



Chapel Hill State School

Maths Curriculum and Assessment Yearly Overview 2024

YEAR 6

Curriculum Intent

Year Level Description

The proficiency strands *Understanding, Fluency, Problem Solving and Reasoning* are an integral part of mathematics content across the three content strands: Number and Algebra, Measurement and Geometry, and Statistics and Probability. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics.

At this year level:

Understanding includes making connections between representations of numbers, using fractions to represent probabilities, comparing and ordering fractions and decimals and representing them in various ways, describing transformations and identifying line and rotational symmetry

Fluency includes choosing appropriate units of measurement for calculation of perimeter and area, using estimation to check the reasonableness of answers to calculations and using instruments to measure angles

Problem Solving includes formulating and solving authentic problems using whole numbers and measurements and creating financial plans

Reasoning includes investigating strategies to perform calculations efficiently, continuing patterns involving fractions and decimals, interpreting results of chance experiments, posing appropriate questions for data investigations and interpreting data sets.

Achievement Standards

Spiral Progression and Alignment

Developing the same concepts from one grade level to the next in increasing complexity and application.

YEAR 5

By the end of Year 5, students solve simple problems involving the four operations using a range of strategies. They check the reasonableness of answers using estimation and rounding.

Students identify and describe factors and multiples. They identify and explain strategies for finding unknown quantities in number sentences involving the four operations. They explain plans for simple budgets. Students connect three-dimensional objects with their two-dimensional representations. They describe transformations of two-dimensional shapes and identify line and rotational symmetry. Students interpret different data sets.

Students order decimals and unit fractions and locate them on number lines. They add and subtract fractions with the same denominator. Students continue patterns by adding and subtracting fractions and decimals. They use appropriate units of measurement for length, area, volume, capacity and mass, and calculate perimeter and area of rectangles. They convert between 12- and 24-hour times. Students use a grid reference system to locate landmarks. They measure and construct different angles. Students list outcomes of chance experiments with equally likely outcomes and assign probabilities between 0 and 1. Students pose questions to gather data, and construct data displays appropriate for the data.

YEAR 6

By the end of Year 6, students recognise the properties of prime, composite, square and triangular numbers. They describe the use of integers in everyday contexts. They solve problems involving all four operations with whole numbers. Students connect fractions, decimals and percentages as different representations of the same number. They solve problems involving the addition and subtraction of related fractions. Students make connections between the powers of 10 and the multiplication and division of decimals.

They describe rules used in sequences involving whole numbers, fractions and decimals. Students connect decimal representations to the metric system and choose appropriate units of measurement to perform a calculation. They make connections between capacity and volume. They solve problems involving length and area. They interpret timetables. Students describe combinations of transformations. They solve problems using the properties of angles. Students compare observed and expected frequencies.

They interpret and compare a variety of data displays including those displays for two categorical variables. They interpret secondary data displayed in the media.

Students locate fractions and integers on a number line. They calculate a simple fraction of a quantity. They add, subtract and multiply decimals and divide decimals where the result is rational. Students calculate common percentage discounts on sale items. They write correct number sentences using brackets and order of operations. Students locate an ordered pair in any one of the four quadrants on the Cartesian plane. They construct simple prisms and pyramids. Students describe probabilities using simple fractions, decimals and percentages.

YEAR 7

By the end of Year 7, students solve problems involving the comparison, addition and subtraction of integers. They make the connections between whole numbers and index notation and the relationship between perfect squares and square roots. They solve problems involving percentages and all four operations with fractions and decimals. They compare the cost of items to make financial decisions. Students represent numbers using variables. They connect the laws and properties for numbers to algebra. They interpret simple linear representations and model authentic information. Students describe different views of three-dimensional objects. They represent transformations in the Cartesian plane. They solve simple numerical problems involving angles formed by a transversal crossing two lines. Students identify issues involving the collection of continuous data. They describe the relationship between the median and mean in data displays.

Students use fractions, decimals and percentages, and their equivalences. They express one quantity as a fraction or percentage of another. Students solve simple linear equations and evaluate algebraic expressions after numerical substitution. They assign ordered pairs to given points on the Cartesian plane. Students use formulas for the area and perimeter of rectangles and calculate volumes of rectangular prisms. Students classify triangles and quadrilaterals. They name the types of angles formed by a transversal crossing parallel line. Students determine the sample space for simple experiments with equally likely outcomes and assign probabilities to those outcomes. They calculate mean, mode, median and range for data sets. They construct stem-and-leaf plots and dot-plots.

Year 6		Maths Curriculum and Assessment Overview		Chapel Hill State School			
Term 1		Term 2		Term 3		Term 4	
Unit 1		Unit 2		Unit 3		Unit 4	
<p>Number and Algebra</p> <p><i>Number and place value</i></p> <ul style="list-style-type: none"> Identify and describe properties of prime and composite numbers Select & apply mental & written strategies to problems involving all four operations <p><i>Fractions and Decimals</i></p> <ul style="list-style-type: none"> Order and compare fractions with related denominators Add and subtract fractions with related denominators Calculate the fraction of a given quantity Solve problems involving the addition and subtraction of fractions <p>Measurement and Geometry</p> <p><i>Using Units of Measurement</i></p> <ul style="list-style-type: none"> Solve problems involving the comparison of lengths and areas Interpret and use timetables <p>Statistics and Probability</p> <p><i>Chance</i></p> <ul style="list-style-type: none"> Represent the probability of outcomes as a fraction or decimal Conduct chance experiments <p><i>Data Representation and Interpretation</i></p> <ul style="list-style-type: none"> Revise different types of data displays Interpret data displays Investigate the similarities and differences between different data displays Identify the purpose and use of different displays Identify the difference between categorical and numerical data 		<p>Number and Algebra</p> <p><i>Number and place value</i></p> <ul style="list-style-type: none"> Select and apply mental and written strategies and Digital Technologies to solve problems involving multiplication and division with whole numbers Identify, describe and continue square and triangular numbers <p><i>Fractions and Decimals</i></p> <ul style="list-style-type: none"> Apply mental and written strategies to add and subtract decimals Solve problems involving decimals Make generalisations about multiplying whole numbers and decimals by 10, 100 and 1 000 Apply mental & written strategies to multiply decimals by 1 digit whole numbers Locate, order and compare fractions with related denominators and locate them on a number line <p><i>Patterns and Algebra</i></p> <ul style="list-style-type: none"> Continue and create sequences involving whole numbers and decimals Describe the rule used to create sequences Explore the use of order of operations to perform calculations <p>Measurement and Geometry</p> <p><i>Using Units of Measurement</i></p> <ul style="list-style-type: none"> Make connections between volume and capacity <i>Shape</i> Problem solve and reason to create nets and construct models of simple prisms and pyramids <p><i>Geometric Reasoning</i></p> <ul style="list-style-type: none"> Make generalisations about angles on a straight line, angles at a point and vertically opposite angles Use generalisations to find unknown angles 		<p>Number and Algebra</p> <p><i>Number and place value</i></p> <ul style="list-style-type: none"> Identify & describe properties of prime, composite, square & triangular numbers Multiply and divide using written methods including a standard algorithm Solve problems involving all four operations with whole numbers Compare and order positive and negative integers <p><i>Fractions and Decimals</i></p> <ul style="list-style-type: none"> Add and subtract fractions with related denominators Calculate a fraction of a quantity Multiply and divide decimals by powers of ten Add and subtract decimals and multiply decimals by whole numbers Divide numbers that result in tenths and hundredths <ul style="list-style-type: none"> Solve problems involving fractions and decimals <p><i>Fractions and Decimals</i></p> <ul style="list-style-type: none"> Add, subtract and multiply decimals Divide decimals by whole numbers Calculate a fraction of a quantity and percentage discount Compare and evaluate shopping options <p><i>Patterns and Algebra</i></p> <ul style="list-style-type: none"> Create and complete sequences involving fractions and decimals Describe the rule used to create the sequence and apply the order of operations to aid calculations when solving problems <p>Measurement and Geometry</p> <p><i>Location and Transformation</i></p> <ul style="list-style-type: none"> Identify the four quadrants on a Cartesian plane Plot and locate ordered pairs in all four quadrants <ul style="list-style-type: none"> <p><i>Measurement</i></p> <ul style="list-style-type: none"> Connect decimals to the metric system Convert between units of measure Compare length and solve problems involving length and area Connect volume and capacity <ul style="list-style-type: none"> <p><i>Location and Transformation</i></p> <ul style="list-style-type: none"> Apply one-step transformations Describe and apply translations, reflections and rotations to create symmetrical shapes 		<p>Number and Algebra</p> <p><i>Number and place value</i></p> <ul style="list-style-type: none"> Solve problems using the order of operations Solve multiplication and division problems using a written algorithm <p><i>Patterns and Algebra</i></p> <ul style="list-style-type: none"> Represent number patterns in a table and graphically Use rules to continue patterns Write a rule to describe a pattern Apply a rule to find the value of unknown terms <p><i>Money and Financial Mathematics</i></p> <ul style="list-style-type: none"> Connect fractions and percentage Calculate percentages and discounts Calculate discounts of 10%, 25% and 50% on sale items Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items <p>Measurement and Geometry</p> <p><i>Using Units of</i></p> <p><i>Geometric Reasoning</i></p> <ul style="list-style-type: none"> Measure and describe angles Apply generalisations about angles on a straight line, angles at a point and vertically opposite angles and apply in real-life contexts <p>Statistics and Probability</p> <p><i>Chance</i></p> <ul style="list-style-type: none"> Conduct chance experiments Record data in a frequency table and calculate relative frequency Write probability as a fraction, decimal or percent Compare observed and expected frequencies <p><i>Data Representation and Interpretation</i></p> <ul style="list-style-type: none"> Compare primary and secondary data, source secondary data, explore data displays in the media, problem solve and reason by interpreting secondary data 	

Assessment

<p>U1 Interpreting and Comparing Data Displays <i>Short answer questions</i> Students interpret and compare data displays</p> <p>U3 Interpreting and Using Timetables <i>Short answer questions</i> Students interpret and use timetables and cost information to determine a travel schedule</p> <p>* Includes Diagnostic Test</p> <p>U3 Identify Number Properties <i>Short answer questions</i> Students recognise the properties of prime, composite, square and triangular numbers</p>	<p>U2 Applying the Order of Operations <i>Short answer questions</i> Students write and apply the correct use of brackets and order of operations in number sentences</p> <p>* Includes Diagnostic Test</p> <p>U2 Investigating Angles <i>Short answer questions</i> Students find unknown angles using the relationships between angles on a straight line, vertically opposite angles and angles at a point</p> <p>Geometric Reasoning -Design and build nets and models of prisms and pyramids</p>	<p>U3 Calculating Fractions and Decimals (Part A) Measurement with Decimals (Part B) <i>Short answer questions</i> Students locate fractions on a number line, solve problems involving the addition and subtraction of related fractions, calculate a simple fraction of a quantity and describe rules for sequences, involving fractions and decimals. They perform calculations on decimals including multiplying and dividing by powers of 10 and make connections between capacity and volume. * Includes Diagnostic Test</p> <p>U3 Locating Integers <i>Short answer questions</i> Students describe the use of integers in everyday contexts; locate integers on a number line. They locate and ordered pair in any one of the four quadrants on the Cartesian plane</p> <p>U3 Location and Transformation -Describe and apply transformations</p>	<p>U4 Describing Probabilities and Comparing Frequencies <i>Short answer questions</i> Students compare observed and expected frequencies and write probabilities as fractions, decimals and percentages</p> <p>U3 Calculating Percentage Discounts <i>Short answer questions</i> Students solve problems involving division and multiplication. They calculate common percentage discounts on sale items and connect fractions, decimals and percentages</p> <p>* Includes Diagnostic Test</p>
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