1.1.8.7</p> <p>1.8.2.1</p> <p>1.8.2.2</p> <p>1.8.2.3</p> <p>1.8.2.4</p> <p>1.8.1.2</p> <p>1.8.1.3</p> <p>1.1.9.10</p> <p>1.7.1.5</p> <p>1.7.1.6</p>
<p>2.1 Number sentences (introduction to algebraic expressions)</p>	<p>Number sentences</p> <ul style="list-style-type: none"> Write number sentences to describe problem situations Solve and complete number sentences by <ul style="list-style-type: none"> ❖ Inspection ❖ Trial and improvement Check solutions by substitution 	<p>4.1.2.4</p>



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<p>1.1 Whole numbers Addition and subtraction</p>	<p>Number range for counting, ordering, comparing and representing, and place value of digits</p> <ul style="list-style-type: none"> • Order, compare and represent numbers at least 9-digit numbers • Represent prime numbers to at least 100 • Recognizing the place value of digits in whole numbers to at least 9-digit numbers • Rounding off to the nearest 5, 10, 100 and 1 000 <p>Number range for calculations</p> <ul style="list-style-type: none"> • Addition and subtraction of whole numbers with at least 6-digits • Multiple operations on whole numbers with or without brackets <p>Calculation techniques Using a range of techniques to perform and check written and mental calculations with whole numbers including:</p> <ul style="list-style-type: none"> • Estimation • Adding, subtracting in columns • Building up and breaking down numbers • Rounding off and compensating • Using addition and subtraction as inverse operations • Using a calculator <p>Properties of whole numbers</p> <ul style="list-style-type: none"> • Recognize and use the commutative, associative and distributive properties of whole numbers 	<p>1.2.6.9 1.2.6.10 1.3.7.4 1.7.10.10</p> <p>1.7.5.1 1.7.5.2 1.7.5.3 1.7.5.4 1.7.5.5 1.7.5.6 1.7.5.7 1.7.5.8</p>
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	<ul style="list-style-type: none"> • 0 in terms of its additive property <p>Solving problems</p> <ul style="list-style-type: none"> • Solve problems involving whole numbers and decimal fractions, including: <ul style="list-style-type: none"> ❖ Financial contexts ❖ Measurement contexts • Solve problems involving whole numbers, including comparing two or more quantities of the same kind (ratio) 	<p>10.6.2.3 10.6.2.4</p> <p>3.8.4.7 10.6.5.5</p>
<p>1.2 Common fractions</p>	<p>Describing and ordering fractions Compare and order common fraction, including specifically tenths and hundredths.</p> <p>Calculations with fractions</p> <ul style="list-style-type: none"> • 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 <p>Solving problems Solve problems in contexts involving common fractions, including grouping and sharing.</p> <p>Percentages Find percentages of whole numbers</p> <p>Equivalent forms Learners should recognize</p> <ul style="list-style-type: none"> • Equivalent forms of common fractions with 1-digit or 2-digit denominators (denominators which are multiples of each other) • Equivalence between common 	<p>2.2.1.2 2.2.1.3 2.2.1.4 2.2.3.2 3.4.6.5 3.4.6.6 2.1.3.3 2.1.4.4 2.1.5.3 2.1.5.6 2.2.1.1 2.2.2.4 2.2.2.5 2.2.2.6 2.2.2.7 2.2.2.8 2.2.3.1 2.2.3.3 2.2.3.4 2.2.3.5 2.2.3.6 2.2.3.7 2.2.3.8 2.2.3.9 2.2.3.10 2.2.4.1 2.2.4.2</p>



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	<p>fraction and decimal fraction forms of the same number</p> <ul style="list-style-type: none"> • Equivalence between common fraction, decimal fraction and percentage forms of the same number 	<p>2.2.4.3 2.2.4.4 2.2.5.10 2.2.5.7 2.2.5.8 2.2.5.9 2.3.5.1 2.3.5.2 2.3.5.3</p>
<p>4.4 Time</p>	<p>Reading time and time instruments Read, tell and write time in 12-hour and 24-hour formats on both analogue and digital instruments in</p> <ul style="list-style-type: none"> • Hours • Minutes • Seconds <p>Instruments include clocks, watches and stopwatches.</p> <p>Reading calendars</p> <p>Calculations and problem-solving related to time Solve problems in contexts involving time.</p> <p>Calculation of time intervals where time is given in</p> <ul style="list-style-type: none"> • Seconds and/or minutes • Minutes and/or hours • Hours and/or days • Days and/or weeks and/or months • Years and/or decades • Centuries, decades and years <p>Read time zone maps and calculating time differences based on time zones.</p> <p>History of time Know some ways in which time was measured and represented in the past.</p>	<p>3.8.6.6 9.2.1.5 9.2.1.6 9.2.1.7 9.2.1.8 9.2.1.9 9.2.2.3 9.2.2.4 9.2.2.5 9.2.2.6 9.2.2.8 9.2.3.1 9.2.3.3 9.2.3.2 9.2.3.4 9.2.3.5 9.2.4.3 3.8.6.5 9.2.2.10 3.8.6.5</p>



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<p>3.1 Properties of 2-D shapes</p>	<p>Shapes learners need to know and name</p> <ul style="list-style-type: none">• Regular and irregular polygons<ul style="list-style-type: none">❖ Triangles, squares, rectangles, parallelograms, other quadrilaterals, pentagons, hexagons, heptagons, octagons• Similarities and differences between rectangles and parallelograms <p>Features of shapes Describe, sort and compare 2-D shapes in terms of</p> <ul style="list-style-type: none">• Numbers of sides• Length of sides• Size of angles<ul style="list-style-type: none">❖ Acute❖ Right❖ Obtuse❖ Straight❖ Reflex❖ Revolution <p>Further activities</p> <ul style="list-style-type: none">• Draw 2-D shapes on grid paper• Draw circles, patterns in circles and patterns with circles using a pair of compasses <p>Angles Recognize and name the following angles in 2-D shapes:</p> <ul style="list-style-type: none">• Acute• Right• Obtuse• Straight• Reflex• Revolution	<p>8.1.1.5</p> <p>8.1.4.1 8.1.4.2</p>
<p>5.1 Collecting and</p>	<p>Collect data</p> <ul style="list-style-type: none">• Use tally marks and tables for	



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<p>organizing data</p>	<p>recording</p> <ul style="list-style-type: none"> • Use simple questionnaires (yes/no type response) <p>Order data from smallest group to largest group.</p>	<p>10.1.1.3</p>
<p>5.2 Representing data</p>	<p>Draw a variety of graphs to display and interpret data including:</p> <ul style="list-style-type: none"> • Pictographs with many-to-one representations • Bar graphs and double bar graphs 	<p>10.1.2.3 10.1.2.4 10.1.2.5</p>
<p>5.3 Analyzing, interpreting and reporting data</p>	<p>Critically read and interpret data represented in</p> <ul style="list-style-type: none"> • Words • Pictographs • Bar graphs • Double graphs • Pie graphs <p>Analyze data by answering questions related to</p> <ul style="list-style-type: none"> • Data categories, including data intervals • Data sources and contexts • Central tendencies – (mode and median) <p>Summarize data verbally and in short written paragraphs that include</p> <ul style="list-style-type: none"> • Drawing conclusions about data • Making predictions based on the data <p>Examine ungrouped numerical data to determine</p> <ul style="list-style-type: none"> • The most frequently occurring score in the data set (mode) • The middlemost score in a data set (median) 	<p>10.1.2.6 10.1.4.2 10.1.4.1</p> <p>10.3.1.2</p>
<p>2.1</p>	<p>Investigate and extend patterns</p>	



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<p>Numeric patterns</p>	<ul style="list-style-type: none"> • Investigate and extend numeric patterns looking for relationships or rules of patterns: <ul style="list-style-type: none"> ❖ Sequences involving a constant difference or ratio ❖ Of learner's own words <p>Input and output values Determine input values, output values and rules for patterns and relationships using flow diagrams.</p> <p>Equivalent forms Determine equivalence of different descriptions of the same relationship or rule presented</p> <ul style="list-style-type: none"> • Verbally • In a flow diagram • By a number sentence 	<p>3.2.5.1 3.2.5.2 3.2.6.3 4.1.2.5 4.1.2.6 4.1.4.1</p>
Term 2		
<p>Mental mathematics</p>		<p>Same as Term 1</p>
<p>1.1 Whole numbers Counting, ordering, comparing, representing digits</p>	<p>Number range for counting, ordering and representing, and place value of digits</p> <ul style="list-style-type: none"> • 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 	<p>1.1.8.7 1.8.2.1 1.8.2.2 1.8.2.3 1.8.2.4 1.8.1.2 1.1.9.10 1.7.1.5 1.7.1.6</p>
<p>1.1 Whole numbers Multiplication</p>	<p>Number range for counting, ordering, comparing and representing, and place value of digits</p> <ul style="list-style-type: none"> • Order, compare and represent numbers to at least 9-digit numbers • Represent prime numbers to at least 	



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	<p>100</p> <ul style="list-style-type: none">• Recognize the place value of digits in whole numbers to at least 9-digit numbers• Round off to the nearest 5, 10, 100 or 1 000 <p>Number range for calculations</p> <ul style="list-style-type: none">• Multiplication of at least whole 4-digit by 3-digit numbers• Multiple operations on whole numbers with or without brackets <p>Calculation techniques include</p> <ul style="list-style-type: none">• Estimation• Multiplying in columns• Building up and breaking down numbers• Rounding off and compensating• Using a calculator <p>Number range for multiples and factors</p> <ul style="list-style-type: none">• Multiples of 2-digit and 3-digits numbers• Factors of 2-digit and 3-digit whole numbers• Prime factors of numbers to at least 100 <p>Properties of whole numbers</p> <ul style="list-style-type: none">• Recognize and use the commutative, associative and distributive properties of whole numbers• 0 in terms of its additive property• 1 in terms of its multiplicative property <p>Solving problems</p> <ul style="list-style-type: none">• Solve problems involving whole numbers and decimal fractions,	<p>1.4.4.5</p> <p>1.4.6.8 3.8.3.6</p>
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	<p>including:</p> <ul style="list-style-type: none"> ❖ Financial contexts ❖ Measurement contexts <ul style="list-style-type: none"> • Solve problems involving whole numbers, including <ul style="list-style-type: none"> ❖ Comparing two or more quantities of the same kind (ratio) ❖ Comparing two quantities of different kinds (rate) 	3.8.7.3
<p>3.2 Properties of 3-D objects</p>	<p>Objects learners need to know and name</p> <ul style="list-style-type: none"> • Rectangular prisms • Cubes • Tetrahedrons and other pyramids • Similarities and differences between tetrahedrons and other pyramids <p>Features learners use to distinguish, describe, sort and compare objects Describe, sort and compare 2-D shapes and 3-D objects in terms of:</p> <ul style="list-style-type: none"> • Number and shape of faces • Number of vertices • Number of edges <p>Further activities to focus learners on characteristics of objects Make 3-D models using:</p> <ul style="list-style-type: none"> • Drinking straws/toothpicks, etc. to form a skeleton • nets 	<p>8.1.2.4</p> <p>Class activity</p>
<p>2.2 Geometric patterns</p>	<p>Investigate and extend patterns</p> <ul style="list-style-type: none"> • Investigate and extend geometric patterns looking for relationships or rules of patterns: <ul style="list-style-type: none"> ❖ represented in physical or diagram form ❖ sequences involving a constant difference or ratio 	4.1.1.7



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	<ul style="list-style-type: none"> ❖ of learner's own creation • Describe observed relationships or rules in learner's own words <p>Input and output values Determine input values, output values and rules for the patterns and relationships using flow diagrams</p> <p>Equivalent forms Determine equivalence of different descriptions of the same relationship or rule presented:</p> <ul style="list-style-type: none"> • Verbally • In a flow diagram • By a number sentence 	
3.3 Symmetry	Recognize, draw and describe lines of symmetry in 2-D shapes	8.10.1.5
1.1 Whole numbers Division	<p>Number range for counting, ordering and representing, and place value</p> <ul style="list-style-type: none"> • 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 up to at least 9-digit numbers • Round off to the nearest 5, 10, 100 and 1000 <p>Number range for calculations</p> <ul style="list-style-type: none"> • Division of at least whole 4-digit by 3-digit numbers • Multiple operations on whole numbers with or without brackets <p>Calculation techniques</p> <ul style="list-style-type: none"> • Estimation • Using the reciprocal relationship 	<p>1.5.8.2</p> <p>3.5.5.3</p> <p>1.5.3.8</p> <p>1.5.5.8</p> <p>1.5.7.4</p>



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	<p>between multiplication and division</p> <ul style="list-style-type: none">• Long division• Building up and breaking down numbers• Rounding off and compensating• Using a calculator <p>Number range for multiples and factors</p> <ul style="list-style-type: none">• Multiples of 2-digit and 3-digit numbers• Factors of 2-digit and 3-digit whole numbers• Prime factors of numbers up to at least 100 <p>Properties of whole numbers</p> <ul style="list-style-type: none">• Recognize and use the commutative, associative and distributive properties of whole numbers• 0 in terms of its additive property• 1 in terms of its multiplicative property <p>Solving problems</p> <ul style="list-style-type: none">• Solve problems involving whole numbers and decimal fractions, including:<ul style="list-style-type: none">❖ Financial contexts❖ Measurement contexts• Solve problems involving whole numbers, including:<ul style="list-style-type: none">❖ Comparing two or more quantities of the same kind (ratio)❖ Comparing two quantities of different kind (rate)❖ Grouping and equal sharing with remainders	
1.3 Decimal fractions	Recognizing, ordering and place value of decimal fractions <ul style="list-style-type: none">• Count forwards and backwards in	2.3.1.1 2.3.1.2



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	<p>decimal fractions to at least two decimal places</p> <ul style="list-style-type: none"> • Compare and order decimal fractions to at least two decimal places • Place value of digits to at least two decimal places <p>Calculations with decimal fractions</p> <ul style="list-style-type: none"> • Addition and subtraction of decimal fractions of at least two decimal places • Multiply decimal fractions by 10 and 100 <p>Solving problems Solve problems in context involving decimal fractions</p> <p>Equivalent forms Recognize equivalence between common fraction and decimal fraction forms of the same number</p>	<p>2.3.1.3 2.3.1.4 2.3.1.5 2.3.1.6 2.3.2.1 2.3.2.2 2.3.4.1 2.3.4.2 2.3.4.5 2.3.4.6 2.3.4.7 2.3.5.4 2.3.5.5 2.3.5.7 2.3.5.8 2.3.5.9 2.3.6.1 2.3.9.4 3.2.4.4 2.3.5.2 2.3.5.3 3.4.7.1 3.4.7.2 3.4.7.3 3.4.7.5 3.4.7.4 3.4.7.6 3.8.5.3</p>
<p>4.3 Capacity/volume</p>	<p>Practical measuring of 3-D objects by Estimating, measuring, recording, comparing and ordering</p> <p>Measuring instruments Measuring jugs</p> <p>Units Millitres (ml), litres(l) and kilolitres (kl)</p> <p>Calculations and problem-solving related to capacity/volume include:</p>	<p>3.8.6.4 9.1.3.5</p>



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	<ul style="list-style-type: none"> Solving problems in context with capacity Converting between kilolitres, litres and milliliters Conversions should include fraction and decimal forms to 2 decimal places 	
Term 3		
Mental mathematics		Same as Term 1
4.2 Mass	Practical measuring of 3-D objects by <ul style="list-style-type: none"> Estimating Measuring Recording Comparing and ordering Measuring instruments Bathroom scales (analogue and digital), kitchen scales (analogue and digital) and balances	9.1.2.5 9.1.2.6
	Units Grams (g) and kilograms (kg)	Class activity
	Calculations and problem-solving related to mass include: Solve problems in context using mass. Converting between grams and kilograms. Conversions should include fraction and decimal forms (to 2 decimal places)	3.8.6.2
1.1 Whole numbers Counting, ordering, comparing, representing digits	Number range for counting, ordering and representing, and place value of digits <ul style="list-style-type: none"> 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 	1.1.8.7 1.8.2.1 1.8.2.2 1.8.2.3 1.8.2.4 1.8.1.2 1.1.9.10 1.7.1.5 1.7.1.6



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	and 1 000	
<p>1.1 Whole numbers Addition and subtraction</p>	<p>Number range for counting, ordering, comparing and representing, and place value of digits</p> <ul style="list-style-type: none"> • Order, compare and represent numbers at least 9-digit numbers • Represent prime numbers to at least 100 • Recognizing the place value of digits in whole numbers to at least 9-digit numbers • Rounding off to the nearest 5, 10, 100 and 1 000 <p>Number range for calculations</p> <ul style="list-style-type: none"> • Addition and subtraction of whole numbers with at least 6-digits • Multiple operations on whole numbers with or without brackets <p>Calculation techniques Using a range of techniques to perform and check written and mental calculations with whole numbers including:</p> <ul style="list-style-type: none"> • Estimation • Adding, subtracting in columns • Building up and breaking down numbers • Rounding off and compensating • Using addition and subtraction as inverse operations • Using a calculator <p>Properties of whole numbers</p> <ul style="list-style-type: none"> • Recognize and use the commutative, associative and distributive properties of whole numbers • 0 in terms of its additive property <p>Solving problems</p>	<p>1.2.6.9 1.2.6.10 1.3.7.4</p> <p>1.7.5.1 1.7.5.2 1.7.5.3 1.7.5.4 1.7.5.5 1.7.5.6 1.7.5.7 1.7.5.8</p>



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	<ul style="list-style-type: none">• Solve problems involving whole numbers and decimal fractions, including:<ul style="list-style-type: none">❖ Financial contexts❖ Measurement contexts• Solve problems involving whole numbers, including comparing two or more quantities of the same kind (ratio)	3.8.4.7
3.5 Viewing objects	Position and views Link the position of viewer to views of single or composite objects, or collections of objects, can include both everyday and geometric objects.	
3.1 Properties of 2-D shapes	Shapes learners need to know and name <ul style="list-style-type: none">• Regular and irregular polygons<ul style="list-style-type: none">❖ Triangles, squares, rectangles, parallelograms, other quadrilaterals, pentagons, hexagons, heptagons, octagons• Similarities and differences between rectangles and parallelograms Features of shapes Describe, sort and compare 2-D shapes in terms of <ul style="list-style-type: none">• Numbers of sides• Length of sides• Size of angles<ul style="list-style-type: none">❖ Acute❖ Right❖ Obtuse❖ Straight❖ Reflex❖ Revolution Further activities	8.1.1.5 8.1.4.1 8.1.4.2



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	<ul style="list-style-type: none"> • Draw 2-D shapes on grid paper • Draw circles, patterns in circles and patterns with circles using a pair of compasses 	Class activity
3.4 Transformations	<p>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</p> <ul style="list-style-type: none"> • Nature • From modern everyday life • From our cultural heritage <p>Enlargement and reduction Draw enlargement and reductions of 2-D shapes to compare size and shape of</p> <ul style="list-style-type: none"> • Triangles • Quadrilaterals 	<p>8.10.2.1 8.10.2.2 8.10.2.3 8.10.3.1 8.10.3.2</p> <p>Class activity</p>
4.5 Temperature	<p>Practical measuring of temperature by</p> <ul style="list-style-type: none"> • Estimating • Measuring • Recording • Comparing and ordering <p>Measuring instruments Thermometers (analogue and digital)</p> <p>Units Degrees Celsius</p> <p>Calculations and problem-solving related temperature include:</p> <ul style="list-style-type: none"> • Solving problems in contexts related to temperatures 	<p>9.1.4</p> <p>3.8.6.4 3.8.6.5</p>
1.2 Percentages	<p>Calculations Find percentages of whole numbers</p> <p>Equivalent forms</p>	



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	<ul style="list-style-type: none">• Recognize equivalences 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	
5.1 Collecting and organizing data	Collect data using: <ul style="list-style-type: none">• Tally marks and tables for recording• Simple questionnaires with a (yes/no type response)• Order data from smallest group to largest group.	10.1.1.3
5.2 Representing data	Draw a variety of graphs to display and interpret data including: <ul style="list-style-type: none">• Pictographs (many-to-one correspondence)• Bar graphs and double bar graphs	10.1.2.3 10.1.2.4 10.1.2.5
5.3 Analyzing, interpreting and reporting data	Critically read and interpret data represented in <ul style="list-style-type: none">• Words• Pictographs• Bar graphs• Double graphs• Pie graphs Analyze data by answering questions related to <ul style="list-style-type: none">• Data categories, including data intervals• Data sources and contexts• Central tendencies – (mode and median) Summarize data verbally and in short written paragraphs that include <ul style="list-style-type: none">• Drawing conclusions about data	10.1.2.6 10.1.4.1 10.1.4.2 10.3.1.2



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	<ul style="list-style-type: none">• Making predictions based on the data <p>Examine ungrouped numerical data to determine</p> <ul style="list-style-type: none">• The most frequently occurring score in the data set (mode)• The middlemost score in a data set called the median of the data set	
2.1 Numeric patterns	<p>Investigate and extend patterns</p> <ul style="list-style-type: none">• Investigate and extend numeric patterns looking for relationships or rules of patterns:<ul style="list-style-type: none">❖ Sequences involving a constant difference or ratio❖ Of learner's own creations• Describe observed relationships or rules in learner's own words <p>Input and output values Determine input values, output values and rules for patterns and relationships using flow diagrams.</p> <p>Equivalent forms Determine equivalence of different descriptions of the same relationship or rule presented</p> <ul style="list-style-type: none">• Verbally• In a flow diagram• By a number sentence	3.2.5.1 3.2.5.2 3.2.6.3 4.1.2.5 4.1.2.6 4.1.4.1
4.1 Length	<p>Practical measuring of 2-D shapes and 3-D objects by Estimating, measuring, recording, comparing and ordering</p> <p>Measuring instruments Rulers, metre sticks, tape measures, trundle wheels</p> <p>Units</p>	9.1.1.2 9.1.1.3 9.1.1.4



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	<p>Millimeters(mm), centimeters(cm), meters(m) and kilometers(km)</p> <p>Calculations and problem-solving related to length Solve problems in contexts related to length</p> <p>Conversions include converting between any of the following units: mm , cm , m , km</p> <p>Conversions should include fraction and decimal forms (to 2 decimal places)</p>	<p>9.1.2.4 9.1.2.6</p> <p>3.8.6.1</p>
Term 4		
Mental mathematics		Same as Term 1
<p>1.1 Whole numbers Counting, ordering representing and place value of digits</p>	<p>Number range for counting, ordering and representing, and place value of digits</p> <ul style="list-style-type: none"> • 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 	<p>1.1.8.7 1.8.2.1 1.8.2.2 1.8.2.3 1.8.2.4 1.8.1.2 1.1.9.10 1.7.1.5 1.7.1.6</p>
<p>1.1 Whole numbers Multiplication</p>	<p>Number range for counting, ordering, comparing and representing, and place value of digits</p> <ul style="list-style-type: none"> • Order, compare and represent numbers 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 or 	



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	<p>1 000</p> <p>Number range for calculations</p> <ul style="list-style-type: none">• Multiplication of at least whole 4-digit by 3-digit numbers• Multiple operations on whole numbers with or without brackets <p>Calculation techniques include</p> <ul style="list-style-type: none">• Estimation• Multiplying in columns• Building up and breaking down numbers• Rounding off and compensating• Using a calculator <p>Number range for multiples and factors</p> <ul style="list-style-type: none">• Multiples of 2-digit and 3-digits numbers• Factors of 2-digit and 3-digit whole numbers• Prime factors of numbers to at least 100 <p>Properties of whole numbers</p> <ul style="list-style-type: none">• Recognize and use the commutative, associative and distributive properties of whole numbers• 0 in terms of its additive property• 1 in terms of its multiplicative property <p>Solving problems</p> <ul style="list-style-type: none">• Solve problems involving whole numbers and decimal fractions, including:<ul style="list-style-type: none">❖ Financial contexts❖ Measurement contexts• Solve problems involving whole numbers, including	<p>1.4.4.5</p> <p>1.4.6.8</p>
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	<ul style="list-style-type: none"> ❖ Comparing two or more quantities of the same kind (ratio) ❖ Comparing two quantities of different kinds (rate) 	3.8.7.3
1.2 Common fractions	<p>Describing and ordering fractions Compare and order common fraction, including specifically tenths and hundredths.</p> <p>Calculations with fractions</p> <ul style="list-style-type: none"> • Addition and subtraction of common fractions in which one denominator is a multiple of each other • Addition and subtraction of mixed numbers • Fractions of whole numbers <p>Solving problems Solve problems in contexts involving common fractions, including grouping and sharing.</p> <p>Percentages Find percentages of whole numbers</p> <p>Equivalent forms Learners should recognize</p> <ul style="list-style-type: none"> • Equivalent forms of common fractions with 1-digit or 2-digit denominators (denominators which are multiples of each other) • Equivalence between common fraction and decimal fraction forms of the same number • Equivalence between common fraction, decimal fraction and percentage forms of the same number 	3.4.6.5 3.4.6.6 2.1.3.3 2.1.4.4 2.1.5.3 2.1.5.6 2.2.1.1 2.2.2.4 2.2.2.5 2.2.2.6 2.2.2.7 2.2.2.8 2.2.3.1 2.2.3.3 2.2.3.4 2.2.3.5 2.2.3.6 2.2.3.7 2.2.3.8 2.2.3.9 2.2.3.10 2.2.4.1 2.2.4.2 2.2.4.3 2.2.4.4 2.2.5.10 2.2.5.7 2.2.5.8 2.2.5.9 2.3.5.1 2.3.5.2 2.3.5.3
3.2 3-D objects	<p>Objects learners need to know and name</p> <ul style="list-style-type: none"> • Rectangular prisms 	8.1.2.4



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	<ul style="list-style-type: none">• Cubes• Tetrahedrons• Pyramids• Similarities and differences between tetrahedrons and other pyramids <p>Characteristics which learners use to distinguish, describe, sort and compare objects Describe, sort and compare 2-D shapes and 3-D objects in terms of:</p> <ul style="list-style-type: none">• Number and shape of faces• Number of vertices• Number of edges <p>Further activities to focus learners on characteristics of objects Create 3-D models using</p> <ul style="list-style-type: none">• Drinking straws/toothpicks, etc. to make a skeleton• Nets	
4.6 Perimeter, area and volume	<p>Perimeter Measure perimeter using rulers or measuring tapes</p> <p>Measurement of area</p> <ul style="list-style-type: none">• Continue to find areas of regular and irregular shapes by counting squares on grids• Develop an understanding of why the area of rectangles can be described as their length multiplied by their width <p>Measurement of volume</p> <ul style="list-style-type: none">• Continue to find volume/capacity of objects (by packing or filling them)• Develop an understanding of why the volume of rectangular prisms can be described as their length multiplied by their width multiplied by their height	9.3.1.6 9.3.1.7 9.3.2.5 9.3.1.8 9.5.1.3



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	<p>Investigate:</p> <ul style="list-style-type: none"> Relationship between perimeter and area of rectangles and squares Relationship between surface area and volume of rectangular prisms 	
<p>4.7 History of measurement</p>	<p>Know how people measured and recorded measurement in the past.</p>	
<p>1.1 Whole numbers Division</p>	<p>Number range for counting, ordering and representing, and place value</p> <ul style="list-style-type: none"> 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 up to at least 9-digit numbers Round off to the nearest 5, 10, 100 and 1000 <p>Number range for calculations</p> <ul style="list-style-type: none"> Division of at least whole 4-digit by 3-digit numbers Multiple operations on whole numbers with or without brackets <p>Calculation techniques</p> <ul style="list-style-type: none"> Estimation Using the reciprocal relationship between multiplication and division Long division Building up and breaking down numbers Rounding off and compensating Using a calculator <p>Number range for multiples and factors</p> <ul style="list-style-type: none"> Multiples of 2-digit and 3-digit 	<p>1.8.2.5</p> <p>1.5.8.2 3.5.5.3 1.5.3.8 1.5.5.8 1.5.7.4</p>



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	<p>numbers</p> <ul style="list-style-type: none">• Factors of 2-digit and 3-digit whole numbers• Prime factors of numbers up to at least 100 <p>Properties of whole numbers</p> <ul style="list-style-type: none">• Recognize and use the commutative, associative and distributive properties of whole numbers• 0 in terms of its additive property• 1 in terms of its multiplicative property <p>Solving problems</p> <ul style="list-style-type: none">• Solve problems involving whole numbers and decimal fractions, including:<ul style="list-style-type: none">❖ Financial contexts❖ Measurement contexts• Solve problems involving whole numbers, including:<ul style="list-style-type: none">❖ Comparing two or more quantities of the same kind (ratio)❖ Comparing two quantities of different kind (rate)❖ Grouping and equal sharing with remainders	<p>10.6.5.5</p> <p>3.8.7.3</p>
<p>2.3 Number sentences</p>	<p>Number sentences</p> <ul style="list-style-type: none">• Write number sentences to describe problem situations• Solve and complete number sentences by:<ul style="list-style-type: none">❖ Inspection❖ Trial and improvement• Check answers by substitution	<p>4.1.2.4</p>
<p>3.4 Transformations</p>	<p>Describe patterns</p> <p>Refer to lines, 2-D shapes, 3-D objects and/or lines of symmetry and/or rotations and/or</p>	



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	<p>reflections and/or translations when describing patterns in</p> <ul style="list-style-type: none">• Nature• From modern everyday life• From our cultural heritage <p>Enlargement and reduction Draw enlargement and reductions of 2-D shapes to compare size and shape of</p> <ul style="list-style-type: none">• Triangles• Quadrilaterals	
3.6 Locations and directions	<p>Location and directions Locate position of objects/drawings/symbols on grid with alpha-numeric grid references.</p> <p>Locate positions of objects on a map by using alpha-numeric grid references.</p> <p>Give directions to move between positions and places on a map.</p>	9.6.1.1 9.6.1.2 9.6.1.3
5.4 Probability	<p>Perform simple repeated events and list possible outcomes for events such as:</p> <ul style="list-style-type: none">• Tossing a coin• Rolling a die• Spinning a spinner <p>Count and compare the frequency of actual outcomes for a series of trials:</p> <ul style="list-style-type: none">• Up to 50 trials	10.2.1.4