



CAMI Education linked to CAPS: Mathematics

Grade 7 CAPS Curriculum		
TERM 1		
TOPIC	CONTENT	CAMI Keys
1.1 Whole numbers	<p>Mental calculations Revise the following done in Grade 6:</p> <ul style="list-style-type: none"> • Multiplication of whole numbers to at least 12×12. • Multiplication facts for: <ul style="list-style-type: none"> ❖ units and tens by multiples of 10 ❖ units and tens by multiples of 100 ❖ units and tens by multiples of 1 000 ❖ units and tens by multiples of 10 000 • Inverse operation between multiplication and division. <p>Ordering and comparing whole numbers Revise the following done in Grade 6:</p> <ul style="list-style-type: none"> • order, compare and represent numbers to at least 9-digit numbers • recognize and represent prime numbers to at least 100 • round off numbers to the nearest 5, 10, 100 or 1 000 <p>Properties of whole numbers Revise the following done in Grade 6:</p> <ul style="list-style-type: none"> • recognize and use the commutative, associative, distributive properties of whole numbers • recognize and use 0 in terms of its additive property (identify element for addition) • recognize and use 1 in terms of its multiplicative property (identify element for multiplication) <p>Calculations using whole numbers</p> <ul style="list-style-type: none"> • Revise the following done in Grade 6, without use of calculators: 	<p>1.9.3 3.5.4.1 3.5.4.2 3.5.4.3</p> <p>1.8.1.2 1.8.2.4 1.8.2.5</p> <p>1.7.1.6 1.7.1.7</p> <p>1.7.7.3 1.7.7.5</p> <p>4.4.1.1 4.4.1.2</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"> ❖ additions and subtraction of whole numbers to at least 6-digit numbers ❖ multiplication of at least whole 4-digit by 2-digit numbers ❖ division of at least 4-digit by 2-digit numbers • Perform calculations using all four operations on whole numbers, estimating and using calculators where appropriate <p>Calculation techniques</p> <ul style="list-style-type: none"> • Use a range of techniques to perform and check written and mental calculations of whole numbers including: <ul style="list-style-type: none"> ❖ Estimation ❖ Adding, subtracting and multiplying in columns ❖ Long division ❖ Rounding off and compensating ❖ Using a calculator <p>Multiples and factors</p> <ul style="list-style-type: none"> • Revise the following done in Grade 6: <ul style="list-style-type: none"> ❖ Multiples of 2-digit and 3-digit whole numbers ❖ Factors of 2-digit and 3-digit whole numbers ❖ Prime factors of numbers to at least 100 • List prime factors of numbers to at least 3-digit whole number • Find the LCM and HCF of numbers to 	<p>1.2.6.9 1.3.7.4 1.7.10.10</p> <p>1.4.4.4 1.4.4.5</p> <p>1.5.5.8</p> <p>4.7.2.1</p> <p>1.8.1.4 1.8.1.5</p>
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	<p>at least 3-digit whole numbers, by inspection or factorization</p> <p>Solving problems</p> <ul style="list-style-type: none"> • Solve problems involving whole numbers, including: <ul style="list-style-type: none"> ❖ Compare 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: <ul style="list-style-type: none"> ❖ Profit, loss and discount ❖ Budgets ❖ Accounts ❖ Loans ❖ Simple interest 	<p>1.8.1.6 1.8.1.7 1.8.1.8</p> <p>3.8.7.3 2.6.1.1 2.6.1.2 2.6.1.3 2.6.1.4</p> <p>10.6.2.3 10.6.2.4 10.7.1.1 10.7.1.2</p>
<p>1.2 Exponents</p>	<p>Mental calculations</p> <ul style="list-style-type: none"> • Determine squares to at least 12^2 and their square roots • Determine cubes to at least 6^3 and their cube roots <p>Comparing and representing numbers in exponential form</p> <ul style="list-style-type: none"> • Compare and represent whole numbers in exponential form: $a^b = a \times a \times a \times \dots$ for b numbers of factors <p>Calculations using numbers in exponential form</p> <ul style="list-style-type: none"> • Recognize and use the appropriate laws of operations with numbers involving exponents and square and cube roots 	<p>1.8.3.1 1.8.3.2 1.8.3.3</p> <p>1.8.4.1 4.3.1.1</p>



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	<ul style="list-style-type: none">Perform calculations involving all four operations using numbers in exponential form, limited to exponents up to 5. and square and cube roots <p>Solving problems</p> <ul style="list-style-type: none">Solve problems in contexts involving numbers in exponential form	
3.5 Construction of geometric figures	<p>Measuring angles</p> <ul style="list-style-type: none">Accurately use a protractor to measure and classify angles:<ul style="list-style-type: none"><math> < 90^\circ </math> (acute angles)Right-angles>90° (obtuse angles)Straight angles>180° (reflex angle) <p>Constructions</p> <ul style="list-style-type: none">Accurately construct geometric figures appropriately using compass, ruler and protractor, including:<ul style="list-style-type: none">Angles, to one degree of accuracyCirclesParallel linesPerpendicular lines	8.1.4.1 8.1.4.2 8.1.6.1 8.1.6.2 8.1.6.3 8.1.6.4
3.1 Geometry of 2D shapes	<p>Classifying 2D shapes</p> <ul style="list-style-type: none">Describe, sort, name and compare triangles according to their sides and angles, focusing on:<ul style="list-style-type: none">Equilateral trianglesIsosceles trianglesRight-angled trianglesDescribe, sort, name and compare quadrilaterals in terms of:<ul style="list-style-type: none">Length of sidesParallel and perpendicular sidesSize of angles (right-angles or not)	8.3.1.1 8.3.1.2 8.3.1.3 8.3.2.1 8.3.3.1 8.3.4.1



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	<ul style="list-style-type: none"> Describe and name parts of a circle 	8.5.1.1 8.5.1.2
3.1 Geometry of 2D shapes	<p>Similar and congruent 2D shapes</p> <ul style="list-style-type: none"> Recognize and describe similar and congruent figures by comparing: <ul style="list-style-type: none"> ❖ Shape ❖ Size <p>Solving problems</p> <ul style="list-style-type: none"> Solve simple geometric problems involving unknown sides and angles in triangles and quadrilaterals, using known properties. 	8.3.7.1 8.3.5.1 8.4.2.1
3.3 Geometry of straight lines	<p>Define</p> <ul style="list-style-type: none"> Line segment Ray Straight line Parallel lines Perpendicular lines 	
Term 2		
1.4 Common fractions	<p>Ordering, comparing and simplifying fractions</p> <ul style="list-style-type: none"> Revise the following done in Grade 6: <ul style="list-style-type: none"> ❖ Compare and order common fractions, including specifically tenths and hundredths Extend to thousandths <p>Calculations using fractions</p> <ul style="list-style-type: none"> Revise the following done in Grade 6: <ul style="list-style-type: none"> ❖ 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 ❖ Finding fractions of whole numbers Extend addition and subtraction to 	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 2.2.3.2 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



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	<p>fractions where one denominator is not a multiple of the other</p> <ul style="list-style-type: none"> • Multiplication of common fractions, including mixed numbers, not limited to fraction where one denominator is a multiple of another <p>Calculation techniques</p> <ul style="list-style-type: none"> • 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 	<p>2.2.3.10</p> <p>2.2.4.1 2.2.4.2 2.2.4.3 2.2.4.4</p> <p>2.2.5.1 2.2.5.10 2.2.5.2 2.2.5.3 2.2.5.4 2.2.5.7 2.2.5.8 2.2.5.9</p> <p>2.1.5.3 2.1.5.6</p>
<p>1.4 Common fractions</p>	<p>Solving problems</p> <ul style="list-style-type: none"> • Solve problems in contexts involving common fractions and mixed numbers, including grouping, sharing and finding fractions of whole numbers <p>Percentages</p> <ul style="list-style-type: none"> • Revise the following done in Grade 6: <ul style="list-style-type: none"> ❖ Percentages of whole numbers • Calculate the percentage of part of a whole • Calculate percentage increase or decrease of whole numbers • Solve problems in contexts involving percentages <p>Equivalent forms</p> <p>Revise the following done in Grade 6:</p> <ul style="list-style-type: none"> • Recognize and use equivalent forms of common fractions with 1-digit or 2-digit denominators (fractions where one denominator is a multiple of the 	<p>4.8.1.1 4.8.4.1</p> <p>2.1.4.4 2.1.4.7 2.1.4.8 2.1.4.9</p> <p>2.4.1.1 2.4.1.2 2.4.2.1 2.4.2.2 2.4.2.3 2.4.3.1 2.4.3.2 2.4.3.3 2.4.3.4</p>



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	<p>other)</p> <ul style="list-style-type: none"> 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 	<p>2.4.4.1 2.4.4.2 2.4.5.1 2.4.5.2 2.4.6.1 2.4.6.2</p>
<p>1.5 Decimal fractions</p>	<p>Ordering and comparing decimal fractions</p> <ul style="list-style-type: none"> Revise the following done in Grade 6: <ul style="list-style-type: none"> 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 Extend all of the above to decimal fractions of at least three decimal places and rounding off to at least 2 decimal places <p>Calculations using decimal fractions</p> <ul style="list-style-type: none"> Revise the following done in Grade 6: <ul style="list-style-type: none"> Addition and subtraction of decimal fractions of at least two decimal places Multiplication of decimal fractions by 10 and 100 Extend addition and subtraction to decimal fractions of at least three decimal places Multiply decimal fractions to include: <ul style="list-style-type: none"> 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 	<p>2.3.1.10 2.3.1.2 2.3.1.3 2.3.1.5 2.3.1.6 2.3.1.7 2.3.1.8 2.3.1.9 2.3.2.2 2.3.2.3 2.3.2.5 2.3.3.1 2.3.4.2 2.3.4.3 2.3.4.7 2.3.4.8 2.3.5.10 2.3.5.6 2.3.6.1 2.3.6.4 2.3.6.7 2.3.7.4 2.3.7.7 2.3.7.8 2.3.7.9 2.3.9.1 2.3.9.5 2.3.9.6 3.4.6.7 3.4.6.8 3.4.7.1</p>



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	<ul style="list-style-type: none">• Divide decimal fractions to include decimal fractions to at least 3 decimal places by whole numbers <p>Calculation techniques</p> <ul style="list-style-type: none">• Use knowledge of place value to estimate the number of decimal places in the result before performing calculations• Use rounding off and a calculator to check results where appropriate <p>Solving problems</p> <ul style="list-style-type: none">• Solve problems in context involving decimal fractions	3.4.7.2 3.4.7.3 3.4.7.4 3.4.7.5 3.4.7.6 3.4.7.7 3.4.7.8 3.8.5.3
1.5 Decimal fractions	<p>Equivalent forms</p> <p>Revise the following done in Grade 6:</p> <ul style="list-style-type: none">• 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	2.3.5.10
2.2 Functions and relationships	<p>Input and output values</p> <ul style="list-style-type: none">• Determine input values, output values or rules for patterns and relationships using:<ul style="list-style-type: none">❖ Flow diagrams❖ Tables❖ Formulae <p>Equivalent forms</p> <ul style="list-style-type: none">• Determine, interpret and justify equivalence of different descriptions of the same relationship or rule presented:<ul style="list-style-type: none">❖ Verbally❖ In flow diagrams❖ In tables	3.2.6.3 4.1.3.5



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	<ul style="list-style-type: none">• Use equivalence between units when solving problems:<ul style="list-style-type: none">❖ $1\text{cm}^3 \leftrightarrow 1\text{ml}$❖ $1\text{m}^3 \leftrightarrow 1\text{kl}$	
TERM 3		
2.1 Numeric and geometric patterns	Investigate and extend patterns <ul style="list-style-type: none">• Investigate and extend numeric and geometric patterns looking for relationships between numbers, including patterns:<ul style="list-style-type: none">❖ 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	3.2.5.3 3.2.5.4 4.1.2.7 4.1.2.10 4.1.1.7
2.2 Functions and relationships	Input and output values <ul style="list-style-type: none">• Determine input values, output values or rules for patterns and relationships using:<ul style="list-style-type: none">❖ Flow diagrams❖ Tables❖ Formulae Equivalent forms <ul style="list-style-type: none">• Determine, interpret and justify equivalence of different descriptions of the same relationship or rule presented:<ul style="list-style-type: none">❖ Verbally❖ In flow diagrams❖ In tables❖ By formulae❖ By number sentences	3.2.6.3 4.1.3.5



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<p>2.3 Algebraic expressions</p>	<p>Algebraic language</p> <ul style="list-style-type: none"> Recognize and interpret rules or relationships represented in symbolic form Identify variables and constants in given formulae and equations 	<p>3.2.6.1 3.2.7.1 3.2.7.2 3.2.7.3 3.2.7.4 4.1.3.8 4.1.8.1 4.1.8.2</p>
<p>2.4 Algebraic equations</p>	<p>Number sentences</p> <ul style="list-style-type: none"> Write number sentences to describe problem situations Analyze and interpret number sentences that describe a given situation Solve and complete number sentences by: <ul style="list-style-type: none"> inspection trial and improvement identify variables and constants in given formulae or equations determine the numerical value of an expression by substitution 	<p>3.5.7.1 4.1.2.4 4.1.3.1 4.1.3.2 4.1.3.3 4.1.3.7 4.2.1.1</p>
<p>2.5 Graphs</p>	<p>Interpreting graphs</p> <ul style="list-style-type: none"> analyze and interpret global graphs of problem situations, with special focus on the following trends and features: <ul style="list-style-type: none"> ❖ linear or non-linear ❖ constant, increasing or decreasing <p>Drawing graphs</p> <ul style="list-style-type: none"> Draw global graphs from given descriptions of a problem situation, identifying features listed above 	
<p>3.4 Transformation Geometry</p>	<p>Transformation</p> <ul style="list-style-type: none"> Recognize, describe and perform translations, reflections and rotations 	<p>8.10.2.1 8.10.2.2 8.10.2.3</p>



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	<p>with geometric figures and shapes on squared paper</p> <ul style="list-style-type: none"> Identify and draw lines of symmetry in geometric figures <p>Enlargements and reductions</p> <ul style="list-style-type: none"> Draw enlargements and reductions of geometric figures on squared paper and compare them in terms of shape and size 	<p>8.10.4.1 8.10.4.2 8.10.5.1</p>
<p>3.2 Geometry of 3D objects</p>	<p>Classifying 3D objects</p> <ul style="list-style-type: none"> Describe, sort and compare polyhedra in terms of: <ul style="list-style-type: none"> ❖ Shape and number of faces ❖ Number of vertices ❖ Number of edges <p>Building 3D model</p> <ul style="list-style-type: none"> Revise using nets to create models of geometric solids, including: <ul style="list-style-type: none"> ❖ Cubes ❖ Prisms 	<p>8.1.2.4 8.1.2.5</p>
TERM 4		
<p>1.3 Integers</p>	<p>Counting, ordering and comparing integers</p> <ul style="list-style-type: none"> Count forwards and backwards in integers for any interval Recognize, order and compare integers <p>Calculations with integers</p> <ul style="list-style-type: none"> Add and subtract with integers <p>Properties of integers</p> <ul style="list-style-type: none"> Recognize and use commutative and associative properties of addition and multiplication for integers <p>Solve problems</p> <ul style="list-style-type: none"> Solve problems in contexts involving addition and subtraction of integers 	<p>2.5.1.1 2.5.1.2 2.5.1.3 2.5.1.4 2.5.1.5 2.5.1.6 2.5.2.1 2.5.2.2 2.5.2.3 2.5.2.4 2.5.4.1 2.5.4.2 2.5.5.1 2.5.5.2 3.8.1.8 2.5.3.1 2.5.3.3</p>



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<p>2.1 Numeric and geometric patterns</p>	<p>Investigate and extend patterns</p> <ul style="list-style-type: none">• Investigate and extend numeric and geometric patterns looking for relationships between numbers, including patterns:<ul style="list-style-type: none">❖ 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	<p>3.2.5.3 3.2.5.4 4.1.2.7 4.1.2.10 4.1.1.7</p>
<p>2.2 Functions and relationships</p>	<p>Input and output values</p> <ul style="list-style-type: none">• Determine input values, output values or rules for patterns and relationships using:<ul style="list-style-type: none">❖ Flow diagrams❖ Tables❖ Formulae <p>Equivalent forms</p> <ul style="list-style-type: none">• Determine, interpret and justify equivalence of different descriptions of the same relationship or rule presented:<ul style="list-style-type: none">❖ Verbally❖ In flow diagrams❖ In tables❖ By formulae❖ By number sentences	<p>3.2.6.3 4.1.3.5</p>
<p>2.3 Algebraic expressions</p>	<p>Algebraic language</p> <ul style="list-style-type: none">• Recognize and interpret rules or relationships represented in symbolic form• Identify variables and constants in given formulae and equations	<p>3.2.6.1 3.2.7.1 3.2.7.2 3.2.7.3 3.2.7.4</p>



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		4.1.3.8 4.1.8.1 4.1.8.2
2.4 Algebraic equations	Number sentences <ul style="list-style-type: none"> • Write number sentences to describe problem situations • Analyze and interpret number sentences that describe a given situation • Solve and complete number sentences by: <ul style="list-style-type: none"> - inspection - trial and improvement • Identify variables and constants in given formulae or equations • Determine the numerical value of an expression by substitution 	3.5.7.1 4.1.2.4 4.1.3.1 4.1.3.2 4.1.3.3 4.1.3.7 4.2.1.1
5.1 Collect, organize and summarize data	Collect data <ul style="list-style-type: none"> • 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 • Design and use simple questionnaires to answer questions: <ul style="list-style-type: none"> ❖ With yes/no type questions ❖ With multiple choice responses Organize and summarize data <ul style="list-style-type: none"> • Organize (including grouping where appropriate) and record data using: <ul style="list-style-type: none"> ❖ Tally marks ❖ Tables ❖ Stem-and-leaf display • Group data into intervals 	10.1.1.3 10.1.5.1 10.1.1.4



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	<ul style="list-style-type: none">Summarize and distinguish between ungrouped numerical data by determining:<ul style="list-style-type: none">❖ Mean❖ Median❖ ModeIdentify 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)	10.3.1.4
5.2 Representing data	Represent data <ul style="list-style-type: none">Draw a variety of graphs by hand / technology to display and interpret data (grouped and ungrouped) including:<ul style="list-style-type: none">❖ Bar graphs and double bar graphs❖ Histograms with given intervals❖ Pie graphs	10.1.2.3 10.1.2.6 10.3.1.4
5.3 Interpret, analyze and report data	Interpret data <ul style="list-style-type: none">Critically read and interpret data represented in:<ul style="list-style-type: none">❖ Words❖ Bar graphs❖ Double graphs❖ Pie charts❖ Histograms Analyze data <ul style="list-style-type: none">Critically analyze data by answering questions related to:<ul style="list-style-type: none">❖ Data categories, including data intervals❖ Data sources and contexts❖ Central tendencies (mean, median, mode)❖ Scales used on graphs	10.1.4.2 10.3.2.2 10.3.1.4 10.3.1.3 10.1.2.6



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	<p>Report data</p> <ul style="list-style-type: none">• Summarize data in short paragraphs that include:<ul style="list-style-type: none">❖ 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)	
<p>5.4 Probability</p>	<p>Probability Perform simple experiments where the possible outcomes are equally likely and</p> <ul style="list-style-type: none">• List the possible outcomes based on the conditions of the activity• Determine the probability of each possible outcome, using the definition of probability	<p>10.2.1.1 10.2.1.2 10.2.5</p>

