ST BARTHOLOMEW'S C of E PRIMARY SCHOOL

'Roots to Grow and Wings to Fly'

Curriculum Progression Document

Maths

'Roots to Grow and Wings to Fly'

St Bartholomew's Maths Curriculum

INTENT

We believe that all children should have:

- A secure understanding of maths and number.
- A positive and resilient attitude towards mathematics and an awareness of the fascination of mathematics.
- Competence and confidence in mathematical knowledge, concepts and skills.
- An ability to solve problems, to reason, to think logically and to work systematically and accurately.
- A range of learning strategies: working both collaboratively and independently.
- Fluency in mathematics where children can express ideas confidently and talk about the subject using mathematical language.
- An understanding of the importance of mathematics in everyday life.
- Independent learners who take responsibility for their own learning.

IMPLEMENTATION

Our maths curriculum aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics through placing number and core skills at the heart of our curriculum with daily practice to ensure fluency of number facts
- rehearse and revisit core skills to ensure that recall is fluent and learned written methods are independently used
- reason mathematically by following a line of enquiry through ensuring discussion plays a vital role in all lessons
- are actively encouraged to discuss with peers and teachers using mathematical language
- can solve problems by ensuring problem solving is embedded in every unit and variation of questions are used to enable children to apply their knowledge to different situations

Rich connections across mathematical ideas to develop fluency are encouraged through variation of questions which can be seen in every lesson and evidenced in the maths books

Challenge is built into every lesson for pupils who grasp concepts rapidly through sophisticated problems and an opportunity for children to demonstrate their understanding creating their own problems.

Intervention is provided for children who are not sufficiently fluent with earlier material to consolidate their understanding.

Our mastery approach to the curriculum is designed to develop children's knowledge and understanding of mathematical concepts from the Early Years through to the end of Y6.
In school, we follow the national curriculum and the following schemes of work as a guide to support teachers with their planning and assessment.

The calculation policy is used within school to ensure a consistent approach to teaching the four operations, building and developing methods year on year from EYFS to Year 6.

Learning has been carefully sequenced to support the development of new skills. Many skills are key pre-requisites of learning new ones, e.g. place value is learned prior to addition and subtraction, division leads onto fractions.

Our emphasis is on number skills first, carefully ordered, throughout our primary curriculum. The EYFS curriculum is based on the White Rose Maths scheme and are fully in line with the statutory framework for EYFS 2021.

In Years 1-6, learning is based on the National Curriculum 2014. Planning and resources are not based on any one scheme or source but will use materials from a variety of sources, such as White Rose, NCETM and Rising Stars. This enables teachers to choose resources and tasks based on children's needs and areas for development.

To ensure there are planned opportunities for children to revisit their learning, teachers allocate one day a week to re-cap and embed learning, irrespective of the week's learning objective. This allows for a greater depth of understanding and supports our commitment to ensure core skills are securely learned and fully embedded.

Our curriculum and planning has been adapted in response to the findings of the 2021 Ofsted Maths Review, incorporating:

- Emphasis on 'core skills' and regularly revisiting these;
- Regular 'low stakes' testing to embed knowledge and assess informally;
- Careful sequencing of units to ensure knowledge and skills are linked and build on those learned previously.

Contents:

EYFS MATHS Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	The children will acquire a deep understanding of number to 10. They will learn about the composition of each number. They will learn to subitise (recognise quantities without counting) to five. They will automatically recall number bonds up to five and some number bonds to 10, including double facts. The children will learn to count verbally beyond 20, recognising the pattern of the counting system. They will compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. The children will explore and represent patterns with numbers up to 10, including odds and evens, double facts and how quantities can be distributed evenly.					
	• Understanding of Numbers to 5 • Subitise to 5 (recognising quantities without counting) • Number Recognition and Formation • Early Addition (One More) • Comparing two quantities • Early Subtraction (One Less) • Time (My day)	• Understanding of Numbers to 5 • Subitise to 5 (recognising quantities without counting) • Number Recognition and Formation • Early Addition (One More) • Comparing two quantities • Early Subtraction (One Less) • Time (My day)	• Understanding of Numbers to 10 • Introducing zero • Subitise (recognising quantities without counting) to 5 • Recall number bonds to 5/10 • Addition – combining two groups to find the whole • Exploring Bonds to 10 • Subtraction • Knowledge of more and less and distribution of quantities evenly • Spatial awareness • 2D Shape • 3D Shape	• Understanding of Numbers to 10 • Introducing zero • Subitise (recognising quantities without counting) to 5 • Recall number bonds to 5/10 • Addition – combining two groups to find the whole • Exploring Bonds to 10 • Subtraction • Knowledge of more and less and distribution of quantities evenly • Spatial awareness • 2D Shape • 3D Shape	• Counting to 20 • Understanding of Numbers to 10 • Introducing zero • Subitise (recognising quantities without counting) to 5 • Recall number bonds to 5/10 • Addition – combining two groups to find the whole • Exploring Bonds to 10 • Subtraction • Knowledge of more and less and distribution of quantities evenly • Making simple patterns and exploring more complex patterns • Doubling • Halving & sharing • Odds and evens • Length, height and distance • Weight • Capacity	• Counting to 20 • Understanding of Numbers to 10 • Introducing zero • Subitise (recognising quantities without counting) to 5 • Recall number bonds to 5/10 • Addition – combining two groups to find the whole • Exploring Bonds to 10 • Subtraction • Knowledge of more and less and distribution of quantities evenly • Making simple patterns and exploring more complex patterns • Doubling • Halving & sharing • Odds and evens • Length, height and distance • Weight • Capacity

EYFS Medium-Term Plan

Term	Week number	Theme
Autumn 1	Week 1	**Getting To Know You**
	Week 2	
	Week 3	
	Week 4	**Just Like Me!** Match & Sort Compare amounts Compare size, mass and capacity Making simple patterns
	Week 5	
	Week 6	
	Week 7	**It's Me 1 2 3!** Representing 1,2 and 3 Comparing 1, 2 and 3 Composition of 1, 2 and 3 Circles and triangles Spatial Awareness
Autumn 2	Week 1	
	Week 2	
	Week 3	**Light & Dark** Four and five One more and one less Shapes with four sides Time: night and day
	Week 4	
	Week 5	
	Week 6	**Consolidation**
	Week 7	
Spring 1	Week 1	**Alive in 5!** Introducing zero Comparing numbers to 5 Composition of 4 and 5 Compare mass Compare capacity
	Week 2	
	Week 3	
	Week 4	**Growing 6, 7, 8**

	Week 5	6, 7 and 8
	Week 6	Combining two groups Length and height Time
	Week 7	**Building 9 and 10**
Spring 2	Week 1	9 and 10
	Week 2	Comparing numbers to 10 Bonds to 10 3D shape Pattern
	Week 3	**Consolidation**
	Week 4	
	Week 5	
	Week 6	**To 20 and Beyond**
Summer 1	Week 1	Building numbers beyond 10
	Week 2	Counting patterns beyond 10 Spatial reasoning
	Week 3	**First then Now**
	Week 4	Adding more
	Week 5	Taking away Spatial reasoning
Summer 2	Week 1	**Find my Pattern**
	Week 2	Doubling
	Week 3	Sharing & Grouping Even & Odd Spatial reasoning
	Week 4	**On the Move**
	Week 5	Deepening understanding
	Week 6	Patterns and relationships Spatial Reasoning
	Week 7	**Consolidation**

EYFS Maths Vocabulary

NUMBER	PLACE VALUE	ESTIMATING
zero number one, two, three … to twenty and beyond teens numbers, eleven, twelve … twenty none how many …? count, count (up) to, count on (from, to), count back (from, to) count in ones, twos, fives, tens is the same as more, less odd, even few pattern pair	ones tens digit the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more one less, ten less compare order size first, second, third… twentieth last, last but one before, after next between	guess how many …? estimate nearly close to about the same as just over, just under too many, too few enough, not enough

ADDITION AND SUBTRACTION	MULTIPLICATION AND DIVISION	FRACTIONS
add, more, and make, sum, total altogether double one more, two more … ten more how many more to make …? how many more is … than …? how much more is …? take away how many are left/left over? how many have gone? one less, two less, ten less … how many fewer is … than …? how much less is …? difference between	sharing doubling halving number patterns	parts of a whole half quarter
MEASURE	LENGTH	WEIGHT
measure, size compare guess, estimate enough, not enough too much, too little, too many, too few nearly, close to, about the same as just over, just under	metre length, height, width, depth long, short, tall, high, low wide, narrow, thick, thin longer, shorter, taller, higher, longest, shortest, tallest, highest far, near, close	weigh, weighs, balances heavy, light heavier than, lighter than heaviest, lightest scales

CAPACITY AND VOLUME	TIME	MONEY
full empty half full holds container	time days of the week, Monday, Tuesday … day, week birthday, holiday morning, afternoon, evening, night bedtime, dinner time, playtime today, yesterday, tomorrow before, after, next, last now, soon, early, late quick, quicker, quickest, quickly slow, slower, slowest, slowly old, older, oldest, new, newer, newest takes longer, takes less time hour, o'clock, clock, watch, hands	money coin penny, pence, pound price, cost buy, sell spend, spent pay
PROPERTIES OF SHAPE	2D Shape	3D Shape
shape, pattern flat, curved, straight round, hollow, solid sort, make, build, draw size, bigger, larger, smaller symmetrical pattern, repeating pattern match	corner, side rectangle (including square) circle triangle	face, edge, vertex, vertices cube pyramid sphere cone

POSITION AND DIRECTION	STATISTICS	GENERAL
position over, under, above, below top, bottom, side on, in, outside, inside around, in front, behind front, back, beside, next to opposite apart between middle, edge corner direction left, right, up, down forwards, backwards, sideways across next to, close, near, far along through to, from, towards, away from movement slide, roll, turn stretch, bend whole turn, half turn	count, sort group, set list	pattern puzzle what could we try next? how did you work it out? recognise describe draw compare sort

KS1 Curriculum Overviews

YEAR 1

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens. Given a number, identify one more and one less. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Read and write numbers from 1 to 20 in numerals and words. Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.	Recognise and know the value of different denominations of coins and notes 2-D shapes [for example, rectangles (including squares), circles and triangles] 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens. Given a number, identify one more and one less. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Read and write numbers from 1 to 20 in numerals and words. Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.	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. Compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later] Measure and begin to record time (hours, minutes, seconds) Recognise and know the value of different denominations of coins and notes Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].	Compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] Measure and begin to record: • lengths and heights • mass/weight [for example, heavy/light, heavier than, lighter than] Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens. Given a number, identify one more and one less. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of:	Describe position, direction and movement, including whole, half, quarter and three-quarter turns. Compare, describe and solve practical problems for: • mass/weight [for example, heavy/light, heavier than, lighter than] • capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] I can measure and begin to record the following: • mass/weight • capacity and volume

	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 one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = -9.		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 one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = -9. 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.	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. Compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] Measure and begin to record lengths and heights	equal to, more than, less than (fewer), most, least. Read and write numbers from 1 to 20 in numerals and words. 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 one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = -9.	
TIMES TABLE OBJECTIVE	Count in multiples of 10 in order up to 120.	Count in 2's up to 24, linking with even numbers and supporting doubles. Count in multiples of 10 in order up to 120.		Focus on counting in multiples of 5 up to 60, linking with knowledge of counting in 10s. Continue to develop fluency of counting in 2's and 10's.	Count in multiples of 10, 2 and 5 in order with growing fluency.	Count in multiples of 10, 2 and 5 in order fluently.

Y1 Medium-Term Plan

Term	Week number	Learning Objective
Autumn 1	Week 1	**Place Value** Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens. Given a number, identify one more and one less. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Read and write numbers from 1 to 20 in numerals and words.
	Week 2	
	Week 3	
	Week 4	
	Week 5	**Addition and Subtraction** 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 one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = -9.
	Week 6	
	Week 7	
Autumn 2	Week 1	
	Week 2	**Money** Recognise and know the value of different denominations of coins and notes
	Week 3	
	Week 4	**Shape** 2-D shapes [for example, rectangles (including squares), circles and triangles] 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].
	Week 5	
	Week 6	Consolidation Autumn Term Learning
	Week 7	
Spring 1	Week 1	**Place Value** **Addition and Subtraction** Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens. Given a number, identify one more and one less. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Read and write numbers from 1 to 20 in numerals and words. Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.
	Week 2	

		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 one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = -9.
	Week 3	**Multiplication and Division**
	Week 4	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.
	Week 5	
	Week 6	
	Week 7	Consolidate previous learning
Spring 2	Week 1	**Fractions**
	Week 2	Recognise, find and name a half as one of two equal parts of an object, shape or quantity.
	Week 3	Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
	Week 4	**Time**
	Week 5	Compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later] Measure and begin to record time (hours, minutes, seconds) 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. Compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
	Week 6	**Measurement Height and Length**
Summer 1	Week 1	Measure and begin to record lengths and heights Compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] Measure and begin to record: • lengths and heights • mass/weight [for example, heavy/light, heavier than, lighter than]
	Week 2	**Place Value**
	Week 3	**Addition and Subtraction** Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens. Given a number, identify one more and one less.

		Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Read and write numbers from 1 to 20 in numerals and words. 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 one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = -9.
	Week 4 Week 5	**Weight and Volume** Compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] Measure and begin to record: • lengths and heights • mass/weight [for example, heavy/light, heavier than, lighter than]
Summer 2	Week 1 Week 2	**Position and Direction** Describe position, direction and movement, including whole, half, quarter and three-quarter turns.
	Week 3 Week 4	**Measurement Mass, Capacity and temperature** Compare, describe and solve practical problems for: • mass/weight [for example, heavy/light, heavier than, lighter than] • capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] I can measure and begin to record the following: • mass/weight • capacity and volume
	Week 5 Week 6 Week 7	Consolidation of Summer Term

Year 1 Maths Vocabulary

Words in red denote new vocabulary for the year group

NUMBER	PLACE VALUE	ADDITION AND SUBTRACTION
number, numeral	ones	addition
zero	tens	add, more, and
one, two, three … twenty	digit	make, sum, total
teens numbers, eleven, twelve …	the same number as, as many as	altogether
twenty	more, larger, bigger, greater	double
twenty-one, twenty-two … one hundred	fewer, smaller, less	near double, half, halve
none	fewest, smallest, least	one more, two more … ten more
how many …?	most, biggest, largest, greatest	how many more to make …?
count, count (up) to, count on (from,	one more, ten more	how many more is … than …?
to), count back (from, to)	one less, ten less	how much more is …?
forwards, backwards	equal to	subtract
count in ones, twos, fives, tens	one more, ten more, one less, ten less	take away
equal to, equivalent to	compare	how many are left/left over?
is the same as, more, less	order	how many have gone?
most, least	size	one less, two less, ten less …
many	first, second, third… twentieth	how many fewer is … than …?
odd, even	last, last but one	how much less is …?
multiple of	before, after, next	difference between
few	between	equals, is the same as
pattern	half-way between	number bonds/pairs
pair	above, below	missing number

MULTIPLICATION AND DIVISION	FRACTIONS	MEASURE
multiplication multiply multiplied by multiple division dividing grouping sharing doubling halving array number patterns	fraction equal part equal grouping equal sharing parts of a whole half one of two equal parts quarter one of four equal parts	measure measurement size compare guess, estimate enough, not enough too much, too little too many, too few nearly, close to, about the same as roughly just over, just under
LENGTH	WEIGHT	CAPACITY AND VOLUME
centimetre, metre length, height, width, depth long, short, tall, high, low wide, narrow, thick, thin longer, shorter, taller, higher longest, shortest, tallest, highest far, near, close ruler metre stick	kilogram, half kilogram weigh, weighs, balances heavy, light heavier than, lighter than heaviest, lightest scales	litre, half litre capacity volume full, empty more than less than half full quarter full holds container

TIME	MONEY	PROPERTIES OF SHAPE
days of the week, Monday, Tuesday …	money	shape, pattern
months (January, February ...), seasons,	coin	flat
spring, summer, autumn, winter	penny, pence, pound	curved, straight
day, week, weekend, month, year	price, cost	round
birthday, holiday	buy, sell	hollow, solid
morning, afternoon, evening, night	spend, spent	sort
bedtime, dinner time, playtime	pay	make, build, draw
today, yesterday, tomorrow	change	size
before, after, earlier, later	dear, costs more	bigger, larger, smaller
next, first, last, midnight, date	cheap, costs less, cheaper	symmetry, symmetrical, symmetrical
now, soon, early, late	costs the same as	pattern
quick, quicker, quickest, quickly	how much …?	pattern, repeating pattern
slow, slower, slowest, slowly	how many …?	match
old, older, oldest, new, newer, newest	total	
takes longer, takes less time		
how long ago? how long will it be to …?		
how long will it take to …? how often?		
always, never, often, sometimes		
usually, once, twice		
hour, o'clock, half past, quarter past,		
quarter to		
clock, clock face, watch, hands		
hour hand, minute hand		
hours, minutes		

2D SHAPE	3D SHAPE	POSITION AND DIRECTION
corner, side point, pointed rectangle (including square) circle triangle	face, edge, vertex, vertices cube, cuboid pyramid sphere cone cylinder	position over, under, underneath, above, below top, bottom, side on, in, outside, inside around, in front, behind front, back beside, next to, opposite, apart, between middle, edge centre, corner direction, journey left, right, up, down forwards, backwards, sideways across, next to, close, near, far along, through to, from, towards, away from movement slide, roll, turn stretch, bend whole turn, half turn, quarter turn, three-quarter turn

STATISTICS	GENERAL	
count, sort, vote group, set list, table	pattern puzzle problem, problem solving mental, mentally what could we try next? how did you work it out? explain your thinking recognise describe draw compare sort	

Y2 MATHS Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. Recognise the place value of each digit in a two-digit number (tens, ones). Identify, represent and estimate numbers using different representations, including the number line. Compare and order numbers from 0 up to 100; use <, > and = signs. Read and write numbers to at least 100 in numerals and in words. Use place value and number facts to solve problems. Can solve problems with addition and subtraction: • using concrete objects and pictorial representations, including those involving numbers, quantities and measures • applying their increasing	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. Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. 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 and 3-D shapes and everyday objects.	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	Recognise, find, name and write fractions 1/3, 1/4, 2/4, and 3/4 of a length, shape, set of objects or quantity. Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2 Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) using rulers Compare and order lengths and record the results using >, < and = 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.	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); weight (g/kg), volume to the nearest appropriate unit, using rulers, scales and measuring vessels. Compare and order lengths, volume and record the results using >, < and = 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).	Choose and use appropriate standard units to estimate and measure mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using scales, thermometers and measuring vessels. Compare and order mass, volume/capacity and record the results using >, < and = Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. 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.

	knowledge of mental and written methods Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 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 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.					
TIMES TABLE OBJECTIVE	Consolidate counting in steps of 2, 5 and 10 in order from 0 up to 12x.	Count in steps of 2 and 5 from 0 up to 12x fluently. Recall multiples of 10 up to 12x10 in any order, including missing numbers and related division facts with growing fluency.	Recall multiples of 2 up to 12x2 in any order, including missing numbers and related division facts. Recall multiples of 10 up to 12x10 fluently.	Recall multiples of 5 up to 12x5 in any order, including missing numbers and related division facts. Recall multiples of 2 up to 12x2 in any order, including missing numbers and related division facts with growing fluency.	Count in multiples of 3 to 12x3 in order from 0. Recall multiples of 2 up to 12x2 in any order, including missing numbers and related division facts fluently. Recall multiples of 5 up to 12x5 in any order, including missing numbers and related division facts with growing fluency.	Count in multiples of 3 to 12x3 in order from 0 with growing fluency. Recall multiples of 5 up to 12x5 in any order, including missing numbers and related division facts fluently..

Y2 Medium-Term Plan

Term	Week number	Learning Objective
Autumn 1	Week 1	**Place Value** Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. Recognise the place value of each digit in a two-digit number (tens, ones). Identify, represent and estimate numbers using different representations, including the number line. Compare and order numbers from 0 up to 100; use <, > and = signs. Read and write numbers to at least 100 in numerals and in words. Use place value and number facts to solve problems.
	Week 2	
	Week 3	
	Week 4	
	Week 5	**Addition and Subtraction** Can 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 Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 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 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.
	Week 6	
	Week 7	
Autumn 2	Week 1	
	Week 2	**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.
	Week 3	
	Week 4	**Shape** Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.
	Week 5	

		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 and 3-D shapes and everyday objects.
	Week 6	Consolidation Autumn Term Learning
	Week 7	
Spring 1	Week 1	**<u>Place Value</u>**
	Week 2	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. Recognise the place value of each digit in a two-digit number (tens, ones). Identify, represent and estimate numbers using different representations, including the number line. Compare and order numbers from 0 up to 100; use <, > and = signs. Read and write numbers to at least 100 in numerals and in words. Use place value and number facts to solve problems. **<u>Addition and Subtraction</u>** Can 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 Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 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 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.
	Week 3	**<u>Multiplication and Division</u>**
	Week 4	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, recognising odd and even numbers. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
	Week 5	
	Week 6	
	Week 7	Consolidate previous learning

Spring 2	Week 1	**Fractions**
	Week 2	Recognise, find, name and write fractions 1/3, 1/4, 2/4, and 3/4 of a length, shape, set of objects or quantity.
	Week 3	Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2
	Week 4	**Time**
	Week 5	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.
	Week 6	**Measurement Height and Length**
Summer 1	Week 1	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) using rulers Compare and order lengths and record the results using >, < and =
	Week 2	**Weight and Volume**
	Week 3	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); weight (g/kg), volume to the nearest appropriate unit, using rulers, scales and measuring vessels. Compare and order weights and volume and record the results using >, < and =
	Week 4	**Position and Direction**
	Week 5	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).
Summer 2	Week 1	**Mass, Capacity and temperature**
	Week 2	Choose and use appropriate standard units to estimate and measure mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using scales, thermometers and measuring vessels. Compare and order mass, volume/capacity and record the results using >, < and =
	Week 3	**Statistics**
	Week 4	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. 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.
	Week 5	Consolidation of Summer Term
	Week 6	
	Week 7	

Year 2 Maths Vocabulary

Words in red denote new vocabulary for the year group

NUMBER	PLACE VALUE	ESTIMATING
number	ones	guess
numeral	tens, hundreds	how many ...?
zero	digit	estimate
one, two, three … twenty	one-, two- or three-digit number	nearly
teens numbers, eleven, twelve …	place, place value	roughly
twenty	stands for, represents	close to
twenty-one, twenty-two … one	exchange	about the same as
hundred, two hundred … one thousand	the same number as, as many as	just over, just under
none	more, larger, bigger, greater	exact, exactly
how many …?	fewer, smaller, less	too many, too few
count, count (up) to, count on (from,	fewest, smallest, least	enough, not enough
to), count back (from, to)	most, biggest, largest, greatest	
forwards	one more, ten more	
backwards	one less, ten less	
count in ones, twos, fives, tens, threes,	equal to	
fours and so on	compare	
equal to	order	
equivalent to	size	
is the same as	first, second, third … twentieth	
more, less	twenty-first, twenty-second …	
most, least	last, last but one	
tally	before, after	

many odd, even multiple of sequence continue predict few pattern pair, rule > greater than < less than	next between halfway between above, below	

ADDITION AND SUBTRACTION	MULTIPLICATION AND DIVISION	FRACTIONS
addition add, more, and make, sum, total, altogether double, near double half, halve one more, two more … ten more … one hundred more how many more to make …? how many more is … than …? how much more is …? subtract, take away how many are left/left over? how many have gone? one less, two less, ten less … one hundred less how many fewer is … than …? how much less is …? difference between equals is the same as number bonds/pairs/facts tens boundary	multiplication, multiply multiplied by, multiple groups of times once, twice, three times … ten times repeated addition division dividing, divide, divided by, divided into grouping sharing, share, share equally left, left over one each, two each, three each … ten each group in pairs, threes … tens equal groups of doubling, halving array row, column number patterns multiplication table multiplication fact, division fact	fraction equivalent fraction mixed number numerator, denominator equal part equal grouping equal sharing parts of a whole half, two halves one of two equal parts quarter, two quarters, three quarters one of four equal parts one third, two thirds one of three equal parts

MEASUREMENT	LENGTH	WEIGHT
measure, measurement size compare, measuring scale guess, estimate enough, not enough too much, too little, too many, too few nearly, close to, about the same as roughly just over, just under	centimetre, metre length, height, width, depth long, short, tall, high, low wide, narrow, thick, thin longer, shorter, taller, higher longest, shortest, tallest, highest far, further, furthest, near, close ruler metre stick, tape measure	kilogram, half kilogram, gram weigh, weighs, balances heavy, light heavier than, lighter than heaviest, lightest scales
CAPACITY AND VOLUME	TEMPERATURE	MONEY
litre, half litre, millilitre capacity volume full empty more than less than half full quarter full holds, contains container	temperature degree	money, coin penny, pence, pound price, cost buy, bought, sell, sold spend, spent pay, change dear, costs more cheap, costs less, cheaper costs the same as how much …?, how many …? total

TIME	POSITION AND DIRECTION	STATISTICS
days of the week, Monday, Tuesday …	position	count, tally, sort, vote
months of the year (January, February ...)	over, under, underneath	graph, block graph, pictogram
	above, below	represent
seasons: spring, summer, autumn, winter	top, bottom, side	group, set
	on, in	list, table
day, week, weekend, fortnight, month, year	outside, inside	label, title
	around	most popular, most common
birthday, holiday	in front, behind	least popular, least common
morning, afternoon, evening, night	front, back	
bedtime, dinnertime, playtime	beside, next to	
today, yesterday, tomorrow	opposite	
before, after	apart	
earlier, later	between	
next, first, last	middle, edge	
midnight	centre	
date	corner	
now, soon, early, late	direction	
quick, quicker, quickest, quickly	journey, route	
slow, slower, slowest, slowly	left, right	
old, older, oldest	up, down	
new, newer, newest	higher, lower	
takes longer, takes less time	forwards, backwards, sideways	
how long ago?	across	
how long will it be to …?	next to, close, near, far	

how long will it take to …? how often? always, never, often, sometimes usually once, twice hour, o'clock, half past, quarter past, quarter to 5, 10, 15 … minutes past clock, clock face, watch, hands digital/analogue clock/watch, timer hour hand, minute hand hours, minutes, seconds	along through to, from, towards, away from clockwise, anticlockwise movement slide roll turn stretch, bend whole turn, half turn, quarter turn, three-quarter turn right angle straight line	
PROPERTIES OF SHAPE	2D SHAPE	3D SHAPE
shape, pattern flat curved, straight round hollow, solid sort make, build, draw surface size bigger, larger, smaller	corner, side point, pointed rectangle (including square), rectangular circle, circular triangle, triangular pentagon hexagon octagon	face, edge, vertex, vertices cube, cuboid pyramid sphere cone cylinder

symmetry, symmetrical, symmetrical pattern line symmetry pattern, repeating pattern match		
GENERAL		
pattern puzzle problem, problem solving mental, mentally what could we try next? how did you work it out? show how you … explain your thinking explain your method describe the pattern describe the rule investigate recognise, describe, draw, compare sort mental calculation written calculation		

YEAR 3 MATHS Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) Compare and order numbers up to 1000 Identify, represent and estimate numbers using different representations Read and write numbers up to 1000 in numerals and in words Solve number problems and practical problems involving these ideas. I can add and subtract numbers mentally, including: • a three-digit number and ones	I can recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables I can 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 I can 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.	I can 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 I can recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators I can recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators I can recognise and show, using diagrams, equivalent fractions with small denominators I can add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7]	I can measure the perimeter of simple 2-D shapes I can add and subtract amounts of money to give change, using both £ and p in practical contexts I can draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	I can tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks I can 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 I know the number of seconds in a minute and the number of days in each month, year and leap year I can compare durations of events [for example to calculate the time taken by particular events or tasks]. I can recognise angles as a property of shape or a description of a turn I can identify right angles, recognise that two right angles make a half-turn,	I can interpret and present data using bar charts, pictograms and tables I can 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. I can measure, compare, add and subtract: mass (kg/g); volume/capacity (l/ml)

	• a three-digit number and tens • a three-digit number and hundreds I can add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction I can estimate the answer to a calculation and use inverse operations to check answers I can solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction		I can compare and order unit fractions, and fractions with the same denominators I can solve problems that involve all of the above. I can measure, compare, add and subtract lengths (m/cm/mm)		three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle I can identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	
TIMES TABLE OBJECTIVE	Count in multiples of 3 to 12x3 in order from 0 fluently.	Recall multiples of 3 up to 12x3 in any order, including missing numbers and related division facts with growing fluency. Count in multiples of 4 to 12x4 in order from 0 with growing fluency. Introduce (relating to x4) and begin to count in multiples of 8 from 0 to 12x8.	Recall multiples of 3 up to 12x3 in any order, including missing numbers and related division facts fluently. Count in multiples of 4 to 12x4 in order from 0 with fluently. Count in multiples of 8 to 12x8 in order from 0 with growing fluency.	Recall multiples of 4 up to 12x4 in any order, including missing numbers and related division facts with growing fluency. Count in multiples of 8 to 12x8 in order from 0 fluently.	Recall multiples of 4 up to 12x4 in any order, including missing numbers and related division facts fluently. Recall multiples of 8 up to 12x8 in any order, including missing numbers and related division facts with growing fluency.	Recall multiples of 8 up to 12x8 in any order, including missing numbers and related division facts fluently.

Year 3 Medium-Term Plan

Term	Week number	Learning Objective
Autumn 1	Week 1	**Number & Place Value** Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) Compare and order numbers up to 1000 Identify, represent and estimate numbers using different representations Read and write numbers up to 1000 in numerals and in words Solve number problems and practical problems involving these ideas.
	Week 2	
	Week 3	
	Week 4	
	Week 5	**Addition & Subtraction** I can add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction I can estimate the answer to a calculation and use inverse operations to check answers I can solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
	Week 6	
	Week 7	
Autumn 2	Week 1	**Multiplication & Division** I can recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables I can 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 I can 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.
	Week 2	
	Week 3	
	Week 4	
	Week 5	
	Week 6	**Consolidation and Depth** Place value & number, addition, subtraction, multiplication, division.
	Week 7	
Spring 1	Week 1	**Fractions & Decimals** I can 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 I can recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators I can recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators I can recognise and show, using diagrams, equivalent fractions with small denominators I can add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] I can compare and order unit fractions, and fractions with the same denominators I can solve problems that involve all of the above.
	Week 2	
	Week 3	
	Week 4	

	Week 5	**Measurement: Length** I can measure, compare, add and subtract lengths (m/cm/mm)
	Week 6	**Consolidation and Depth**
	Week 7	Addition & Subtraction, Multiplication & Division, Fractions
Spring 2	Week 1	**Measurement: Perimeter** Measure the perimeter of simple 2-D shapes
	Week 2	**Measurement: Money** Add and subtract amounts of money to give change, using both £ and p in practical contexts
	Week 3	**Properties Of Shape**
	Week 4	Draw 2-D shapes and make 3-D shapes using modelling materials; recognise and describe 3-D shapes in different orientations
	Week 5	**Consolidation and Depth**
	Week 6	Fractions & Decimals
Summer 1	Week 1	**Measurement: Time**
	Week 2	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12 / 24-hour clocks
	Week 3	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].
	Week 4	**Properties Of Shape**
	Week 5	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.
Summer 2	Week 1	**Statistics**
	Week 2	Interpret and present data using bar charts, pictograms and tables 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.
	Week 3	**Measurement: Mass & Capacity**
	Week 4	Measure, compare, add and subtract: mass (kg/g); volume/capacity (l/ml)
	Week 5	**Position & Direction**
	Week 6	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.
	Week 7	**Consolidation and Depth** Four operations, fractions, decimals.

Year 3 Maths Vocabulary

Words in red denote new vocabulary for the year group

NUMBER	PLACE VALUE	ESTIMATING
number	ones	guess
numeral	tens, hundreds	how many ...?
zero	digit	estimate
one, two, three … twenty	one-, two- or three-digit number	nearly
teens numbers, eleven, twelve …	place, place value	roughly
twenty	stands for, represents	close to
twenty-one, twenty-two … one	exchange	approximate, approximately
hundred, two hundred … one thousand	the same number as, as many as	about the same as
none	more, larger, bigger, greater	just over, just under
how many …?	fewer, smaller, less	exact, exactly
count, count (up) to, count on (from,	fewest, smallest, least	too many, too few
to), count back (from, to)	most, biggest, largest, greatest	enough, not enough
forwards	one more, ten more, one hundred more	round, nearest, round to the nearest
backwards	one less, ten less, one hundred less	ten,
count in ones, twos, fives, tens, threes,	equal to	hundred
fours, eights, fifties and so on to	compare	round up, round down
hundreds	order	
equal to	size	
equivalent to	first, second, third … twentieth	
is the same as	twenty-first, twenty-second …	
more, less	last, last but one	
most, least	before, after	

tally many odd, even multiple of, factor of sequence continue predict few pattern pair, rule relationship > greater than < less than Roman numerals	next between halfway between above, below	

ADDITION AND SUBTRACTION	MULTIPLICATION AND DIVISION	FRACTIONS
addition	multiplication	fraction
add, more, and	multiply, multiplied by	equivalent fraction
make, sum, total	multiple, factor	mixed number
altogether	groups of	numerator, denominator
double, near double	times	equal part, equal grouping
half, halve	product	equal sharing
one more, two more … ten more … one hundred more	once, twice, three times … ten times	parts of a whole, half, two halves
	repeated addition	one of two equal parts
how many more to make …?	division	quarter, two quarters, three quarters
how many more is … than …?	dividing, divide, divided by, divided into	one of four equal parts
how much more is …?	left, left over, remainder	one third, two thirds
subtract, take away	grouping	one of three equal parts
how many are left/left over?	sharing, share, share equally	sixths, sevenths, eighths, tenths …
how many have gone?	one each, two each, three each … ten each	
one less, two less, ten less … one hundred less	group in pairs, threes … tens	
how many fewer is … than …?	equal groups of	
how much less is …?	doubling	
difference between	halving	
equals	array	
is the same as	row, column	
number bonds/pairs/facts	number patterns	
missing number	multiplication table	
tens boundary, hundreds boundary	multiplication fact, division fact	

MEASUREMENT	LENGTH	WEIGHT
measure measurement size compare measuring scale, division guess, estimate enough, not enough too much, too little too many, too few nearly, close to, about the same as, approximately roughly just over, just under	millimetre, centimetre, metre, kilometre, mile length, height, width, depth long, short, tall high, low wide, narrow thick, thin longer, shorter, taller, higher … and so on longest, shortest, tallest, highest … and so on far, further, furthest, near, close distance apart … between … to … from perimeter ruler metre stick, tape measure	kilogram, half kilogram, gram weigh, weighs, balances heavy, light heavier than, lighter than heaviest, lightest scales

CAPACITY AND VOLUME	TEMPERATURE	TIME
litre, half litre, millilitre capacity volume full empty more than less than half full quarter full holds, contains container	temperature degree centigrade Celsius	time days, Monday, Tuesday … months (January, February ...) seasons: spring, summer, autumn, winter day, week, weekend, fortnight, month, year, century, birthday, holiday morning, afternoon, evening, night bedtime, dinner time, playtime today, yesterday, tomorrow before, after, earlier, later next, first, last midnight, calendar, date now, soon, early, late, earliest, latest quick, quicker, quickest, quickly slow, slower, slowest, slowly old, older, oldest, new, newer, newest takes longer, takes less time how long ago? how long will it be to …? how long will it take to …? how often? always, never, often, sometimes, usually

		once, twice hour, o'clock, half past, quarter past, quarter to 5, 10, 15 … minutes past a.m., p.m. clock, clock face, watch, hands digital/analogue clock/watch, timer hour hand, minute hand hours, minutes, seconds Roman numerals 12-hour clock time, 24-hour clock time
MONEY	PROPERTIES OF SHAPE	2D SHAPE
money, coin penny, pence, pound price, cost, buy, bought, sell, sold spend, spent, pay, change dear, costs more, cheap, costs less, cheaper, costs the same as how much …? how many …? total	shape, pattern flat, curved, straight round, hollow, solid sort, make, build, draw perimeter, surface, size bigger, larger, smaller symmetry, symmetrical, symmetrical pattern line symmetry pattern, repeating pattern match 2-D shape	corner, side point, pointed rectangle (including square), rectangular circle, circular triangle, triangular pentagon, pentagonal hexagon, hexagonal octagon, octagonal quadrilateral right-angled parallel, perpendicular

3D SHAPE	POSITION AND DIRECTION	STATISTICS
face, edge, vertex, vertices cube, cuboid pyramid sphere, hemisphere cone cylinder prism, triangular prism	position, over, under, underneath, above, below, top, bottom, side on, in, outside, inside, around, in front, behind, front, back beside, next to, opposite apart, between middle, edge, centre, corner direction, journey, route left, right, up, down, higher, lower forwards, backwards, sideways across, next to, close, near, far along, through to, from, towards, away from clockwise, anticlockwise compass point north, south, east, west, N, S, E, W horizontal, vertical, diagonal movement slide, roll, turn, stretch, bend whole turn, half turn, quarter turn, three-quarter turn angle … is a greater/smaller angle than right angle, acute angle obtuse angle, straight line	count, tally, sort, vote graph, block graph, pictogram represent group, set list, table, chart, bar chart, frequency table Carroll diagram, Venn diagram label, title, axis, axes diagram most popular, most common least popular, least common

GENERAL
pattern
puzzle
problem, problem-solving
mental, mentally
what could we try next?
how did you work it out?
show how you …
explain your thinking, explain your method, describe the pattern, describe the rule
investigate
recognise
describe
draw
compare, sort
greatest value, least value
mental calculation, written calculation
statement

YEAR 4 MATHS Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Count in multiples of 6, 7, 9, 25 and 1000. Find 1000 more or less than a given number. Count backwards through zero to include negative numbers. Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). Order and compare numbers beyond 1000. Identify, represent and estimate numbers using different representations. 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.	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 Multiply two-digit and three-digit numbers by a one-digit number using formal written layout 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.	Recognise and show, using diagrams, families of common equivalent fractions Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. 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 Add and subtract fractions with the same denominator Recognise and write decimal equivalents of any number of tenths or hundredths Recognise and write decimal equivalents to 1/4, 1/2, 3/4 Find the effect of dividing a one- or two-digit number by	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres Find the area of rectilinear shapes by counting squares Estimate, compare and calculate different measures, including money in pounds and pence Solve simple measure and money problems involving fractions and decimals to two decimal places. Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	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. 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.	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. 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. Measure, compare, add and subtract: mass (kg/g); volume/capacity (l/ml)

	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. Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate Estimate and use inverse operations to check answers to a calculation Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.		10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths 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 Convert between different units of measure [for example, kilometre to metre; hour to minute]			
TIMES TABLE OBJECTIVE	Recall multiples of 3,4 and 8 up to 12x in any order, including missing numbers and related division facts fluently. Fluently count in 6's in order up to 12x6, using multiples of 3 to support.	Recall multiples of 6 in any order, including missing numbers and related division facts with growing fluency. Fluently count in 7's in order up to 12x7.	Recall multiples of 6 in any order, including missing numbers and related division facts fluently. Recall multiples of 7 in any order, including missing numbers and related division facts with growing fluency.	Recall multiples of 7 in any order, including missing numbers and related division facts fluently. Fluently count in 9's in order up to 12x9. Fluently count in 11's in order up to 12x11.	Recall multiples of 9 in any order, including missing numbers and related division facts with growing fluency (using 10x and adjusting by 1 group to find 9x) Recall multiples of 11 in any order, including missing numbers and related division facts fluently. Fluently count in 12's in order up to 12x12.	Recall multiples of 9 in any order, including missing numbers and related division facts fluently. Recall multiples of 12 in any order, including missing numbers and related division facts with growing fluency (using 10x and adjusting by adding 2 more groups).

Year 4 Medium-Term Plan

Term	Week number	Learning Objective
Autumn 1	Week 1 Week 2 Week 3 Week 4	**Number & Place Value** Count in multiples of 6, 7, 9, 25 and 1000. Find 1000 more or less than a given number. Count backwards through zero to include negative numbers. Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). Order and compare numbers beyond 1000. Identify, represent and estimate numbers using different representations. 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. 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.
	Week 5 Week 6 Week 7	**Addition & Subtraction** Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate Estimate and use inverse operations to check answers to a calculation Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
Autumn 2	Week 1 Week 2 Week 3 Week 4 Week 5	**Multiplication & Division** 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 Multiply two-digit and three-digit numbers by a one-digit number using formal written layout 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.
	Week 6 Week 7	**Consolidation and Depth** Place value & number, addition, subtraction, multiplication, division.
Spring 1	Week 1	**Fractions & Decimals** Recognise and show, using diagrams, families of common equivalent fractions

	Week 2	Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. 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 Add and subtract fractions with the same denominator Recognise and write decimal equivalents of any number of tenths or hundredths Recognise and write decimal equivalents to 1/4, 1/2, 3/4 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 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
	Week 3	
	Week 4	
	Week 5	**Measurement: Length** Convert between different units of measure [for example, kilometre to metre] Solve simple measure problems involving fractions and decimals to two decimal places.
	Week 6	**Consolidation and Depth** Addition & Subtraction, Multiplication & Division, Fractions
	Week 7	
Spring 2	Week 1	**Measurement: Perimeter & Area** Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres Find the area of rectilinear shapes by counting squares
	Week 2	**Measurement: Money** Estimate, compare and calculate different measures, including money in pounds and pence Solve simple money problems involving fractions and decimals to two decimal places.
	Week 3	**Properties Of Shape** Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
	Week 4	
	Week 5	**Consolidation and Depth** Fractions & Decimals
	Week 6	
Summer 1	Week 1	**Measurement: 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.
	Week 2	
	Week 3	
	Week 4	**Properties Of Shape** 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.
	Week 5	
Summer 2	Week 1	**Statistics**

	Week 2	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.
	Week 3	**Measurement: Mass & Capacity**
	Week 4	Measure, compare, add and subtract: mass (kg/g); volume/capacity (l/ml)
	Week 5	**Position & Direction**
	Week 6	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.
	Week 7	**Consolidation and Depth** Four operations, fractions, decimals.

Year 4 Maths Vocabulary

Words in red denote new vocabulary for the year group

NUMBER	PLACE VALUE	ESTIMATING
number numeral zero one, two, three … twenty teens numbers, eleven, twelve … twenty twenty-one, twenty-two … one hundred, two hundred … one thousand … ten thousand, hundred thousand, million none how many …? count, count (up) to, count on (from, to), count back (from, to) forwards, backwards count in ones, twos, fives, tens, threes, fours, eights, fifties, sixes, sevens, nines, twenty-fives and so on to hundreds, thousands equal to, equivalent to	ones tens, hundreds digit one-, two- or three-digit number place, place value stands for, represents exchange the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more, one hundred more, one thousand more one less, ten less, one hundred less, one thousand less equal to compare order size first, second, third … twentieth	guess how many estimate nearly roughly close to approximate, approximately about the same as just over, just under exact, exactly too many, too few enough, not enough round, nearest, round to the nearest ten, hundred, thousand round up, round down

is the same as more, less most, least tally many odd, even multiple of, factor of sequence continue predict few pattern pair, rule relationship next, consecutive > greater than < less than Roman numerals integer, positive, negative above/below zero, minus negative numbers	twenty-first, twenty-second … last, last but on before, after next between halfway between above, below	

ADDITION AND SUBTRACTION	MULTIPLICATION AND DIVISION	FRACTIONS
addition	multiplication, multiply	fraction
add, more, and, make, sum, total	multiplied by	equivalent fraction
altogether	multiple, factor	mixed number
double, near double	groups of	numerator, denominator
half, halve	times, product	equal part
one more, two more… ten more…	once, twice, three times … ten times	equal grouping
one hundred more	repeated addition	equal sharing
how many more to make …?	division, dividing, divide, divided by,	parts of a whole
how many more is … than …?	divided into	half, two halves
how much more is …?	left, left over, remainder	one of two equal parts
subtract, take away	grouping	quarter, two quarters, three quarters
how many are left/left over?	sharing, share, share equally	one of four equal parts
how many have gone?	one each, two each, three each … ten	one third, two thirds
one less, two less, ten less … one	each	one of three equal parts
hundred less	group in pairs, threes … tens	sixths, sevenths, eighths, tenths
how many fewer is … than …?	equal groups of	…hundredths
how much less is …?	doubling, halving	decimal, decimal fraction, decimal
difference between	array, row, column	point, decimal place, decimal
equals, is the same as	number patterns	equivalent
number bonds/pairs/facts	multiplication table	proportion
missing number	multiplication fact, division fact	
tens boundary, hundreds boundary	inverse	
inverse	square, squared, cube, cubed	

MEASUREMENT	LENGTH	WEIGHT
measure measurement size compare unit, standard unit metric unit measuring scale, division guess, estimate enough, not enough too much, too little too many, too few nearly, close to, about the same as, approximately roughly just over, just under	millimetre, centimetre, metre, kilometre, mile length, height, width, depth, breadth long, short, tall high, low wide, narrow thick, thin longer, shorter, taller, higher … and so on longest, shortest, tallest, highest … and so on far, further, furthest, near, close distance apart … between … to … from edge, perimeter area, covers square centimetre (cm^2) ruler metre stick, tape measure	mass: big, bigger, small, smaller weight: heavy/light, heavier/lighter, heaviest/lightest kilogram, half kilogram, gram weigh, weighs, balances heavy, light heavier than, lighter than heaviest, lightest scales

CAPACITY AND VOLUME	TEMPERATURE	TIME
litre, half litre, millilitre capacity volume full empty more than less than half full quarter full holds, contains container, measuring cylinder	temperature degree centigrade Celsius	time days of the week, Monday, Tuesday … months of the year (January, February ...) seasons: spring, summer, autumn, winter day, week, weekend, fortnight, month, year, leap year, century, millennium birthday, holiday morning, afternoon, evening, night bedtime, dinner time, playtime today, yesterday, tomorrow before, after earlier, later next, first, last noon, midnight calendar, date, date of birth now, soon, early, late, earliest, latest quick, quicker, quickest, quickly slow, slower, slowest, slowly old, older, oldest

		new, newer, newest takes longer, takes less time how long ago? how long will it be to …? how long will it take to …? how often? always, never, often, sometimes usually once, twice hour, o'clock, half past, quarter past, quarter to 5, 10, 15 … minutes past a.m., p.m. clock, clock face, watch, hands digital/analogue clock/watch, timer hour hand, minute hand hours, minutes, seconds timetable, arrive, depart Roman numerals 12-hour clock time, 24-hour clock time

MONEY	PROPERTIES OF SHAPE	2D SHAPE
money	shape, pattern	2-D, two-dimensional
coin	flat, line	corner, side
penny, pence, pound	curved, straight	point, pointed
price, cost	round	rectangle (including square),
buy, bought, sell, sold	hollow, solid	rectangular, oblong
spend, spent	sort	rectilinear
pay	make, build, construct, draw, sketch	circle, circular
change	perimeter	triangle, triangular
dear, costs more	centre	equilateral triangle, isosceles
cheap, costs less, cheaper	surface	triangle, scalene triangle
costs the same as	angle, right-angled	pentagon, pentagonal
how much …?	base, square-based	hexagon, hexagonal
how many …?	size	heptagon
total	bigger, larger, smaller	octagon, octagonal
	symmetry, symmetrical, symmetrical	quadrilateral
	pattern	parallelogram, rhombus, trapezium
	line symmetry	polygon
	reflect, reflection	right-angled
	pattern, repeating pattern	parallel, perpendicular
	match	
	regular, irregular	

3D SHAPE	POSITION AND DIRECTION	
3-D, three-dimensional face, edge, vertex, vertices cube, cuboid pyramid sphere, hemisphere, spherical cone cylinder, cylindrical prism, triangular prism tetrahedron, polyhedron	position over, under, underneath above, below top, bottom, side on, in outside, inside around in front, behind front, back beside, next to opposite apart between middle, edge centre corner direction journey, route left, right up, down higher, lower forwards, backwards, sideways across	

	next to, close, near, far along through to, from, towards, away from clockwise, anticlockwise compass point north, south, east, west, N, S, E, W north-east, north-west, south-east, south-west, NE, NW, SE, SW horizontal, vertical, diagonal translate, translation movement slide, roll, turn, stretch, bend whole turn, half turn, quarter turn, three-quarter turn rotate, rotation angle, is a greater/smaller angle than degree right angle, acute angle, obtuse angle reflection straight line ruler, set square angle measurer, compass	

STATISTICS	GENERAL
count, tally, sort, vote	pattern
survey, questionnaire, data	puzzle
graph, block graph, pictogram	problem, problem solving
represent	mental, mentally
group, set	what could we try next?
list, table, chart, bar chart, frequency table	how did you work it out?
Carroll diagram, Venn diagram	show how you …
label, title, axis, axes	explain your thinking
diagram	explain your method
most popular, most common	describe the pattern
least popular, least common	describe the rule
	investigate
	recognise
	describe
	draw
	compare
	sort
	greatest value, least value
	mental calculation, written calculation
	statement
	justify
	make a statement

YEAR 5 MATHS Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0 Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 Solve number problems and practical problems that involve all of the above Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals. Add and subtract whole numbers with more than 4	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 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	Compare and order fractions whose denominators are all multiples of the same number 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 e.g. 2/5 + 4/5 = 6/5 = 1 and 1/5 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	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres Calculate and compare the area of rectangles (including squares) including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes Use all four operations to solve problems involving measure using decimal notation including scaling. e.g. length, mass, volume, money Identify 3-D shapes, including cubes and other cuboids, from 2-D representations	Solve problems involving converting between units of time 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 1 whole turn (total 360°) • angles at a point on a straight line and half a turn (total 180°) • other multiples of 90° Use the properties of rectangles to deduce related facts and find missing lengths and angles Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	Solve comparison, sum and difference problems using information presented in a line graph Complete, read and interpret information in tables, including timetables. Estimate volume e.g. using 1cm3 blocks to build cuboids (including cubes) and capacity e.g. using water 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.

	digits, including using formal written methods (columnar addition and subtraction) Add and subtract numbers mentally with increasingly large numbers Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	remainders appropriately for the context Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	Read and write decimal numbers as fractions e.g. 0.71 = 71/100 Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place Read, write, order and compare numbers with up to 3 decimal places Solve problems involving number up to 3 decimal places Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per 100", and write percentages as a fraction with denominator 100, and as a decimal fraction Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and fractions with a			

			denominator of a multiple of 10 or 25. Convert between different units of metric measure e.g. km and m, cm and m, cm and mm, g and kg, l and ml Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints			
TIMES TABLE OBJECTIVE	Recap 9x / 7x / 11x / 12x tables. All children to meet ARE requirements by half term.	Related division facts for 3x / 4x / 6x / 8x including missing numbers	Related division facts for 8x / 9x / 7x including missing numbers One step word problems involving times table facts (either multiplication or division)	Related division facts for 7x / 11x / 12x including missing numbers One/Two step word problems involving times table facts (either multiplication or division)	Two-step word problems using times table facts (either multiplication or division)	Two-step word problems using times table facts (either multiplication, division or both)

Year 5 Medium-Term Plan

Term	Week number	Learning Objective
Autumn 1	Week 1 Week 2 Week 3 Week 4	**Number & Place Value** Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0 Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 Solve number problems and practical problems that involve all of the above Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.
	Week 5 Week 6 Week 7	**Addition & Subtraction** 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 Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Autumn 2	Week 1 Week 2 Week 3 Week 4 Week 5	**Multiplication & Division** 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 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 1,000 Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

	Week 6 Week 7	**<u>Consolidation and Depth</u>** Place value & number, addition, subtraction, multiplication, division.
Spring 1	Week 1 Week 2 Week 3 Week 4	**<u>Fractions, Decimals & Percentages</u>** Compare and order fractions whose denominators are all multiples of the same number 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 e.g. 2/5 + 4/5 = 6/5 = 1 and 1/5 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 Read and write decimal numbers as fractions e.g. 0.71 = 71/100 Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place Read, write, order and compare numbers with up to 3 decimal places Solve problems involving number up to 3 decimal places Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per 100", and write percentages as a fraction with denominator 100, and as a decimal fraction Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and fractions with a denominator of a multiple of 10 or 25.
	Week 5	**<u>Measurement: Conversion & Equivalence</u>** Convert between different units of metric measure e.g. km and m, cm and m, cm and mm, g and kg, l and ml Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
	Week 6 Week 7	**<u>Consolidation and Depth</u>** Multiplication & Division, Fractions
Spring 2	Week 1	**<u>Measurement: Perimeter & Area</u>** Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres Calculate and compare the area of rectangles (including squares) including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes

	Week 2	**Measurement: Measure with decimals** Use all four operations to solve problems involving measure using decimal notation including scaling. e.g. length, mass, volume, money
	Week 3 Week 4	**Properties Of Shape** Identify 3-D shapes, including cubes and other cuboids, from 2-D representations
	Week 5 Week 6	**Consolidation and Depth** Fractions & Decimals
Summer 1	Week 1 Week 2	**Measurement: Time** Solve problems involving converting between units of time
	Week 3 Week 4 Week 5	**Properties Of Shape** 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 1 whole turn (total 360°) • angles at a point on a straight line and half a turn (total 180°) • other multiples of 90° Use the properties of rectangles to deduce related facts and find missing lengths and angles Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
Summer 2	Week 1 Week 2	**Statistics** Solve comparison, sum and difference problems using information presented in a line graph Complete, read and interpret information in tables, including timetables.
	Week 3 Week 4	**Measurement: Mass & Capacity** Estimate volume e.g. using 1cm3 blocks to build cuboids (including cubes) and capacity e.g. using water
	Week 5 Week 6	**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.
	Week 7	**Consolidation and Depth** Four operations, fractions, decimals.

Year 5 Maths Vocabulary

Words in red denote new vocabulary for the year group

NUMBER	PLACE VALUE	ESTIMATING
number numeral zero one, two, three … twenty teens numbers, eleven, twelve … twenty twenty-one, twenty-two … one hundred, two hundred … one thousand … ten thousand, hundred thousand, million none how many …? count, count (up) to, count on (from, to), count back (from, to) forwards, backwards count in ones, twos, fives, tens, threes, fours, eights, fifties, sixes, sevens, nines, twenty-fives and so on to hundreds, thousands equal to, equivalent to	ones tens, hundreds digit one-, two- or three-digit number place, place value stands for, represents exchange the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more, one hundred more, one thousand more one less, ten less, one hundred less, one thousand less equal to compare order size first, second, third … twentieth	guess how many estimate nearly roughly close to approximate, approximately about the same as just over, just under exact, exactly too many, too few enough, not enough round, nearest, round to the nearest ten, hundred, thousand, ten thousand round up, round down

is the same as more, less most, least tally many odd, even multiple of, factor of factor pair sequence continue predict few pattern pair, rule relationship next, consecutive > greater than < less than ≥ greater than or equal to ≤ less than or equal to Roman numerals integer, positive, negative above/below zero, minus negative numbers	twenty-first, twenty-second … last, last but on before, after next between halfway between above, below	

formula divisibility square number prime number ascending/descending order		
ADDITION AND SUBTRACTION	MULTIPLICATION AND DIVISION	FRACTIONS
addition add, more, and, make, sum, total altogether double, near double half, halve one more, two more… ten more… one hundred more how many more to make …? how many more is … than …? how much more is …? subtract, take away how many are left/left over? how many have gone? one less, two less, ten less … one hundred less how many fewer is … than …? how much less is …? difference between	multiplication, multiply multiplied by multiple, factor groups of times, product once, twice, three times … ten times repeated addition division, dividing, divide, divided by, divided into left, left over, remainder grouping sharing, share, share equally one each, two each, three each … ten each group in pairs, threes … tens equal groups of doubling, halving array, row, column	Fraction, proper/improper fraction equivalent fraction mixed number numerator, denominator equivalent, reduced to, cancel equal part equal grouping equal sharing parts of a whole half, two halves one of two equal parts quarter, two quarters, three quarters one of four equal parts one third, two thirds one of three equal parts sixths, sevenths, eighths, tenths …hundredths, thousandths

equals, is the same as number bonds/pairs/facts missing number tens boundary, hundreds boundary, ones boundary, tenths boundary inverse	number patterns multiplication table multiplication fact, division fact inverse square, squared, cube, cubed	decimal, decimal fraction, decimal point, decimal place, decimal equivalent proportion, in every, for every percentage, per cent, %
MEASUREMENT	LENGTH	WEIGHT
measure measurement size compare unit, standard unit metric unit, imperial unit measuring scale, division guess, estimate enough, not enough too much, too little too many, too few nearly, close to, about the same as, approximately roughly just over, just under	millimetre, centimetre, metre, kilometre, mile length, height, width, depth, breadth long, short, tall high, low wide, narrow thick, thin longer, shorter, taller, higher … and so on longest, shortest, tallest, highest … and so on far, further, furthest, near, close distance apart … between … to … from edge, perimeter area, covers	mass: big, bigger, small, smaller weight: heavy/light, heavier/lighter, heaviest/lightest kilogram, half kilogram, gram weigh, weighs, balances heavy, light heavier than, lighter than heaviest, lightest scales

	square centimetre (cm^2), square metre (m^2), square millimetre (mm^2) ruler metre stick, tape measure	
CAPACITY AND VOLUME	TEMPERATURE	TIME
litre, half litre, millilitre capacity volume full empty more than less than half full quarter full holds, contains container, measuring cylinder pint, gallon	temperature degree centigrade Celsius	time days of the week, Monday, Tuesday … months of the year (January, February ...) seasons: spring, summer, autumn, winter day, week, weekend, fortnight, month, year, leap year, century, millennium birthday, holiday morning, afternoon, evening, night bedtime, dinner time, playtime today, yesterday, tomorrow before, after earlier, later next, first, last noon, midnight calendar, date, date of birth

		now, soon, early, late, earliest, latest quick, quicker, quickest, quickly slow, slower, slowest, slowly old, older, oldest new, newer, newest takes longer, takes less time how long ago? how long will it be to …? how long will it take to …? how often? always, never, often, sometimes usually once, twice hour, o'clock, half past, quarter past, quarter to 5, 10, 15 … minutes past a.m., p.m. clock, clock face, watch, hands digital/analogue clock/watch, timer hour hand, minute hand hours, minutes, seconds timetable, arrive, depart Roman numerals

		12-hour clock time, 24-hour clock time
MONEY	PROPERTIES OF SHAPE	2D SHAPE
money coin penny, pence, pound price, cost buy, bought, sell, sold spend, spent pay change dear, costs more cheap, costs less, cheaper costs the same as how much …? how many …? total discount currency	shape, pattern flat, line curved, straight round hollow, solid sort make, build, construct, draw, sketch perimeter centre, radius, diameter surface angle, right-angled congruent base, square-based size bigger, larger, smaller symmetry, symmetrical, symmetrical pattern line symmetry reflect, reflection axis of symmetry, reflective symmetry	2-D, two-dimensional corner, side point, pointed rectangle (including square), rectangular, oblong rectilinear circle, circular triangle, triangular equilateral triangle, isosceles triangle, scalene triangle pentagon, pentagonal hexagon, hexagonal heptagon octagon, octagonal quadrilateral parallelogram, rhombus, trapezium polygon right-angled parallel, perpendicular x-axis, y-axis, quadrant

	pattern, repeating pattern match regular, irregular	
3D SHAPE	POSITION AND DIRECTION	
3-D, three-dimensional face, edge, vertex, vertices cube, cuboid pyramid sphere, hemisphere, spherical cone cylinder, cylindrical prism, triangular prism tetrahedron, polyhedron octahedron	position over, under, underneath above, below top, bottom, side on, in, outside, inside around in front, behind front, back beside, next to opposite, apart, between middle, edge centre corner direction journey, route left, right, up, down higher, lower forwards, backwards, sideways across next to, close, near, far	

	along through to, from, towards, away from clockwise, anticlockwise compass point north, south, east, west, N, S, E, W north-east, north-west, south-east, south-west, NE, NW, SE, SW horizontal, vertical, diagonal translate, translation coordinate movement slide, roll, turn, stretch, bend whole turn, half turn, quarter turn, three-quarter turn rotate, rotation angle, is a greater/smaller angle than degree right angle, acute angle, obtuse angle reflection straight line ruler, set square angle measurer, compass, protractor	

STATISTICS	GENERAL
count, tally, sort, vote	pattern
survey, questionnaire, data, database	puzzle
graph, block graph, pictogram	problem, problem solving
represent	mental, mentally
group, set	what could we try next?
list, table, chart, bar chart, frequency table, bar line chart	how did you work it out?
Carroll diagram, Venn diagram	show how you …
line graph	explain your thinking
label, title, axis, axes	explain your method
diagram	describe the pattern
most popular, most common	describe the rule
least popular, least common	investigate
maximum/minimum value	recognise
outcome	describe
	draw
	compare
	sort
	greatest value, least value
	mental calculation, written calculation
	statement
	justify
	make a statement
	explain your reasoning

YEAR 6 MATHS Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Read, write, order and compare numbers up to 10 000 000 and 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 0. Solve number and practical problems that involve all of the above. Perform mental calculations, including with mixed operations and large numbers. Use their knowledge of the order of operations to carry out calculations involving the 4 operations. Solve addition and subtraction multi-step problems in contexts,	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions >1. 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. Divide proper fractions by whole numbers. Describe positions on the full coordinate grid (all 4 quadrants). Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction. Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers are up to three decimal places. Multiply one-digit numbers with up to 2 decimal places by whole numbers. Use written division methods in cases where the answer has up to 2 decimal places. Solve problems which require answers to be rounded to specified degrees of accuracy. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	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 e.g. mm^3 and km^3 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 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. Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average.	Draw 2-D shapes using given dimensions and angles. Recognise, describe and build simple 3-D shapes, including making nets. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	

	deciding which operations and methods to use and why. Solve problems involving addition, subtraction, multiplication and division. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. 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.		Solve problems involving the calculation of percentages and the use of percentages for comparison. 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 2 variables. Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 2 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			

	Identify common factors, common multiples and prime numbers		decimal notation to up to 3 decimal places. Convert between miles and kilometres.			
TIMES TABLE OBJECTIVE	Year 6 children should now be secure in all times tables and children who did not meet end of Year 4 expectations should now have been accelerated to be secure. Lesson starters will use mixed multiplication/division facts.					

Year 6 Medium-Term Plan

Term	Week number	Learning Objective
Autumn 1	Week 1 Week 2 Week 3	**Problem Solving and reasoning** **Number & Place Value** Read, write, order and compare numbers up to 10 000 000 and 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 0. Solve number and practical problems that involve all of the above.
	Week 4 Week 5	**Four Operations** Perform mental calculations, including with mixed operations and large numbers. Use their knowledge of the order of operations to carry out calculations involving the 4 operations. 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. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.
	Week 6	**Assessments – SATs Practice/Revision**
	Week 7	**Four Operations** 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. Identify common factors, common multiples and prime numbers.
Autumn 2	Week 1 Week 2 Week 3 Week 4	**Fractions** Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions >1. 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. Divide proper fractions by whole numbers.
	Week 5	**Geometry: Position & Direction** Describe positions on the full coordinate grid (all 4 quadrants).
	Week 6	**Assessments – SATs Practice/Revision**
	Week 7	**Geometry: Position & Direction**

		Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
Spring 1	Week 1	**Decimals** Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction. Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers are up to three decimal places. Multiply one-digit numbers with up to 2 decimal places by whole numbers. Use written division methods in cases where the answer has up to 2 decimal places. Solve problems which require answers to be rounded to specified degrees of accuracy.
	Week 2	
	Week 3	**Percentages** Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. Solve problems involving the calculation of percentages and the use of percentages for comparison.
	Week 4	**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 2 variables.
	Week 5	**Measurement: Conversions** Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 2 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 3 decimal places. Convert between miles and kilometres.
	Week 6	
	Week 7	**Assessments – SATs Practice/Revision**
Spring 2	Week 1	**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 e.g. mm^3 and km^3
	Week 2	
	Week 3	**Proportion and Ratio**

	Week 4	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 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.
	Week 5	**Statistics** Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average.
	Week 6	**Assessments – SATs Practice/Revision**
Summer 1	Week 1	**Geometry: Properties Of Shape**
	Week 2	Draw 2-D shapes using given dimensions and angles. Recognise, describe and build simple 3-D shapes, including making nets. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
	Week 3	**KS2 SATS**
	Week 4	
	Week 5	
Summer 2	Week 1	
	Week 2	
	Week 3	
	Week 4	
	Week 5	
	Week 6	
	Week 7	

Year 6 Maths Vocabulary

Words in red denote new vocabulary for the year group

NUMBER	PLACE VALUE	ESTIMATING
number numeral zero one, two, three … twenty teens numbers, eleven, twelve … twenty twenty-one, twenty-two … one hundred, two hundred … one thousand … ten thousand, hundred thousand, million none how many …? count, count (up) to, count on (from, to), count back (from, to) forwards, backwards count in ones, twos, fives, tens, threes, fours, eights, fifties, sixes, sevens, nines, twenty-fives and so on to hundreds, thousands equal to, equivalent to is the same as	ones tens, hundreds digit one-, two- or three-digit number place, place value stands for, represents exchange the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more, one hundred more, one thousand more one less, ten less, one hundred less, one thousand less equal to compare order size first, second, third … twentieth twenty-first, twenty-second …	guess how many estimate nearly roughly close to approximate, approximately about the same as just over, just under exact, exactly too many, too few enough, not enough round, nearest, round to the nearest ten, hundred, thousand, ten thousand round up, round down

more, less most, least tally many odd, even multiple of, factor of factor pair sequence continue predict few pattern pair, rule relationship next, consecutive > greater than < less than ≥ greater than or equal to ≤ less than or equal to Roman numerals integer, positive, negative above/below zero, minus negative numbers formula	last, last but on before, after next between halfway between above, below	

divisibility square number prime number factorise prime factor ascending/descending order digit total		
ADDITION AND SUBTRACTION	MULTIPLICATION AND DIVISION	FRACTIONS
addition add, more, and, make, sum, total altogether double, near double half, halve one more, two more… ten more… one hundred more how many more to make …? how many more is … than …? how much more is …? subtract, take away how many are left/left over? how many have gone? one less, two less, ten less … one hundred less how many fewer is … than …?	multiplication, multiply multiplied by multiple, factor groups of times, product once, twice, three times … ten times repeated addition division, dividing, divide, divided by, divided into left, left over, remainder grouping sharing, share, share equally one each, two each, three each … ten each group in pairs, threes … tens equal groups of	Fraction, proper/improper fraction equivalent fraction mixed number numerator, denominator equivalent, reduced to, cancel equal part equal grouping equal sharing parts of a whole half, two halves one of two equal parts quarter, two quarters, three quarters one of four equal parts one third, two thirds one of three equal parts

how much less is …? difference between equals, is the same as number bonds/pairs/facts missing number tens boundary, hundreds boundary, ones boundary, tenths boundary inverse	doubling, halving array, row, column number patterns multiplication table multiplication fact, division fact inverse square, squared, cube, cubed	sixths, sevenths, eighths, tenths …hundredths, thousandths decimal, decimal fraction, decimal point, decimal place, decimal equivalent proportion, in every, for every ratio percentage, per cent, %
ALGEBRA	MEASUREMENT	LENGTH
formula formulae equation unknown variable	measure measurement size compare unit, standard unit metric unit, imperial unit measuring scale, division guess, estimate enough, not enough too much, too little too many, too few nearly, close to, about the same as, approximately roughly just over, just under	millimetre, centimetre, metre, kilometre, mile yard, foot, feet, inch, inches length, height, width, depth, breadth long, short, tall high, low wide, narrow thick, thin longer, shorter, taller, higher … and so on longest, shortest, tallest, highest … and so on far, further, furthest, near, close distance apart … between … to … from

		edge, perimeter, circumference area, covers square centimetre (cm^2), square metre (m^2), square millimetre (mm^2) ruler metre stick, tape measure
WEIGHT	CAPACITY AND VOLUME	TEMPERATURE
mass: big, bigger, small, smaller weight: heavy/light, heavier/lighter, heaviest/lightest tonne pound ounce kilogram, half kilogram, gram weigh, weighs, balances heavy, light heavier than, lighter than heaviest, lightest scales	litre, half litre, millilitre centilitre, cubic centimetres(cm3), cubic metres (m3), cubic millimetres (mm3), cubic kilometres (km3) capacity volume full empty more than less than half full quarter full holds, contains container, measuring cylinder pint, gallon	temperature degree centigrade Celsius
TIME	MONEY	PROPERTIES OF SHAPE
time	money	shape, pattern

days of the week, Monday, Tuesday …	coin	flat, line
months of the year (January, February ...)	penny, pence, pound	curved, straight
seasons: spring, summer, autumn, winter	price, cost	round
day, week, weekend, fortnight,	buy, bought, sell, sold	hollow, solid
month, year, leap year, century, millennium	spend, spent	sort
birthday, holiday	pay	make, build, construct, draw, sketch
morning, afternoon, evening, night	change	perimeter
bedtime, dinner time, playtime	dear, costs more	centre, radius, diameter
today, yesterday, tomorrow	cheap, costs less, cheaper	circumference, concentric, arc
before, after	costs the same as	net, open, closed
earlier, later	how much …?	surface
next, first, last	how many …?	angle, right-angled
noon, midnight	total	congruent
calendar, date, date of birth	discount	intersecting, intersection
now, soon, early, late, earliest, latest	currency	plane
quick, quicker, quickest, quickly	profit, loss	base, square-based
slow, slower, slowest, slowly		size
old, older, oldest		bigger, larger, smaller
new, newer, newest		symmetry, symmetrical, symmetrical pattern
takes longer, takes less time		line symmetry
		reflect, reflection
		axis of symmetry, reflective symmetry

how long ago? how long will it be to …? how long will it take to …? how often? always, never, often, sometimes usually once, twice hour, o'clock, half past, quarter past, quarter to 5, 10, 15 … minutes past a.m., p.m. clock, clock face, watch, hands digital/analogue clock/watch, timer hour hand, minute hand hours, minutes, seconds timetable, arrive, depart Roman numerals 12-hour clock time, 24-hour clock time Greenwich Mean Time, British Summer Time, International Date Line		pattern, repeating pattern match regular, irregular
2D SHAPE	3D SHAPE	POSITION AND DIRECTION
2-D, two-dimensional	3-D, three-dimensional	position

corner, side point, pointed rectangle (including square), rectangular, oblong rectilinear circle, circular triangle, triangular equilateral triangle, isosceles triangle, scalene triangle pentagon, pentagonal hexagon, hexagonal heptagon octagon, octagonal quadrilateral parallelogram, rhombus, trapezium kite polygon right-angled parallel, perpendicular x-axis, y-axis, quadrant	face, edge, vertex, vertices cube, cuboid pyramid sphere, hemisphere, spherical cone cylinder, cylindrical prism, triangular prism tetrahedron, polyhedron octahedron dodecahedron net, open, closed	over, under, underneath above, below top, bottom, side on, in, outside, inside around in front, behind front, back beside, next to opposite, apart, between middle, edge centre corner direction journey, route left, right, up, down higher, lower forwards, backwards, sideways across next to, close, near, far along through to, from, towards, away from clockwise, anticlockwise compass point

		north, south, east, west, N, S, E, W north-east, north-west, south-east, south-west, NE, NW, SE, SW horizontal, vertical, diagonal translate, translation coordinate movement slide, roll, turn, stretch, bend whole turn, half turn, quarter turn, three-quarter turn rotate, rotation angle, is a greater/smaller angle than degree right angle, acute angle, obtuse angle reflex angle reflection straight line ruler, set square angle measurer, compass, protractor
STATISTICS	GENERAL	
count, tally, sort, vote	pattern	

survey, questionnaire, data, database	puzzle
graph, block graph, pictogram	problem, problem solving
represent	mental, mentally
group, set	what could we try next?
list, table, chart, bar chart, frequency table, bar line chart	how did you work it out?
Carroll diagram, Venn diagram	show how you …
line graph	explain your thinking
pie chart	explain your method
label, title, axis, axes	describe the pattern
diagram	describe the rule
most popular, most common	investigate
least popular, least common	recognise
maximum/minimum value	describe
outcome	draw
mean (mode, median, range as estimates for this)	compare
statistics, distribution	sort
	greatest value, least value
	mental calculation, written calculation
	statement
	justify
	make a statement
	explain your reasoning

Progression in MATHS

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Number & Place Value	Understanding of numbers to 10	**Ma1/2.1a** count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	**Ma2/2.1a** count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward	**Ma3/2.1a** count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	**Ma4/2.1a** count in multiples of 6, 7, 9, 25 and 1,000	**Ma5/2.1a** read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	**Ma6/2.1a** read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
	Count numbers to 20	**Ma1/2.1b** count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s	**Ma2/2.1b** recognise the place value of each digit in a two-digit number (10s, 1s)	**Ma3/2.1b** recognise the place value of each digit in a 3-digit number (100s, 10s, 1s)	**Ma4/2.1b** find 1,000 more or less than a given number	**Ma5/2.1b** count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000	**Ma6/2.1b** round any whole number to a required degree of accuracy
	Given a number, identify 1 more and 1 less	**Ma1/2.1c** given a number, identify 1 more and 1 less	**Ma2/2.1c** identify, represent and estimate numbers using different representations, including the number line	**Ma3/2.1c** compare and order numbers up to 1,000	**Ma4/2.1c** count backwards through 0 to include negative numbers	**Ma5/2.1c** interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0	**Ma6/2.1c** use negative numbers in context, and calculate intervals across 0
	Subitise to 5 (recognising quantities without counting)	**Ma1/2.1d** identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less	**Ma2/2.1d** compare and order numbers from 0 up to 100; use <, > and = signs	**Ma3/2.1d** identify, represent and estimate numbers using different representations	**Ma4/2.1d** recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s and 1s)	**Ma5/2.1d** round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000	**Ma6/2.1d** solve number and practical problems that involve all of the above.

		than (fewer), most, least					
	Number recognition and formation to 10	**Ma1/2.1e** read and write numbers from 1 to 20 in numerals and words.	**Ma2/2.1e** read and write numbers to at least 100 in numerals and in words	**Ma3/2.1e** read and write numbers up to 1,000 in numerals and in words	**Ma4/2.1e** order and compare numbers beyond 1,000	**Ma5/2.1e** solve number problems and practical problems that involve all of the above	
			Ma2/2.1f use place value and number facts to solve problems.	**Ma3/2.1f** solve number problems and practical problems involving these ideas.	**Ma4/2.1f** identify, represent and estimate numbers using different representations	**Ma5/2.1f** read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.	
					Ma4/2.1g round any number to the nearest 10, 100 or 1,000		
					Ma4/2.1h solve number and practical problems that involve all of the above and with increasingly large positive numbers		
					Ma4/2.1i read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value.		
Addition & Subtraction		**Ma1/2.2a** read, write and interpret	**Ma2/2.2a** solve problems with addition and subtraction:	**Ma3/2.2a**	**Ma4/2.2a** add and subtract numbers with up to	**Ma5/2.2a** add and subtract whole numbers	***In Y6, skills 2.2a to 2.2c and 2.2e are multiplication and***

(Addition, Subtraction, Multiplication and Division in Year 6)		mathematical statements involving addition (+), subtraction (-) and equals (=) signs	- using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods	add and subtract numbers mentally, including: • a three-digit number and 1s • a three-digit number and 10s • a three-digit number and 100s	4 digits using the formal written methods of columnar addition and subtraction where appropriate	with more than 4 digits, including using formal written methods (columnar addition and subtraction)	***division skills so have been placed below.***
		Ma1/2.2b represent and use number bonds and related subtraction facts within 20	**Ma2/2.2b** recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	**Ma3/2.2b** add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction	**Ma4/2.2b** estimate and use inverse operations to check answers to a calculation	**Ma5/2.2b** add and subtract numbers mentally with increasingly large numbers	
		Ma1/2.2c add and subtract one-digit and two-digit numbers to 20, including 0	**Ma2/2.2c** add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - a two-digit number and 1s - a two-digit number and 10s - 2 two-digit numbers	**Ma3/2.2c** estimate the answer to a calculation and use inverse operations to check answers	**Ma4/2.2c** solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	**Ma5/2.2c** use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	

			- adding 3 one-digit numbers				
		Ma1/2.2d solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? - 9.	**Ma2/2.2d** show that addition of 2 numbers can be done in any order (commutative) and subtraction of one number from another cannot			**Ma5/2.2d** solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	**Ma6/2.2d** perform mental calculations, including with mixed operations and large numbers.
			Ma2/2.2e recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	**Ma3/2.2e** solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.			
							Ma6/2.2f use their knowledge of the order of operations to carry out calculations involving the 4 operations
							Ma6/2.2g solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
							Ma6/2.2h

							solve problems involving addition, subtraction, multiplication and division
							Ma6/2.2i use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
Multiplication & Division		**Ma1/2.3a** 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.	**Ma2/2.3a** recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	**Ma3/2.3a** recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	**Ma4/2.3a** recall multiplication and division facts for multiplication tables up to 12 × 12	**Ma5/2.3a** identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	**Ma6/2.2a** multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
			Ma2/2.3b calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	**Ma3/2.3b** 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,	**Ma4/2.3b** use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers	**Ma5/2.3b** know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	**Ma6/2.2b** 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

				using mental and progressing to formal written methods			remainders, fractions, or by rounding, as appropriate for the context
			Ma2/2.3c show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot	**Ma3/2.3c** 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.	**Ma4/2.3c** recognise and use factor pairs and commutativity in mental calculations	**Ma5/2.3c** establish whether a number up to 100 is prime and recall prime numbers up to 19	**Ma6/2.2c** 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
			Ma2/2.3d solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.		**Ma4/2.3d** multiply two-digit and three-digit numbers by a one-digit number using formal written layout	**Ma5/2.3d** 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	
					Ma4/2.3e solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by 1 digit,	**Ma5/2.3e** multiply and divide numbers mentally drawing upon known facts	**Ma6/2.2e** identify common factors, common multiples and prime numbers

					integer scaling problems and harder correspondence problems such as n objects are connected to m objects.		
						Ma5/2.3f 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	
						Ma5/2.3g multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	
						Ma5/2.3h recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)	
						Ma5/2.3i solve problems involving	

						multiplication and division, including using their knowledge of factors and multiples, squares and cubes	
						Ma5/2.3j solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	
						Ma5/2.3k solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	
Fractions		**Ma1/2.4a** recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity	**Ma2/2.4a** recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity	**Ma3/2.4a** 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	**Ma4/2.4a** recognise and show, using diagrams, families of common equivalent fractions	**Ma5/2.4a** compare and order fractions whose denominators are all multiples of the same number	**Ma6/2.3a** use common factors to simplify fractions; use common multiples to express fractions in the same denomination
		Ma1/2.4b recognise, find and	**Ma2/2.4b**	**Ma3/2.4b** recognise, find and	**Ma4/2.4b**	**Ma5/2.4b** identify, name and	**Ma6/2.3b** compare and order

		name a quarter as 1 of 4 equal parts of an object, shape or quantity.	write simple fractions, for example 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.	write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	count up and down in hundredths; recognise that hundredths arise when dividing an object by a 100 and dividing tenths by 10.	write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	fractions, including fractions >1
				Ma3/2.4c recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	**Ma4/2.4c** 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	**Ma5/2.4c** recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number e.g. 2/5 + 4/5 = 6/5 = 1 and 1/5	**Ma6/2.3c** add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
				Ma3/2.4d recognise and show, using diagrams, equivalent fractions with small denominators	**Ma4/2.4d** add and subtract fractions with the same denominator	**Ma5/2.4d** add and subtract fractions with the same denominator and denominators that are multiples of the same number	**Ma6/2.3d** multiply simple pairs of proper fractions, writing the answer in its simplest form
				Ma3/2.4e add and subtract fractions with the same denominator within one whole	**Ma4/2.4e** recognise and write decimal equivalents of any number of tenths or hundredths	**Ma5/2.4e** multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	**Ma6/2.3e** divide proper fractions by whole numbers

				Ma3/2.4f compare and order unit fractions, and fractions with the same denominators	**Ma4/2.4f** recognise and write decimal equivalents to ¼; ½; ¾	**Ma5/2.4f** read and write decimal numbers as fractions e.g. 0.71 = 71/100	**Ma6/2.3f** associate a fraction with division and calculate decimal fraction equivalents for a simple fraction.
				Ma3/2.4g solve problems that involve all of the above.	**Ma4/2.4g** 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	**Ma5/2.4g** recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	**Ma6/2.3g** identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers are up to three decimal places
					Ma4/2.4h round decimals with 1 decimal place to the nearest whole number	**Ma5/2.4h** round decimals with 2 decimal places to the nearest whole number and to 1 decimal place	**Ma6/2.3h** multiply one-digit numbers with up to 2 decimal places by whole numbers
					Ma4/2.4i compare numbers with the same number of decimal places up to 2 decimal places	**Ma5/2.4i** read, write, order and compare numbers with up to 3 decimal places	**Ma6/2.3i** use written division methods in cases where the answer has up to 2 decimal places
					Ma4/2.4j solve simple measure and money	**Ma5/2.4j** solve problems involving number	**Ma6/2.3j** solve problems which require

					problems involving fractions and decimals to 2 decimal places	up to 3 decimal places	answers to be rounded to specified degrees of accuracy
						Ma5/2.4k recognise the per cent symbol (%) and understand that per cent relates to "number of parts per 100", and write percentages as a fraction with denominator 100, and as a decimal fraction	**Ma6/2.3k** recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
						Ma5/2.4l solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and fractions with a denominator of a multiple of 10 or 25.	
Proportion & Ratio							**Ma6/2.4a** solve problems involving the

							relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
							Ma6/2.4b solve problems involving the calculation of percentages and the use of percentages for comparison
							Ma6/2.4c solve problems involving similar shapes where the scale factor is known or can be found
							Ma6/2.4d solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.
Algebra							**Ma6/2.5a** use simple formulae

							Ma6/2.5b generate and describe linear number sequences
							Ma6/2.5c express missing number problems algebraically
							Ma6/2.5d find pairs of numbers that satisfy an equation with two unknowns
							Ma6/2.5e enumerate possibilities of combinations of 2 variables.
Measurement		**Ma1/3.1a** compare, describe and solve practical problems for: - lengths and heights e.g. long / short, longer / shorter, tall / short, double / half - mass / weight e.g. heavy, light, heavier than, lighter than	**Ma2/3.1a** 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	**Ma3/3.1a** measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	**Ma4/3.1a** convert between different units of measure	**Ma5/3.1a** convert between different units of metric measure e.g. km and m, cm and m, cm and mm, g and kg, l and ml	**Ma6/3.1a** solve problems involving the calculation and conversion of units of measure, using decimal notation up to 2 decimal places where appropriate

		- capacity and volume e.g. full, empty, more than, less than, quarter - time e.g. quicker, slower, earlier, later					
		Ma1/3.1b measure and begin to record the following: - lengths and heights - mass/weight - capacity and volume - time (hours, minutes, seconds)	**Ma2/3.1b** compare and order lengths, mass, volume/capacity and record the results using >, < and =	**Ma3/3.1b** measure the perimeter of simple 2-D shapes	**Ma4/3.1b** measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	**Ma5/3.1b** understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	**Ma6/3.1b** 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 3 decimal places
		Ma1/3.1c recognise and know the value of different denominations of coins and notes	**Ma2/3.1c** recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value	**Ma3/3.1c** add and subtract amounts of money to give change, using both £ and p in practical contexts	**Ma4/3.1c** find the area of rectilinear shapes by counting squares	**Ma5/3.1c** measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	**Ma6/3.1c** convert between miles and kilometres
		Ma1/3.1d sequence events in	**Ma2/3.1d**	**Ma3/3.1d**	**Ma4/3.1d** estimate, compare	**Ma5/3.1d** calculate and	**Ma6/3.1d** recognise that

		chronological order using language e.g. before and after, next, first today, yesterday, tomorrow, morning, afternoon and evening	find different combinations of coins that equal the same amounts of money	tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	and calculate different measures, including money in pounds and pence	compare the area of rectangles (including squares) including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes	shapes with the same areas can have different perimeters and vice versa
		Ma1/3.1e recognise and use language relating to dates, including days of the week, weeks, months and years	**Ma2/3.1e** solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	**Ma3/3.1e** 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, am/pm, morning, afternoon, noon and midnight	**Ma4/3.1e** read, write and convert time between analogue and digital 12 and 24-hour clocks	**Ma5/3.1e** estimate volume e.g. using 1cm3 blocks to build cuboids (including cubes) and capacity e.g. using water	**Ma6/3.1e** recognise when it is possible to use formulae for area and volume of shapes
		Ma1/3.1f tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	**Ma2/3.1f** compare and sequence intervals of time	**Ma3/3.1f** know the number of seconds in a minute and the number of days in each month, year and leap year	**Ma4/3.1f** solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days.	**Ma5/3.1f** solve problems involving converting between units of time	**Ma6/3.1f** calculate the area of parallelograms and triangles
			Ma2/3.1g tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a	**Ma3/3.1g** compare durations of events e.g. calculate the time taken by		**Ma5/3.1g** use all four operations to solve problems involving measure using	**Ma6/3.1g** calculate, estimate and compare volume of cubes and cuboids using standard units,

			clock face to show these times.	particular events or tasks		decimal notation including scaling. e.g. length, mass, volume, money	including cubic centimetres (cm3) and cubic metres (m3), and extending to other units e.g. mm3 and km3
			Ma2/3.1h know the number of minutes in an hour and the number of hours in a day				
Properties of Shapes		**Ma1/3.2a** recognise and name common 2-D and 3-D shapes, including: - rectangles (including squares), circles and triangles - cuboids (including cubes), pyramids and spheres	**Ma2/3.2a** identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line	**Ma3/3.2a** draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	**Ma4/3.2a** compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	**Ma5/3.2a** identify 3-D shapes, including cubes and other cuboids, from 2-D representations	**Ma6/3.2a** draw 2-D shapes using given dimensions and angles
			Ma2/3.2b identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces	**Ma3/3.2b** recognise angles as a property of shape or a description of a turn	**Ma4/3.2b** identify acute and obtuse angles and compare and order angles up to 2 right angles by size	**Ma5/3.2b** know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	**Ma6/3.2b** recognise, describe and build simple 3-D shapes, including making nets
			Ma2/3.2c	**Ma3/3.2c**	**Ma4/3.2c**	**Ma5/3.2c**	**Ma6/3.2c** compare and

			identify 2-D shapes on the surface of 3-D shapes e.g. a circle on a cylinder, a triangle on a pyramid	identify right angles, recognise that 2 right angles make a half-turn, 3 make three quarters of a turn and 4 a complete turn; identify whether angles are greater than or less than a right angle	identify lines of symmetry in 2-D shapes presented in different orientations	draw given angles, and measure them in degrees (o)	classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
			Ma2/3.2d compare and sort common 2-D and 3-D shapes and everyday objects.	**Ma3/3.2d** identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	**Ma4/3.2d** complete a simple symmetric figure with respect to a specific line of symmetry.	**Ma5/3.2d** identify: • angles at a point and 1 whole turn (total 360o) • angles at a point on a straight line and half a turn (total 180o) • other multiples of 90o	**Ma6/3.2d** illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
						Ma5/3.2e use the properties of rectangles to deduce related facts and find missing lengths and angles	**Ma6/3.2e** recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

						Ma5/3.2f distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	
Position and Direction		**Ma1/3.3a** describe position, directions and movements, including whole, half, quarter and three-quarter turns.	**Ma2/3.3a** order and arrange combinations of mathematical objects in patterns and sequences		**Ma4/3.3a** describe positions on a 2-D grid as coordinates in the first quadrant	**Ma5/3.3a** 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.	**Ma6/3.3a** describe positions on the full coordinate grid (all 4 quadrants)
			Ma2/3.3b 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).		**Ma4/3.3b** describe movements between positions as translations of a given unit to the left/right and up/down		**Ma6/3.3b** draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
					Ma4/3.3c plot specified points and draw sides to		

					complete a given polygon.		
Statistics			**Ma2/4.1a** interpret and construct simple pictograms, tally charts, block diagrams and tables	**Ma3/4.1a** interpret and present data using bar charts, pictograms and tables	**Ma4/4.1a** interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	**Ma5/4.1a** solve comparison, sum and difference problems using information presented in a line graph	**Ma6/4.1a** interpret and construct pie charts and line graphs and use these to solve problems
			Ma2/4.1b ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity	**Ma3/4.1b** solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables. e.g. 'How many more?' and 'How many fewer?'	**Ma4/4.1b** solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	**Ma5/4.1b** complete, read and interpret information in tables, including timetables.	**Ma6/4.1b** calculate and interpret the mean as an average.
			Ma2/4.1c ask and answer questions about totalling and comparing categorical data.				

What will MATHS look like in the classroom?

THE WEEK'S LESSONS

Monday	Tuesday	Wednesday	Thursday	Friday
Teaching from curriculum sequence				**Assess and revisit**

From Monday to Thursday, lessons are taught to follow the unit shown on the medium-term plans. Friday's lesson is an assess and revisit lesson.

Assess
During this lesson, a short informal 'low-stakes' assessment (of no more than three questions) takes place to give an indication of the child's understanding of the skills learned from that week.

Recap
Following the assessment, children will work on core skills learned in previous weeks. This enables knowledge to stay 'fresh' in the children's memory and ensure that core skills are embedded securely for use in other contexts.

During this assess and revise lesson, the class Times Table will be assessed using a standard test.

TIMES TABLES

In Years 1-5, each daily maths lesson begins with a five minute times table starter. This is based on the times table (or 'counting in' skill below Year 2) target for each term, as detailed in each year group's curriculum overview (see p11, p21, p33, p45).

This activity will take the form of chanting the times table (research has shown this to be the most impactful method), although visual representations should initially be used with Year 1 and Year 2 children, such as grouping objects in arrays as below:

1 x 3 = 3

Showing 1 group of 3 is worth 3

4 x 3 = 12

Showing 4 groups of 3 is worth 12

7 x 3 = 21

Showing 7 groups of 3 is worth 21

Arrays using dots should also be used to represent times tables to make links with the method used for multiplication in Year 1 and 2.

Children in KS2 should be supported initially with the times table written on the board or screen, then removing some to encourage recall.

Times tables should be chanted as "one 2 is 2, two 2s are 4, three 2s are 6, four 2s are 8". This enables to children to chant in a rhythm and research shows that this impacts positively on memorising each fact.

The key to learning times tables effectively is repetition. This means that the starter activity to each maths lesson will be identical or very similar to the previous day's starter.

Other activities can be used, such as songs or games. However, these should only be used to further embed facts when the times table has been sufficiently learned through chanting.

Once children are secure in saying the times table in order, they should then be given verbal questions out of table order, e.g.:

"What are six 2s?"
"What is 9 x 2?"
"What are three lots of 2?"
"What is the product of 5 and 2?"

As shown in the example above, question language should be varied to encourage flexibility.

When children are secure in answering times table question out of order, they should then also practise related division facts, e.g.:

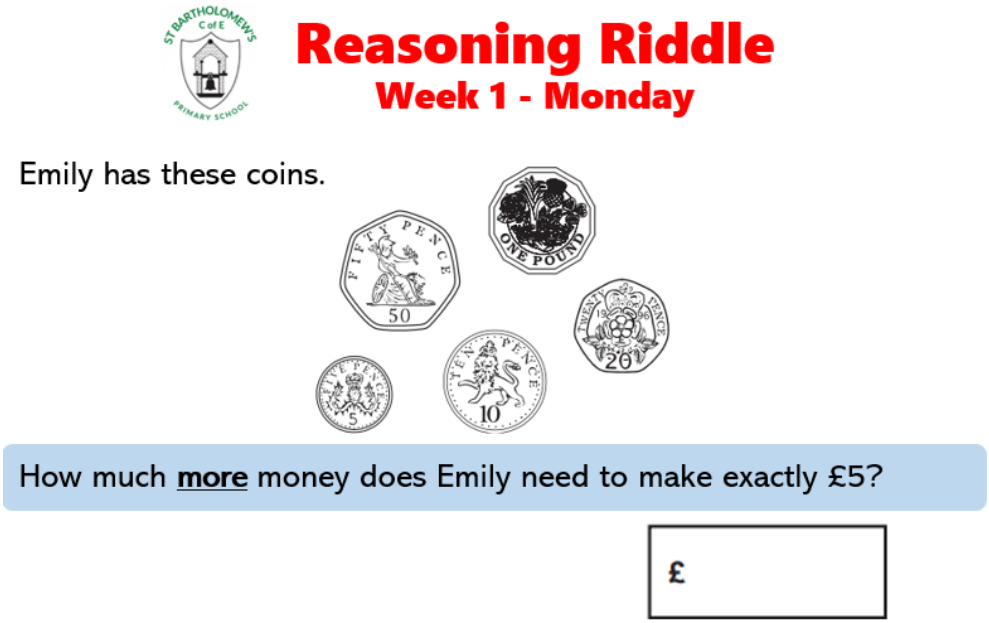
"How many 2s make 18?"
"If 14 is the answer, what is the question?"
"What is 8 divided by 2?"

While speed of recall is important once a times table has been initially learned, children should be given reasonable recall and thinking time during the initial learning stage. Some children will recall facts more quickly than others and it is vital that other children do not get left behind during this process.

REASONING RIDDLE

Following Times Table practice, Maths lessons on Monday – Thursday will then progress to a **Reasoning Riddle**. These are whole-class activities aimed to increase confidence and ability in answering reasoning questions. They are designed to emulate the question type and challenge of questions found in SAT Reasoning papers. Reasoning Riddles are used in every year group, from EYFS to Year 6.

Monday's Reasoning Riddle introduces a question type which is then worked through and modelled by the teacher with minimal questioning. Here is an example from Year 6:



For the following days, the same question type is used, with different information. Throughout the week, children will answer these questions with increasing independence as confidence improves.

Here is another Year 6 Reasoning Riddle from later in the week:

Reasoning Riddle
Week 1 - Thursday

Emily has these coins.

How much **more** money does Emily need to make exactly £5?

£

The method of solving each Reasoning Riddle will remain the same throughout each week to ensure that skills are securely embedded.

In EYFS, children are shown a picture which the teacher will use as a stimulus for number talk.

Here is an example:

Using the picture, the teacher might ask:

- How many sheep are there inside the shed?
- How many sheep are outside?
- How many sheep are there altogether?

This conversation enables the teacher to practise counting skills within 10 and begin to introduce simple addition and subtraction.

MAIN LESSON

Children are taught using clear modelling of methods and skills by the teacher. Children work either individually on tasks, or in pairs or small groups. Tasks are matched to the year group objective being learned and all children are taught to achieve this objective. Differentiation is provided by support for those working below age-related expectations and challenge is given to those working above age-related expectations using problem-solving and reasoning tasks. Children working significantly below age-related expectations will work towards similar stage-appropriate objectives. The "Ready To Progress" documents provide a structure for teaching children working significantly below age-related expectations and ensures that key core skills are learned in order and built on sequentially.

Daily Maths lessons will consist of a main task which will focus on fluency skills or key methods. They will provide repeated practice to make sure that new skills are embedded effectively or recapped to ensure secure knowledge retention.

There will be an independent reasoning task available in all lessons and it is an expectation that all children will access this. Children will progress to this once their main task has been checked by an adult. The reasoning task is placed in the classroom to be easily accessed without the need to ask an adult to ensure that no learning time is wasted. In some lessons, there may be a need for individual children to have further practice of fluency key skills and may not be ready to use these skills in a reasoning context.

There may also be occasions where a Maths lesson is used to recap, embed or clarify misconceptions that have been identified by the class teacher and this may affect the structure of the lesson.

CONCRETE, PICTORIAL, ABSTRACT

Children will use **concrete**, **pictorial** and **abstract** methods of calculation.

Concrete is the 'doing' stage – physically moving objects to explore a concept. This helps bring the maths to life. Every abstract concept is first introduced using physical, concrete objects.

When learning a new concept, **concrete** materials and objects are used to aid calculation. For example, Numicon is used in EYFS to learn numbers to 10, number bonds to ten and whether each number is odd or even. A number sentence is written to record the question and answer calculated. In the example image above, one cube has been added to two cubes to show the calculation of 2 + 1 = 3.

Pictorial methods use images to represent the **concrete** materials. This stage encourages children to make a mental connection between the physical object they just handled and the abstract pictures, diagrams or models that represent the objects from the problem. Building or drawing a model makes it easier for children to grasp difficult abstract concepts (for example, fractions). Simply put, it helps children visualise abstract problems and make them more accessible.

These methods bridge the gap between **concrete** and **abstract** methods. In the example image above, the cubes from the **concrete** method have become coloured squares. Two green squares are combined with one purple square to represent 2 + 1 = 3. A number sentence is written to record the question and answer calculated.

The **abstract** stage uses only symbols and numerals to model the problem or calculation. The teacher uses operational symbols (+, –, x, ÷) to indicate addition, subtraction, multiplication or division.

PRESENTATION AND MARKING

When writing in books, children write numbers using one digit per square, e.g.:

When writing fractions, the whole fraction is written in one square.

Decimal points are placed on the line between squares.

Marking is done mainly within the lesson, following the school marking policy. Correct answers are ticked with green ink and errors are indicated with orange ink. Children then use red ink for corrections. If children self-correct errors, purple ink is used to show independent alterations.

Due to this 'instant feedback', misconceptions are identified rapidly and intervention can be given within the lesson itself. Where there are misconceptions that require more dedicated time, interventions may take place after the lesson.

Assessment

Children are assessed in the following ways:

- A short, 'low-stakes' formative assessment typically on Friday to assess the week's learning. This is done informally using a small number of key questions set by the teacher to identify gaps in understanding. These gaps can then be worked on in the Friday recap session.
- In each term, a formal assessment takes place which are based on the term's learning and are focused on the key objectives for the unit studied. These assessments *inform* teacher judgement and each child's assessment is based on a combination of these tests, their work during lessons and the teacher's in-depth knowledge of the child. Teacher judgements are recorded on SIMS

and Pupil Progress meetings then identify children at risk of not making good progress or achieving age-related expectations. Support is then put in place for these children.

SEN

At St Bartholomew's, we provide learning opportunities that enable all pupils to make good progress. Every child has an equal right to receive the maths curriculum in daily maths lessons of approximately one hour. There may be times when it is more appropriate for Foundation Stage or Key Stage 1 sessions to be approximately 45 minutes in length and for Key Stage 2 sessions to be over an hour. All children will have their specific needs met through differentiated work in conjunction with targets. Teacher or TA support time is planned for and provided in relation to identified needs for individuals and groups.

Monitoring and review

The phase leaders, alongside the maths leader and SLT, are responsible for monitoring and evaluating curriculum progress. This is done through book scrutiny, planning scrutiny, lesson observations, pupil interviews, staff discussions and audit of resources.