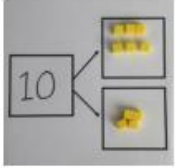
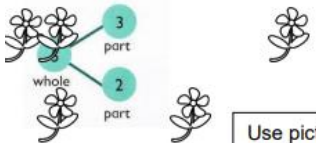
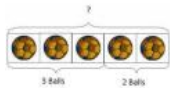
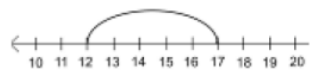
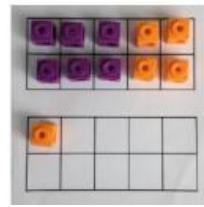
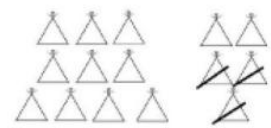
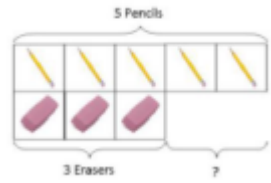
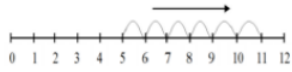
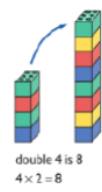
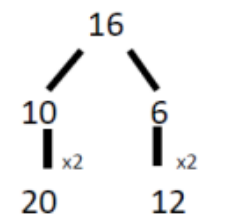
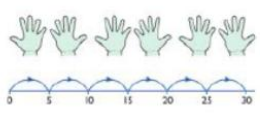
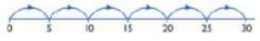
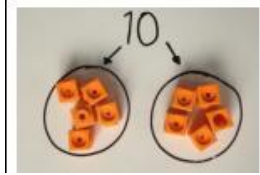
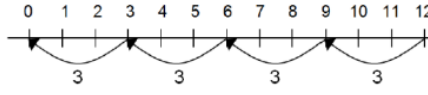


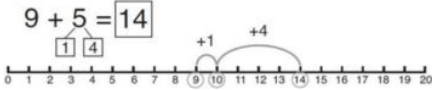
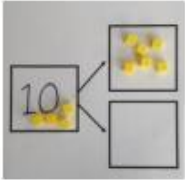
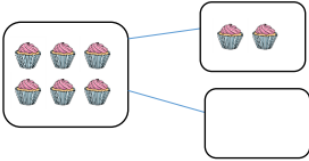


Maths Curriculum Map

Year 1

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Previous EYFS Experience	✓ Begin to develop a sense of the number system by verbally counting forward to and beyond 20, pausing at each multiple of 10. ✓ Play games that involve moving along a numbered track and understand that larger numbers are further along the track. ✓ Begin to experience partitioning and combining numbers within 10. ✓ Distribute items fairly, for example, put 3 marbles in each bag. Recognise when items are distributed unfairly. ✓ Understand the cardinal value of number words, for example understanding that 'four' relates to 4 objects. Subitise for up to 5 items. Automatically show a given number using fingers. ✓ Devise and record number stories, using pictures, numbers and symbols (such as arrows). ✓ See, explore and discuss models of common 2D and 3D shapes with varied dimensions and presented in different orientations (for example, triangles not always presented on their base).					
Core Curriculum	Number: Place Value (within 10) - Sort, count and represent objects - Count, read and write forwards and backwards from any number 0-10 - Count one more and one less - One-to-one correspondence to compare groups - Compare groups using language such as equal, more/greater, less/fewer - Introduce <, > and = symbols - Compare, order numbers and groups of objects - Ordinal numbers (1st, 2nd, 3rd ...) - Use a number line for counting	Number: Addition and Subtraction (within 10) - Use a part-whole model - Find number bonds for numbers within 10 - Compare number bonds - Addition-adding together, adding more, finding a part - Subtraction-taking away, how many left? - Subtraction-finding a part, breaking away, counting back, finding the difference - Fact families - Comparing addition and subtraction statements - Recognising odd and even numbers. Geometry: Shape - Recognise and name 3-D shapes - Sort 3-D shapes - Recognise and name 2-D shapes - Sort 2-D shapes - Make patterns with 2-D and 3-D shapes Number: Place Value (within 20) - Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =	Number: Addition and Subtraction (within 20) - Add by counting on - Find and make number bonds - Add by making 10 - Subtraction including crossing 10 - Related facts - Compare number sentences - relate additive expressions and equations to real-life contexts. Number: Place Value (within 50) - Represent numbers to 50 using tens and ones - One more one less - Compare objects and numbers within 50 - Order numbers within 50 - Count in 2s and 5s	Measurement: Length and Height - Compare lengths and heights - Measure length Measurement: Weight and Volume - Introduce weight and mass - Measure and compare mass - Introduce capacity and volume - Measure capacity and volume	Number: Multiplication and Division - Count in 2s, 5s, 10s - Make and add equal groups - Make arrays - Make doubles - Make equal groups-grouping and sharing Number: Fractions - Find halves and quarters Geometry: Position and Direction - Describe turns and position - Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always like one another. - Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.	Number: Place Value (within 100) - Count forwards and backwards within 100 - Partition numbers - Compare and order numbers - One more, one less Measurement: Money - Recognise coins and notes - Count in coins Measurement: Time - Before and after - Dates - Tell time to the hour and half hour - Compare time

	Addition	Subtraction	Multiplication	Division
Calculation Methods: Concrete Pictorial Abstract	<u>Combining two parts to make a whole: part whole model</u>  Use cubes to add two numbers together as a group or in a bar.  Use pictures to add two numbers together as a group or in a bar.  <u>Starting at the bigger number and counting on</u>  $12 + 5 = 17$  Start at the larger number on the number line and count on in ones or in one jump to find the answer. <u>Regrouping to make 10</u>  Start with the bigger number and use the smaller number to make 10.	<u>Taking ones away</u> Use physical objects, counters, cubes etc to show how objects can be taken away.  $6 - 2 = 4$  Cross out drawn objects to show what has been taken away.  $15 - 3 = 12$ <u>Find the difference</u> Compare amounts and objects to find the difference. Use cubes to build towers or make bars to find the difference.  Use basic bar models with items to find the difference.  Count on to find the difference. 	<u>Doubling</u> Use practical activities to show how to double a number.  double 4 is 8 $4 \times 2 = 8$ Draw pictures to show how to double a number.  Double 4 is 8  16 $10 \times 2 = 20$ $6 \times 2 = 12$ <u>Counting in multiples</u> Count in multiples supported by concrete objects in equal groups.    Use a number line or pictures to continue support in counting in multiples. 	<u>Sharing objects into groups</u>  I have 10 cubes, can you share them equally in 2 groups?  Children use pictures or shapes to share quantities  $8 \div 2 = 4$ Divide quantities into equal groups. Use cubes, counters, objects, or place value counters to aid understanding.  Use a number line to show jumps in groups. The number of jumps equals the number of groups.  <u>Moving on to the abstract $9 \div 3 = 3$</u>

	This is an example of a pictorial representation which could be used.  <u>Moving onto the abstract $5 + 12 = 17$</u>	Link to addition- use the part whole model to help explain the inverse between addition and subtraction.  Use a pictorial representation of objects to show the part part whole model.   Move to using numbers within the part whole model. <u>Moving onto abstract $18 - 3 = 15$</u>	Count in multiples of a number aloud. Write sequences with multiples of numbers. 2, 4, 6, 8, 10 5, 10, 15, 20, 25, 30	
New Vocabulary For Y1	Number and Place value: 20-100 count (on/up/to/from/ down), least, fewest, smallest, greater, lesser, equal to, odd, even, units, tens, ten more/less, digit, numeral, figure(s), compare (In) order/a different order, size, value, between, halfway between, above, below. Addition and subtraction: number bonds, addition, plus, sum, greater, inverse, near double, halve, is the same as, (including equals sign), difference between, how many more to make..?, how, many more is...than..?, how much more is..? subtract, minus, how many fewer is...than..?, how much less is..? Fractions: whole, equal parts, four equal parts, one half, two halves, a quarter, two quarters. Measurement: size, bigger, larger, length, width, height, depth, taller, tallest, high, higher, highest, wide, narrow, shallow, close, Metre, metre stick. half full, balances, heavier, heaviest, lighter, lightest, scales. Measurement (Time): Seasons (Spring, Summer, Autumn, Winter) quicker, quickest, quickly, faster, fastest, slower, slowest, slowly, older, oldest, newer, newest, takes longer, takes less time, hour, o clock, half past, hands, how long ago? how long will it be to...? how long will it take to...? how often? often, sometimes, usually, once, twice, second, third etc, estimate, close to, about the same as, just over/under, too many/few, not enough, enough. spend, spent, change, dear(er), costs more, costs less, cheaper, costs the same as, how much? Multiplication and Division: odd, even, count in twos, fives, tens, (forwards from/backwards from), how many times?, multiple of, multiply, multiply by repeated addition, array, row, column, halve, share equally, group in pairs, threes, etc. equal groups of, divide, divided by Geometry (Position and Direction): over, beside, opposite, apart, between, edge, centre, corner, direction, journey, left, right, sideways, near, through, towards, away from, movement, whole turn, half turn. Geometry (Properties of Shape): pyramid, cone, cylinder. curved, hollow, solid, corner (point, pointed) face, side, edge. General / Problem Solving: arrange, rearrange, change over, separate, continue, repeat, describe, explain, record, trace, complete, shade, same number(s)/different number(s)/missing number(s) number facts, same way, different way, best way, another way, in a different order, not all.			

Continuous Curriculum (Maths Meetings)	Geometry: Shape Recognise and name 3-D shapes; Sort 3-D shapes; Recognise and name 2-D shapes; Sort 2-D shapes; Make patterns with 2-D and 3-D shapes Geometry: Position and Direction Describe turns and position Measurement: Length and Height Compare lengths and heights; Measure length Measurement: Weight and Volume Introduce weight and mass; Measure and compare mass; Introduce capacity and volume; Measure capacity and volume Measurement: Money Recognise coins and notes; Count in coins Measurement: Time Before and after; Dates; Tell time to the hour and half hour; Compare time Number: Fractions Find halves and quarters					
Arithmetic Fluency (Key Focus)	Counting Count to and across 20 forwards and backwards, beginning with 0 or 1, or from any given number Count, read and write numbers to 20 in numerals Count in 2s Recognising odd and even numbers.		Number facts (+ -) Given a number, identify 1 more, 1 less Represent and use number bonds and related subtraction facts within 20		Mental (+ -) Add and subtract one-digit and two-digit numbers to 20, including 0	Written (+ -) Read, write and interpret mathematical statements involving +, - and = signs
Consolidation (To be Included in Arithmetic Lessons)	Addition and subtraction – count on and back (Reception, Summer 1)	Number: Place Value (within 10) (Year 1, Autumn 1)	Number: Addition and Subtraction (within 10) (Year 1, Autumn 2)	Number: Addition and Subtraction (within 20) (Year 1, Spring 1)	Number: Place Value (within 50) (Year 1, Spring 1)	Number: Multiplication and Division (Year 1, Summer 1)
Mental Maths	Number and Place Value (Securing Numbers, Ordering and Comparing): Counting forwards and backwards in 1s to 20 - teen numbers; Order a set of consecutive and then random numbers to 20. Number and Place Value (Counting): Counting forwards in multiples of 10 to 100; Counting forwards and backwards in 1s to 100. Adding any number to 10 <i>e.g.</i>, $10 + 5$, $10 + 7$ Addition and Subtraction (Multiples): Adding / subtracting 1 more / less to any number up to 100; Number bonds to 5 extending to 10; Counting on from largest number / re-ordering numbers to add <i>e.g.</i>, $1 + 8$ Counting on / back in 1s to add / subtract any 1-digit number to teens number <i>e.g.</i>, $13 + 5$, $17 - 2$; Partition numbers to 10 (using concrete resources for number bonds) to find addition and subtraction facts. <i>e.g.</i>, $8 + 2 = 10$ so $8 + 3 = 8 + 2 + 1$; $10 - 2 = 8$ so $11 - 2 = 9$; Number bonds to 10; Number bonds to 20 <i>e.g.</i>, $8 + 2 = 10$ so $18 + 2 = 20$; $10 - 8 = 2$ so $20 - 18 = 2$ Addition and Subtraction (Adding / Subtracting 10's, 100's, 1000's): Counting in multiples of 10s; Representing 2 digit numbers using concrete resources; What changes / stays the same when you add / subtract 1, 10? Multiplication and Division (Doubling Numbers / Near Doubles): Recall double numbers to 5/10 <i>e.g.</i>, up to double $10 = 20$; Doubling 1 digit numbers <i>e.g.</i> $6 + 6$; Adding near doubles (adjusting) <i>e.g.</i> $6 + 7$ (double 6 add 1 or double 7 subtract 1); Halve even numbers to 20; Half of 20 = 10; Recognise odd numbers as those that cannot be shared into 2 equal groups; Adding near doubles <i>e.g.</i> $6 + 7$					
Ready to Progress Criteria	➤ Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers. ➤ Develop fluency in addition and subtraction facts within 10. ➤ Count within 100, forwards and backwards, starting with any number. ➤ Reason about the location of numbers to 20 within the linear number system, including comparing using $<$ $>$ and $=$ ➤ Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers. ➤ Read, write and interpret equations containing addition subtraction and equals symbols, and relate additive expressions and equations to real-life contexts. ➤ Read, write and interpret equations containing addition subtraction and equals symbols, and relate additive expressions and equations to real-life contexts. ➤ Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.					



Maths Curriculum Map

Year 2

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 Conceptual Prerequisites	✓ Know that 10 ones are equivalent to 1 ten. ✓ Know that multiples of 10 are made up from several tens, for example, 50 is 5 tens. ✓ Place the numbers 1 to 9 on a marked, but unlabelled, 0 to 10 number line. ✓ Estimate the position of the numbers 1 to 9 on an unmarked 0 to 10 number line. ✓ Count forwards and backwards to and from 100. ✓ Develop fluency in addition and subtraction facts within 10. ✓ Learn and use number bonds to 10. ✓ Partition numbers within 10. ✓ Solve missing addend problems within 10. ✓ Add and subtract within 10. ✓ Count in multiples of 2, 5 and 10 in everyday contexts. ✓ Recognise common 2D and 3D shapes presented in different orientations.					
Core Curriculum	Number: Place Value - Count forwards and backwards within 20 - Tens and ones within 20 - Count forwards and backwards within 50 - Tens and ones within 50 - Compare numbers within 50 - Count objects, read, write and represent numbers to 100 - Tens and ones with a part whole model - Tens and ones using addition - Use a place value chart - Compare and order objects and numbers - Recognise the place value of each digit in two-digit numbers and compose and decompose two-digit numbers using standard and non-standard partitioning. - Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10. Number: Addition and Subtraction - Fact families-addition and subtraction bonds to 20 - Compare number sentences and related facts	Number: Addition and Subtraction - Bonds to 100 (10s) - Add and subtract 1s 10 more and 10 less - Add and subtract 10s - Add by making 10 - Add/subtract a 2- and 1-digit number –crossing 10 - Subtract a 1 digit from a 2-digit number-crossing 10 - Recognise the subtraction structure of 'difference Measurement: Money - Recognise coins and notes - Count money-pence and pounds - Select money - Make the same amount - Compare money - Find the total, difference, change - Two step problems Number: Multiplication and Division - Make and add equal groups - Make arrays	Number: Multiplication and Division - Recognise, make and add equal groups - Multiplication sentences using x symbol - Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables. - Multiplication sentences from pictures - Use arrays - Make doubles 2,5-, and 10-times table - Make equal groups-sharing and grouping - Divide by 2 - Odd and even numbers - Divide by 5 and 10 Statistics - Make tally charts - Draw and interpret pictograms (1-1)	Geometry: Properties of Shape - Recognise 2D and 3D shapes - Count sides and vertices on 2D shapes - Draw, sort and make patterns with 2D shapes - Lines of symmetry - Count faces, edges and vertices on 3D shapes - Sort and make patterns with 3D shapes Number: Fractions - Make equal parts - Recognise and find half and quarter - Recognise and find one third - Unit and non-unit fractions - Equivalence of $\frac{1}{2}$ and $\frac{2}{4}$ - Find three-quarters - Count in fractions	Measurement: Length and Height - Compare lengths and heights - Measure lengths in cm and m - Compare and order lengths - Four operations with lengths Geometry: Position and Direction - Describe position, movement and turns - Make patterns with shapes	Measurement: Time - Tell time to the hour and half hour - clock and half past - Quarter past and quarter to - Tell time to 5 minutes - Hours and days - Find and compare durations of time Measurement: Mass, Capacity and Temperature - Introduce weight and mass - Measure and compare mass - Measure mass in grams - Introduce capacity and volume - Measure capacity - Compare volume - Millilitres and litres - Temperature

- Draw and interpret pictograms (2,5 and 10)
- Block diagrams

Addition

Calculation Methods:
Concrete
Pictorial
Abstract

Add three single digits

$4 + 7 + 6 = 17$
Put 4 and 6 together to make 10. Add on 7.



Following on from making 10, make 10 with 2 of the digits (if possible) then add on the third digit.

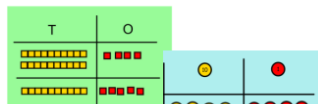
Add together three groups of objects. Draw a picture to recombine the groups to make 10.

$$\begin{array}{r} 4 + 7 + 6 = 10 + 7 \\ 10 \\ = 17 \end{array}$$

Combine the two numbers that make 10 and then add on the remainder.

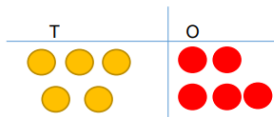
Column method- no regrouping

$24 + 15 =$
Add together the ones first then add the tens. Use the Base 10 blocks first before moving onto place value counters.



Focus on dienes

Limit use of PV
After practically using the base 10 blocks & counters, children can draw the counters to solve additions.



Moving onto the abstract

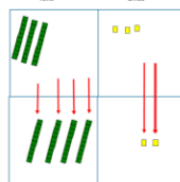
Subtraction

Revisit concrete, pictorial, and abstract strategies from Year One:

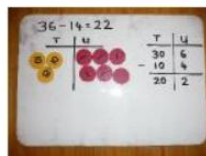
Taking Away One
Counting Back
Find the Difference
Part Whole Model

Column method without regrouping

Use Base 10 to make the bigger number then take the smaller number away.



Show how you partition numbers to subtract. Again make the larger number first.



Moving onto the abstract

$$\begin{array}{r} 47 - 24 = 23 \\ \underline{20 + 3} \end{array}$$

This will lead to a clear written column subtraction.

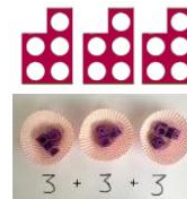
$$\begin{array}{r} 32 \\ - 12 \\ \hline 20 \end{array}$$

Multiplication

Revisit concrete, pictorial, and abstract strategies from Year One:

Doubling
Counting in Multiples

Repeated addition



Use different objects to add equal groups.



2 add 2 add 2 equals 6

Write addition sentences to describe objects and pictures.



Arrays showing commutative multiplication

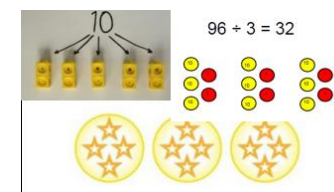


Draw arrays in different rotations to find commutative multiplication sentences.

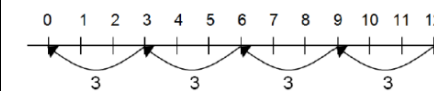
Division

Division as grouping

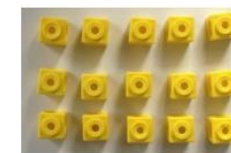
Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding.



Use a number line to show jumps in groups. The number of jumps equals the number of groups.



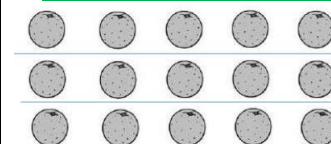
Division within arrays



Link division to multiplication by creating an array and thinking about the

number sentences that can be created.

$$\begin{array}{ll} \text{Eg } 15 \div 3 = 5 & 5 \times 3 = 15 \\ 15 \div 5 = 3 & 3 \times 5 = 15 \end{array}$$



Draw an array and use lines to split the array into groups to make multiplication and division sentences.

Also use multiplication triangles

Find the inverse of multiplication and division sentences by creating four linking number

	21 + 42 = 21 + 42		4 × 2 = 8 2 × 4 = 8 2 × 4 = 8 4 × 2 = 8 Use an array to write multiplication sentences and reinforce repeated addition. 5 + 5 + 5 = 15 3 + 3 + 3 + 3 + 3 = 15 5 × 3 = 15 3 × 5 = 15	sentences. 7 × 4 = 28 4 × 7 = 28 28 ÷ 7 = 4 28 ÷ 4 = 7 “Fact Families” Moving onto the abstract 28 ÷ 7 = 4 Divide 28 into 7 groups. How many are in each group?	
New Vocabulary For Y2	Number and Place Value: numbers to one hundred, hundreds, partition, recombine, hundred more/less, represents, exchange, Statistics: count, tally, sort, vote, graph, block graph, pictogram, represent group, set, list, table label, title most popular, most common, least popular, least common Fractions: three quarters, one third, a third, equivalence, equivalent. Measurement: quarter past/to, fortnight temperature (degrees) m/cm, g/kg, ml/l Multiplication and Division: count in multiples of 3 Geometry (Position and Direction): rotation, clockwise, anticlockwise, straight-line, ninety-degree turn, right angle. Geometry (Properties of shape): smaller, symmetrical, line of symmetry, fold, match, mirror line, reflection, pattern, repeating pattern, vertices, vertex. pentagon, hexagon, octagon, circular, triangular, right angle. General/Problem Solving: predict, describe the pattern, describe the rule, find, find all, find different, investigate.				
Continuous Curriculum (Maths Meetings)	Measurement: Money Recognise coins and notes; Count money-pence and pounds; Select money; Make the same amount; Compare money; Find the total, difference, change; Two step problems Statistics Make tally charts; Draw and interpret pictograms (1-1); Draw and interpret pictograms (2,5 and 10); Block diagrams Geometry: Properties of Shape Recognise 2D and 3D shapes; Count sides and vertices on 2D shapes; Draw, sort and make patterns with 2D shapes; Lines of symmetry; Count faces, edges, and vertices on 3D shapes; Sort and make patterns with 3D shapes Number: Fractions Make equal parts; Recognise and find half and quarter; Recognise and find one third; Unit and non-unit fractions; Equivalence of ½ and 2/4; Find three-quarters; Count in fractions Measurement: Length and Height Compare lengths and heights; Measure lengths in cm and m; Compare and order lengths; Four operations with lengths Geometry: Position and Direction Describe position, movement and turns; Make patterns with shapes Measurement: Time Tell time to the hour and half hour; O’clock and half past; Quarter past and quarter to; Tell time to 5 minutes; Hours and days; Find and compare durations of time Measurement: Mass, Capacity and Temperature Introduce weight and mass; Measure and compare mass; Measure mass in grams; Introduce capacity and volume; Measure capacity; Compare volume; Millilitres and litres; Temperature				
Arithmetic Fluency (Key Focus)	Counting Count to and across 100 from any given number	Number facts (+ -) Use place value and number facts to solve problems	Mental (+ -) Add and subtract numbers using concrete objects, pictorial representations and mentally:	Written (+ -) Record addition and subtraction in columns to prepare for formal written	Number facts (x ÷) Recall and use multiplication and division facts for the 2,5- and 10- Mental / Written (x ÷) Calculate mathematical statements for multiplication and division within the 2, 5 and 10 times tables.

	Count, read and write numbers to 100 in numerals Count in multiples of 2, 3, 5 and 10 from any number forward and back.	Recall and use addition and subtraction facts to 20 fluently Derive and use related facts up to 100	• A two-digit number and 1s • A two-digit number and 10s • 2 two-digit numbers • Add 3 one-digit numbers Show that addition can be done in any order (commutative) and subtraction of a 1-digit number from another cannot	methods with larger numbers	times tables, including recognising odd and even numbers	Show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot Write the mathematical statements using $\times$ $\div$ and $=$ signs
Consolidation (To be Included in Arithmetic Lessons)	Number: Place Value (within 100) (Year 1, Summer 2)	Number: Addition and Subtraction (Year 2, Autumn 1)	Number: Multiplication and Division (Year 2, Autumn 2)	Number: Place Value (within 100) (Year 1, Summer 2)	Number: Fractions (Year 2, Spring 2)	Number: Addition and Subtraction (Year 2, Autumn 1)
Mental Maths	Number and Place Value (Securing Numbers, Ordering and Comparing): Counting forwards and backwards in 1s to 100; Order a set of random numbers to 100; Compare numbers using symbols $<$ and $>$ Number and Place Value (Counting): Counting forwards/backwards in 10s and 1s to 100 (mixed counting) <i>e.g., 20, 30, 40 etc, 20, 30, 31, 32, 33 etc, 80, 70, 60 etc</i> Addition and Subtraction (Multiples): Recall number bonds to 20 and use this to find bonds to 18, 19; Add 3 numbers where bond to 10 evident; Reorder numbers to add <i>e.g., $7 + 4 + 3$</i>; Partition numbers (1 number) using number bonds to add/subtract (reordering numbers) <i>e.g. $8 + 7 = 8 + 2 + 5$, $13 - 5 = 13 - (3 - 5)$, $16 + 5 (16 + 4 + 1)$</i>; Subtracting any single digit number from a multiple of 10 <i>e.g. $80 - 7$ (knowledge of bonds to 10)</i> Addition and Subtraction (Adding / Subtracting 10's, 100's, 1000's): Add 1 to any number to 100; Counting in 10s from any number (forwards/backwards); Add/subtract near 10s and adjusting <i>e.g. 9, 11</i> Number bonds to 100 <i>e.g. $70 + 30$</i>; Adding multiples of ten <i>e.g. $30 + 20$, $30 + 60$, $30 + 80$</i> Multiplication and Division (Doubling Numbers / Near Doubles): Double teen numbers $16 + 16$ Near doubles $16 + 17$; Double multiples of 10 to 100 <i>e.g. double 20</i>; Halve multiples of 10 with even number of 10s to 100 <i>e.g. half of 40</i>. Focus on doubling/halving multiples of 10 with odd number of 10s by partitioning and recombining <i>e.g. half of 30, 50, 70, $30 = 20 + 10$, Half is $10 + 5 = 15$</i>; Doubling even numbers up to 100 by partitioning and recombining; Halving even numbers up to 100 by partitioning and recombining. Multiplication and Division (Order of Operations): Explore commutativity using arrays <i>e.g. $4 \times 3 = 3 \times 4$</i>; Rewrite repeated addition as multiplication; Relationship between 5x and 10x table and doubling and halving. Fractions Decimals and Percentages (Comparing, Ordering and Calculating): Pupils should count in fractions up to 10, starting from any number and using the $\frac{1}{2}$ and $\frac{2}{4}$ equivalence on the number line					
Multiplication Facts	Consolidate counting in multiples of x2 x5 x10 x11 x3 and introduce counting in multiples of x4. Consolidate counting in multiples of x2 x5 x10 and introduce counting in multiples of 11. Consolidate counting in multiples of x2 x5 x10 x11 and introduce counting in multiples of x3.					
Ready to Progress Criteria	➤ Recognise the place value of each digit in two-digit numbers and compose and decompose two-digit numbers using standard and non-standard partitioning. ➤ Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10. ➤ Secure fluency in addition and subtraction facts within 10, through continued practice. ➤ Add and subtract across 10. ➤ Recognise the subtraction structure of 'difference' ➤ Add and subtract within 100 by applying related one digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number. ➤ Add and subtract within 100 by applying related one digit addition and subtraction facts: add and subtract any 2 two-digit numbers. ➤ Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables. ➤ Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotative division). ➤ Use precise language to describe the properties of 2D and 3D shapes and compare shapes by reasoning about similarities and differences in properties.					



Maths Curriculum Map

Year 3

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 2 Conceptual Prerequisites	✓ Know that 10 ones are equivalent to 1 ten, and that 40 (for example) can be composed from 40 ones or 4 tens. Know how many tens there are in multiples of 10 up to 100. ✓ Recognise the place value of each digit in two-digit numbers and compose and decompose two-digit numbers using standard and non-standard partitioning. ✓ Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10. ✓ Count in multiples of 2, 5 and 10. ✓ Add and subtract across 10. ✓ Calculate products within the 2, 5 and 10 multiplication tables. ✓ Automatically recall addition and subtraction facts within 10, and across 10. ✓ Unitise in tens: understand that 10 can be thought of as a single unit of 1 ten. ✓ Recognise the place value of each digit in three-digit numbers. ✓ Have experience with the commutative property of addition. ✓ Be able to write an equation in different ways. ✓ Write equations to represent addition and subtraction contexts. ✓ Recognise repeated addition contexts and represent them with multiplication equations. ✓ Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotative division). ✓ Reason about the location of whole numbers in the linear number system. ✓ Recognise standard and non-standard examples of 2D shapes presented in different orientations. Identify similar shapes. ✓ Compose 2D shapes from smaller shapes to match an exemplar, rotating and turning over shapes to place them in specific orientations.					
Core Curriculum	Number: Place Value • Represent numbers to 100 • Tens and ones using addition • Hundreds • Represent numbers to 1000 • 100s, 10s and 1s • Number line to 1000 • Find 1,10,100 more or less than a given number • Compare objects to 1000 • Compare and order numbers to 1000 • Recognise the place value of each digit in three-digit numbers and compose and decompose three-digit numbers using standard and non-standard partitioning. Number: Addition and Subtraction • Add and subtract multiples of 100 • Add and subtract 2,3- and 1-digit numbers and crossing 10 • Subtract 2 digit and 1 digit and then 3 digit and 1-digit numbers and crossing 10 • Subtract 3- and 2-digit numbers and crossing 100 • Spot patterns • Calculate complements to 100 • Understand the inverse relationship between addition and subtraction, and how both relate to the part-part-whole structure.	Number: Multiplication and Division • Multiplication-equal groups • Multiplication using the symbol • Using arrays • 2- and 5-times table • Make equal groups-sharing and grouping • Divide by 2,5 and 10 • Multiply and divide by 3 • 3 times table • Count in 50s • Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.	Number: Multiplication and Division • Consolidate 2,4- and 8-times tables • Compare statements • Related calculations • Multiply and divide 2 digits by 1 digit • Scaling • How many ways? • Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10. Measurement: Money • Convert pounds and pence • Add and subtract money • Give change	Statistics • Make tally charts • Draw and interpret pictograms (2,5 and 10) • Pictograms, bar charts, tables Measurement: Length and Perimeter • Measure length (m) • Equivalent lengths m, cm and mm • Compare lengths • Add and subtract lengths • Measure and calculate perimeter Number: Fractions • Make equal parts • Recognise and find $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$ • Unit and non-unit fractions • Equivalence of $\frac{1}{2}$ and $\frac{2}{4}$ • Count in fractions	Number: Fractions • Making the whole • Count in tenths • Tenths as decimals • Fractions on a num line • Fractions of a set • Equivalent fractions • Compare and order fractions • Add and subtract fractions Measurement: Time • Clock, half past, quarter to and quarter past • Months and years • Hours in a day • Telling the time to 5 minutes and the minute • Using am and pm • 24-hour clock • Find and compare durations • Measuring time in seconds	Geometry: Properties of Shape • Turns and angles • Right angles in shapes • Compare angles • Draw accurately • Horizontal, vertical, parallel and perpendicular • Recognise and describe 2D and 3D shapes • Make 3D shapes Measurement: Mass and Capacity • Compare and measure mass • Add and subtract mass • Compare volume • Measure and compare capacity • Add and subtract capacity • Temperature

	Addition	Subtraction	Multiplication	Division
Calculation Methods: Concrete Pictorial Abstract	<u>Column method regrouping</u> Children can draw a pictorial representation of the columns and place value counters to further support their learning and understanding. Start by partitioning the numbers before moving on to clearly show the exchange below the addition. This is expanded form: 20 + 5 40 + 8 60 + 13 = 73 <u>Moving onto the abstract of column addition</u>	<u>Column method with regrouping</u> Use Base 10 to start with before moving on to place value counters. Start with one exchange before moving onto subtractions with 2 exchanges. Make the larger number with the place value counters Calculations 234 - 88 Draw the counters onto a place value grid and show what you have taken away by crossing the counters out as well as clearly showing the exchanges you make. Calculations 234 - 88 <u>Moving onto the abstract of decomposition</u> <td> <u>Revisit concrete, pictorial, and abstract strategies from Year Two:</u> Repeated Addition Arrays showing commutative multiplication <u>Grid Method</u> Show the link with arrays to first introduce the grid method with counters 4 rows of 10 4 rows of 3 Move on to using Base 10 to move towards a more compact method (almost repeated addition). 4 rows of 13 Use base 10 – then, once secure, move on to place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows. Fill each row with 126. Calculations 4 x 126 Children can represent the work they have done with place value counters in a way that they understand. 35 x 7 x 30 5 7 210 35 210 + 35 = 245 Moving forward, multiply by a 2 digit number showing the different rows within the grid method. 18 x 13 <u>Moving onto the abstract of short multiplication</u> </td> <td> <u>Revisit concrete, pictorial, and abstract strategies from Year Two:</u> Division with arrays <u>Division with a remainder</u> 14 ÷ 3 = Divide objects between groups and see how much is left over Jump forward in equal jumps on a number line then see how many more you need to jump to find a remainder. Draw dots and group them to divide an amount and clearly show a remainder. 14 ÷ 4 remainder 2 96 ÷ 3 Tens Units 3 2 Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups. Only for SEN children. Not practical for higher numbers. As soon as understood, move onto abstract. <u>Moving onto the abstract of short division</u> Begin with divisions that divide equally with no remainder. 218 3 4 8 7 2 </td>	<u>Revisit concrete, pictorial, and abstract strategies from Year Two:</u> Repeated Addition Arrays showing commutative multiplication <u>Grid Method</u> Show the link with arrays to first introduce the grid method with counters 4 rows of 10 4 rows of 3 Move on to using Base 10 to move towards a more compact method (almost repeated addition). 4 rows of 13 Use base 10 – then, once secure, move on to place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows. Fill each row with 126. Calculations 4 x 126 Children can represent the work they have done with place value counters in a way that they understand. 35 x 7 x 30 5 7 210 35 210 + 35 = 245 Moving forward, multiply by a 2 digit number showing the different rows within the grid method. 18 x 13 <u>Moving onto the abstract of short multiplication</u>	<u>Revisit concrete, pictorial, and abstract strategies from Year Two:</u> Division with arrays <u>Division with a remainder</u> 14 ÷ 3 = Divide objects between groups and see how much is left over Jump forward in equal jumps on a number line then see how many more you need to jump to find a remainder. Draw dots and group them to divide an amount and clearly show a remainder. 14 ÷ 4 remainder 2 96 ÷ 3 Tens Units 3 2 Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups. Only for SEN children. Not practical for higher numbers. As soon as understood, move onto abstract. <u>Moving onto the abstract of short division</u> Begin with divisions that divide equally with no remainder. 218 3 4 8 7 2

New Vocabulary for Y3	Number and Place Value: numbers to 1,000 Addition and subtraction: column addition and subtraction Fractions: numerator, denominator, unit fraction, non-unit fraction, compare and order, tenths Measurement: leap year twelve-hour/24- hour clock, am/pm, century roman numerals I-XII mm Multiplication and Division: count in multiples of 4, 8 and 11, product, scale up Geometry (Position and Direction): greater/less than 90 degrees orientation (same orientation, different orientation), north, south, east, west Geometry (Properties of Shape): horizontal, vertical, perpendicular and parallel lines. perimeter hemi-sphere, prism, semi-circle Statistics: chart, bar chart, frequency table, Carroll diagram, Venn diagram, axis, axes diagram					
Continuous Curriculum (Maths Meetings)	Measurement: Money Convert pounds and pence; Add and subtract money; Give change Statistics Make tally charts; Draw and interpret pictograms (2,5 and 10); Pictograms, bar charts, tables Measurement: Length and Perimeter Measure length (m); Equivalent lengths m, cm and mm; Compare lengths; Add and subtract lengths; Measure and calculate perimeter Number: Fractions Make equal parts; Recognise and find half, quarter and third; Unit and non-unit fractions; Equivalence of $\frac{1}{2}$ and $\frac{2}{4}$; Count in fractions; Making the whole; Count in tenths; Tenths as decimals; Fractions on a number line; Fractions of a set of objects; Equivalent fractions; Compare and order fractions; Add and subtract fractions Measurement: Time O'clock, half past, quarter to and quarter past; Months and years; Hours in a day; Telling the time to 5 minutes and the minute; Using am and pm; 24 hour clock; Find and compare durations; Start and end times; Measuring time in seconds Geometry: Properties of Shape Turns and angles; Right angles in shapes; Compare angles; Draw accurately; Horizontal, vertical, parallel and perpendicular; Recognise and describe 2D and 3D shapes; Make 3D shapes Measurement: Mass and Capacity Compare and measure mass; Add and subtract mass; Compare volume; Measure and compare capacity; Add and subtract capacity; Temperature					
Arithmetic Fluency (Key Focus)	Counting Count from 0 in multiples of 4,8,50 and 100 Find 10 or 100 more or less than a given number	Written (+ -) Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	Mental (+ -) Add and subtract numbers mentally, including: • A three-digit number and 1s • A three-digit number and 10s • A three-digit number and 100s	Number facts (x ÷) Recall and use multiplication and division facts for the 3,4- and 8-times tables	Mental (+ -) /Written (x ÷) Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers of times one digit numbers, using mental methods Progress to formal written methods for multiplication and division	Fractions and Decimals 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 Add and subtract fractions with the same denominator within one whole
Consolidation (To be Included in Arithmetic Lessons)	Number: Multiplication and Division (Year 2, Spring 2)	Number: Place Value (Year 3, Autumn 1)	Number: Addition and Subtraction (Year 3, Autumn 1)	Number: Multiplication and Division (Year 3, Autumn 2 & Spring 1)	Number: Addition and Subtraction (Year 3, Autumn 1)	Number: Fractions (Year 3, Spring 2 & Summer 1)

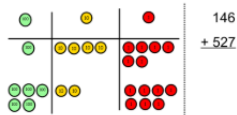
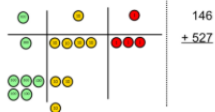
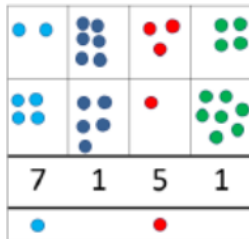
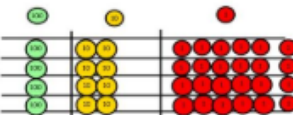
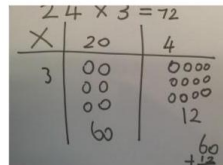
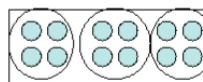
Mental Maths	Number and Place Value (Securing Numbers, Ordering and Comparing): Count in 100, 10s, 1s from any number to 1000; Order a set of random numbers to 1000; Compare numbers using symbols < and > up to 1000 Number and Place Value (Counting): Add 100 to any 2 / 3digit number <i>e.g.</i>, $45 + 100$, $145 + 100$; Add multiples of 100 to any 2 / 3-digit number $45 + 200$, $145 + 200$, $145 + 700$ (regrouping) Addition and Subtraction (Multiples): Add any multiple of 10 to a 2/3-digit number <i>e.g.</i> $153 + 20$, $153 + 70$ (regrouping); Subtract any multiple of 10 from a 2/3-digit number, <i>e.g.</i> $153 - 20$, $153 - 70$ (regrouping) Counting in 10s <i>e.g.</i> Use number bonds/partitioning $153 - (50 + 20)$; To subtract many amounts, combine to add first in context. <i>Eg</i> £1 - (20p – 30p), £1 – 50p Addition and Subtraction (Adding / Subtracting 10's, 100's, 1000's): Add 10 to any number, $43 + 10$, $143 + 10$, Add multiples of 10 to any number <i>e.g.</i> $43 + 30$ (no regrouping), $43 + 70$ (regrouping), $143 + 30$ (no regrouping), $143 + 70$ (regrouping); Explain effects of adding 10. <i>Why do 1s not change when adding 10s? When will 100s change?</i> Add near multiples of 10 <i>e.g.</i> + 99, 31, 29 etc including in simple money context <i>e.g.</i> 99p, £1.99 Multiplication and Division (Doubling Numbers / Near Doubles): Doubles of multiples of 10/near10s $60 + 60$, $60 + 70$; Review doubling/halving multiples of 10 with odd number of 10s by partitioning and recombining <i>e.g.</i> half of 30, 50, 70, $30 = 20 + 10$, Half is $10 + 5 = 15$; Double simple 3 digit numbers (multiples of 10, 50, 100) <i>e.g.</i> double 200, double 250 Multiplication and Division (Order of Operations): Multiplication and division of whole numbers by 10 exploring the effect of moving digits <i>e.g.</i> 6×10, 10×10, 16×10; Use known facts to multiply and divide by multiples of 10 <i>e.g.</i> 6×3, 6×30 Reorder calculations using associative rule <i>e.g.</i>, $4 \times 12 \times 5$, $4 \times 12 = 48$, $48 \times 5 = 240$, $4 \times 5 \times 12$, $4 \times 5 = 20$, 20×12; Knowledge of doubling <i>e.g.</i> double 4x table = 8x; Know that... <i>e.g.</i> $50 \times 2 = 100$, $25 \times 4 = 100$, $20 \times 5 = 100$; Link to measure and reading scales <i>e.g.</i> 50p $\times 2 = \text{£}1.00$, $\text{£}50 \times 2 = \text{£}100$, 25p $\times 4 = \text{£}1.00$ $\text{£}25 \times 4 = \text{£}100$, 20p $\times 5 = \text{£}1.00$ $\text{£}20 \times 5 = \text{£}100$, 1000g = 1kg 1000ml = 1l , $1000\text{cm} = 1\text{km}$, $1000 \div 2 = 500$ $1000 \div 4 = 250$, $\frac{1}{2} \text{ l/kg/km} = 500$, $\frac{1}{4} \text{ l/kg/km} = 250$, $\frac{3}{4} \text{ l/kg/km} = 750$ Fractions Decimals and Percentages (Comparing, Ordering and Calculating): count and down in tenths.
Multiplication Facts	Consolidate counting in multiples of x2 x5 x10 x11 x3 x4 and introduce counting in multiples of x6. Consolidate counting in multiples of x2 x5 x10 x11 x3 x4 x6 and introduce counting in multiples of x7. Consolidate counting in multiples of x2 x5 x10 x11 x3 x4 x6 x7 and introduce counting in multiples of x8
Ready to Progress Criteria	➤ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10. ➤ Recognise the place value of each digit in three-digit numbers and compose and decompose three-digit numbers using standard and non-standard partitioning. ➤ Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10. ➤ Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. ➤ Secure fluency in addition and subtraction facts that bridge 10, through continued practice. ➤ Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. ➤ Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10). ➤ Calculate complements to 100. ➤ Add and subtract up to three-digit numbers using columnar methods. ➤ Manipulate the additive relationship. ➤ Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. ➤ Understand and use the commutative property of addition and understand the related property for subtraction. ➤ Apply known multiplication and division facts to solve contextual problems with different structures, including quotative and partitive division. ➤ Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts. ➤ Find unit fractions of quantities using known division facts (multiplication tables fluency). ➤ Reason about the location of any fraction within 1 in the linear number system. ➤ Add and subtract fractions with the same denominator, within 1.



Maths Curriculum Map

Year 4

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3 Conceptual Prerequisites	✓ Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10. ✓ Recognise the place value of each digit in three-digit numbers and compose and decompose three-digit numbers using standard and non-standard partitioning. ✓ Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 10 and 100. ✓ Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. ✓ Recall multiplication and division facts in the 5 and 10, and 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. ✓ Use known division facts to solve division problems. ✓ Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10). ✓ Multiply two-digit numbers by 10 and divide three-digit multiples of 10 by 10. ✓ Understand the inverse relationship between multiplication and division. ✓ Write and use multiplication table facts with the factors presented in either order. ✓ Reason about the location of fractions less than 1 in the linear number system. ✓ Identify unit and non-unit fractions. ✓ Add and subtract fractions with the same denominator, within 1 whole. ✓ Draw polygons by joining marked points. ✓ Measure lines in centimetres and metres. ✓ Add more than 2 addends.					
Core Curriculum	Number: Place Value - Represent numbers to 1000 100s, 10s and 1s - Number line to 1000 - Round to nearest 10, 100 - Count in 1000s 1000s, 100s, 10s, 1s - Partitioning - Number line to 10000 - Find 1, 10, 100 more or less 1000 more or less - Compare numbers Number: Addition and Subtraction - Add and subtract 1s, 10s, 100s, 1000s - Add two 3-digit numbers not crossing then crossing 10 and 100 - Add two 4-digit numbers, no exchange then one or more exchanges - Subtract a 3 digit from a 3-digit number no exchange - Subtract a 4 digit from a 4-digit number no exchange - Subtract a 3 digit from a 3-digit number-exchange - Subtract two 4-digit numbers-exchange - Estimate answers and check strategies	Measurement: Length and Perimeter - Equivalent lengths-m and cm, mm and cm - Kilometres - Add lengths - Subtract lengths - Measure perimeter - Perimeter on a grid - Perimeter of rectangles and rectilinear shapes Number: Multiplication and Division - Multiply and divide by 10 and 100 - Multiply by 1 and 0 - Divide by 1 and itself - Multiply and divide by 3 - The 3 times table - Multiply and divide by 6 6 times table and division facts - Multiply and divide by 9 9 times table and division facts - Multiply and divide by 7 7 times table and division facts	Number: Multiplication and Division 11- and 12-times table - Multiply 3 numbers - Factor pairs - Efficient multiplication - Written methods - Multiply 2 digits by 1 digit - Multiply 3 digits by 1 digit - Divide 2 digits by 1 digit - Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts. - Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100). - Manipulate multiplication and division equations and understand and apply the commutative property of multiplication. Measurement: Area - What is area? - Counting squares - Making shapes - Comparing area	Number: Fractions - Unit and non-unit fractions - Tenths –count in tenths - Equivalent fractions - Fractions greater than 1 - Count in fractions - Add fractions - Add 2 or more fractions - Convert mixed numbers to improper fractions and vice versa. - Add and subtract improper and mixed fractions with the same denominator, including bridging whole number. Number: Decimals - Recognise tenths and hundredths - Tenths as decimals - Tenths on a place value grid and number line - Divide 1 then 2 digits by 10 - Hundredths as decimals - Hundredths on a place value grid - Divide 1 or 2 digits by 100	Number: Decimals - Bonds to 10 and 100 - Make a whole - Write, compare and order decimals - Round decimals - Halves and quarters Measurement: Money - Pounds and pence - Ordering money - Estimating money - Convert pounds and pence - Add and subtract money - Find change - Four operations	Measurement: Time - Telling the time to 5 minutes - Telling the time to the minute - Using a.m. and p.m. 24-hour clock - Hours, minute and seconds - Years, months, weeks and days - Analogue to digital-12 hour - Analogue to digital -24 hour Statistics - Interpret charts - Comparison, sum and difference - Introduce line graphs Geometry: Properties of Shape - Turns and angles - Right angles in shapes - Compare, identify and order angles - Recognise and describe 2-D shapes - Triangles and quadrilaterals - Horizontal and vertical - Lines of symmetry - Complete a symmetrical figure - Find the perimeter of regular and irregular polygons. Geometry: Position and Direction - Describe a position - Draw on a grid - Move on a grid - Describe movement on a grid - Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.

	Addition	Subtraction	Multiplication	Division												
Calculation Methods: Concrete Pictorial Abstract	<u>Column method regrouping</u> Make both numbers on a place value grid.  146 + 527 Add up the units and exchange 10 ones for one 10.  146 + 527  Start by partitioning the numbers before moving on to clearly show the exchange below the addition. This is expanded form: $\begin{array}{r} 20 + 5 \\ 40 + 8 \\ 60 + 13 \\ \hline \end{array} = 73$ <u>Moving onto the abstract of column addition with exchanges</u>	<u>Column method regrouping</u>  Calculations $\begin{array}{r} 274 \\ - 88 \\ \hline 146 \end{array}$  Draw the counters onto a place value grid and show what you have taken away by crossing the counters out as well as clearly showing the exchanges you make. <u>Moving onto the abstract of column subtraction with exchanges</u> 	<u>Grid Method</u> Use base 10 – then, once secure, move on to place value counters to show how we are finding groups of a number.  Calculations 4×126  35×7 <table border="1"><tr><td>x</td><td>30</td><td>5</td></tr><tr><td>7</td><td>210</td><td>35</td></tr></table> $210 + 35 = 245$ Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods. (Children need to understand multiplication as repeated addition to use bar modelling for problem solving). <u>Moving onto the abstract of column multiplication</u> Year 4 – two- and three-digit x 1 digit	x	30	5	7	210	35	<u>Revisit concrete, pictorial, and abstract strategies from Year Three:</u> Division with arrays Division with a remainder <u>Short division</u> $96 \div 3$ <table><tr><td></td><td>Tens</td><td>Units</td></tr><tr><td>3</td><td>3</td><td>2</td></tr></table>  Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups.  Only for SEN children. Not practical for higher numbers. As soon as understood, move onto abstract. <u>Moving onto the abstract of short division</u> $\begin{array}{r} 218 \\ 3 \overline{) 9672} \\ \underline{48} \\ 872 \\ \underline{84} \\ 32 \\ \underline{30} \\ 2 \end{array}$ $\begin{array}{r} 86 \text{ r } 2 \\ 5 \overline{) 432} \\ \underline{40} \\ 32 \\ \underline{30} \\ 2 \end{array}$		Tens	Units	3	3	2
	x	30	5													
7	210	35														
	Tens	Units														
3	3	2														
New Vocabulary for Y4	Number and Place value: tenths, hundredths, numeral decimal places round (to nearest) thousand more or less, negative integers count through zero roman numerals I to C Multiplication and Division: count in multiples of 6, 7, 9, 12, inverse, derive division facts Fractions: equivalent fractions and decimals, decimal point, decimal fraction hundredths Geometry (Position and Direction): co-ordinates translation, translate, quadrant x-axis, y-axis Geometry (Properties of Shape): area, net rectilinear adjacent quadrilaterals: (rhombus, parallelogram, trapezium, trapezoid, kite). heptagon, polygon, tetrahedron, polyhedron, cylindrical triangles (isosceles, scalene) right angle, acute angle, obtuse angles Measurement: convert, noon Statistics: continuous data, line graphs															

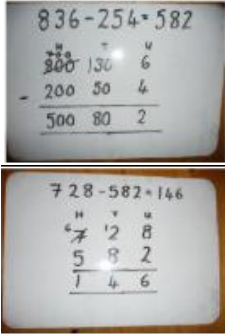
Continuous Curriculum (Maths Meetings)	Measurement: Length and Perimeter Equivalent lengths-m and cm, mm and cm; Kilometres; Add lengths; Subtract lengths; Measure perimeter; Perimeter on a grid; Perimeter of rectangles and rectilinear shapes Measurement: Area What is area? Counting squares; Making shapes; Comparing area Number: Fractions Unit and non-unit fractions; Tenths –count in tenths; Equivalent fractions; Fractions greater than 1; Count in fractions; Add fractions; Add 2 or more fractions Number: Decimals Recognise tenths and hundredths; Tenths as decimals; Tenths on a place value grid and number line; Divide 1 then 2 digits by 10; Hundredths as decimals; Hundredths on a place value grid; Divide 1 or 2 digits by 100; Bonds to 10 and 100; Make a whole; Write, compare and order decimals; Round decimals; Halves and quarters Measurement: Money Pounds and pence; Ordering money; Estimating money; Convert pounds and pence; Add and subtract money; Find change; Four operations Measurement: Time Telling the time to 5 minutes; Telling the time to the minute; Using a.m. and p.m.; 24-hour clock; Hours, minute and seconds; Years, months, weeks and days; Analogue to digital-12 hour; Analogue to digital -24 hour Statistics Interpret charts; Comparison, sum and difference; Introduce line graphs Geometry: Position and Direction Describe a position; Draw on a grid; Move on a grid; Describe movement on a grid					
Arithmetic Fluency (Key Focus)	Counting Count in multiples of 6,7,9, 25 and 1000 Find 1000 more or less than a given number through zero to include negative numbers	Written (+ -) Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	Fractions and decimals Count up and down in hundredths Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten Written (+ -) Multiply two- and three-digit numbers by a one-digit number using formal written layout	Number facts (x ÷) Recall multiplication and division facts for multiplication tables up to 12x12	Mental / Written (x ÷) 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	Fractions and decimals Add and subtract fractions with the same denominator 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
Consolidation (To be Included in Arithmetic Lessons)	Number: Fractions (Year 3, Spring 2 & Summer 1)	Number: Place Value (Year 4, Autumn 1)	Number: Addition and Subtraction (Year 4, Autumn 1)	Number: Multiplication and Division (Year 4, Autumn 2 & Spring 1)	Number: Multiplication and Division (Year 4, Autumn 2 & Spring 1)	Number: Fractions & Decimals (Year 4, Spring 2 & Summer 1)
Mental Maths	Number and Place Value (Securing Numbers, Ordering and Comparing): Count in 1s across boundaries 1000, 10,000, 100,000; Order a set of random numbers to 100,000; Compare numbers using symbols < and > up to 100,000 Number and Place Value (Counting): Count in 10, 100s, 1000s forwards and backwards across boundaries 1000, 10,000, 100,000; What is 10, 100, 1000 more/less than?; Round any number to the nearest 10, 100 or 1000; Round decimals with one decimal place to the nearest whole number Addition and Subtraction (Multiples): Add any multiple of 10 to a 4-digit number <i>e.g., 2153 + 20, 2153 + 70</i> (regrouping); Add any multiple of 100 to a 4-digit number <i>e.g. 2153 + 100, 2153 + 300, 2153 + 900</i> (regrouping) Multiplication and Division (Doubling Numbers / Near Doubles): Near doubles to multiple of 10 <i>e.g., 60 + 59</i>; Double simple 3-digit numbers by recall of known facts or partitioning and recombining (multiples of 10, 50, 100) <i>e.g. double 200, double 250, double 220, half of 140.</i> Multiplication and Division (Order of Operations): Multiplication and division of whole numbers by 10 and 100 and multiples of <i>e.g., 6 x 100, 10 x 100, 16 x 100, 16 x 300</i> etc; Distributive law <i>e.g., 39 x 7 = 30 x 7 + 9 x 7</i>; Associative law and reordering calculations to make it easier, expressing equal calculations <i>e.g. 2 x 6 x 5 = 10 x 6</i>; Multiply by 50 by multiply by 100 and halving <i>e.g. 23 x 50 = half of 23 x 100</i>; Know all the table facts and the related division facts <i>e.g. 500 x 2 = 1000, 1000 ÷ 2 = 500, 250 x 4 = 1000, 1000 ÷ 4 = 250, 200 x 5 = 1000, 1000 ÷ 5 = 200</i>; Known facts linked to measures <i>e.g. £5.00 x 2 = £10.00, £500 x 2 = £1000, £2.50 x 4 = £10.00, £250 x 4 = £1000, £2.00 x 5 = £10.00, £200 x 5 = £1000</i> And corresponding division facts. Multiplication and Division (Rounding and Adjusting): Rounding and adjusting decimals in context of money <i>e.g., 3 items costing 99p or £1.99</i> Fractions Decimals and Percentages (Comparing, Ordering and Calculating): Count up and down in hundredths; compare numbers with the same number of decimal places up to two decimal places; round decimals with one decimal place to the nearest whole number; recognise and write decimal equivalents of any number of tenths or hundredths, recognise and write decimal equivalents to $\frac{1}{4}; \frac{1}{2}; \frac{3}{4}$					
Multiplication Facts	Consolidate counting in multiples of x2 x5 x10 x11 x3 x4 x6 x7 x8 and introduce counting in multiples of x9 and x12 Revise all multiplication and related division facts up to x12 x12					
Ready to Progress Criteria	➤ Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100. ➤ Recognise the place value of each digit in four-digit numbers and compose and decompose four-digit numbers using standard and non-standard partitioning. ➤ Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each. ➤ Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts. ➤ Recall multiplication and division facts up to 12x12 and recognise products in multiplication tables as multiples of the corresponding number. ➤ Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, for example: and interpret remainders appropriately. ➤ Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100). ➤ Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. ➤ Manipulate multiplication and division equations and understand and apply the commutative property of multiplication. ➤ Understand and apply the distributive property of multiplication. ➤ Reason about the location of mixed numbers in the linear number system. ➤ Convert mixed numbers to improper fractions and vice versa. ➤ Add and subtract improper and mixed fractions with the same denominator, including bridging whole number. ➤ Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant. ➤ Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. ➤ Find the perimeter of regular and irregular polygons. ➤ Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.					



Maths Curriculum Map

Year 5

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 4 Conceptual Prerequisites	✓ Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100. ✓ Recognise the place value of each digit in four-digit numbers and compose and decompose four-digit numbers using standard and non-standard partitioning. ✓ Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each. ✓ Divide 1,000 and 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts. ✓ Find unit fractions of quantities using known division facts (multiplication tables fluency). ✓ Recall multiplication and division facts up to 12 x 12. ✓ Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders. ✓ Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10 or 100), for example: ✓ Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to scaling a number by 10 or 100. ✓ Recognise products in multiplication tables as multiples of the corresponding number. ✓ Recognise multiples of 10, 100 and 1,000. ✓ Apply place-value knowledge to known additive and multiplicative number facts. ✓ Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients). ✓ Divide powers of 10 into 2, 4, 5 and 10 equal parts. ✓ Recognise right angles as a property of shape or a description of a turn and identify right angles in 2D shapes presented in different orientations. ✓ Identify whether the interior angles of a polygon are equal or not.					
Core Curriculum	Number: Place Value • 1000s, 100s, 10s and 1s • Numbers to 10000 • Round to nearest 10, 100 and 1000 • Numbers to 100000 • Compare and order numbers to 100000 • Round numbers within 100000 • Numbers to a million • Counting in 10s, 100s, 1000s, 10000s and 100000s • Compare and order numbers to one million • Round any number • Round numbers to one million • Negative numbers • Roman numerals to 1000 Number: Addition and Subtraction • Add up to 6-digit numbers one exchange then more than one exchange • Add whole numbers with more than 4 digits (column method) • Subtract two 4-digit numbers-one exchanges then more than one exchange • Round to estimate and approximate • Inverse operations (addition and subtraction) • Multi-step addition and subtraction problems	Number: Multiplication and Division • Multiples and factors • Common factors • Prime numbers • Square numbers and cube numbers • Multiply by 10 and 100 • Multiply by 10, 100 and 1000 • Divide by 10 and 100 • Divide by 10, 100 and 1000 • Multiples of 10, 100 and 1000 Measurement: Perimeter and Area • Measure perimeter • Perimeter on a grid • Perimeter of rectangles and rectilinear shapes • Calculate perimeter • Counting squares • Area of rectangles • Area of compound shapes and irregular shapes • Area of a triangle • Area of a parallelogram	Number: Multiplication and Division • Multiply 2 and 3 digits by 1 digit • Multiply 4 digits by 1 digit • Multiply 2 digits (area model) • Multiply 2, 3 and then 4 digits by 2 digits • Short division • Divide 2, 3 then 4 digits by 1 digit • Divide with remainders Number: Fractions • Equivalent fractions • Fractions greater than 1 • Improper fractions to mixed numbers • Mixed numbers to improper fractions • Number sequences • Compare and order fractions greater and less than 1 • Add and subtract fractions • Add fractions within 1 • Add 3 or more fractions • Add mixed numbers	Number: Fractions • Subtract fractions and mixed numbers • Subtract-breaking the whole • Subtract 2 mixed numbers • Multiply unit then non-unit fractions by an integer • Calculate fractions of a quantity • Fraction of an amount • Using fractions as operators Number: Decimals • Adding and subtracting decimals within 1 • Complements to 1 • Adding decimals-crossing the whole • Adding and subtracting decimals with the same number of decimal places • Adding and subtracting decimals with a different number of decimal places • Adding and subtracting wholes and decimals • Decimal sequences • Multiplying and dividing decimals by 10, 100 and 1000	Number: Decimals and Percentages • Decimals up to 2 d.p. • Decimals as fractions • Understand thousandths • Thousandths = decimals • Rounding decimals • Order and compare decimals • Understand percentages • Percentages = fractions and decimals • Equivalent F.D.P Geometry: Properties of Shape • Identify, compare and order angles • Measure angles in degrees • Measure with a protractor • Draw lines and angles accurately • Calculate angles on a straight line and around a point • Triangles and quadrilaterals • Calculate length and angles in shapes • Angles in regular and irregular polygons • Reasoning about 3-D shapes • Angles of a triangle • Angles of a quadrilateral	Geometry: Position and Direction • Describe position • Draw on a grid • Position in the first quadrant • Translation • Translation with coordinates • Lines of symmetry • Complete a symmetrical figure • Reflection • Reflection with coordinates Measurement: Converting Units • Kilograms and kilometres • Millimetres and millilitres • Metric units • Imperial units • Converting units of time • Timetables Measurement: Volume • What is volume? • Compare volume • Estimate volume • Estimate capacity

	Addition	Subtraction	Multiplication	Division
Calculation Methods: Concrete Pictorial Abstract	<u>Column addition including the expanded form to develop reasoning skills</u> Start by partitioning the numbers before moving on to clearly show the exchange below the addition. This is expanded form: $\begin{array}{r} 20 + 5 \\ 40 + 8 \\ 60 + 13 = 73 \end{array}$ As the children move on, introduce decimals with the same number of decimal places and different.	<u>Expanded subtraction</u> Use expanded and compact method  Moving forward the children use a more compact method. This will lead to an understanding of subtracting any number including decimals. $\begin{array}{r} 5 \quad 12 \quad 1 \\ 2 \quad 6 \quad 3 \quad . \quad 0 \\ - 2 \quad 6 \quad . \quad 5 \\ \hline 2 \quad 3 \quad 6 \quad . \quad 5 \end{array}$	<u>Column Multiplication</u> Start with short multiplication <u>Long Multiplication</u> If it helps, children can write out what they are solving next to their answer. $\begin{array}{r} 32 \\ \times 24 \\ \hline 120 \quad (4 \times 2) \\ 640 \quad (20 \times 2) \\ \hline 768 \end{array}$ $\begin{array}{r} 1342 \\ \times 18 \\ \hline 10736 \\ 24156 \\ \hline \end{array}$	<u>Short Division</u> $\begin{array}{r} 86 \text{ r } 2 \\ 3 \overline{) 5432} \\ \underline{54} \\ 0 \end{array}$ Move into decimal places to divide the total accurately $\begin{array}{r} 14.6 \\ 35 \overline{) 511.0} \\ \underline{35} \\ 16 \\ \underline{14} \\ 21 \\ \underline{21} \\ 0 \end{array}$ <u>Long Division</u> Children apply their learning of short division and write the groups underneath to use column subtraction to calculate a remainder. The next digit then meets the remainder rather than carrying the remainder over. For decimal long division, add the decimal point before solving the calculation. 
New Vocabulary for Y5	Number and Place Value: powers of 10 numbers to 1,000,000 roman numerals I to M Multiplication and Division: count in multiples for all tables up to 12x12 factor pairs composite numbers, prime numbers, prime factors, square number, cubed number Fractions: proper fractions, improper fractions, mixed numbers percentage Measurement: volume, concave, convex breadth imperial units/metric units inches, pounds, pints, currency, ounce, tonne Geometry (Properties of Shape): reflex angles dimensions regular/irregular polygons, octahedron Statistics: average			
Continuous Curriculum (Maths Meetings)	Statistics: Interpret charts; Comparison, sum and difference; Read and interpret line graphs; Draw line graphs; Use line graphs to solve problems; Read and interpret tables; Two-way tables; Timetables, Mean Number: Fractions, Decimals & Percentages Equivalent fractions; Fractions greater than 1; Improper fractions to mixed numbers; Mixed numbers to improper fractions; Number sequences; Compare and order fractions greater and less than 1; Add and subtract fractions; Add fractions within 1; Add 3 or more fractions; Add mixed numbers; Subtract fractions and mixed numbers; Subtract-breaking the whole; Subtract 2 mixed numbers; Multiply unit then non-unit fractions by an integer; Calculate fractions of a quantity; Fraction of an amount; Using fractions as operators; Decimals up to 2 d.p.; Decimals as fractions; Understand thousandths; Thousandths as decimals; Rounding decimals; Order and compare decimals; Adding and subtracting decimals within 1; Complements to 1; Adding decimals-crossing the whole; Adding and subtracting decimals with the same number of decimal places; Adding and subtracting decimals with a different number of decimal places; Adding and subtracting wholes and decimals; Decimal sequences; Multiplying and dividing decimals by 10,100 and 1000; Understand percentages; Percentages as fractions and decimals; Equivalent F.D.P			

	Geometry: Properties of Shape Identify, compare and order angles; Measure angles in degrees; Measure with a protractor; Draw lines and angles accurately; Calculate angles on a straight line and around a point; Triangles and quadrilaterals; Calculate length and angles in shapes; Regular and irregular polygons; Reasoning about 3-D shapes Geometry: Position and Direction Describe position; Draw on a grid; Position in the first quadrant; Translation; Translation with coordinates; Lines of symmetry; Complete a symmetrical figure; Reflection; Reflection with coordinates Measurement: Converting Units Kilograms and kilometres; Millimetres and millilitres; Metric units; Imperial units; Converting units of time; Timetables Measurement: Volume What is volume?; Compare volume; Estimate volume; Estimate capacity					
Arithmetic Fluency (Key Focus)	Counting Count forwards and backwards in steps of powers of 10 for any given number up to 100000-interpret negative numbers in context Count forwards and backwards with positive and negative whole numbers, including through zero	Number facts (+ -) 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 numbers Establish whether a number up to 100 is prime and recall prime numbers up to 19	Mental (+ -) Add and subtract numbers mentally with increasing accuracy Written (+ -) Add and subtract whole numbers with more than 4 digits, including using formal written methods Add and subtract square and cubed numbers	Fractions and decimals Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number Add and subtract mixed numbers Add and subtract improper fractions Multiply proper fractions and mixed numbers	Mental Multiply and divide numbers mentally drawing upon known facts Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	Written ($\times \div$) 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 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
Consolidation (To be Included in Arithmetic Lessons)	Number: Fractions & Decimals (Year 4, Spring 2 & Summer 1)	Number: Place Value (Year 5, Autumn 1)	Number: Addition and Subtraction (Year 5, Autumn 1)	Number: Multiplication and Division (Year 5, Autumn 2 & Spring 1)	Number: Fractions, Decimals and Percentages (Year 5, Spring 2)	Number: Fractions, Decimals and Percentages (Year 5, Spring 2)
Mental Maths	Number and Place Value (Securing Numbers, Ordering and Comparing): Count in 1s forwards and backwards across boundaries 1000, 10,000, 100,000, 1 000, 000; Read, write, order and compare numbers to at least 1,000,000 and determine the values of each digit <i>e.g.</i>, <i>What is the value of the 6 in 681,927?</i> Number and Place Value (Counting): Count in 10, 100s, 1000s forwards and backwards across boundaries 1000, 10,000, 100,000, 1 000, 000; What is 10, 100, 1000 more/less than? Counting forwards and backwards in powers of 10 from any given number up to 1,000,000 <i>e.g.</i> 30, 60, 90 etc; count in 10,000s from 329,109; round any number up to 1 000 000 to the nearest 10, 100, 1000, 10000 and 100 000; round decimals with two decimal places to the nearest whole number and to one decimal place; Interpret negative numbers in context, count forwards and backwards with + and – numbers including zero <i>e.g.</i> continue the sequence -7, -14, -21 etc Addition and Subtraction (Multiples): Add any multiple of 10/100 to a 4 digit number <i>e.g.</i> $2153 + 110$, $2153 + 330$, $2153 + 350$, $2153 + 910$, $2153 + 950$; Add and subtract numbers mentally with increasingly large numbers <i>e.g.</i> <i>what is 12,463 – 23,000?</i> Multiplication and Division (Doubling Numbers / Near Doubles): Near doubles to multiples of 10 or 100 <i>e.g.</i> $198+198$; Double simple 3/4 digit numbers by recall of known facts or partitioning and recombining (multiples of 10, 50, 100) <i>e.g.</i> double 200, double 250, double 220, half of 140; Double decimals to 1/2dp <i>e.g.</i> 0.3×2 (no regrouping), $0.6 + 0.6$ or 0.6×2 (regrouping) Near doubles $0.16 + 0.17$ or 0.16×2 Focus on regrouping after not regrouping Multiplication and Division (Order of Operations): Multiplication and division of whole numbers by 10 and 100 and 1000; Use partitioning and recombining to calculate mentally <i>e.g.</i> 14×1000, 14×1200; Use cubed and squared to express calculations <i>e.g.</i> $3 \times 3 \times 5 = 3^2 \times 5$; Multiply pairs of multiples of 10 and 100. <i>e.g.</i> 20×300 Multiplication and Division (Rounding and Adjusting): Rounding and adjusting, Multiply by 10, 100 and 1000 and adjust <i>e.g.</i> 99×15; Use 100×15; Use arrays to show how to adjust.					

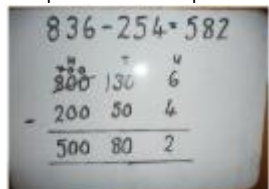
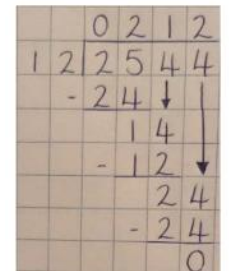
	Fractions Decimals and Percentages (Comparing, Ordering and Calculating): compare and order fractions whose denominators are all multiples of the same number; read, write, order and compare numbers with up to three decimal places; round decimals with two decimal places to the nearest whole number and to one decimal place; read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$); write percentages as a fraction with denominator 100 as a decimal fraction
Multiplication and Division Facts	Recall all multiplicative facts and related division facts including, missing numbers and decimals.
Ready to progress Criteria	➤ Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. ➤ Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. ➤ Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. ➤ Recognise the place value of each digit in numbers with up to 2 decimal places and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning. ➤ Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each. ➤ Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts. ➤ Convert between units of measure, including using common decimals and fractions. ➤ Secure fluency in multiplication table facts, and corresponding division facts, through continued practice. ➤ Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). ➤ Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size. ➤ Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors. ➤ Multiply any whole number with up to 4 digits by any one-digit number using a formal written method. ➤ Divide a number with up to 4 digits by a one-digit number using a formal written method and interpret remainders appropriately for the context. ➤ Find non-unit fractions of quantities. ➤ Find equivalent fractions and understand that they have the same value and the same position in the linear number system. ➤ Recall decimal fraction equivalents. ➤ Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size ➤ Compare areas and calculate the area of rectangles (including squares) using standard units.



Maths Curriculum Map

Year 6

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5 Conceptual Prerequisites	✓ Understand the relationship between powers of 10 from 1 hundredth to 1,000 in terms of grouping and exchange (for example, 1 is equal to 10 tenths) and in terms of scaling (for example, 1 is ten times the size of 1 tenth). ✓ Recognise the place value of each digit in numbers with units from thousands to hundredths and compose and decompose these numbers using standard and non-standard partitioning. ✓ Reason about the location of numbers between 0.01 and 9,999 in the linear number system. Round whole numbers to the nearest multiple of 1,000, 100 or 10, as appropriate. Round decimal fractions to the nearest whole number or nearest multiple of 0.01 ✓ Divide 1000, 100 and 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines with 2, 4, 5 and 10 equal parts. ✓ Be fluent in all key stage 2 additive and multiplicative number facts and calculations. ✓ Manipulate additive equations, including applying understanding of the inverse relationship between addition and subtraction, and the commutative property of addition. ✓ Manipulate multiplicative equations, including applying understanding of the inverse relationship between multiplication and division, and the commutative property of multiplication. ✓ Make a given number (up to 9,999, including decimal fractions) 10, 100, 1 tenth or 1 hundredth times the size (multiply and divide by 10 and 100). ✓ Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10, 100, 1 tenth or 1 hundredth). ✓ Be fluent in all key stage 2 additive and multiplicative number facts and calculation. ✓ Find a fraction of a quantity. ✓ Find factors and multiples of positive whole numbers, including common factors and common multiples. ✓ Find equivalent fractions and understand that they have the same value and the same position in the linear number system. ✓ Reason about the location of fractions and mixed numbers in the linear number system. ✓ Find the perimeter of regular and irregular polygons. ✓ Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size. ✓ Compare areas and calculate the area of rectangles (including squares) using standard units.					
Core Curriculum	Number: Place Value - Numbers to 10000 and 100000 - Numbers to a million and ten million - Compare and order any number - Negative numbers Number: Addition and Subtraction, Multiplication and Division - Inverse operations (addition and subtraction) - Multi-step addition and subtraction problems - Multiply 2 digits (area model)	Number: Fractions - Equivalent fractions - Simplify fractions - Improper fractions to mixed numbers - Fractions on a number line - Compare and order (numerator, denominator) - Add mixed numbers - Subtract mixed numbers - multiply fractions by integers - multiply integers by fractions	Number: Decimals - Decimals up to 2 decimal places - Understand thousandths - Three decimal places - Multiply and divide decimals by integers - Division to solve problems - Decimals as fractions - Fractions to decimals Number: Percentages - Understand percentages - Fractions to percentages - Equivalent FDP - Order FDP - Percentage of an amount - Percentages-missing values	Measurement: Converting Units - Metric measures - Convert metric measures - Calculate with metric measures - Miles and kilometres - Imperial measures - Time problems Geometry: Properties of Shape - Vertically opposite angles - Angles in special quadrilaterals - Draw shapes accurately	Financial Literacy: Introduction to banking https://www.bankofengland.co.uk/education/education-resources/money-and-me What banks are and how they make money What is the Bank of England? Why do prices change over time? Exploring supply and demand and their impact on price changes	Financial Literacy: Living with Money Children will learn about the following: - Mortgages - Rent - Further Education Fees - Food Costs - Energy Costs - Other Household Bills - Taxes - Wages - Government Charges - Pensions - NI Contributions

	• Multiply 2 and 3 digits by 2 digits • Multiply a 4-digit number by a 2 digit number • Division using factors • Long division • Common factors and multiples • Order of operations • Mental calculations and estimation • Reason from known facts	• divide fractions by integers • four rules with fractions Number: Ratio • Using ratio language • Ratio and fractions • Introduce the ratio symbol • Using scale factors • Calculate scale factors • Ratio and proportion problems	Number: Algebra • Find a rule-one step then two step • Forming expressions • Substitution • Formulae • Forming equations • Solve simple one-step equations • Solve two-step equations • Find pairs of values • Enumerate possibilities	• Draw nets of 3-D shapes • Properties of circles Statistics • Read and interpret pie charts • Pie charts with percentages • Draw pie charts	Why is money so important? Exploring money decisions and their impact Teaching how to successfully budget How can I keep my money safe? Understanding how to avoid scams What is debt? Understanding debt in all its forms Explaining the importance of ethical spending	Pupils will complete scenario based, real world, maths tasks.
	Addition	Subtraction	Multiplication	Division		
Calculation Methods: Concrete Pictorial Abstract	<u>Column addition including the expanded form to develop reasoning skills</u> Start by partitioning the numbers before moving on to clearly show the exchange below the addition. This is expanded form: $\begin{array}{r} 20 + 5 \\ 40 + 8 \\ 60 + 13 = 73 \end{array}$ As the children move on, introduce decimals with the same number of decimal places and different.	<u>Expanded subtraction</u> Use expanded and compact method   Moving forward the children use a more compact method. This will lead to an understanding of subtracting any number including decimals. $\begin{array}{r} 5 \quad 12 \quad 1 \\ 2 \quad 6 \quad 3 \quad . \quad 0 \\ - \quad 2 \quad 6 \quad . \quad 5 \\ \hline 2 \quad 3 \quad 6 \quad . \quad 5 \end{array}$	<u>Column Multiplication</u> Start with short multiplication <u>Long Multiplication</u> If it helps, children can write out what they are solving next to their answer. $\begin{array}{r} 32 \\ \times 24 \\ \hline 128 \\ 640 \\ \hline 768 \end{array}$ $\begin{array}{r} 1342 \\ \times 18 \\ \hline 10736 \\ 24156 \\ \hline \end{array}$	<u>Short Division</u> $\begin{array}{r} 86r2 \\ 3 \overline{) 5432} \\ \underline{15} \\ 43 \\ \underline{12} \\ 32 \\ \underline{30} \\ 20 \\ \underline{18} \\ 20 \\ \underline{18} \\ 20 \end{array}$ Move into decimal places to divide the total accurately $\begin{array}{r} 14.6 \\ 35 \overline{) 511.0} \\ \underline{35} \\ 16 \\ \underline{14} \\ 21 \\ \underline{21} \\ 0 \end{array}$ <u>Long Division</u> Children apply their learning of short division and write the groups underneath to use column subtraction to calculate a remainder. The next digit then meets the remainder rather than carrying the remainder over. For decimal long division, add the decimal point before solving the calculation. 		

New Vocabulary for Y6	Number and Place Value: numbers to 10,000,000 Addition and Subtraction: order of operations Multiplication and Division: order of operations, common factors, common multiples, factorise Fractions: degree of accuracy, simplify Algebra: algebra, algebraically express ratio proportion linear number of sequence substitute, variables, symbol, known values Geometry (Position and Direction): Four quadrants Geometry (Properties of Shape): circumference, radius, diameter, arc, congruent, dodecahedron Statistics: mean, median, range pie chart construct					
Continuous Curriculum (Maths Meetings)	Number: Fractions Equivalent fractions; Simplify fractions; Improper fractions to mixed numbers; Mixed numbers to improper fractions; Fractions on a number line; Compare and order(numerator, denominator); Add and subtract fractions; Add mixed numbers; Subtract mixed numbers; Subtract fractions; Mixed addition and subtraction; Multiply fractions by integers; Multiply integers by fractions; Divide fractions by integers; Four rules with fractions; Fractions of an amount-find the whole Place Value Round numbers to 10,100 and 1000, round any number Geometry: Position and Direction The first quadrant; Four quadrants; Translations; Reflections Number: Decimals Decimals up to 2 decimal places; Understand thousandths; Three decimal places; Multiply and divide by 10,100 and 1000; Multiply and divide decimals by integers; Division to solve problems; Decimals as fractions; Fractions to decimals Number: Percentages Understand percentages; Fractions to percentages; Equivalent FDP; Order FDP Measurement: Converting Units Metric measures; Convert metric measures; Calculate with metric measures; Miles and kilometres; Imperial measures Measurement: Perimeter, Area and Volume Shapes-same area; Area and perimeter; Area of a triangle, Angles in a triangle, Area of a parallelogram; Volume-counting cubes; Volume of a cuboid, Volume of a cuboid Number: Ratio Using ratio language; Ratio and fractions; Introduce the ratio symbol; Using scale factors; Calculate scale factors; Ratio and proportion problems Geometry: Properties of Shape Measure with a protractor; Draw lines and angles accurately; Angles on a straight line and around a point; Calculate angles; Vertically opposite angles; Angles in a triangle (special and missing); Angles in special quadrilaterals; Angles in regular polygons; Draw shapes accurately; Draw nets of 3-D shapes Statistics Read and interpret line graphs; Draw line graphs; Use line graphs to solve problems; Circles; Read and interpret pie charts; Pie charts with percentages; Draw pie charts; The mean					
Arithmetic Fluency (Key Focus)	Counting Use negative numbers in context and calculate intervals across zero Written (+ -) Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	Number facts (+ -) Identify common factors, common multiples and prime numbers Written (+ -) 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 context	Mental (+ -) Perform mental calculations including with mixed operations Written (+ -) Divide numbers up to 4 digits by a two-digit whole number using the formal method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context	Fractions and decimals Divide proper fractions by whole numbers Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places	Fractions and decimals Multiply one-digit numbers with up to 2 decimal places by whole numbers	Mental Perform mental calculations, including with mixed operations and large numbers

Consolidation (To be Included in Arithmetic Lessons)	Number: Decimals (Year 5, Summer 1) Add and subtract whole numbers with more than 4 digits (Year 5 Autumn 1)	Number: Place Value (Year 6, Autumn 1)	Number: Addition and Subtraction, Multiplication and Division (Year 6, Autumn 1) Multiply 4 digits by 1 digit (Year 5 Spring 1) Primes to 100, Squares and cubes (Year 5 Autumn 2)	Number: Fractions, Decimals and Percentages (Year 6, Autumn 2 & Spring 1)	Number: Addition and Subtraction, Multiplication and Division (Year 6, Autumn 1)	Number: Fractions, Decimals and Percentages (Year 6, Autumn 2 & Spring 1)
Mental Maths	Number and Place Value (Securing Numbers, Ordering and Comparing): Count in 1s forwards and backwards across boundaries 1000, 10,000, 100,000, 1000, 000+; Read, write, order and compare numbers to at least 10,000,000 and determine the values of each digit <i>e.g. what is the value of 8 in 8,239,146?</i> Number and Place Value (Counting): Count in 10, 100s, 1000, 10,000s forwards and backwards across boundaries 100,000, 1000, 000+; What is 10, 100, 1000/10000 more/less than? <i>e.g. 1 million – 1 1 million – 5 etc</i>; What is 0.1, 0.01 more than/less than?; Round any whole number to a required degree of accuracy <i>e.g. round 3,819,278 to nearest million</i>; round any whole number or decimal to a required degree of accuracy; Use negative numbers in context and calculate intervals across zero <i>e.g. What is difference between -37.4°C and 29.8 °C</i> Addition and Subtraction (Multiples): Perform mental calculations, including with mixed operations and large numbers <i>e.g. 700,000 - 904</i>; Use knowledge of the order of operations to carry out calculations involving the four operations <i>e.g. what is 2 + 7 x 6?</i> Solve addition and subtractions multi-step problems in contexts, deciding which operations and methods to use and why <i>e.g. How much change from £10 if you spend £1.45 and then £2. 57?</i> Perform mental calculations, including with mixed operations and large numbers <i>e.g. 7000 x 0.9</i> Multiplication and Division (Doubling Numbers / Near Doubles): Double decimals to 1dp <i>e.g. 0.3 x 2</i> (no regrouping), <i>0.6 + 0.6 or 0.6 x 2</i> (regrouping) Near doubles <i>e.g. 0.16 + 0.17 or 0.16 x 2</i>; Focus on regrouping after not regrouping Multiplication and Division (Order of Operations): Multiply and divide decimals using knowledge of place value <i>e.g. 3 x 0.5, 15 x 0.6</i>; Revisit mental skills of partitioning and recombining and using place value. Perform mental calculations, including with mixed operations and large numbers <i>e.g., 7000 x 0.9</i>; BIDMAS Multiplication and Division (Rounding and Adjusting): <i>999 x 16, 1000 x 16 and adjust, 101 x 16</i>; Explore efficiency of methods <i>e.g. 20 x 399, 20 x (400 – 20)</i>; Multiply decimals <i>e.g. 0.99 x 16</i> Fractions Decimals and Percentages (Comparing, Ordering and Calculating): Compare and order fractions including those >1; <i>e.g. enter the correct sign between the fractions (< or > or =) 14/6 139/48</i>; Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions <i>e.g. 1 ¼ + 2 ½</i>; Multiply simple pairs of proper fractions <i>e.g. ¾ x 2/5</i>; Divide proper fractions by whole numbers <i>e.g. 1/3 ÷ 2</i>; Identify the value of each digit in numbers given to 3DP; x and ÷ numbers by 10, 100 and 1000 giving answers up to 3DP; <i>e.g. 47 ÷ 1000</i>; Multiply 1 digit number with up to 2DP by whole numbers <i>e.g. 0.09 x 12</i>; Recall and use equivalences between F D and P <i>e.g. 78% as a fraction</i>; associate a fraction with division and calculate decimal fraction equivalents <i>e.g. 0.375 for a simple fraction (3/8)</i>					
Ready to Progress Criteria	➤ Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000). ➤ Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning. ➤ Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts. ➤ Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts. ➤ Understand that 2 numbers can be related additively or multiplicatively and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number). ➤ Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding. ➤ Solve problems involving ratio relationships. ➤ Solve problems with 2 unknowns. ➤ Recognise when fractions can be simplified and use common factors to simplify fractions. ➤ Express fractions in a common denomination and use this to compare fractions that are similar in value. ➤ Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy. ➤ Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.					