Tonge Moor Academy: Maths Curriculum

Maths in the EYFS

Curriculum structure – *Taught through White Rose Maths*

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Maths	Nursery	Getting to know you! Matching Sorting		Comparing amounts Size, mass & capacity Simple pattern		It's me 1, 2, 3! Light & Dark – numbers to 5	
	Reception	Getting to know you! Just like me! It's me 1, 2, 3! Light and dark		Alive in 5! Growing 6, 7, 8! Building 9 & 10 Consolidation		To 20 and beyond! First, then, now Find my pattern On the move	

Maths

The EYFS framework is organised across seven areas of learning (Literacy, Mathematics, Understanding the World, Expressive Arts and Design, Physical Development, Personal, Social and Emotional Development and Communication and Language) This document demonstrates which statements from Birth to Five Matters are prerequisite skills for Maths within the National Curriculum.

The statements for Maths are taken from the following areas of learning:

- **Communication and Language**
- **Mathematics**

Range			
Range 3 (18-24 Months) 1½ - 2 Yrs	**Communication and Language**	**Understanding**	• Selects familiar objects by name and will go and find objects when asked, or identify objects from a ground • Understands simple sentences (e.g. Throw the ball)
		Speaking	• Copies familiar expressions, e.g. Oh dear, All gone. • Beginning to ask simple questions
	Mathematics	**Comparison**	• Responds to words like lots or more
		Counting	• Says some counting words • May engage in counting-like behaviour, making sounds and pointing or saying some numbers in sequence
		Cardinality	• Uses number words, like one or two and sometimes responds accurately when asked to give one or two things
		Spatial Awareness	• Enjoys filling and emptying containers • Investigates fitting themselves inside and moving through spaces
		Shape	• Pushes objects through different shaped holes, and attempts to fit shapes into spaces on inset boards or puzzles • Beginning to select a shape for a specific space

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			• Enjoys using blocks to create their own simple structures and arrangements
		Pattern	• Becoming familiar with patterns in daily routines • Joins in with and predicts what comes next in a story or rhyme • Beginning to arrange items in their own patterns, e.g. lining up toys
		Measures	• Shows an interest in size and weight • Explores capacity by selecting, filling and emptying containers, e.g. fitting toys in a pram • Beginning to understand that things might happen now or at another time, in routines
Range 4 (24-36 Months) 2-3 Yrs	**Communication and Language**	**Understanding**	• Identifies action words by following simple instructions, e.g. Show me jumping • Beginning to understand more complex sentences, e.g. Put your toys away and then sit on the carpet • Understands who, what, where in simple questions (e.g. Who's that? Who can? What's that? Where is?) • Developing understanding of simple concepts (e.g.fast/slow, good/bad)
		Speaking	• Learns new words very rapidly and is able to use them in communicating • Uses a variety of questions (e.g. what, where, who)
	Mathematics	**Comparison**	• Beginning to compare and recognise changes in numbers of things, using words like more, lots or'same'
		Counting	• Begins to say numbers in order, some of which are in the right order (ordinality)
		Cardinality	• In everyday situations, takes or gives two or three objects from a group • Beginning to notice numerals (number symbols) • Beginning to count on their fingers.
		Spatial Awareness	• Moves their bodies and toys around objects and explores fitting into spaces • Begins to remember their way around familiar environments • Responds to some spatial and positional language • Explores how things look from different viewpoints including things that are near or far away
		Shape	• Chooses puzzle pieces and tries to fit them in • Recognises that two objects have the same shape • Makes simple constructions
		Pattern	• Joins in and anticipates repeated sound and action patterns • Is interested in what happens next using the pattern of everyday routines
		Measures	• Explores differences in size, length, weight and capacity • Beginning to understand some talk about immediate past and future • Beginning to anticipate times of the day such as mealtimes or home time

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Range 5 (36-48 Months) 3-4 Yrs	**Communication and Language**	**Understanding**	• Understands use of objects (e.g. Which one do we cut with?) • Shows understanding of prepositions such as under, on top, behind by carrying out an action or selecting correct picture • Responds to instructions with more elements, e.g. Give the big ball to me; collect up all the blocks and put them in the box • Beginning to understand why and how questions
		Speaking	• Can retell a simple past event in correct order (e.g. went down slide, hurt finger) • Uses talk to explain what is happening and anticipate what might happen next • Questions why things happen and gives explanations. Asks e.g. who, what, when, how Builds up vocabulary that reflects the breadth of their experiences
	Mathematics	**Comparison**	• Compares two small groups of up to five objects, saying when there are the same number of objects in each group, e.g. You've got two, I've got two. Same!
		Counting	• May enjoy counting verbally as far as they can go • Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5. • Uses some number names and number language within play, and may show fascination with large numbers • Begin to recognise numerals 0 to 10
		Cardinality	• Subitises one, two and three objects (without counting) • Counts up to five items, recognising that the last number said represents the total counted so far (cardinal principle) • Links numerals with amounts up to 5 and maybe beyond • Explores using a range of their own marks and signs to which they ascribe mathematical meanings
		Composition	• Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers • Beginning to use understanding of number to solve practical problems in play and meaningful activities • Beginning to recognise that each counting number is one more than the one before • Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same
		Spatial Awareness	• Responds to and uses language of position and direction • Predicts, moves and rotates objects to fit the space or create the shape they would like
		Shape	• Chooses items based on their shape which are appropriate for the child's purpose • Responds to both informal language and common shape names • Shows awareness of shape similarities and differences between objects • Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes

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			• Attempts to create arches and enclosures when building,
		Pattern	• Creates their own spatial patterns showing some organisation or regularity • Explores and adds to simple linear patterns of two or three repeating items, e.g. stick, leaf (AB) or stick, leaf, stone (ABC) • Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next
		Measures	• In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items • Recalls a sequence of events in everyday life and stories
Range 6 (48-60 Months) 4-5 Yrs (60 – 71 Months) 5-6 Yrs	**Communication and Language**	**Understanding**	• Understands a range of complex sentence structures including negatives, plurals and tense markers • Understands questions such as who; why; when; where and how
		Speaking	• Extends vocabulary, especially by grouping and naming, exploring the meaning and sounds of new words • Links statements and sticks to a main theme or intention • Uses talk to organise, sequence and clarify thinking, ideas, feelings and events
	Mathematics	**Comparison**	• Uses number names and symbols when comparing numbers, showing interest in large numbers • Estimates of numbers of things,
		Counting	• Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0 • Increasingly confident at putting numerals in order 0 to 10 (ordinality)
		Cardinality	• Engages in subitising numbers to four and maybe five • Counts out up to 10 objects from a larger group • Matches the numeral with a group of items to show how many there are (up to 10)
		Composition	• Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects • Begins to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees six raisins on a plate as three and three • In practical activities, adds one and subtracts one with numbers to 10 • Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-"
		Spatial Awareness	• Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints • Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they will look (spatial reasoning) • May enjoy making simple maps of familiar and imaginative environments, with landmarks

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		Shape	• Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shapes • Enjoys composing and decomposing shapes, learning which shapes combine to make other shapes • Uses own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build
		Pattern	• Spots patterns in the environment, beginning to identify the pattern "rule" • Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat
		Measures	• Enjoys tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy • Becomes familiar with measuring tools in everyday experiences and play • Is increasingly able to order and sequence events using everyday language related to time • Beginning to experience measuring time with timers and calendars
Early Learning Goals			
ELG	**Communication and Language**	**Listening, Attention And Understanding**	• Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions. • Make comments about what they have heard and ask questions to clarify their understanding. • Hold conversation when engaged in back-and-forth exchanges with their teacher and peers.
		Speaking	• Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. • Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate. • Express their ideas and feelings about their experiences using full sentences, including use of past, present and future tenses and making use of conjunctions, with modelling and support from their teacher.
	Mathematics	**Number**	• 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.
		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.

			• Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Maths in Years 1-6

Curriculum structure - *Taught through White Rose Maths*

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Number: Place Value (within 10) Number: Addition and Subtraction (within 10)	Number: Addition and Subtraction (within 10) Geometry: Shape Number: Place Value (within 20)	Number: Addition and Subtraction (within 20) Number: Place Value (within 50)	Number: Place Value (within 50) Measurement: Length and Height Measurement: Weight and Volume	Number: Multiplication and Division Number: Fractions	Geometry: Position and Direction Number: Place Value (within 100) Measurement: Money Measurement: Time
Year 2	Number: Place Value Number: Addition and Subtraction	Number: Addition and Subtraction Measurement: Money Number: Multiplication and Division	Number: Multiplication and Division Statistics	Geometry: Properties of Shape Number: Fractions	Measurement: Length and Height Geometry: Position and Direction Problem Solving	Measurement: Time Measurement: Mass, Capacity and Temperature
Year 3	Number: Place Value Number: Addition and Subtraction	Number: Addition and Subtraction Number: Multiplication and Division	Number: Multiplication and Division Measurement: Money Statistics	Measurement: Length and Perimeter Number: Fractions	Number: Fractions Measurement: Time Geometry: Properties of Shape Measurement: Mass and Capacity	

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Year 4	Number: Place Value Number: Addition and Subtraction	Number: Addition and Subtraction Measurement: Length and Perimeter Number: Multiplication and Division	Number: Multiplication and Division Measurement: Area Number: Fractions	Number: Fractions Number: Decimals	Number: Decimals Measurement: Money Measurement: Time	Statistics Geometry: Properties of Shape Geometry: Position and Direction
Year 5	Number: Place Value Number: Addition and Subtraction	Statistics Number: Multiplication and Division Measurement: Perimeter and Area	Number: Multiplication and Division Number: Fractions	Number: Fractions Number: Decimals and Percentages	Number: Decimals Geometry: Properties of Shape	Geometry: Position and Direction Measurement: Converting Units Measurement: Volume
Year 6*	Number: Place Value Number: Addition, Subtraction, Multiplication and Division	Number: Addition, Subtraction, Multiplication and Division Number: Place Value Number: Fractions Geometry: Position and Direction	Number: Decimals Number: Percentages Number: Algebra	Measurement: Converting Units Measurement: Perimeter, Area and Volume Number: Ratio	Statistics Geometry: Properties of Shape	Consolidation and themed projects

**For Year 6, the areas of learning may be changed based on the needs of the children in order to address gaps in knowledge and prepare them for the end of KS2 assessments.*

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Objective overview for each Mathematical Strand:

Place value	
Year 1 children can:	
Counting • Count to and across 100, forward and backwards, beginning with 0 or 1, or from any given number.	
• Count numbers to 100 in numerals; count in multiples of twos, fives and tens.	
Represent • Identify and represent numbers using objects and pictorial representations.	
• Read and write numbers to 100 in numerals.	
• Read and write numbers from 1 to 20 in numerals and words.	
Use Place Value and Compare • Given a number, identify one more and one less.	
Year 2 children can:	
Counting • Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.	
Represent • Read and write numbers to at least 100 in numerals and in words.	
• Identify, represent and estimate numbers using different representations, including the number line.	
Use Place Value and Compare • 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.	
Problems & Rounding • Use place value and number facts to solve problems.	
Year 3 children can:	
Counting • Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.	
Represent • Identify, represent and estimate numbers using different representations. • Read and write numbers up to 1000 in numerals and in words	
Use place value and compare • Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • Compare and order numbers up to 1000	
• Solve number problems and practical problems involving these ideas.	
Year 4 children can:	
Counting • Count in multiples of 6, 7, 9, 25 and 1000. • Count backwards through zero to include negative numbers	
Represent • Identify, represent and estimate numbers 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.	
Use place value and compare • Find 1000 more or less than a given number.	

• Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • Order and compare numbers beyond 1000.	
Problems and rounding • 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.	
Year 5 children can:	
Counting • Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	
• Count forward and backwards with positive and negative whole numbers, including through zero.	
Represent • 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.	
Use Place Value and Compare • Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.	
Problems & Rounding • Interpret negative numbers in context.	
• Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	
• Solve number problems and practical problems that involve all of the above.	
Year 6 children can:	
Represent • Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.	
Use Place Value and Compare • Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.	
Problems & Rounding • 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.	

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Addition and subtraction	
Year 1 children can:	
Recall, Represent, Use • Read, write and interpret mathematical statements involving addition (+) subtraction (-) and equals (=_ signs.	
• Represent and use number bonds and relation subtraction facts within 20.	
Calculations • Add and subtract one-digit and two-digit numbers to 20, including zero.	
Solve Problems • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9	
Year 2 children can:	
Recall, Represent, Use • 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 number from another cannot.	
• Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	

Calculations
• Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
  • a two-digit number and ones
  • a two-digit number and tens
  • two two-digit numbers
  • adding three one-digit numbers	

Solve Problems • Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures	
• Solve problems with addition and subtraction by applying their increasing knowledge of mental and written methods	
Year 3 children can:	
Recall, represent, use • Estimate the answer to a calculation and use inverse operations to check answers	
Calculations • Add and subtract numbers mentally, including: • a three-digit number and ones • a three-digit number and tens • a three-digit number and hundreds • Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	
Solve problems • Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	
Year 4 children can:	
Recall, represent, use • Estimate and use inverse operations to check answers to a calculation.	

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Calculations • Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.	
Solve problems • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	
Year 5 children can:	
Recall, Represent, Use • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	
Calculations • Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	
• Add and subtract numbers mentally with increasingly large numbers.	
Solve Problems • Solve addition and subtraction multi-step problems in 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.	
Year 6 children can:	
Calculations • Perform mental calculations, including with mixed operations and large numbers. • Use their knowledge of the order of operations to carry out calculations involving the four operations.	
Solve Problems • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	
Recall, Represent, Use • Identify common factors, common multiples and prime numbers. • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	

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Multiplication and division	
Year 1 children can:	
Solve Problems • Solve one-step problems involving multiplication and division, by calculating the answers using concrete objects, pictorial representations and arrays with the support of the teacher.	
Year 2 children can:	
Recall, Represent, Use • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.	
• Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	
Calculations • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	
Solve Problems • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	
Year 3 children can:	
Recall, represent, use • Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	
Calculations • 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	
Solve problems • Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects,	
Year 4 children can:	
Recall, represent, use • Recall multiplication and division facts for multiplication tables up to 12 × 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.	
Calculations • Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.	
Solve problems • Solve problems involving multiplying and adding, including 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.	
Year 5 children can:	
Recall, Represent, Use • Identify multiples and factors, including finding all 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.	

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• Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)	
Calculations • Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.	
• Multiply and divide numbers mentally drawing upon known facts.	
• Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.	
• Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	
Solve Problems • Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.	
• Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	
Combined operations • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.	
Year 6 children can:	
Calculations • Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. •	
• Divide numbers up to 4 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 appropriate for the context.	
• Divide numbers up to 4 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 operations and large numbers.	
Solve Problems • Solve problems involving addition, subtraction, multiplication and division	
Combined operations • Use their knowledge of the order of operations to carry out calculations involving the four operations.	

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Fractions, decimals and percentages	
Year 1 children can:	
Recognise and Write • Recognise, find and name a half as one of two equal parts of an object, shape or quantity.	
• Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	
Year 2 children can:	
Recognise and Write • Recognise, find, name and write fractions $\frac{1}{3}, \frac{1}{4}, \frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.	
Compare • Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.	
Calculations • Write simple fractions for example, $\frac{1}{2}$ of 6 = 3	
Year 3 children can:	
Recognise and write • 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 10. • Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. • Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.	
Compare • Recognise and show, using diagrams, equivalent fractions with small denominators. • Compare and order unit fractions, and fractions with the same denominators.	
Calculations • Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]	
Solve Problems • Solve problems that involve all of the above.	
Year 4 children can:	
Recognise and write • Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	
Compare • Recognise and show, using diagrams, families of common equivalent fractions.	
Calculations • Add and subtract fractions with the same denominator	
Solve problems • Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.	
Recognise and write • Recognise and write decimal equivalents of any number of tenths or hundredths. • Recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$	
Compare • Round decimals with one decimal place to the nearest whole number. • Compare numbers with the same number of decimal places up to two decimal places.	
Calculations and problems • Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.	

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Fractions, decimals and percentages • Solve simple measure and money problems involving fractions and decimals to two decimal places.	
Year 5 children can:	
Recognise and write • Identify name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.	
• 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, + = = 1]	
Compare • Compare and order fractions whose denominators are all multiples of the same number.	
Calculations • Add and subtract fractions with the same denominator and denominators that are multiples of the same number.	
• Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	
Solve problems • Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.	
Recognise and write • Read and write decimal numbers as fractions [for example, 0.71 = $\frac{71}{100}$]	
• Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	
Compare • Round decimals with two decimal places to the nearest whole number and to one decimal place.	
• Read, write, order and compare numbers with up to three decimal places.	
Calculations and problems • Solve problems involving number up to three decimal places.	
Fractions, decimals and percentages • 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.	
• Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.	
Year 6 children can:	
Compare • Use common factors to simplify fractions; use common fractions to express fractions in the same denomination.	
• Compare and order fractions, including fractions >1	
Calculations • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.	
• Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]	
• Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]	
Recognise and Write • Identify the value of each digit in numbers given to three decimal places.	
Calculations & Problems • Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.	

• Multiply one-digit numbers with up to two decimal places by whole numbers.	
• Use written division methods in cases where the answer has up to two decimal places.	
• Solve problems which require answers to be rounded to specified degrees of accuracy.	
Fractions, Decimals, & Percentages • Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]	
• Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	

Algebra	
Year 1 children can:	
• Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9	
Year 2 children can:	
• Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	
Year 3 children can:	
• Solve problems including missing number problems.	
Year 4 children can:	
Year 5 children can:	
Year 6 children can:	
Algebra • Use simple formulae.	
• Generate and describe linear number sequences.	
• Express missing number problems algebraically.	
• Find pairs of numbers that satisfy an equation with two unknowns.	
• Enumerate possibilities of combinations of two variables.	

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Measurement	
Year 1 children can:	

Using Measures
• Compare, describe and solve practical problems for:
  • Lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
  • Mass/weight [for example, heavy/light, heavier than, lighter than[
  • Capacity and Volume [for example, full/empty, more than, less than, half full, quarter]
  • Time [for example, quicker, slower, earlier, later]	

• Measure and begin to record the following:
  • Lengths and heights
  • Mass/weight
  • Capacity and volume
  • Time (hours, minutes, seconds)	

Money • Recognise and know the value of different denominations of coins and notes.	
Time • Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	
• Recognise and use language relating to dates, including days of the week, weeks, months and years.	
• Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	
Year 2 children can:	
Using Measures • 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.	
• Compare and order lengths, mass, volume/capacity and record the results using >, < and =	
Money • Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.	
• Find different combinations of coins that equal the same amounts of money.	
• Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	
Time • Compare and sequence intervals of time.	
• Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.	
• Know the number of minutes in an hour and the number of hours in a day.	
Year 3 children can:	
Using measures • Measure compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	
Money • Measure compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	
Time • Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. • Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight.	

• Know the number of seconds in a minute and the number of days in each month, year and leap year. • Compare durations of events [for example to calculate the time taken by particular events or tasks]	
Perimeter, area, volume • Measure the perimeter of simple 2D shapes.	
Year 4 children can:	
Using measures • Convert between different units of measure [for example, kilometre to metre; hour to minute]	
Money • Estimate, compare and calculate different measures, including money in pounds and pence	
Time • Read, write and convert time between analogue and digital 12- and 24-hour clocks. • Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	
Perimeter, area, volume • Read, write and convert time between analogue and digital 12- and 24-hour clocks. • Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	
Year 5 children can:	
Using measures • Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	
• Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.	
• Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	
Money • Use all four operations to solve problems involving measure [for example, money]	
Time • Solve problems involving converting between units of time.	
Perimeter, Area, Volume • Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	
• Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.	
• Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]	
Year 6 children can:	
Using Measures • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.	
• 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 to up to three decimal places.	
• Convert between miles and kilometres.	
Time • 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.	

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Perimeter, Area, Volume	
• Recognise that shapes with the same areas can have different perimeters and vice versa.	
• Recognise when it is possible to use formulae for area and volume of shapes.	
• Calculate the area of parallelograms and triangles.	
• Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].	

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Geometry	
Year 1 children can:	
2D Shape • Recognise and name common 2D shapes [for example, rectangles (including squares), circles and triangles]	
3D Shape • Recognise and name common 3D shapes [for example, cuboids (including cubes), pyramids and spheres]	
Position & Direction • Describe position, direction and movement, including whole, quarter and three-quarter turns.	
Year 2 children can:	
2D Shape • Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.	
• Identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid]	
• Compare and sort common 2-D shapes and everyday objects.	
3D Shape • Recognise and name common 3D shapes [for example, cuboids (including cubes), pyramids and spheres]	
• Compare and sort common 3-D shapes and everyday objects.	
Position & direction • Order and arrange combinations of mathematical objects in patterns and sequences.	
• 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 anti-clockwise).	
Year 3 children can:	
2D Shape • Draw 2D shapes.	
3D Shapes • Make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them.	
Angles and lines • Recognise angles as a property of shape or a description of a turn. • Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. • Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	
Year 4 children can:	
2D shape • Compare and classify geometric shapes, including quadrilaterals and triangles**,** based on their properties and sizes. • Identify lines of symmetry in 2-D shapes presented in different orientations	
Angles and lines • Identify acute and obtuse angles and compare and order angles up to two right angles by size. • Identify lines of symmetry in 2-D shapes presented in different orientations. • Complete a simple symmetric figure with respect to a specific line of symmetry.	
Position and direction • Describe positions on a 2-D grid as coordinates in the first quadrant. • Describe movements between positions as translations of a given unit to the left/right and up/down.	

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• Plot specified points and draw sides to complete a given polygon.	
Year 5 children can:	
2D Shape • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	
• Use the properties of rectangles to deduce related facts and find missing lengths and angles.	
3D shapes • Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.	
Angles & Lines • Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	
• Draw given angles, and measure them in degrees (o)	

• Identify:
  • angles at a point and one whole turn (total 360o)
  • angles at a point on a straight line and a turn (total 180o)
  • other multiples of 90o	

Position & Direction • 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 6 children can:	
2D Shape • Draw 2-D shapes using given dimensions and angles.	
• Compare and classify geometric shapes based on their properties and sizes.	
• Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.	
3D shapes • Recognise, describe and build simple 3-D shapes, including making nets.	
Angles & Lines • Find unknown angles in any triangles, quadrilaterals, and regular polygons.	
• Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	
Position & Direction • Describe positions on the full coordinate grid (all four quadrants)	
• Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	

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Statistics	
Year 2 children can:	
Present & interpret • Interpret and construct simple pictograms, tally charts, block diagrams and simple tables	
Solve Problems • Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.	
• Ask and answer questions about totalling and comparing categorical data.	
Year 3 children can:	
Present and interpret • Interpret and present data using bar charts, pictograms and tables.	
Solve Problems • Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	
Year 4 children can:	
Present and interpret • Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	
Solve problems • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	
Year 5 children can:	
Present & interpret • Complete, read and interpret information in tables, including timetables.	
Solve Problems • Solve comparison, sum and difference problems using information presented in a line graph.	
Year 6 children can:	
Present & interpret • Interpret and construct pie charts and line graphs and use these to solve problems.	
Solve Problems • Calculate and interpret the mean as an average.	

Ratio and proportion	
Year 6 children can:	
Ratio and Proportion • Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.	
• Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.	
• Solve problems involving similar shapes where the scale factor is known or can be found.	
• Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	

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Objective Overview: Year 1

Place Value	
Counting	• Count to and across 100, forward and backwards, beginning with 0 or 1, or from any given number. • Count numbers to 100 in numerals; count in multiples of twos, fives and tens.
Represent	• Identify and represent numbers using objects and pictorial representations. • Read and write numbers to 100 in numerals. • Read and write numbers from 1 to 20 in numerals and words.
Use Place Value and Compare	• Given a number, identify one more and one less.
Addition & Subtraction	
Recall, Represent, Use	• Read, write and interpret mathematical statements involving addition (+) subtraction (-) and equals (=_ signs. • Represent and use number bonds and relation subtraction facts within 20.
Calculations	• Add and subtract one-digit and two-digit numbers to 20, including zero.
Solve Problems	• Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9
Multiplication & Division	
Solve Problems	• Solve one-step problems involving multiplication and division, by calculating the answers using concrete objects, pictorial representations and arrays with the support of the teacher
Fractions, Decimals, Percentages	
Recognise and Write	• Recognise, find and name a half as one of two equal parts of an object, shape or quantity. • Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
Algebra	
Algebra	• Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as • 7 = □ – 9
Measurement	

Using Measures	• Compare, describe and solve practical problems for:
	  • Lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
	  • Mass/weight [for example, heavy/light, heavier than, lighter than[
	  • Capacity and Volume [for example, full/empty, more than, less than, half full, quarter]
	  • Time [for example, quicker, slower, earlier, later]
	• Measure and begin to record the following:
	  • Lengths and heights
	  • Mass/weight
	  • Capacity and volume
	  • Time (hours, minutes, seconds)

Money	• Recognise and know the value of different denominations of coins and notes.
Time	• Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] • Recognise and use language relating to dates, including days of the week, weeks, months and years. • Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.
Geometry	
2D Shape	• Recognise and name common 2D shapes [for example, rectangles (including squares), circles and triangles]

3D Shape	• Recognise and name common 3D shapes [for example, cuboids (including cubes), pyramids and spheres]
Position & Direction	• Describe position, direction and movement, including whole, quarter and three-quarter turns.

Maths Objective Overview: Year 2

Place Value	
Counting	• Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.
Represent	• Read and write numbers to at least 100 in numerals and in words. • Identify, represent and estimate numbers using different representations, including the number line.
Use Place Value and Compare	• 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.
Problems & Rounding	• Use place value and number facts to solve problems.
Addition & Subtraction	
Recall, Represent, Use	• 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 number from another cannot. • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Calculations	• Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
	  • a two-digit number and ones
	  • a two-digit number and tens
	  • two two-digit numbers
	  • adding three one-digit numbers

Solve Problems	• Solve problems with addition and subtraction
	  • using concrete objects and pictorial representations, including those involving numbers, quantities and measures
	  • applying their increasing knowledge of mental and written methods

Multiplication & Division	
Recall, Represent, Use	• Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. • Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.
Calculations	• Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs
Solve Problems	• Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
Fractions, Decimals, Percentages	
Recognise and Write	• Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.
Compare	• Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.
Calculations	• Write simple fractions for example, $\frac{1}{2}$ of 6 = 3

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Algebra	
Algebra	• Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
Measurement	
Using Measures	• 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. • compare and order lengths, mass, volume/capacity and record the results using >, < and =
Money	• Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. • Find different combinations of coins that equal the same amounts of money. • Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
Time	• Compare and sequence intervals of time. • Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. • Know the number of minutes in an hour and the number of hours in a day.
Geometry	
2D Shape	• Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. • Identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid] • Compare and sort common 2-D shapes and everyday objects.
3D Shape	• Recognise and name common 3D shapes [for example, cuboids (including cubes), pyramids and spheres] • Compare and sort common 3-D shapes and everyday objects.
Position & Direction	• Order and arrange combinations of mathematical objects in patterns and sequences. • 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 anti-clockwise).
Statistics	
Present & interpret	• Interpret and construct simple pictograms, tally charts, block diagrams and simple tables
Solve Problems	• Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. • Ask and answer questions about totalling and comparing categorical data.

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Maths Objective Overview: Year 3

Place Value	
Counting	• Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. •
Represent	• Identify, represent and estimate numbers using different representations. • Read and write numbers up to 1000 in numerals and in words.
Use Place Value and Compare	• Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • Compare and order numbers up to 1000. •
Problems & Rounding	• Solve number problems and practical problems involving these ideas.
Addition & Subtraction	
Recall, Represent, Use	• Estimate the answer to a calculation and use inverse operations to check answers.
Calculations	• Add and subtract numbers mentally, including: • a three-digit number and ones • a three-digit number and tens • a three-digit number and hundreds • Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.
Solve Problems	• Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
Multiplication & Division	
Recall, Represent, Use	• Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
Calculations	• 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.
Solve Problems	• Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects,
Fractions, Decimals, Percentages	
Recognise and Write	• 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 10. • Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. • Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.
Compare	• Recognise and show, using diagrams, equivalent fractions with small denominators. • Compare and order unit fractions, and fractions with the same denominators.

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Calculations	• Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]
Solve Problems	• Solve problems that involve all of the above.
Algebra	
Algebra	• Solve problems including missing number problems.
Measurement	
Using Measures	• Measure compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
Money	• Add and subtract amounts of money to give change, using both £ and p in practical contexts.
Time	• Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. • Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. • Know the number of seconds in a minute and the number of days in each month, year and leap year. • Compare durations of events [for example to calculate the time taken by particular events or tasks]
Perimeter, Area, Volume	• Measure the perimeter of simple 2D shapes.
Geometry	
2D Shape	• Draw 2D shapes.
3S Shape	• Make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them.
Angles & Lines	• Recognise angles as a property of shape or a description of a turn. • Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. • Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.
Statistics	
Present & interpret	• Interpret and present data using bar charts, pictograms and tables.
Solve Problems	• Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.

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Maths Objective Overview: Year 4

Place Value	
Counting	• Count in multiples of 6, 7, 9, 25 and 1000. • Count backwards through zero to include negative numbers.
Represent	• Identify, represent and estimate numbers 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. •
Use Place Value and Compare	• Find 1000 more or less than a given number. • Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • Order and compare numbers beyond 1000.
Problems & Rounding	• 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.
Addition & Subtraction	
Recall, Represent, Use	• Estimate and use inverse operations to check answers to a calculation.
Calculations	• Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.
Solve Problems	• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. •
Multiplication & Division	
Recall, Represent, Use	• Recall multiplication and division facts for multiplication tables up to 12 × 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.
Calculations	• Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.
Solve Problems	• Solve problems involving multiplying and adding, including 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.
Fractions, Decimals, Percentages	
Recognise and Write	• Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
Compare	• Recognise and show, using diagrams, families of common equivalent fractions.
Calculations	• Add and subtract fractions with the same denominator.

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Solve Problems	• Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.
Recognise and Write	• Recognise and write decimal equivalents of any number of tenths or hundredths. • Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$
Compare	• Round decimals with one decimal place to the nearest whole number. • Compare numbers with the same number of decimal places up to two decimal places.
Calculations & Problems	• Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.
Fractions, Decimals, & Percentages	• Solve simple measure and money problems involving fractions and decimals to two decimal places.
Measurement	
Using Measures	• Convert between different units of measure [for example, kilometre to metre; hour to minute]
Money	• Estimate, compare and calculate different measures, including money in pounds and pence.
Time	• Read, write and convert time between analogue and digital 12- and 24-hour clocks. • Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
Perimeter, Area, Volume	• Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. • Find the area of rectilinear shapes by counting squares.
Geometry	
2D Shape	• Compare and classify geometric shapes, including quadrilaterals and triangles**,** based on their properties and sizes. • Identify lines of symmetry in 2-D shapes presented in different orientations.
Angles & Lines	• Identify acute and obtuse angles and compare and order angles up to two right angles by size. • Identify lines of symmetry in 2-D shapes presented in different orientations. • Complete a simple symmetric figure with respect to a specific line of symmetry. •
Position & Direction	• Describe positions on a 2-D grid as coordinates in the first quadrant. • Describe movements between positions as translations of a given unit to the left/right and up/down. • Plot specified points and draw sides to complete a given polygon.
Statistics	
Present & interpret	• Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.

Solve Problems	• Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. •

Maths Objective Overview Year 5

Place Value	
Counting	• Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • Count forward and backwards with positive and negative whole numbers, including through zero.
Represent	• 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. •
Use Place Value and Compare	• Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.
Problems & Rounding	• Interpret negative numbers in context. • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • Solve number problems and practical problems that involve all of the above.
Addition & Subtraction	
Recall, Represent, Use	• Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
Calculations	• Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • Add and subtract numbers mentally with increasingly large numbers.
Solve Problems	• Solve addition and subtraction multi-step problems in 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.
Multiplication & Division	
Recall, Represent, Use	• Identify multiples and factors, including finding all 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 notation for squared (2) and cubed (3)
Calculations	• Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. • Multiply and divide numbers mentally drawing upon known facts. • Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

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Solve Problems	• Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
Combined operations	• Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
Fractions, Decimals, Percentages	
Recognise and Write	• Identify name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. • 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]
Compare	• Compare and order fractions whose denominators are all multiples of the same number.
Calculations	• Add and subtract fractions with the same denominator and denominators that are multiples of the same number. • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
Recognise and Write	• Read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.
Compare	• Round decimals with two decimal places to the nearest whole number and to one decimal place. • Read, write, order and compare numbers with up to three decimal places.
Calculations & Problems	• Solve problems involving number up to three decimal places.
Fractions, Decimals, & Percentages	• 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. • Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.
Measurement	
Using Measures	• Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.
Money	• Use all four operations to solve problems involving measure [for example, money]
Time	• Solve problems involving converting between units of time/

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Perimeter, Area, Volume	• Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. • Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes. • Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
Geometry	
2D Shape	• Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • Use the properties of rectangles to deduce related facts and find missing lengths and angles.
3D shapes	• Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.

Angles & Lines	• Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
	• Draw given angles, and measure them in degrees (°)
	• Identify:
	  • angles at a point and one whole turn (total 360°)
	  • angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°)
	  • other multiples of 90°

Position & Direction	• 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.
Statistics	
Present & interpret	• Complete, read and interpret information in tables, including timetables.
Solve Problems	• Solve comparison, sum and difference problems using information presented in a line graph.

Maths Objective Overview: Year 6

Place Value	
Represent	• Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.
Use Place Value and Compare	• Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.
Problems & Rounding	• 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 & Subtraction	
Calculations	• Perform mental calculations, including with mixed operations and large numbers.

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	• Use their knowledge of the order of operations to carry out calculations involving the four operations.
Solve Problems	• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. •
Recall, Represent, Use	• Identify common factors, common multiples and prime numbers. • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
Multiplication & Division	
Calculations	• Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. • Divide numbers up to 4 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 appropriate for the context. • Divide numbers up to 4 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 operations and large numbers.
Solve Problems	• Solve problems involving addition, subtraction, multiplication and division
Combined operations	• Use their knowledge of the order of operations to carry out calculations involving the four operations.
Fractions, Decimals, Percentages	
Compare	• Use common factors to simplify fractions; use common fractions to express fractions in the same denomination. • Compare and order fractions, including fractions >1
Calculations	• Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. • Multiply simple pairs of proper frqctions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] • Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]
Recognise and Write	• Identify the value of each digit in numbers given to three decimal places.
Calculations & Problems	• Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. • Multiply one-digit numbers with up to two decimal places by whole numbers. • Use written division methods in cases where the answer has up to two decimal places. • Solve problems which require answers to be rounded to specified degrees of accuracy.
Fractions, Decimals, & Percentages	• Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Ratio and Proportion	

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Ratio and Proportion	• Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. • Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison. • Solve problems involving similar shapes where the scale factor is known or can be found. • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.
Algebra	
Algebra	• Use simple formulae. • Generate and describe linear number sequences. • Express missing number problems algebraically. • Find pairs of numbers that satisfy an equation with two unknowns. • Enumerate possibilities of combinations of two variables.
Measurement	
Using Measures	• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. • 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 to up to three decimal places. • Convert between miles and kilometres.
Time	• 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.
Perimeter, Area, Volume	• Recognise that shapes with the same areas can have different perimeters and vice versa. • Recognise when it is possible to use formulae for area and volume of shapes. • Calculate the area of parallelograms and triangles. • calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].
Geometry	
2D Shape	• Draw 2-D shapes using given dimensions and angles. • Compare and classify geometric shapes based on their properties and sizes. • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
3D shapes	• Recognise, describe and build simple 3-D shapes, including making nets.
Angles & Lines	• Find unknown angles in any triangles, quadrilaterals, and regular polygons. • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
Position & Direction	• Describe positions on the full coordinate grid (all four quadrants) • Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
Statistics	
Present & interpret	• Interpret and construct pie charts and line graphs and use these to solve problems.

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Solve Problems	• Calculate and interpret the mean as an average.