

## Year 5 – Primary School Syllabus

Mathematical Content	Success Criteria	Teaching Hours
<b>UNIT 1</b> <ul style="list-style-type: none"> <li>• Revision</li> </ul>	Recite, read, write and recognize numbers up to 1000000000. Compare and order natural numbers up to 1000000000. Synthesize and analyze numbers up to 1000000000. Estimate and calculate the sum, difference, product and quotient of numbers up to 100000 and verify their answer. Use and formulate mental calculation strategies with integers and decimal numbers. Describe, fill in, extend, construct, explain the rule, and find inductively the general term of numerical and geometric patterns. Solve and construct routine, multi-step problems and process problems	8
<b>UNIT 2</b> <ul style="list-style-type: none"> <li>• Multiples and Factors</li> <li>• Divisibility Criteria (2,5,10)</li> <li>• Even and Odd numbers</li> <li>• Prime</li> <li>• Breakdown of numbers into the product or prime factors</li> <li>• Euclidean division</li> </ul>	Estimate and calculate the sum, difference, product and quotient of numbers up to 1 000 000 000 and verify their answer. State and solve problems involving whole numbers, fractions and decimal numbers and verify the validity of their answers. State, explain and apply the divisibility criteria for 2,3,4,5,8,9,10 and 25. Recognise and explore the prime, composite numbers Analyse and express a whole number as the product of its prime factors. Describe, complete, extend, construct and explain the rule for arithmetic and geometric patterns. Understand the concept of a variable and describe relationships between variables Read and construct bar charts, pictograms, pie charts and line graph with or without the use of ICT.	12
<b>UNIT 3</b> <ul style="list-style-type: none"> <li>• Introduction to negative numbers</li> <li>• Numbers up to one million: Place value, analyse and synthesise, rounding, and</li> </ul>	Read, write and recognize numbers up to 1000000000. Compare and order natural numbers up to 1000000000. Synthesize and analyse numbers up to 1000000000. Use negative numbers in real life context. Estimate and evaluate the sum, difference, product and quotient of numbers up to 1000000000 and verify their answer.	27

<p>estimating of sum and difference</p> <ul style="list-style-type: none"> <li>• Problems involving sums</li> <li>• Problems involving products of two digit numbers.</li> <li>• Properties of addition and multiplication</li> <li>• Two digit division</li> <li>• Inverse operations</li> <li>• Problem Solving</li> </ul>	<p>Round numbers to the nearest ten, hundred, thousand and a million. Round decimal numbers to the nearest tenth and hundredth.</p> <p>Compare and order rational numbers both positive and negative and assign them a place on a number line.</p> <p>Report and apply strategies for mental calculations involving whole numbers, fractions, decimal numbers and percentages.</p> <p>Apply strategies of rounding whole numbers, fractions, and decimals numbers in order to estimate and check the answer of a calculation.</p> <p>Use the properties of calculations (commutativity, associativity and distributivity) to simplify mental calculations and check their answers.</p> <p>Solve and manipulate equations.</p> <p>Solve and construct routine, multi-step problems and process problems.</p> <p>Convert algebraic symbols to verbal form and vice versa.</p>	
<p><b>UNIT 4</b></p> <ul style="list-style-type: none"> <li>• Types of lines, parallel and perpendicular lines</li> <li>• Measuring angles</li> <li>• Types of triangles</li> <li>• Properties of parallelograms</li> <li>• Shapes in a coordinate axes system</li> <li>• Transformations</li> </ul>	<p>Estimate, measure, order and construct angles with or without the use of ICT</p> <p>Name and construct points, line segments, half lines, lines and different types of lines (curves, straight lines, refracted) with different software.</p> <p>Name and construct edges and angles.</p> <p>Analyse, order and construct 2 dimensional and 3 dimensional shapes based on their properties using various means and software.</p> <p>Recognise, name and describe the basic properties of a parallelogram.</p> <p>Recognise, order and describe different types of triangles according to the length of their sides and measure of their angles.</p> <p>Distinguish the parameters and properties of a shape and compare groups of shapes based on their properties.</p> <p>Draw simple geometric constructions (midpoint of a line segment) using various means and geometric software.</p> <p>Explore the notion of coordinates using maps, coordinate grids and appropriate software.</p> <p>Construct simple 2 dimensional shapes and describe instructions of direction.</p> <p>Recognise shapes that are symmetric along their axis or centre or have rotational symmetry.</p> <p>Draw and describe the result of transformations such as translation, rotation, reflection and enlargement.</p> <p>Construct polygons and drawings with multiple axes of symmetry or shapes that are symmetric along one point</p>	<p>12</p>

<p><b>UNIT 5</b></p> <ul style="list-style-type: none"> <li>• HCF and LCM</li> <li>• Fractions ( notion of a fraction, equivalent fractions, comparing fractions, fraction as a quotient and measure)</li> <li>• Addition and subtraction of fractions</li> <li>• Decimal numbers ( tenth – hundredth – thousandth, connection with fractions, rounding of decimal numbers)</li> <li>• Addition and subtraction of decimal numbers, problem solving</li> <li>• Improper fractions and mixed numbers, conversions</li> <li>• Problems with units of measure: length, mass, volume – conversions</li> </ul>	<p>Represent, compare and order fractions with the same denominator and decimal numbers using the appropriate material such as fractional circle, number line or pictures.</p> <p>Recite, read, write, recognise, compare and order fractions with the same denominator and decimal numbers( up to two decimal places)</p> <p>Interpret fractions as part of a unit, as part of a set, as a measure and as a quotient.</p> <p>Use various means of representing and strategies, to simplify fractions and find equivalent forms.</p> <p>Calculate the LCM and HCF of two or more numbers.</p> <p>Simplify and calculate equivalent fractions using the lowest common multiple and the highest common factor.</p> <p>Estimate and calculate the result of calculations with positive rational numbers.</p> <p>Report and apply strategies to perform mental calculations with whole numbers, fractions, decimal numbers and percentages.</p> <p>Apply strategies for rounding whole numbers, fractions and decimal numbers for purposes of estimation and checking the answer of a calculation.</p> <p>Formulate and solve problems with rational numbers and percentages and check the validity of their answer.</p> <p>Use of units for length(mm, cm, m, km) for mass(kg, g) capacity (L, ml) and volume (<math>m^3</math>, <math>cm^3</math>)</p> <p>Convert between the units of measure of the same metric system.</p> <p>Solve problems that involve the relationship between bank notes and coins of a currency.</p> <p>Represent and solve problems involving Venn diagrams.</p>	<p>30</p>
<p><b>UNIT 6</b></p> <ul style="list-style-type: none"> <li>• Introduction to proportion/ratio, strategies for solving ratio problems</li> <li>• Time (hours, minutes, seconds)</li> <li>• Introduction to percentages</li> </ul>	<p>Convert decimal numbers to percentages and vice versa.</p> <p>Use rounding to the nearest integer (verbally and written) in the solution of problems</p> <p>Explore the notion or proportion, identify when two values are proportional or not and report if they are directly or inversely proportional.</p> <p>Formulate and solve problems involving proportion.</p> <p>Read and write the time (hours, minutes, and seconds) using digital and analogue clocks.</p> <p>Estimate and calculate the duration of time of certain events to the nearest second.</p> <p>Use ordered pairs to represent everyday information in daily life( e.g. the performance of a student in maths and in language)</p>	<p>17</p>

<p>(connections between fractions, decimals and percentages, use of a pie chart)</p> <ul style="list-style-type: none"> <li>• Probability experiments, notion of probability</li> <li>• Data management, notion of bivariate data in statistics (graphical representation), range, largest and smallest value</li> </ul>	<p>Draw in a coordinate axes system ordered pairs or data given in a table.  Solve problems use the notion of the total, the population, the population number.  Organise data in columns and use the notion of order pairs.  Describe and compare totals of data, use the mean, the median, the mode and the maximum and minimum values.  Record the results of an experiment in a systematic way (multiple repetitions) with or without the use of ICT.  Predict and calculate the probability of an event using the concept of ratio.  Record and find the population of the date based on the principle of numbering.</p>	
<p><b>UNIT 7</b></p> <ul style="list-style-type: none"> <li>• Addition and subtraction of whole numbers (negative)</li> <li>• Numbers up to a billion</li> <li>• Divisibility criteria for 4</li> <li>• Interpretation of algebraic expressions</li> <li>• Introduction to solving an equation</li> <li>• Introduction the concept of a function</li> <li>• Concept of a variable – Solving problems involving variables</li> <li>• Number patterns, introduction to sequence, triangular and square numbers</li> <li>• Problems</li> </ul>	<p>Recite, read, write and recognize numbers up to 1000000.  Compare and order natural numbers up to 1000000.  Synthesize and analyze numbers up to 1000000.  Estimate and calculate the sum, difference, product and quotient of numbers up to 100000 and verify their answer.  Round numbers to the nearest ten, hundred, thousand and a million. Round decimal numbers to the nearest tenth and hundredth.  State, explain and apply the divisibility criteria for 2,3,4,5,8,9,10 and 25.  Estimate and calculate the result of calculations with positive rational numbers.  Report and apply strategies for mental calculations involving whole numbers, fractions, decimal numbers and percentages.  Formulate and solve problems involving rational numbers and percentages and check the validity of their answer.  Describe, fill in, extend, construct, explain the rule, and find inductively the general term of numerical and geometric patterns.  Realise the concept of a function as a “one-to-one mapping” through tables, diagrams and charts.  Simplify mathematical expressions and determine their value for specific variable values.  Solve and manipulate equations.  Write mathematical expressions or equations involving variables to represent information and solve problems.  Solve and construct routine problems involving multiple steps.</p>	<p>13</p>

	<p>Record and calculate changes in temperature during certain time periods.</p> <p>Read and construct bar charts, pictograms, pie charts and line graph with or without the use of ICT.</p> <p>Describe and compare totals of data, use the mean, the median, the mode and the maximum and minimum values.</p>	
<p><b>UNIT 8</b></p> <ul style="list-style-type: none"> <li>• Addition and subtraction of mixed numbers</li> <li>• Introduction to multiplication of fractions( whole number multiplied by a fraction and fraction multiplied by a fraction)</li> <li>• Fraction as a quotient</li> <li>• Introduction to division of fractions(whole number divided by a fraction and fraction divided by a whole number)</li> <li>• Multiplication and division of decimal numbers with multiples of 10</li> <li>• Introduction to multiplication of decimal numbers(whole number multiplied by a decimal)</li> <li>• Introduction to division of decimal numbers</li> </ul>	<p>Perform calculations of the product of a whole number and a decimal number (eg <math>23 \times 0.25</math>) and division where the divisor is a whole number (eg <math>4/5 : 2</math>) and confirm their answer</p> <p>Estimate and calculate the result of mathematical calculations with positive rational numbers.</p> <p>Report and apply strategies for mental calculations involving whole numbers, fractions, decimal numbers and percentages.</p> <p>Formulate and solve problems with rational numbers and percentages and check the validity of their answer</p> <p>Discover the formulae for the perimeter and area of a parallelogram and triangle using computer software.</p> <p>Name, describe and order 3 dimensional shapes (cube, cuboid, pyramid, sphere, cylinder, cone) using the correct terminology (edge, vertex, face) and relate these to objects in real life.</p> <p>Analyse, order and construct 2 dimensional and 3 dimensional shapes based on their properties using various means and software.</p> <p>Recognise, name and describe the basic properties of a parallelogram.</p> <p>Construct the height, the median and the bisector of a triangle.</p> <p>Recognise and construct nets of cubes, cuboids, prisms and pyramids, using various means and software.</p> <p>Predict and justify the results of splitting, combining and transforming 2 dimensional and 3 dimensional shapes.</p>	<p>26</p>

(decimal divided by a whole number) <ul style="list-style-type: none"><li>• Area of a triangle and parallelogram</li><li>• Solids – Euler’s Law</li><li>• Nets and visualisation</li></ul>		
<b>TOTAL</b>		145