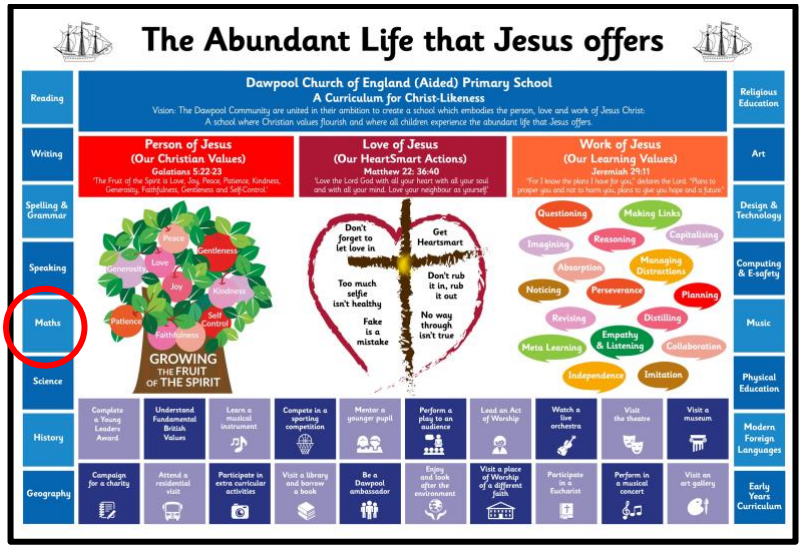
Dawpool C.E. (Aided) Primary School

DAWPOOL

A Dawpool Mathematician

Maths



Vision Statement

'The Dawpool community are united in their ambition to create a school which embodies the **person, love and work** of **Jesus Christ**: a school which enables **Christian values to flourish** and where all children may experience the **abundant life that Jesus offers**.'

'The Fruit of the Spirit is Love, Joy, Peace, Patience, Kindness, Generosity, Faithfulness, Gentleness and Self-Control' (Galatians 5: 22-23).

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How does Mathematics contribute to the 'Abundant Life'?

Mathematics equips pupils with a uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem-solving skills, and the ability to think in abstract ways. Mathematics is important in everyday life, many forms of employment, science and technology, medicine, the economy, the environment and development, and in public decision-making.

Different cultures have contributed to the development and application of mathematics. Today, the subject transcends cultural boundaries and its importance is universally recognised. Mathematics is a creative discipline. It can stimulate moments of pleasure and wonder when a pupil solves a problem for the first time, discovers a better solution to that problem, or suddenly sees hidden connections.

Dawpool's Vision for Mathematics

On completion of the mathematics curriculum at Dawpool, pupils will have developed:

- *An understanding of the important concepts and an ability to make connections within mathematics.*
- *A broad range of skills in using and applying mathematics.*
- *Fluent knowledge and recall of number facts and the number system.*
- *The ability to show initiative in solving problems in a wide range of contexts, including the new or unusual.*
- *The ability to think independently and to persevere when faced with challenges, showing a confidence of success.*
- *The ability to embrace the value of learning from mistakes and false starts.*
- *The ability to reason, generalise and make sense of solutions.*
- *Fluency in performing written and mental calculations and mathematical techniques.*
- *A wide range of mathematical vocabulary.*
- *A commitment to and passion for the subject.*

National Curriculum for Mathematics

The National Curriculum for Mathematics at Key Stages 1 and 2 can be downloaded from the 'Curriculum' tab of the Dawpool school website.

A Foundation Stage Mathematician

Foundation Stage Mathematics	
Class	**Development Matters Statements** **Mathematical Development; Number and Numerical Patterns**
Foundation 1	• Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). • Recite numbers past 5. • Say one number for each item in order: 1,2,3,4,5. • Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). • Show 'finger numbers' up to 5. • Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. • Experiment with their own symbols and marks as well as numerals. • Solve real world mathematical problems with numbers up to 5. • Compare quantities using language: 'more than', 'fewer than'. • Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. • Understand position through words alone – for example, "The bag is under the table," – with no pointing. • Describe a familiar route. • Discuss routes and locations, using words like 'in front of' and 'behind'. • Make comparisons between objects relating to size, length, weight and capacity. • Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. • Combine shapes to make new ones – an arch, a bigger triangle etc. • Talk about and identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc. • Extend and create ABAB patterns – stick, leaf, stick, leaf. • Notice and correct an error in a repeating pattern. • Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then…'
Foundation 2	• Count objects, actions and sounds. • Subitise. • Link the number symbol (numeral) with its cardinal number value.

	• Count beyond ten. • Compare numbers. • Understand the 'one more than/one less than' relationship between consecutive numbers. • Explore the composition of numbers to 10. • Automatically recall number bonds for numbers 0-5 and some to 10. • Select, rotate and manipulate shapes to develop spatial reasoning skills. • Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. • Continue, copy and create repeating patterns. • Compare length, weight and capacity.
Early Learning Goals	**<u>Number</u>** • Have a deep understanding of number to 10, including the composition of each number. • Subitise (recognise quantities without counting) up to 5. • Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. **<u>Numerical Patterns</u>** • Verbally count beyond 20, recognising the pattern of the counting system. • Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Term	Topic	Activities which may be included. Please note the nature of the EYFS means planning changes daily.
Autumn Term	**Getting to Know You**	• The classroom provision is set up to include a dedicated Maths area. Shelves are open access with resources such as; maths counters and natural resources for counting, tens frames,

<table>
<tr><td>Spring Term</td><td>Superheroes</td><td rowspan="2">numicon, number cards, 2D shapes, 3D shapes, scales, rulers and number lines.
At the start of the year staff will talk with children about each resource and its purpose. Staff will observes and scaffold children’s learning during continuous provision, to ensure they are halting any misconceptions.
Staff will set the Maths table up daily with a specific focus task which all children are encouraged to complete.
In Foundation 1, children start each day with a Maths focus, discussing how many children are in school, counting them and writing that number down. Songs and rhymes are sung involving number e.g. 5 Little Ducks. During these songs objects and number cards are used to immerse children in Mathematical language.
In Foundation 2 children have a daily Maths Mastery lesson. Each week is dedicated to a specific number and all lessons and discussions are based upon this e.g. “The Oneness of One”. Children will be introduced to the number, match the number of objects to it. Discuss the concept of 1 more or 1 less, look at 1 o’clock, look at 1 sided shapes, look at 1p and £1, look at the number written as a word; discuss the first day of the week, the first month and who is 1st in the line.
White Rose planning, NCETM planning and the CBeebies programme ‘Numberblocks” are used to plan the week.
The classroom display will be based upon the number of the week and this will change weekly.
During the week the children will complete two adult led activities, one based upon number and one based upon other areas of Maths. Children will also be encouraged to complete one independent challenge.</td></tr>
<tr><td>Summer Term</td><td>Disney Around the World</td></tr>
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A Year 1 Mathematician at Dawpool

Year 1 Number and place value

- I can count to and across 100, forward and backwards ,beginning with 0 or 1 from any number.
- I can count in multiples of 2, 5 and 10.
- I can count, read and write numbers to 100 in numerals.
- I can say what is one more or one less than any number.
- I can read numbers from 1 to 20 in numerals and words.
- I can identify and represent numbers using objects and pictorial representations including the number line and use the language of: equal to, more than, less than (fewer), most least

Year 1 Calculations

- I can represent and use number bonds and related subtraction facts to 20.
- I can add and subtract 1-digit and 2-digit numbers to 20, including zero.
- I can read, write and interpret mathematical statements involving addition, subtraction and equals signs.
- I can solve one-step problems that involve addition and subtraction, using objects and pictorial representations.
- I can solve missing number problems.
- I can solve one-step problems involving multiplication and division, by using concrete objects, pictorial representations and arrays.

Year 1 Fractions

- I can recognise, find and name a half of an object, shape or quantity.
- I can recognise, find and name a quarter of an object, shape or quantity.

Year 1 Measurement

- I can compare, describe and solve practical problems for lengths and heights; mass/weight; capacity and volume; and time.
- I can measure and begin to record lengths and heights; mass/weight; capacity and volume; and time.
- I recognise and know the value of different denominations of coins and notes.
- I can tell the time to the hour.
- I can tell the time to half past the hour.
- I can draw hands on a clock face to show these times.
- I can sequence events in chronological order using language.
- I recognise and use language relating to dates, including days, weeks, months and years

Year 1 Geometry – properties of shapes

- I recognise and can name common 2D shapes (rectangles, including squares, circles and triangles.)
- I recognise and can name common 3D shapes (cuboids, including cubes, pyramids and spheres.)

Year 1 Geometry – position and direction

- I can describe position, directions and movement, including half, quarter and three-quarter turns.

Year 1 Greater Depth in Mathematics

- I can count reliably well beyond 100.
- I count on and back in 3s from any given number to beyond 100.
- I can say the number that is 10 more or 10 less than a number to 100.
- I know the signs (+); (-); (=); (<); (>).

- I can apply my knowledge of number to solve a one-step problem involving an addition, a subtraction and simple multiplication and division.
- I can add and subtract 1-digit and 2-digit numbers to 50, including zero.
- I can recognise all coins and notes and know their value.
- I can use coins to pay for items bought up to £1.
- I can use my knowledge of time to know when key periods of the day happen, for example, lunchtime, home time, etc.
- I can recognise different 2D and 3D shapes in the environment.

A Year 2 Mathematician at Dawpool

Year 2 Number and place value

- I can count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward.
- I can read and write numbers to at least 100 in numerals and in words.
- I can compare and order numbers from 0 up to 100; using < > = signs.
- I recognise the place value of each digit in a 2-digit number.
- I can identify, represent and estimate numbers using different representations, including the number line.
- I can use place value and number facts to solve problems.

Year 2 Calculations

- I can recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
- I can add and subtract mentally, including:
- A 2-digit number and ones
- A 2-digit number and tens
- Two 2-digit numbers
- Adding three 1-digit numbers
- I can add and subtract numbers using concrete objects and pictorial representations, including:
- A 2-digit number and ones
- A 2-digit number and tens
- Two 2-digit numbers
- Adding three 1-digit numbers
- I recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.

- I can solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures.
- I can solve problems with addition and subtraction applying my increasing knowledge of mental and written methods.
- I can recall and use multiplication and division facts for the 2, 5 and 10x tables, including recognising odd and even numbers.
- I can calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs.
- I can solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context.
- I can show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.
- I can show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.

Year 2 Fractions

- I recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity.
- I can write simple fractions.
- I recognise the equivalence of 2/4 and 1/2.

Year 2 Measurement

- I can compare and order lengths, mass, volume/capacity and record the results using > < and =.
- I can choose and use standard units to estimate and measure length/height in any direction in m and cm using rulers.
- I can choose and use standard units to estimate and measure mass in kg and g using scales.
- I can choose and use standard units to estimate and measure temperature in ºC using thermometers.
- I can choose and use standard units to estimate and measure capacity in l and ml using measuring vessels.
- I recognise and use symbols for £ and p and combine amounts to make a particular value.
- I can find different combinations of coins that equal the same amount of money.
- I can tell and write the time to five minutes, including quarter to/past and draw the hands on a clock face to show these times.

- I can compare and sequence intervals of time.
- I know the number of minutes in an hour.
- I know the number of hours in a day.
- I can solve simple problems in a practical context involving addition and subtraction of money of the same units, including giving change.

Year 2 Geometry – properties of shapes

- I can compare and sort common 2D shapes and everyday objects.
- I can compare and sort common 3D shapes and everyday objects.
- I can identify and describe the properties of 2D shapes, including the number of sides and line of symmetry in a vertical line.
- I can identify and describe the properties of 3D shapes including the number of edges, vertices and faces.
- I can identify 2D shapes on the surface of 3D shapes.
- Geometry – position and direction
- I can order and arrange combinations of mathematical objects in patterns and sequences.
- I can use mathematical vocabulary to describe position, direction and movement.

Year 2 Statistics

- I can interpret and construct simple pictograms.
- I can interpret and construct tally charts.
- I can interpret and construct block diagrams.
- I can interpret and construct simple tables.
- I can ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.
- I can ask and answer questions about totalling and comparing categorical data.

Year 2 Greater Depth in Mathematics

- I can count reliably up to 1000 in 2s, 5s and 10s.
- I can count on and back in multiples of 4, 8, 25, 50 and 100 from any given number to beyond 1000.
- I can add and subtract fractions with a common denominator.
- I can apply knowledge of number up to 100 to solve a one-step problem involving a addition, subtraction and simple multiplication and division.

- I can apply knowledge of addition and subtraction to pay for items, up to £10, within a problem solving context.
- I can add and subtract two 2-digit and numbers to 100.
- I can use an appropriate strategy to add and subtract numbers that move between and through 100, for example, 97 + 7; 103 - 8.
- I know about right angles and where they can be seen in the environment.
- I can tell the time to 5 minute intervals with both analogue and digital clocks and relate one to the other.
- I can measure, compare, add and subtract using common metric measures.

A Year 3 Mathematician at Dawpool

Year 3 Number, place value, approximation and estimation/rounding

- I can count from 0 in multiples of 4, 8, 50 and 100.
- I can compare and order numbers up to 1,000.
- I can read and write numbers to 1,000 in numerals and words.
- I can find 10 or 100 more or less than a given number.
- I can recognise the place value of each digit in a 3-digit number.
- I can identify, represent and estimate numbers using different representations.
- I can solve number problems and practical problems using above.

Year 3 Calculations

- I can add and subtract mentally, including:
- A 3-digit number and ones
- A 3-digit number and tens
- A 3-digit number and hundreds
- I can add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.
- I can estimate the answer to a calculation and use inverse operation to check answers.
- I can solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
- I can recall and use multiplication and division facts for the 3, 4 and 8x tables.
- I can write and calculate mathematical statements for multiplication and division using the multiplication tables, including for 2-digit numbers, using mental and progressing to formal written methods.
- I can solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.

Year 3 Fractions, decimals and percentages

- I can count up and down in tenths.
- I recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10.
- I recognise and can find and write factions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.
- I can compare and order unit fractions and factions with the same denominators.
- I can add and subtract factions with the same denominator within one whole.
- I can solve problems involving the above.

Year 3 Measurement

- I can compare lengths using m, cm &mm.
- I can compare mass using kg & g.
- I can compare volume/capacity using l & ml.
- I can measure lengths using m, cm & mm.
- I can measure mass using kg & g.
- I can measure volume/capacity using l & ml.
- I can add and subtract lengths using m, cm & mm.
- I can add and subtract mass using kg & g.
- I can add and subtract volume/capacity using l & ml.
- I can tell and write the time from an analogue clock (12 hour clock).
- I can tell and write the time from an analogue clock (24 hour clock).
- I can tell and write the time from an analogue clock (Roman numerals).
- I can estimate and read time with increasing accuracy to the nearest minute.
- I can record and compare time in terms of seconds, minutes and hours.
- I can use the following vocabulary: o'clock, am, pm, morning, afternoon, noon & midnight.
- I know the number of seconds in a minute.
- I know the number of days in each month, year and leap year.
- I can compare the duration of events.
- I can measure the perimeter of simple 2D shapes.
- I can add and subtract amounts of money to give change, using both £ and p in a practical context.

Year 3 Geometry – properties of shapes

- I can identify horizontal, vertical lines and pairs of perpendicular and parallel lines.
- I can draw 2D shapes.
- I can make 3D shapes using modelling materials.
- I recognise 3D shapes in different orientations and describe them.
- I recognise that angles are a property of shape or a description of a turn.
- I can identify right angles.
- I recognise that two right angles make a half-turn & three make a three quarter turn.
- I can identify whether angles are greater than or less than a right angle.
- Statistics
- I can interpret and present data using bar charts, pictograms and tables.
- I can solve one-step and two-step questions using information presented in scaled bar charts, pictograms and tables.

Year 3 Greater Depth in Mathematics

- I can recognise the value of each digit in a 4-digit number and the value of a tenth.
- I know all multiplication facts up to 10 x 10 and can instantaneously answer questions such as, how many 7s in 42?
- I can add and subtract numbers with any number of digits using formal written methods.
- I am beginning to have an understanding about negative numbers recognising they are smaller than zero.
- I can multiply and divide any 2-digit number by a single digit number and have an understanding of 'remainder'.
- I can find fractional values (from ½ to 1/10)of amounts up to 1000.
- I can use my knowledge of number to solve problems related to money, time and measures.
- I know that the total internal angles of a triangle measure 180° and can measure each angle
- I can ran use my knowledge of time to help me solve problems related to timetables.
- I can measure, compare, add and subtract when solving more complex problems using common metric measures set out in Kg,gms; Kl,litres; Km and metres, etc.

A Year 4 Mathematician at Dawpool

Year 4 Number, place value, approximation and estimation/rounding

- I can count in multiples of 6, 7, 9, 25 and 1,000.
- I can order and compare numbers beyond 1,000.
- I can find 1,000 more or less than a given number.
- I recognise the place value of each digit in a 4-digit number.
- I can read Roman numerals to 100 and know that over time the numeral system changed to include the concept of zero and place value.
- I can identify, represent and estimate numbers using different representations.
- I can round any number to the nearest 10, 100 or 1,000.
- I can count backwards through zero to include negative numbers.
- I can solve number and practical problems with the above (involving increasingly large numbers).

Year 4 Calculations

- I can add and subtract numbers with up to 4-digits using the formal written methods of columnar addition and subtraction.
- I can estimate and use inverse operations to check answers in a calculation.
- I can solve addition and subtraction 2-step problems in contexts, deciding which operations and methods to use and why.
- I an recall multiplication and division facts up to 12x12.
- I can use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.
- I recognise and use factor pairs and commutativity in mental calculations.
- I can multiply 2-digit numbers by a 1-digit number using formal written layout.
- I can solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1-digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Year 4 Fractions, decimals and percentages

- I an count up and down in hundredths.
- I recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.

- I recognise and show using diagrams, families of common equivalent fractions.
- I can add and subtract factions within the same denominator.
- I recognise and write decimal equivalents to 1/4, 1/2 and ¾.
- I recognise and write decimal equivalents of any number of tenths or hundredths.
- I can round decimals with one decimal place to the nearest whole number.
- I can compare numbers with the same number of decimal places up to 2 decimal places.
- I can find the effect of dividing a 1-digit or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.
- I can solve problems involving increasingly harder factions and fractions to divide quantities, including non-unit fractions where the answer is a whole number.
- I can solve simple measure and money problems involving fractions and decimals to 2 decimal places.

Year 4 Measurement

- I can compare different measures, including money in £ and p.
- I can estimate different measures, including money in £ and p.
- I can calculate different measures. Including money in £ and p.
- I can read, write and convert time between analogue and digital 12 hour clocks.
- I can read, write and convert time between analogue and digital 24 hour clocks.
- I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
- I can convert between different units of measurements
- I can measure and calculate the perimeter of a rectilinear figure in cm and m.
- I can find the area of rectilinear shapes by counting squares.
- I can calculate different measures

Year 4 Geometry – properties of shapes

- I can compare and classify geometric shapes, including quadrilateral and triangles based on their properties and sizes.
- I can identify lines of symmetry in 2D shapes presented in different orientations.

- I can complete a simple symmetric figure with respect to a specific line of symmetry,
- I can identify acute and obtuse angles and compare and order angles up to two right angles by size.
- Geometry – position and direction
- I can describe movements between positions as translations of a given unit to the left/right and up/down.
- I can describe positions on a 2D grid as coordinates in the first quadrant.
- I can plot specified points and draw sides to complete a given polygon.

Year 4 Statistics

- I can interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
- I can solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

Greater Depth in Mathematics

- I can use tenths, hundredths and thousandths when comparing values and solving addition and subtraction problems.
- I can round any number to 100,000 to the nearest 10, 100, 1,000 or 10,000.
- I can relate tenths and hundredths to fractional values.
- I can rapidly recall answer when multiplying and dividing a whole or decimal number by 10.
- I can solve multi-step problems involving more than one of the operations.
- I can work out simple percentage values of whole numbers, for example, as met in on-going learning in science, history and geography .
- I can compare and add fractions whose denominators are all multiples of the same number.
- I can use a 24-hour timetable to find out times for journeys between various places.
- I can use my knowledge of perimeter to work out the perimeter of large areas around school, using metres and centimetres.
- I can collect my own data on a given project and present information in graphical formats of my choosing.

A Year 5 Mathematician at Dawpool

Year 5 Number, place value, approximation and estimation/rounding

- I can count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.
- I can read, write, order and compare numbers to at least 1,000,000.
- I can determine the value of each digit in numbers up to 1,000,000.
- I can read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.
- I can round any number up to 1,000,000 to the nearest 10, 100, 1000, 10000 and 100000.
- I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.
- I can solve number problems and practical problems with the above.

Year 5 Calculations

- I can add and subtract numbers mentally with increasingly large numbers.
- I can add and subtract whole numbers with more than 4 digits, including using formal written methods.
- I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
- I can identify multiples and factors, including finding all factor pairs or a number and common factor pairs of two numbers.
- I use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- I can establish whether a number up to 100 is prime and recall prime numbers up to 19.
- I recognise and use square numbers and cube numbers, and the notation for squared and cubed.
- I can multiply and divide numbers mentally drawing on known facts.
- I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- I can multiply numbers up to 4 digits by a 1-digit or 2-digit number using a formal written method, including long multiplication for 2-digit numbers.
- I can divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context.
- I can solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes.

- I can solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
- I can solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates.

Year 5 Fractions, decimals and percentages

- I can recognise mixed numbers and improper fractions and convert from one form to the other.
- I can write mathematical statements >1 as a mixed number.
- I can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
- I can compare and order fractions whose denominators are multiples of the same number.
- I can add and subtract fractions with the same denominator and denominators that are multiples of the same number.
- I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
- I can read and write decimal numbers as fractions.
- I recognise and can use thousandths and relate them to tenths, hundredths and decimal equivalents.
- I can round decimals with 2 decimal places to the nearest whole number and 1 decimal place.
- I can read, write, order and compare numbers with up to 3 decimal places.
- I can solve problems involving numbers up to 3 decimal places.
- I recognise the percent symbol and understand that percent relates to 'number parts per hundred'.
- I can write percentages as a fraction with denominator hundred, and as a decimal.
- I can solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator or a multiple of 10 or 25.

Year 5 Measurement

- I can solve problems involving converting between units of time.
- I can convert between different units of metric measure.
- I understand and use approximate equivalences between metric units and common imperial units, such as inches, pounds and pints.
- I can measure and calculate the perimeter of composite rectilinear shapes in cm and m.

- I can calculate and compare the area of rectangles (incl. squares), and including using standard units (cm2 and cm3) to estimate the area of irregular shapes.
- I can estimate volume and capacity.
- I can use all four operations to solve problems involving money using decimal notation, including scaling.

Year 5 Geometry – properties of shapes

- I can use the properties of rectangles to deduce related facts and find missing lengths and angles.
- I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
- I can identify 3D shapes, including cubes and other cuboids, from 2D representations.
- I know angles are measured in degrees.
- I can estimate and compare acute, obtuse and reflex angles.
- I can identify angles at a point and one whole turn.
- I can identify angles at a point on a straight line and ½ a turn.
- I can identify other multiples of 90º.
- I can draw given angles and measure them in degrees.

Year 5 Geometry – position and direction

- I can identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

Year 5 Statistics

- I can complete, read and interpret information in tables, including timetables.
- I can solve comparison, sum and difference problems using information presented in a line graph.

Year 5 Greater Depth in Mathematics

- I have a concept of numbers well beyond 1,000,000 and their relative association to distances to planets; historical data and geographical aspects.
- I can divide whole numbers (up to 4 digits) by 2-digit numbers, using my preferred method.
- I can use rounding as a strategy for quickly assessing what approximate answers ought to be before calculating.
- I can link working across zero for positive and negative numbers, for example, to work out time intervals between BC and AD in history
- I can recognise the symbol for square root (√) and work out square roots for numbers up to 100.
- I can calculate number problems algebraically, for example, 2x – 3 = 5
- I can use my knowledge of measurement to create plans of areas around school, such as the classroom , field, outside play area, etc.
- I can relate the imperial measures still used regularly in our society to their metric equivalents, for example, miles to Km and lbs to Kg.
- I can use a range of timetables to work out journey times on a fictional journey around the world, for example, “How long would it take to reach the rainforests in the Amazon?”
- I can collect my own data on a personal project and present information in formats of my choosing using charts, graphs and tables.

A Year 6 Mathematician at Dawpool

Year 6 Number, place value, approximation and estimation/rounding

- I can read, write, order and compare numbers up to10,000,000.
- I can determine the value of each digit in numbers up to 10,000,000.
- I can round any whole number to a required degree of accuracy.
- I can use negative numbers in context, and calculate intervals across zero.
- I can solve number problems and practical problems with the above.

Year 6 Calculations

- I can use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
- I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
- I can identify common factors, common multiples and prime numbers.
- I can perform mental calculations, including with mixed operations and large numbers.

- I can multiply multi-digit numbers up to 4 digits by a 2 digit whole number using the formal written method of long multiplication.
- I can divide numbers up to 4 digits by a 2 digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
- I can divide numbers up to 4 digits by a 2 digit number using the formal written method of short division where appropriate.
- I can solve problems involving addition, subtraction, multiplication and division.
- I can use my knowledge of the order of operations to carry out calculations involving the four operations.

Year 6 Fractions, decimals and percentages

- I can use common factors to simplify fractions and use common multiples to express fractions in the same denomination.
- I can compare and order fractions, including fractions >1.
- I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
- I can multiply simple pairs of proper fractions, writing the answer in the simplest form.
- I can divide proper fractions by whole numbers.
- I can associate a fraction with division to calculate decimal fractions equivalents for a simple fraction.
- I can identify the value of each digit to 3 decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places.
- I can multiply 1-digit numbers with up to 2 decimal places by whole numbers.
- I can use written division methods in cases where the answer has up to 2 decimal places.
- I can solve problems which require answers to be rounded to specified degrees of accuracy.
- I an recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Year 6 ratio and proportion

- I can solve problems involving the relative sizes of two quantities, where missing values can be found using integer multiplication and division facts.
- I can solve problems involving the calculation of percentages and the use of percentage comparisons.
- I can solve problems involving similar shapes where the scale factor is known or can be found.

- I can solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Year 6 Algebra

- I can express missing number problems algebraically.
- I can use simple formulae.
- I can generate and describe linear number sequences.
- I can find pairs of numbers that satisfy an equation with two unknowns.
- I can enumerate possibilities of combinations of two variables.

Year 6 Measurement

- I can use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation of up to 3 decimal places.
- I can convert between miles and kilometres.
- I recognise that shapes with the same areas can have different perimeters and vice versa.
- I can calculate the area of parallelograms and triangles.
- I recognise when it is possible to use the formulae for the area of shapes.
- I can calculate, estimate and compare volume of cubes and cuboids, using standard units.
- I recognise when it is possible to use the formulae for the volume of shapes.
- I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate.

Year 6 Geometry – properties of shapes

- I can compare and classify geometric shapes based on the properties and sizes.
- I can describe simple 3D shapes.
- I can draw 2D shapes given dimensions and angles.
- I recognise and build simple 3D shapes, including making nets.
- I can find unknown angles in any triangles, quadrilaterals and regular polygons.
- I recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
- I can illustrate and name parts of circles, including radius, diameter and circumference.

- I know the diameter is twice the radius.

Year 6 Geometry – position and direction

- I can draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes.
- I can describe positions on the full co-ordinate grid (all four quadrants).
- Statistics
- I can interpret and construct pie charts and line graphs and use these to solve problems
- I can calculate and interpret the mean as an average.

Year 6 Greater Depth in Mathematics

- I can compare, order and convert between fractions, decimals and percentages, for example, in contexts related to science, history or geography learning
- I can move beyond squared and cubed numbers to calculate problems such as X x 10n where n is positive.
- I can use =, ≠, <, >, ≤, ≥ correctly.
- I can multiply all integers, (using efficient written methods) including mixed numbers and negative numbers.
- I can recognise an arithmetic progression and find the nth term .
- I can use a formula for measuring the area of a shape, such as a rectangle and triangle to work out the area of an irregular shape in the school environment
- I can use the four operations with mass, length, time, money and other measures, including the use of decimal quantities.
- I can create a scaled model of an historical or geographical structure showing an acceptable degree of accuracy using known measurements.
- I can calculate the costs and time involved of a visit to a destination in another part of the world relating to on-going learning in history or geography.
- I can collect my own data on a personal project and present information in formats of my choosing, using charts, graphs and tables, and answer specific questions related to my research.

Archived (2021-22): Education Recovery in Mathematics

In response to the COVID-19 pandemic, we have identified 3 overarching improvement priorities for education recovery:

- *Reading across the curriculum*
- *Teachers' subject, pedagogical and pedagogical content knowledge*
- *Quality First Teaching*

A focus on these 3 priorities will ensure that all pupils can access the full curriculum which is central to the '**Abundant Life that Jesus offers.**'

In addition to these 3 priorities, we have taken a **subject-specific approach** when prioritising what to teach. Dawpool will sequence and prioritise the **Mathematics curriculum** in accordance with the Ready to Progress Criteria **(Year 1 to Year 6**), published by the Department for Education. This guidance:

- *Identifies the core concepts and procedures that pupils need in order to progress in their study of mathematics and shows how they can build their proficiency from year 1 to year 6*
- *Defines core content and concepts as ready-to-progress criteria, which provide a coherent, linked framework to support pupils' mastery of the primary mathematics curriculum.*