Maths Curriculum Progression Document

Intent

Maths at Cockwood embraces the integral understanding of number and the importance of children's ability to reason and problem solve in equal measure. In order to be successful in later life and future employment, pupils at Cockwood are encouraged to enjoy the challenge that real-life contextual maths has to offer; with the underpinning of quick recall of number facts essential to this

A Mastery approach to learning is utilised, combining the key 5 elements of a coherent curriculum, a range of appropriate representations of mathematical structures, mathematical thinking, fluency and variation of concept and procedure. Oracy is also at the heart of the maths curriculum at Cockwood. Children are encouraged to explain their thinking both orally and in its written form, with the use of mathematical vocabulary explicit in this. Each classroom is also primed with stem sentences to help the children confidently formulate their explanations or answer a question in Maths.
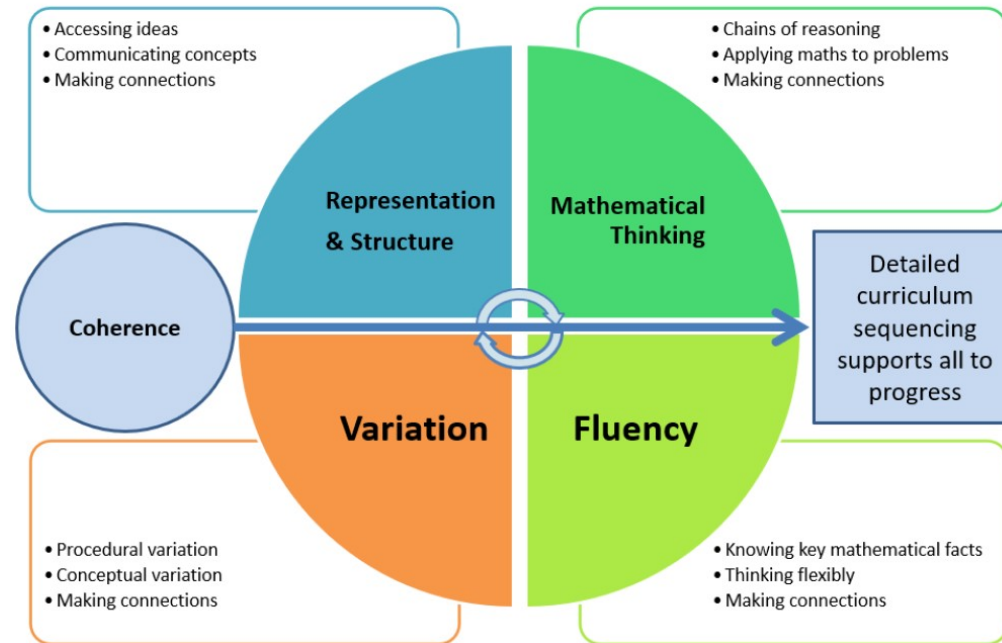
Accessing prior knowledge of subject specific content is key to both children and staff equally, in that opportunities to make clear what the children know and where they need to be empowers them to become highly motivated learners. Building and adding to existing knowledge is able to happen once prior knowledge has been accessed, and next steps carefully planned. This is done through careful and thorough assessment at both the start and end of a unit, and frequent formative assessment. In order to create confident learners with positive attitudes in Maths, Cockwood school prides itself on enrichment such as Times Table Rockstars day, NSPCC Number Day, as well as engaging in wider mathematical opportunities across the Trust and at Exeter University.

Implementation

The children at Cockwood receive a rich offer in Maths;

- Maths is taught daily at Cockwood School, as we have deemed this to be a priority for us.
- White Rose is our driver for all curriculum content and delivery. Teachers follow the Version 2 mixed age edition of the documents, and teachers use resources from relevant curriculum blocks to ensure coverage. Teachers make use of all White Rose resources including question formatting, pre-unit assessments, end of unit assessments and flash backs, to ensure continuity in how our learning is presented to our students. We adhere to the calculation policy provided by White Rose as this provides clear and explicit guidance for teachers to ensure consistency across the school. This includes using a CPA (concrete- pictorial- abstract) approach to new concepts, and providing children with a range of relevant resources to support learning. We follow a progression document for vocabulary to ensure that all of our vocabulary usage is tiered and the route of learning is clear across the school.
- Teachers use a Mastery approach to teaching Maths. Highly effective small group, responsive, trouble- shooting sessions after lessons to plug any gaps are used to ensure all children have a complete understanding of key concepts and all children progress. These sessions can be to increase children's confidence in lesson content, identify misconceptions or remind children of the correct methods when undertaking operations in number. This allows all children to access further lessons with confidence, and with any misconceptions addressed quickly. Assessment is frequent and formative, addressing need quickly and within a small time frame to enable children to overcome difficulties within a short amount of time.

Teaching for Mastery

- Accessing ideas
- Communicating concepts
- Making connections

Representation & Structure

- Chains of reasoning
- Applying maths to problems
- Making connections

Mathematical Thinking

Coherence

Detailed curriculum sequencing supports all to progress

Variation

Fluency

- Procedural variation
- Conceptual variation
- Making connections

- Knowing key mathematical facts
- Thinking flexibly
- Making connections

- At Cockwood, we split the classes to ensure children are receiving the best support possible. Year 6 are taught as a small cohort to ensure curriculum coverage and pace of teaching and learning is efficient and personalised, and Year 4 children are moved and taught in the same class to ensure consistency in their learning. This supports our Mastery approach in our offer to Year 4, who are normally split between 2 classes.
- At Cockwood, we have identified times tables as an essential part of our Mathematics curriculum. We have employed the use of the Number Sense programme across the school, starting with EYFS Number, then Number Sense in Year 1/2 and Times Table Fluency from Year 3 onwards. These sessions happen daily, and follow a simple format to ensure consistency. The Times Table Fluency programme starts in the middle of Year 3, and will equip children with the skills that they need to learn their times table facts with confidence and automatic recall. We have further endeavoured to create an enjoyment and love of times tables by dressing up and taking part in TT Rockstars Days. Cockwood were incredibly successful when competing against the other schools in the Trust competition, clearly flourishing when they were presented with the competitive and fun element. We also enjoy in-school competitions between children in the school. Successful children who win the most coins or make the biggest improvement are rewarded handsomely for their efforts.

- We believe that one size doesn't fit all at Cockwood. Whilst White Rose is our curriculum content driver, teachers are encouraged to use a range of relevant resources in order to provide a mathematical curriculum that encourages number practise and recall, problem solving, reasoning and oracy. Teachers carefully use, adapt or extract the questions and resources they believe will suit their cohorts whether that is White Rose, Power Maths or Maths Shed.
- We use STAR Maths every half term to ensure we have strong summative assessment data for all children and use this data to inform planning. We also use Target Tracker to identify gaps in children's understanding before undertaking a unit so that teachers can identify and personalise learning as much as possible. Before a unit, children complete a baseline assessment to ascertain their prior knowledge. This score is collected and kept on an excel document, and is then compared against an end of unit assessment to measure progress.
- Unit start pages are used within books to show the key vocabulary included with the coming unit, alongside widgets to demonstrate their meanings. The widgets are used across the school to ensure consistency, and allow for layered progression within our vocabulary usage and concepts.
- We have a stand-alone Maths intervention that takes place for those children needing extra support with key mathematical concepts. This is logged and progress in measured, with the list of children partaking in this being flexible throughout the year. For some children this is completed in a small group, where children are working on the same objectives and are of similar age, but for some this is completed as as 1-1 activity.
- We aim to involve parents in our Maths journey, hosting a Maths 'open day', where children can share their mathematical methods, key mathematical resources and vocabulary. In EYFS, we use Tapestry to share daily learning with families, including activities and learning around Number and Numerical Patterns. Parents are able to comment on these and be a part of their child's mathematical learning. We are also introducing 'Maths Ambassadors' who will act as a form of pupil voice to share student's feelings on teaching, delivery and to drive forward our Maths journey by working with children across the school.
- Children from Year 2 onwards are set a form of Maths homework every week. This is an activity to embed learning from the week.

Progression of Skills:

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number and Place Value	Number: Have a deep understanding of number to 10, including the composition of each number.	Count and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	Count in steps 2, 3 and 5 from 0, and in tens from any number, forward and backward	Count from 0 in multiples 4, 80, 50 and 100; find 10 or 100 more or less than a given number	Count in multiples of 6, 7, 9 or 25 and 1000 Count backwards through zero to include negative numbers	Count forwards or backwards in steps of powers of 10 for any	Read, write (order and compare) numbers up to 10 000 000 and determine the value of each digit

	Subitise (recognise quantities without counting) up to 5. Numerical Patterns 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.	Count numbers to 100 in numerals; count in multiples of twos, fives and tens Identify and represent numbers using objects and pictorial representations read and write numbers to 100 in numerals Read and write number from 1 to 20 in numerals and words identify , represent and estimate numbers using different representations including the number line Given a number, identify one more and one less	Read and write numbers to at least 100 in numerals and words Identify, represent and estimate numbers using different representations Read and write numbers up to 1000 in numerals and in words Recognise the place value of each digit in a two-digit number (tens, ones) Compare and order numbers from 0 up to 100; use <, > and = signs Solve number problems and practical problems involving these ideas	identify , represent and estimate numbers using different representations Compare and order numbers up to 1000 Round any number to the nearest 10, 100 or 1000 Solve number and practical problems that involve all of the above and with increasingly large positive numbers	identify , represent and estimate using different representations Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value Find 1000 more or less than a given number Recognise the place value of each in a four-digit number (thousands, hundreds, ten and ones) order and compare numbers beyond 1000 Interpret negative numbers in context Round any number up to 1 000 000 to the	given number up to 1 000 000 Count forwards and backwards with positive and negative whole numbers, including through zero read , write (order and compare) numbers to at least 1 000 000 and determine the value of each digit Read Roman numerals to 1000 (M) and recognise years written in Roman numerals (read, write) order and compare numbers to at least 1 000 000 and	

		Use place value and number facts to solve problems			nearest 10 100, 1000, 10 000 and 100 000 Solve number problems and practical problems that involve all of the above	determine the value of each digit Round any whole number to a required degree of accuracy Use negative numbers in context, and calculate intervals across zero Solve number and practical problems that involve all of the above	
Addition and Subtraction	Number: 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. Numerical Patterns: Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 Show that addition of two numbers can be done in any order (commutative) and subtraction of one from another cannot Recognise and use the inverse relationship	Estimate the answer to a calculation and use inverse operations to check answers Add and subtract numbers using an efficient strategy explaining their method verbally, in pictures or using apparatus mentally, including - A two-digit numbers - A two-digit number and tens	Estimate and use inverse operations to check answers to a calculation Add and subtract numbers mentally including: - A three digit numbers and ones - A three-digit number and tens - A three-digit number and hundreds Add and subtract numbers with up to three digits, using	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate Solve addition and subtraction two-step problems in different contexts deciding which operations and methods to use and why	Use rounding to check answers to calculations and determine, in the context of a problem, level of accuracy Add and subtract whole numbers with more than 4-digits including formal written methods (columnar addition and subtraction) Add and subtract numbers mentally with increasingly large numbers	Perform mental calculations, including with mixed operations and large numbers Use their knowledge of the order of operation to carry out calculations involving the four operations Solve addition and subtraction multi-step problems in different contexts, deciding which operations and methods to use and why

	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	between addition and subtraction and use this to check calculations and solve missing number problems Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs Represent and use number bonds and related subtraction facts within 20 Add and subtract one-digit and two-digit numbers to 20 including zero Solve problems that involve addition and subtraction, using concrete objects and pictorial representation, and missing number	- Two two-digit number - Adding three one digit numbers Solve problems with addition and subtraction: - Using concrete objects and pictorial representations involving numbers, quantities and measures - Applying their increasing knowledge of mental and written methods	formal written methods of columnar addition and subtraction Solve problems including missing number problems using number facts, place value, and more complex addition and subtraction		Solve addition and subtraction multi-step problems in different contexts, deciding which operations and methods to use and why Solve problems involving addition, subtraction, multiplication and division and a combination of these including understanding the meaning of the equals sign

			problems such as 7 = __ - 9				
Multiplication and Division			To solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables including recognising odd and even numbers and use them to solve simple problems, demonstrating an understanding of commutativity as necessary Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x),	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods To solve simple problems in different contexts, deciding which of the four operations to use and why. These include missing number problems, involving multiplication and division, including measuring and positive integer	Recall and use multiplication and division facts for multiplication tables up to 12 x 12 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 Recognise and use factor pairs and commutativity in mental calculations Multiply two-digit and three-digit numbers by a one digit number using formal written layout To solve two-step problems in different contexts involving multiplying and adding, including	Identify multiples and factors, including factor pairs of a number and common factors of two numbers Know and use the vocabulary of prime numbers, prime factors and composite (non prime) numbers Establish whether a number up to 100 is prime and recall prime numbers up to 19 Recognise and use square numbers and cube numbers, and the notion of squared and cubed To multiply numbers up to four digits by a one or two-digit number using a formal written method, including long multiplication for two digit numbers fluently.	Identify common factors, common multiples and prime factors Use estimation and check answers to calculation and determine, in the context of a problem, an appropriate degree of accuracy To multiply multi-digit numbers up to four digits by a two-digit whole number using the formal written method of long multiplication. To divide numbers up to four digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as

			division and equals signs To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	scaling problems and correspondence problems in which n objects are connected to m objects	using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems, such as n objects are connected to m objects	Multiply and divide mentally drawing upon known facts To divide numbers up to four digits by a one digit number using the formal written method of short division and interpret remainders appropriately for the context fluently. To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 To solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. To solve problems involving multiplication and division, including scaling by simple fractions and	appropriate for the context. To divide numbers up to four digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. Perform mental calculations, including with mixed operation and large numbers To solve problems involving addition, subtraction, multiplication and division To use their knowledge of the order of operation to carry out calculations involving the four operations

Measure							
						problems involving simple rates To solve problems, including in missing number problems, involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign (to indicate equivalence).	
Measure	There are no early learning goals that directly relate to measure objectives. However, children will have experienced rich opportunities to develop their spatial reasoning skills in shape, space and measure, including using comparative language in length, mass, capacity and time	To compare, describe and solve practical problems for: - lengths and heights, - mass/weight, - capacity and volume, - time. To measure and begin to record the following: - lengths and heights - mass/weight, - capacity and volume - time.	To choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels To compare and order lengths, mass, volume/capacity and	To measure, compare, add and subtract using mixed units: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) To add and subtract amounts of money, including mixed units, to give change, using both £ and p in practical contexts To tell and write the time from an analogue clock,	To estimate, compare and calculate different measures To convert between different units of measure (for instance metres to kilometres and minutes to hours) To estimate, compare and calculate different measures, including money in pounds and pence To read, write and convert time between analogue and digital	To convert between different units of metric measure To understand and use approximate equivalences between metric units and common imperial units To use all four operations to solve problems involving measure using decimal notation, including scaling and conversions	To solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate To 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

		Development Matters- Reception: Compare length, weight and capacity .	To recognise and know the value of different denominations of coins and notes To sequence events in chronological order using language To recognise and use language relating to dates, including days of the week, weeks, months and years To tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	record the results using >, < and = Read scales in divisions of ones, twos, fives and tens To recognise and use symbols for pounds (£) and pence (p) accurately, recording pounds and pence separately; combine amounts to make a particular value To find and use different combinations of coins that equal the same amounts of money To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change To read, tell and write the time to five minutes, including quarter past/to the	including using Roman numerals from I to XII, and 12-hour and 24-hour clocks To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours To know the number of seconds in a minute and the number of days in each month, year and leap year To compare durations of events To measure the perimeter of simple 2D shapes	12- and 24-hour clocks To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres To find the area of rectilinear shapes by counting squares	To use all four operations to solve problems involving measure (for examples, money) To solve problems involving converting between units of time To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres To calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes.. To estimate volume	unit, and vice versa, using decimal notation to up to three decimal places To convert between miles and kilometres To use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa To recognise that shapes with the same areas can have different perimeters and vice versa To recognise when it is possible to use formulae for area and volume of shapes To calculate the area of parallelograms and triangles To calculate, estimate and compare volume

			hour/half hour and draw the hands on a clock face to show these times To know the number of minutes in an hour and the number of hours in a day To compare and sequence intervals of time				of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units (for example, mm³ and km³).
Geometry (position and direction)	Development Matters- Reception Mathematics Select, rotate and manipulate shapes to develop spatial reasoning skills.	To describe position, direction and movement, including whole, half, quarter and three-quarter turns	To use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise) To order and arrange combinations of mathematical objects and shapes, including those in different orientations, in	To recognise angles as a property of shape or a description of a turn To identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn To identify whether angles are greater than or less than a right angle	To describe positions on a 2D grid as coordinates in the first quadrant To plot specified points and draw sides to complete a given polygon To describe movements between positions as translations of a given unit to the left/right and up/down To identify acute and obtuse angles and compare and order angles up to two right angles by size in	To 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 To know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles To draw given angles, and measure them in degrees To identify:	To draw and translate simple shapes on the coordinate plane, and reflect them in the axes. To describe positions on the full coordinate grid (all four quadrants) To recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Geometry (properties of shape)			patterns and sequences		preparation for using a protractor To complete a simple symmetric figure with respect to a specific line of symmetry To identify lines of symmetry in 2D shapes presented in different orientations.	- angles at a point and one whole turn (total 360˚) - angles at a point on a straight line and a turn (total 180˚) - Other multiples of 90˚	
Geometry (properties of shape)	There are no early learning goals that directly relate to shape, space and measure objectives. However, children will have experienced rich opportunities to develop their spatial reasoning skills in shape, space and measure. Development Matters- Reception Mathematics Select, rotate and manipulate shapes to develop spatial reasoning skills. Compose and decompose shapes so	To recognise, handle and name common 2D shapes (for example rectangles (including squares), circles and triangles) To recognise, handle and name common 3D (for example, cuboids (including cubes), pyramids and spheres	To identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line To identify 2D shapes on the surface of 3D shapes To compare and sort common 2D and 3D shapes and everyday objects To compare and sort common 2D and 3D shapes and everyday objects	To draw 2D shapes To draw 2D shapes and make 3D shapes using modelling materials	To compare and classify geometric shapes, including different quadrilaterals and triangles, based on their properties and sizes To identify lines of symmetry in 2-D shapes presented in different orientations	To distinguish between regular and irregular polygons based on reasoning about equal sides and angles To use the properties of rectangles to deduce related facts and find missing lengths and angles To identify 3D shapes, including cubes and other cuboids, from 2D representations	To illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius To compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons To draw 2D shapes using given dimensions and angles

	that children recognise a shape can have other shapes within it, just as numbers can. Continue, copy and create repeating patterns.		To, identify and describe the properties of 3D shapes, including the number of edges, vertices and faces				To recognise, describe and build simple 3D shapes, including making nets
Fractions, Decimals and Percentages		To recognise, find and name a half as one of two equal parts of an object, shape or quantity To recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	To recognise, find, name, identify and write fractions , , , and of a length, number, shape, set of objects or quantity and know that all parts must be equal parts of the whole To recognise the equivalence of 2/4 and ½ To write simple fractions for example, ½ of 6 = 3	To count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by ten. To recognise, understand and use fractions as numbers: unit fractions and non-unit fractions with small denominators To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	To count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten To recognise and show, using diagrams, families of common equivalent fractions To add and subtract fractions with the same denominator To solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions	To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. To recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number. For example 2/5 + 4/5 = 6/5 = 1 1/5 To compare and order fractions whose denominators are all multiples of the same number	To compare and order fractions, including fractions > 1. To use common factors to simplify fractions; use common multiples to express fractions in the same denomination To add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions To multiply simple pairs of proper fractions, writing the answer in its simplest form To divide proper fractions by whole numbers

| | | | | To recognise and show, using diagrams, equivalent fractions with small denominators.

To compare and order unit fractions, and fractions with the same denominators

To add and subtract fractions with the same denominator within one whole

To solve problems that involve all of the above. | where the answer is a whole number

To recognise and write decimal equivalents of any number of tenths or hundredths. To recognise and write decimal equivalents to

To recognise and write decimal equivalents to one quarter, one half, three quarters

To round decimals with one decimal place to the nearest whole number.

To compare numbers, amounts and quantities with the same number of decimal places up to two decimal places

To find the effect of dividing a one or two-digit number by 10 and 100, identifying | To add and subtract fractions with the same denominator and denominators that are multiples of the same number

To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

To read and write decimal numbers as fractions. To recognise and use thousandths and relate them to tenths, hundredths, decimal equivalents

To round decimals with two decimal places to the nearest whole number and to one decimal place

 To read, say, write, order and compare numbers with up to three decimal places | To identify the value of each digit in numbers given to three decimal places

To multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places

To use written division methods in cases where the answer has up to two decimal places

To multiply one-digit numbers with up to two decimal places by whole numbers

To solve problems which require answers to be rounded to specified degrees of accuracy

To associate a fraction with division and calculate decimal fraction equivalents for a simple fraction. |
|---|---|---|---|---|---|---|---|

					the value of the digits in the answer as ones, tenths and hundredths. To solve simple measure and money problems involving fractions and decimals to two decimal places	To solve problems involving numbers up to three decimal places To recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal To solve problems which require knowing percentage and decimal equivalents of half, quarter, fifth, two fifths, four fifths) and those fractions with a denominator of a multiple of 10 or 25.	To recall and use equivalences between simple fractions, decimals and percentages, including in different contexts To solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts To solve problems involving the calculation of percentages and the use of percentages To solve problems involving similar shapes where the scale factor is known or can be found To solve problems involving unequal quantities, sharing and grouping using knowledge of fractions and multiples

Statistics			To interpret and construct simple pictograms, tally charts, block diagrams and simple tables (e.g. many-to-one correspondence in pictograms with simple ratios 2, 5, 10 scales) To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. To ask and answer questions about totalling and comparing categorical data	To interpret and present data using bar charts, pictograms and tables and use simple scales with increasing accuracy To solve one-step and two-step questions using information presented in scaled bar charts, pictograms and tables	To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	To complete, read and interpret information in tables, including timetable To solve comparison, sum and difference problems using information presented in a line graph	To interpret and construct pie charts and line graphs (relating to two variables) and use these to solve problems To calculate and interpret the mean as an average

Algebra		To Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ___ - 9	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	Solve problems including missing number problems			To use simple formulae. To generate and describe linear number sequences

To express missing number problems algebraically. To find pairs of numbers that satisfy an equation with two unknowns

To enumerate possibilities of combinations of two variables. |
| **Ratio and Proportion** | | | | | | | To solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts

To solve problems involving the calculation of percentages and the use of percentages

To solve problems involving similar shapes where the |

							scale factor is known or can be found
							To solve problems involving unequal quantities, sharing and grouping using knowledge of fractions and multiples.

Skills adapted from White Rose skills progression document

Impact

We are confident that our Mathematics curriculum equips children with the tools they need to be successful and confident problem solvers, who are able to use a variety of tools and methods when faced with a challenge. Our children will be fluent and quick in recalling key number facts including number bonds and times table facts, and will have these embedded fully so that they are automatic. There is a love of Maths across the school, and it is not a subject that children are afraid of. Children who need more support in Maths are highlighted early and are given the time and tools they need to fill gaps and create a strong foundation for future independent mathematical endeavour. Learning is meaningful and sequential, with quick, responsive support sessions given to children daily to correct any misconceptions from the prior lesson, allowing students to gain confidence before the next lesson. Going forward, we want children to carry this love of number into their future learning, and choose Maths in further education. We want children to be able to articulate their thought processes when working through problems, and effectively communicate their understanding of maths concepts to demonstrate a deep understanding. It is our responsibility to ensure children are given all the tools and opportunities possible to support them to meet the statutory age related requirements for a successful transition to KS3 and to create lifelong Mathematics learners.