Maths Curriculum Map Nursery

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Core Curriculum	**Number** • Listen to and join in with rhymes, songs, stories and games that have a mathematical theme • Realise that anything can be counted, not just objects, e.g. claps, steps • Demonstrate an understanding of one to one correspondence by matching pairs of objects or pictures **Shape, Space & Measure** • Recognise and use the names for 2D shapes (circle, square, triangle within play activities and the environment **Measurement – Time** • Anticipate events related to elements of daily routines and use terms 'before' and 'after'	**Number** • Count reliably up to 5 objects • Recognise numbers 0 to 5 and relate a number to its respective quantity **Shape, Space & Measure** • Use and build with 2D and 3D shapes within play based activities • Sing/chant days of the week	**Number** • Use mark making to represent numbers in play activities that can be interpreted and explained • Recite numbers from 0-10 forwards and backwards using songs and rhymes **Shape, Space & Measure** • Demonstrate an awareness of prepositions and movement within games and play activities • Compare, sort and order two objects in terms of size	**Number** • Develop conservation of number by arranging objects in different ways • Subitize with numbers to 5 **Shape, Space & Measure** • Repeating patterns • Sequencing language • Compare, sort and order two objects in terms of weight	**Number** • Compare and order numbers to at least 5 • Understand the concept of one more and one less in their play **Shape, Space & Measure** • Compare, sort and order two objects in terms of capacity • Use words that describe temperature during everyday activities	**Number** • Write numerals up to 5 • Use counting to solve simple mathematical problems in everyday and play situations **Shape, Space & Measure** • Demonstrate an awareness of the purpose of money through role play
Big Ideas in Early Maths	**Sets and Sorting** • Counting can be used to find out how many in a collection • Counting has rules that apply to any collection • Attributes can be used to sort collections into sets • The same collection can be sorted in different ways • Sets can be compared and ordered **Number Sense** • Numbers are used in many ways, some more mathematical than others • Quantity is an attribute of a set of objects and we use numbers to name specific quantities		**Counting** • Counting can be used to find out how many in a collection • Counting has rules that apply to any collection **Subitizing** • The quantity of a small collection can be intuitively perceived without counting **Shape, space and measure: patterns** • Patterns are sequences (repeated or growing) governed by a rule; they exist both in the world and in mathematics. • Identifying the rule of a pattern brings predictability and allows us to make generalisation.		**Number: calculations and number problem combinations** • Numbers are used in many ways, some more mathematical than others • Quantity is an attribute of a set of objects and we use numbers to name specific quantities • The quantity of a small collection can be intuitively perceived without counting **Subitizing** • The quantity of a small collection can be intuitively perceived without counting **Shape, space and measure: classifying 2D and 3D shapes**	

	• The quantity of a small collection can be intuitively • perceived without counting **Number Operations** • Numbers are used in many ways, some more mathematical than others • Quantity is an attribute of a set of objects and we use numbers to name specific quantities • The quantity of a small collection can be intuitively perceived without counting **Spatial Relationships** • Relationships between objects and places can be described with mathematical precision • Our own experiences of space and two-dimensional representations of space reflect a specific point of view • Spatial relationships can be visualised and manipulated mentally	• The same pattern can be found in many different forms. **Number: reciting, representing and comparing** • Counting can be used to find out how many in a collection • Counting has rules that apply to any collection **Shape, space and measure: shapes in the environment** • Shapes can be defined and classified by their attributes • The flat faces of solid (three – dimensional) shapes are two – dimensional shapes	• Shapes can be defined and classified by their attributes • The flat faces of solid (three – dimensional) shapes are two – dimensional shapes • Shapes can be combined and separated (composed and decomposed) to make new shapes **Number: reciting, representing and comparing** • Counting can be used to find out how many in a collection • Counting has rules that apply to any collection **Shape, space and measure: shape combinations in the world** • Shapes can be combined and separated (composed and decomposed) to make new shapes
Mental Maths In EYFS	**Number and Place Value (Securing Numbers, Ordering and Comparing):** Counting forwards and backwards in 1s to 20 - teen numbers; Order a set of consecutive numbers to 10. **Addition and Subtraction (Multiples):** Partitioning 3 or 4 objects in different ways; Number bonds to 5; Knowing 1 more / less than numbers to 5 / 10; Counting all-combining groups; Counting on to add from any number; Knowing 1 less than numbers to 5; Counting back to subtract **Multiplication and Division (Doubling Numbers / Near Doubles):** Double numbers to 5; Halve even numbers up to 10 by sharing		
New Vocabulary For EYFS	**Number and Place Value:** number, zero 1-20 count on/back lots, more, few, fewer, compare, sort, order, before, after, less, many, most, the same as, ones, pair **Addition and Subtraction:** add, more, altogether, takeaway, number line, one more, one less, equals, equal to, double, half, how many? make, total **Fractions:** double, half, whole **Measure:** days of the week, week, month, year, weekend, birthday, holiday, morning, afternoon, evening, night, midnight, bedtime, dinnertime, playtime, today, yesterday, tomorrow, before, after, next, last, now, soon, early, late, quick, fast, slow, old, new, watch, clock, always, never, first, size, weight, capacity, time, money long, longer, longest, short, shorter, shortest, heavy, light, empty, full, tall, small, large, thick, thin, low, deep, ruler, far, near, holds, container, weigh, weighs coin, pound, pence, cost, money, penny, buy, sell, pay, price, how many? **Multiplication and Division:** times, counting in ones, twos, fives, tens, lots of, groups of, once, twice, five times sharing, share, set, group, left, left over **Geometry (Position and Direction):** position, distance, after, before, in, on, inside, under, on top of, behind, next to, above, below, top, bottom, side, outside, around, underneath, in front, front, back, before, middle, up, down, forwards, backwards, across, close, far, along, to, from, slide, roll, turn, stretch, bend, move. **Geometry (Properties of Shape):** shape, group, sort, round, flat, straight, make, build, draw. square, circle, triangle, cube, cuboid, sphere **General / Problem Solving:** listen, join in, say, think, imagine, remember, start from, start with, start at, look at, point to, put, place, fit, change, split, carry on, what comes next? find, choose, collect, use, make, build, tell me, pick out, talk about, explain, show me read, write, finish, copy, colour, tick, cross, draw, draw a line between, join (up), ring, arrow, cost, count, work out, answer, fill in, check, in order, every, each.		

Maths Curriculum Map Reception

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Core Curriculum	**Number and place value – numbers to 5** • Count up to three or four objects by saying one number name for each item • Count actions or objects that cannot be moved • Recognise numerals 1-5 • Select the correct numeral to represent 1-5 **Addition and subtraction – sorting** • Sorting into groups • Say the number that is one more or less to 5 **Measurement – Time** • Use everyday language related to time • Order and sequence familiar events • Measure short periods of time in simple ways	**Number and place value – comparing groups** • Compare quantities of identical objects • Compare quantities of non-identical objects **Addition and subtraction – change within 5** • Find one more • Find one less	**Addition and subtraction – numbers to 5** • Find the total number of items in two groups by counting all of them • Say the number that is one more than any number • Find one more or one less from a group of up to 5 objects • In practical activities and discussion, is beginning to use the vocabulary involved in adding and subtracting • Record, using marks that they can interpret and explain **Number and place value – numbers to 10** • Count objects to 10, and begin to count beyond 10 • Count an irregular arrangement of up to ten objects • Say the number that is one more • Find one more or less from a group of up to ten objects • Count out up to six objects from a larger group • Compare groups up to 10 • Use the language of 'more' and 'fewer' to compare two sets of objects **Geometry – Shape and Space** • Begin to use mathematical names for solid 3D shapes and flat 2D shapes	**Addition and subtraction – numbers to 10** • In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting • Combine two groups to find the whole • Find number bonds to 10 using a ten frame • Find number bonds to 10 using a part-whole model • Begin to subtract by guessing how many are hiding • Record, using marks that they can interpret and explain	**Addition and subtraction – count on and back** • Add 1,2 or 3 to any number to 10 by counting on • Taking away by counting back • Find pairs with a total of 6 or 7 • Find doubles to 5 +5 **Measurement – measure** • Order two or three items by length or height • Order two items by weight or capacity **Geometry – exploring patterns** • Make simple patterns • Explore more complex patterns • Continue a repeating pattern with three colours/shapes/objects • Recognise and create symmetrical patterns	**Number and place value – numbers to 20** • Count reliably to 20, place numbers in order and say which number is one more or one less **Multiplication and Division – numerical patterns** • Count in 1s and 10s to 100 • Double numbers to 5 +5 • Solve practical problems involving halving and sharing • Use practical resources to find odd and even numbers

			• Use mathematical terms to describe shapes • Select a particular named shape • Use familiar objects and common shapes to create and recreate patterns and build models • Describe their relative position such as 'behind' or 'next to'			
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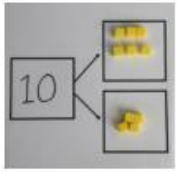
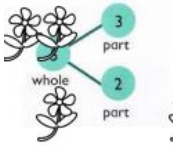
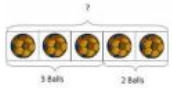
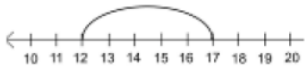
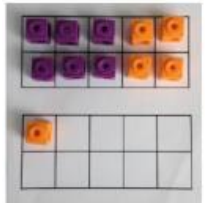
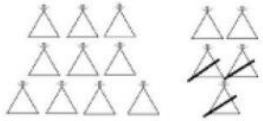
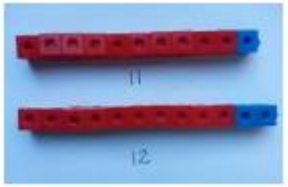
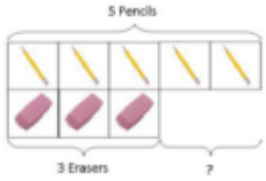
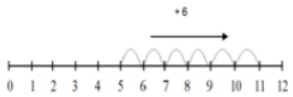
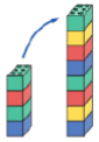
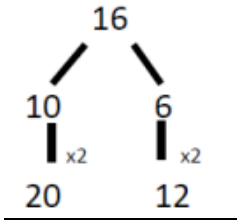
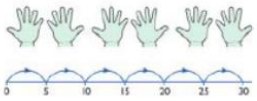
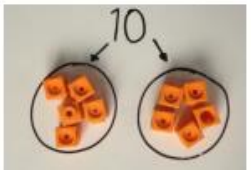
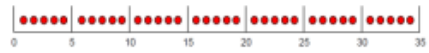
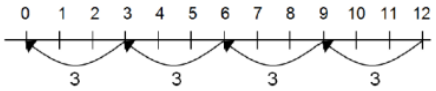
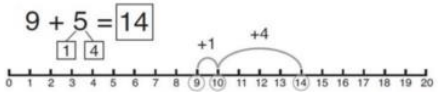
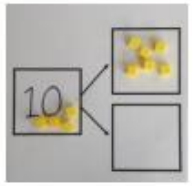
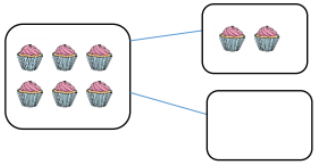
Maths Curriculum Map
Year 1

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
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 **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)**	**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 **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	**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	**Combining two parts to make a whole: part whole model**  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. **Starting at the bigger number and counting on**  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. **Regrouping to make 10**  Start with the bigger number and use the smaller number to make 10.	**Taking ones away** 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.  **Find the difference** 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.	**Doubling** Use practical activities to show how to double a number.  Draw pictures to show how to double a number. Double 4 is 8   **Counting in multiples** Count in multiples supported by concrete objects in equal groups.    Use a number line or pictures to continue support in counting in multiples.	**Sharing objects into groups**  I have 10 cubes, can you share them equally in 2 groups?  Children use pictures or shapes to share quantities  8 ÷ 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.  **Moving on to the abstract 9 ÷ 3 = 3**

	This is an example of a pictorial representation which could be used.  Moving onto the abstract 5 + 12 =17	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. Moving onto abstract 18 -3= 15	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.			

<table>
<tr><td>Continuous Curriculum (Maths Meetings)</td><td colspan="5"><u>Geometry: Shape</u> 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

<u>Geometry: Position and Direction</u> Describe turns and position

<u>Measurement: Length and Height</u> Compare lengths and heights; Measure length

<u>Measurement: Weight and Volume</u> Introduce weight and mass; Measure and compare mass; Introduce capacity and volume; Measure capacity and volume

<u>Measurement: Money</u> Recognise coins and notes; Count in coins

<u>Measurement: Time</u> Before and after; Dates; Tell time to the hour and half hour; Compare time

<u>Number: Fractions</u> Find halves and quarters</td></tr>
<tr><td>Arithmetic Fluency (Key Focus)</td><td colspan="2">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</td><td colspan="2">Number facts (+ -)
Given a number, identify 1 more, 1 less
Represent and use number bonds and related subtraction facts within 20</td><td>Mental (+ -)
Add and subtract one-digit and two-digit numbers to 20, including 0</td><td>Written (+ -)
Read, write and interpret mathematical statements involving +, - and = signs</td></tr>
<tr><td>Consolidation (To be Included in Arithmetic Lessons)</td><td>Addition and subtraction – count on and back
(Reception, Summer 1)</td><td>Number: Place Value (within 10)
(Year 1, Autumn 1)</td><td>Number: Addition and Subtraction (within 10)
(Year 1, Autumn 2)</td><td>Number: Addition and Subtraction (within 20)
(Year 1, Spring 1)</td><td>Number: Place Value (within 50)
(Year 1, Spring 1)</td><td>Number: Multiplication and Division
(Year 1, Summer 1)</td></tr>
<tr><td>Mental Maths</td><td colspan="5">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 e.g., 10 + 5, 10 + 7

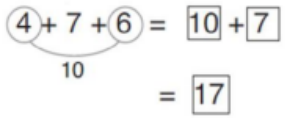
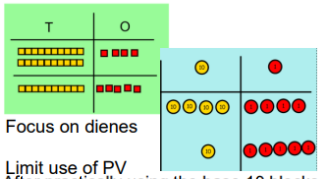
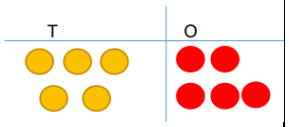
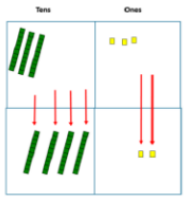
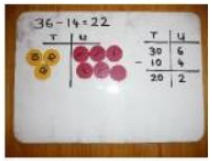
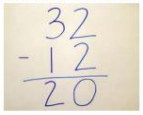
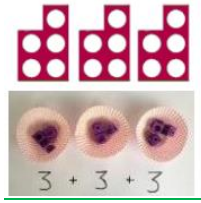
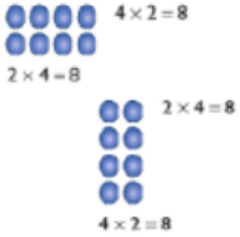
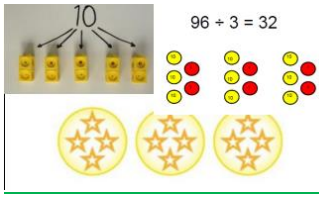
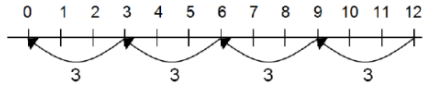
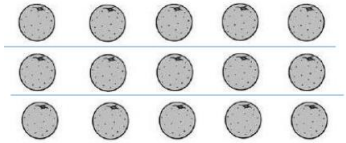
Addition and Subtraction (Multiples): Adding / subtracting 1 more / less to any number up to 100; Number bonds to 5 extending to 10; Counting on from largest number / re-ordering numbers to add e.g., 1 + 8 Counting on / back in 1s to add / subtract any 1-digit number to teens number e.g., 13 + 5, 17 – 2; Partition numbers to 10 (using concrete resources for number bonds) to find addition and subtraction facts. e.g., 8 + 2 = 10 so 8 + 3 = 8 + 2 + 1; 10 – 2 = 8 so 11 – 2 = 9; Number bonds to 10; Number bonds to 20 e.g., 8 + 2 = 10 so 18 + 2 = 20; 10 – 8 = 2 so 20 – 18 = 2

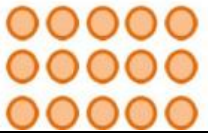
Addition and Subtraction (Adding / Subtracting 10’s, 100’s, 1000’s): Counting in multiples of 10s; Representing 2 digit numbers using concrete resources; What changes / stays the same when you add / subtract 1, 10?

Multiplication and Division (Doubling Numbers / Near Doubles): Recall double numbers to 5/10 e.g., up to double 10 = 20; Doubling 1 digit numbers e.g. 6 + 6; Adding near doubles (adjusting) e.g. 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 e.g. 6 + 7</td></tr>
<tr><td colspan="3">Multiplication Facts
Count in multiples of x1 x2
Consolidate counting in multiples of x1 x2 and introduce counting in multiples of x2 x5 x10</td><td colspan="3">Number Talk/ STEM Sentences
I noticed that…
My first step is…
The answer is…because…
I think…because…</td></tr>
</table>

Maths Curriculum Map
Year 2

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
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 **Number: Addition and Subtraction** • Fact families-addition and subtraction bonds to 20 • Compare number sentences and related facts • Bonds to 100 (10s) • Add and subtract 1s • 10 more and 10 less • Add and subtract 10s • Add by making 10 • Add a 2 and 1 digit number – crossing 10 • Subtract a 1 digit from a 2 digit number-crossing 10 • Add 2 digit numbers not crossing then crossing 10	**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 • 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) • 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 • 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

	Addition	Subtraction	Multpication	Division
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.  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 a counters, children can draw the counters t solve additions.  Moving onto the abstract	**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** 47 − 24 = 23 40 + 7 − 20 + 4 20 + 3 This will lead to a clear written column subtraction.  	**Revisit concrete, pictorial, and abstract strategies from Year One:** **Doubling** **Counting in Multiples** **Repeated addition**  Use different objects to add equal groups. There are 3 plates. Each plate has 2 star biscuits on. How many biscuits are there?  2 add 2 add 2 equals 6 Write addition sentences to describe objects and pictures.  2 + 2 + 2 + 2 + 2 = 10 **Arrays showing commutative multiplication**  **Draw arrays in different rotations to find commutative multiplication sentences.**  	**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. Eg 15 ÷ 3 = 5 5 x 3 = 15 15 ÷ 5 = 3 3 x 5 = 15  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 sentences. 7 x 4 = 28 4 x 7 = 28 28 ÷ 7 = 4 28 ÷ 4 = 7 “Fact Families”

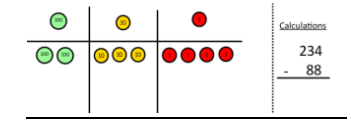
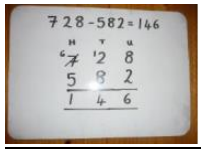
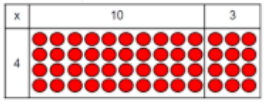
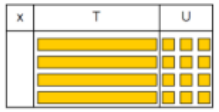
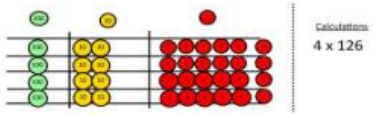
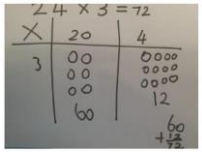
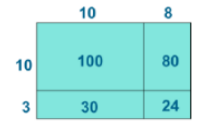
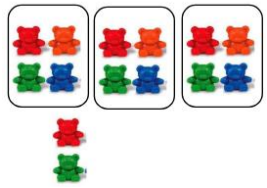
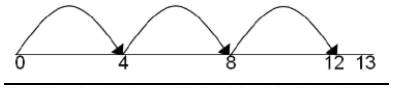
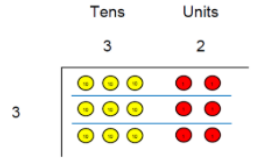
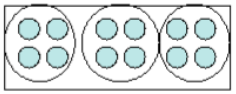
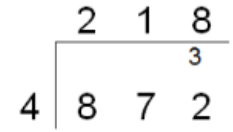
	21 + 42 = 21 + 42		Use an array to write multiplication sentences and reinforce repeated addition.  5 + 5 + 5 = 15 3 + 3 + 3 + 3 + 3 = 15 5 x 3 = 15 3 x 5 = 15	**Moving onto the abstract** 28 ÷ 7 = 4 Divide 28 into 7 groups. How many are in each group?
New Vocabulary For Y2	**Number and Place Value:** 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 Count, read and write numbers to 100 in numerals Count in multiples of 2, 3, 5 and 10 from any number forward and back.	**Number facts (+ -)** Use place value and number facts to solve problems Recall and use addition and subtraction facts to 20 fluently Derive and use related facts up to 100	**Mental (+ -)** Add and subtract numbers using concrete objects, pictorial representations and mentally: • 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	**Written (+ -)** Record addition and subtraction in columns to prepare for formal written methods with larger numbers	**Number facts (x ÷)** Recall and use multiplication and division facts for the 2,5 and 10 times tables, including recognising odd and even numbers	**Mental / Written (x ÷)** Calculate mathematical statements for multiplication and division within the 2, 5 and 10 times tables. 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 x ÷ 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) e.g.,*20, 30, 40 etc, 20, 30, 31, 32, 33 etc, 80, 70, 60 etc* **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 *e.g.,7 + 4 + 3;* Partition numbers (1 number) using number bonds to add/subtract (reordering numbers) *e.g. 8 + 7 = 8 + 2 + 5, 13 – 5 = 13-(3-5), 16 + 5 (16 + 4 + 1)*; Subtracting any single digit number from a multiple of 10 *e.g. 80 – 7 (knowledge of bonds to 10)* **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 *e.g. 9, 11* Number bonds to 100 *e.g. 70 + 30*; Adding multiples of ten *e.g. 30 + 20, 30 + 60, 30 + 80* **Multiplication and Division (Doubling Numbers / Near Doubles):** Double teen numbers *16 + 16* Near doubles *16 + 17*; Double multiples of 10 to 100 *e.g double 20*; Halve multiples of 10 with even number of 10s to 100 *e.g. half of 40*. Focus on doubling/halving multiples of 10 with odd number of 10s by partitioning and recombining *e.g. half of 30, 50, 70, 30 = 20+10*, *Half is 10 + 5 = 15*; 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 *e.g. 4 x 3 = 3 x 4*; 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 1/2 and 2/4 equivalence on the number line					

Multiplication Facts	**Number Talk/ STEM Sentences**
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. Consolidate counting in multiples of x2 x5 x10 x11 x3 and introduce counting in multiples of x4.	I noticed that… My first step… The answer is…because… I think…because……reminds me of … I predict that…

Maths Curriculum Map
Year 3

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
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 • Count in 50s **Number: Addition and Subtraction** • Add and subtract multiples of 100 • Add and subtract 1s • 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 • Add and subtract 100s • Spot patterns • Add two 2 digit numbers crossing 10 • Subtract 2 digit from a 2 digit number crossing 10	**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	**Number: Multiplication and Division** • Consolidate 2,4 and 8 times tables • Compare statements • Related calculations • Multiply and divide 2 digit by 1 digit • Scaling • How many ways? **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 ½ and 2/4 • Count in fractions	**Number: 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** • 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

	Addition	Subtraction	Multiplication	Division
Calculation Methods: Concrete Pictorial Abstract	**Column method regrouping** 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 **Moving onto the abstract of column addition**	**Column method with regrouping** 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   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. **Moving onto the abstract of decomposition**  	**Revisit concrete, pictorial, and abstract strategies from Year Two:** **Repeated Addition** **Arrays showing commutative multiplication** **Grid Method** 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.  Children can represent the work they have done with place value counters in a way that they understand.  35 x 7 × 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**  **Moving onto the abstract of short multiplication**	**Revisit concrete, pictorial, and abstract strategies from Year Two:** **Division with arrays** **Division with a remainder** 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  96 ÷ 3  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. **Moving onto the abstract of short division** Begin with divisions that divide equally with no remainder. 

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 ½ and 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 times one digit numbers, using metal 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 *e.g., 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 *e.g. 153 + 20, 153 + 70* (regrouping); Subtract any multiple of 10 from a 2/3 digit number, *e.g. 153 – 20, 153 – 70* (regrouping) Counting in 10s e.g. Use number bonds/partitioning 153 – (50 + 20); To subtract many amounts, combine to add first in context. Eg £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 e.g. 43+ 30 (no regrouping), 43 + 70 (regrouping), 143 + 30 (no regrouping), *143 + 70* (regrouping); Explain effects of adding 10. *Why do 1s not change when adding 10s? When will 100s change?*; Add near multiples of 10 *e.g. + 99, 31, 29 etc* including in simple money context *e.g. 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 e.g. half of 30, 50, 70, 30 = 20+10, Half is 10 + 5 = 15; Double simple 3 digit numbers (multiples of 10, 50, 100) e.g. double 200, double 250

Multiplication and Division (Order of Operations): Multiplication and division of whole numbers by 10 exploring the effect of moving digits e.g. 6 x 10, 10 x 10, 16 x 10; Use known facts to multiply and divide by multiples of 10 e.g. 6 x 3, 6 x 30 Reorder calculations using associative rule e.g,. 4 x 12 x 5, 4 x 12= 48, 48 x 5= 240, 4 x 5 x 12, 4 x 5 = 20, 20 x 12; Knowledge of doubling e.g. double 4x table = 8x; Know that… e.g. 50 x 2 = 100, 25 x 4 = 100, 20 x 5 = 100; Link to measure and reading scales e.g. 50p x 2 = £1.00, £50 x 2 = £100, 25p x 4 = £1.00 £25 x 4 = £100, 20p x 5 = £1.00 £20 x 5 = £100, 1000g = 1kg 1000ml = 1l , 1000cm = 1km, 1000 ÷ 2 = 500 1000 ÷ 4 = 250, ½ l/kg/km = 500, ¼ l/kg/km = 250, ¾ l/kg/km = 750

Fractions Decimals and Percentages (Comparing, Ordering and Calculating): count up and down in tenths.

Multiplication Facts

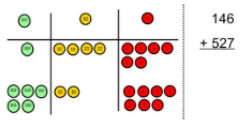
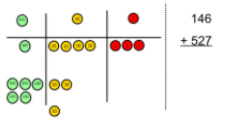
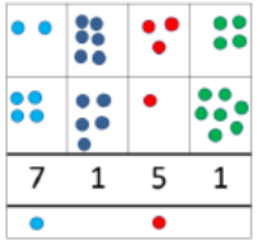
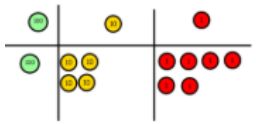
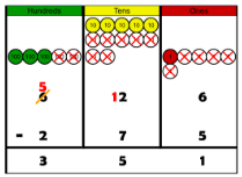
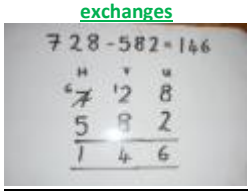
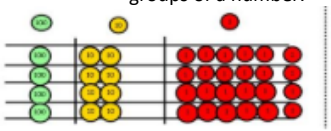
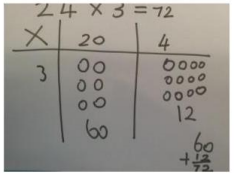
Consolidate counting in multiples of x2 x5 x10 x11 x3 x4 and introduce counting in multiples of x6.
Consolidate counting in multiples of x2 x5 x10 x11 x3 x4 x6 and introduce counting in multiples of x7.
Consolidate counting in multiples of x2 x5 x10 x11 x3 x4 x6 x7 and introduce counting in multiples of x8.

Number Talk/STEM sentences

I noticed that…
My first step…
The answer is…because…
I think…because…
…reminds me of …
I predict that…
I know the problems is asking me to…
I can defend my answer by…
I agree/disagree with your answer because…

Maths Curriculum Map
Year 4

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
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 • Efficient subtraction • 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 or 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 **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	**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 **Geometry: Position and Direction** • Describe a position • Draw on a grid • Move on a grid • Describe movement on a grid

	Addition	Subtraction	Multiplication	Division
Calculation Methods: Concrete Pictorial Abstract	**Column method regrouping** Make both numbers on a place value grid.  Add up the units and exchange 10 ones for one 10.   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 **Moving onto the abstract of column addition with exchanges**	**Column method regrouping**   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. **Moving onto the abstract of column subtraction with exchanges**  	**Grid Method** Use base 10 – then, once secure, move on to place value counters to show how we are finding groups of a number.   35 x 7 | ×	30	5
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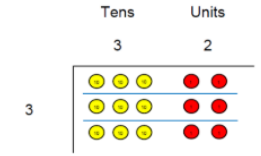
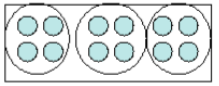
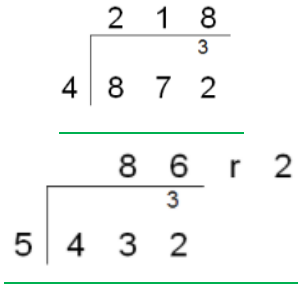
7	210	35	 **210 + 35 = 245** Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods. (Children need to understand multiplication as repeated addition to use bar modelling for problem solving). **Moving onto the abstract of column multiplication** Year 4 – two- and three-digit x 1 digit	**Revisit concrete, pictorial, and abstract strategies from Year Three:** **Division with arrays** **Division with a remainder** **Short division** 96 ÷ 3  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. **Moving onto the abstract of short division** 
New Vocabulary for Y4	**Number and Place value:** tenths, hundredths, numeral decimal places round (to nearest) thousand more / 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			

<table>
<tr><td>Continuous Curriculum (Maths Meetings)</td><td colspan="6"><u>Measurement: Length and Perimeter</u> Equivalent lengths-m and cm, mm and cm; Kilometres; Add lengths; Subtract lengths; Measure perimeter; Perimeter on a grid; Perimeter or rectangles and rectilinear shapes

<u>Measurement: Area</u> What is area?; Counting squares; Making shapes; Comparing area

<u>Number: Fractions</u> 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

<u>Number: Decimals</u> 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

<u>Measurement: Money</u> Pounds and pence; Ordering money; Estimating money; Convert pounds and pence; Add and subtract money; Find change; Four operations

<u>Measurement: Time</u> 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

<u>Statistics</u> Interpret charts; Comparison, sum and difference; Introduce line graphs

<u>Geometry: Position and Direction</u> Describe a position; Draw on a grid; Move on a grid; Describe movement on a grid</td></tr>
<tr><td>Arithmetic Fluency (Key Focus)</td><td>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</td><td>Written (+ -)
Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</td><td>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</td><td>Number facts (x ÷)
Recall multiplication and division facts for multiplication tables up to 12x12</td><td>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</td><td>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</td></tr>
<tr><td>Consolidation (To be Included in Arithmetic Lessons)</td><td>Number: Fractions
(Year 3, Spring 2 & Summer 1)</td><td>Number: Place Value
(Year 4, Autumn 1)</td><td>Number: Addition and Subtraction
(Year 4, Autumn 1)</td><td>Number: Multiplication and Division
(Year 4, Autumn 2 & Spring 1)</td><td>Number: Multiplication and Division
(Year 4, Autumn 2 & Spring 1)</td><td>Number: Fractions & Decimals
(Year 4, Spring 2 & Summer 1)</td></tr>
<tr><td>Mental Maths</td><td colspan="6">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 e.g.,2153 + 20, 2153 + 70 (regrouping); Add any multiple of 100 to a 4-digit number e.g.2153 + 100, 2153 + 300, 2153 + 900 (regrouping)

Multiplication and Division (Doubling Numbers / Near Doubles): Near doubles to multiple of 10 e.g., 60 + 59; Double simple 3-digit numbers by recall of known facts or partitioning and recombining (multiples of 10, 50, 100) e.g. double 200, double 250, double 220, half of 140.

Multiplication and Division (Order of Operations): Multiplication and division of whole numbers by 10 and 100 and multiples of e.g.,6 x 100, 10 x 100, 16 x 100, 16 x 300 etc; Distributive law e.g.,39 x 7= 30 x 7+</td></tr>
</table>

	9 x 7; Associative law and reordering calculations to make it easier, expressing equal calculations *e.g. 2 x 6 x 5 = 10 x 6*; Multiply by 50 by multiply by 100 and halving *e.g. 23 x 50= half of 23 x 100*; Know all the table facts and the related division facts *e.g. 500 x 2 = 1000, 1000 ÷ 2 = 500, 250 x 4 = 1000, 1000 ÷ 4 = 250, 200 x 5 = 1000, 1000 ÷ 5 = 200*; Know facts linked to measures *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* And corresponding division facts. **Multiplication and Division (Rounding and Adjusting):** Rounding and adjusting decimals in context of money e.g, *3 items costing 99p or £1.99* **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 $^{1}/_{4}$; $^{1}/_{2}$; $^{3}/_{4}$

Multiplication Facts

Consolidate counting in multiples of x2 x5 x10 x11 x3 x4 x6 x7 x8 and introduce counting in multiples of x9
Consolidate counting in multiples of x2 x5 x10 x11 x3 x4 x6 x7 x8 x9 and introduce counting in multiples of x12
Revise all multiplication facts up to x12 x12
Revise all multiplication facts up to x12 x12
Recall all facts and related division facts

Number Talk

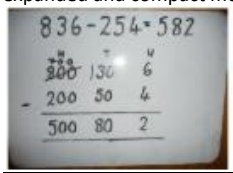
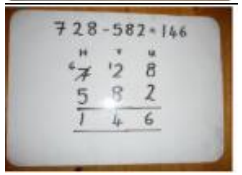
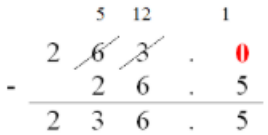
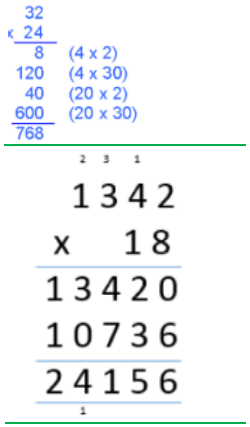
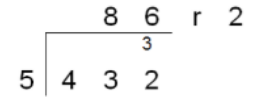
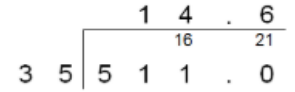
STEM sentences

I noticed that…
My first step…
The answer is…because…
I think…because…
…reminds me of …
I predict that…
I know the problems is asking me to…
I can defend my answer by…
I agree/disagree with your answer because…
I want to add to what…said about…
Next time I solve a problem like this, I will

Maths Curriculum Map
Year 5

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
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)	**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 pf 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 • 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 and Percentages** • Decimals up to 2 d.p.	**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 **Geometry: Properties of Shape** • Identify, compare and order angles • Measure angles in degrees • Measure with a protractor • Draw lines and angles accurately	**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

	• Multi-step addition and subtraction problems			• Decimals as fractions • Understand thousandths • Thousandths = decimals • Rounding decimals • Order and compare decimals • Understand percentages • Percentages = fractions and decimals • Equivalent F.D.P	• 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	

	Addition	**Subtraction**	**Multiplication**	**Division**
Calculation Methods: Concrete Pictorial Abstract	**Column addition including the expanded form to develop reasoning skills** 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 As the children move on, introduce decimals with the same number of decimal places and different.	**Expanded subtraction** **U**se 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.  	**Column Multiplication** Start with short multiplication **Long Multiplication** If it helps, children can write out what they are solving next to their answer.  	**Short Division**  Move into decimal places to divide the total accurately  **Long Division** 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. 

<table>
<tr><td>New Vocabulary for Y5</td><td colspan="6">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</td></tr>
<tr><td>Continuous Curriculum (Maths Meetings)</td><td colspan="6"><u>Statistics</u> 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

<u>Number: Fractions, Decimals & Percentages</u> 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

<u>Geometry: Properties of Shape</u> 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

<u>Geometry: Position and Direction</u> 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

<u>Measurement: Converting Units</u> Kilograms and kilometres; Millimetres and millilitres; Metric units; Imperial units; Converting units of time; Timetables

<u>Measurement: Volume</u> What is volume?; Compare volume; Estimate volume; Estimate capacity</td></tr>
<tr><td>Arithmetic Fluency (Key Focus)</td><td>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</td><td>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</td><td>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</td><td>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</td><td>Mental
Multiply and divide numbers mentally drawing upon known facts
Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</td><td>Written (x ÷)
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</td></tr>
<tr><td>Consolidation (To be Included in Arithmetic Lessons)</td><td>Number: Fractions & Decimals
(Year 4, Spring 2 & Summer 1)</td><td>Number: Place Value
(Year 5, Autumn 1)</td><td>Number: Addition and Subtraction
(Year 5, Autumn 1)</td><td>Number: Multiplication and Division
(Year 5, Autumn 2 & Spring 1)</td><td>Number: Fractions, Decimals and Percentages
(Year 5, Spring 2)</td><td>Number: Fractions, Decimals and Percentages
(Year 5, Spring 2)</td></tr>
</table>

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 *e.g., What is the value of the 6 in 681,927?*

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 *e.g. 30, 60, 90 etc*; count in 10,000s from 329,109; round any number up to 1 000 000 to the nearest 10, 100, 1 000, 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 *e.g. continue the sequence -7, -14, -21 etc*

Addition and Subtraction (Multiples): Add any multiple of 10/100 to a 4 digit number *e.g. 2153 + 110, 2153 + 330, 2153 + 350, 2153 + 910, 2153 + 950*; Add and subtract numbers mentally with increasingly large numbers *e.g. what is 12,463 – 23,000?*

Multiplication and Division (Doubling Numbers / Near Doubles): Near doubles to multiples of 10 or 100 e.g. 198+198; Double simple 3/4 digit numbers by recall of known facts or partitioning and recombining (multiples of 10, 50, 100) *e.g. double 200, double 250, double 220, half of 140*; Double decimals to 1/2dp *e.g. 0.3 x 2* (no regrouping), *0.6 + 0.6 or 0.6 x 2* (regrouping) Near doubles *0.16 + 0.17 or 0.16 x 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 *e.g. 14 x 1000, 14 x 1200*; Use cubed and squared to express calculations *e.g. 3 x 3 x 5 = 3^2 x 5*; Multiply pairs of multiples of 10 and 100. *e.g. 20 x 300*

Multiplication and Division (Rounding and Adjusting): Rounding and adjusting, Multiply by 10, 100 and 1000 and adjust *e.g. 99 x 15*; Use 100 x 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 = $^{71}/_{100}$)*; write percentages as a fraction with denominator 100 as a decimal fraction

Multiplication and division facts

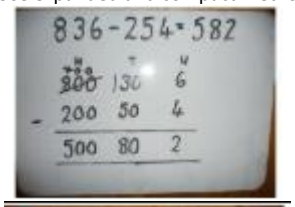
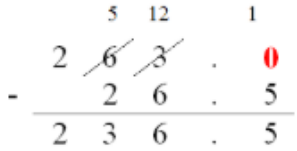
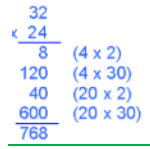
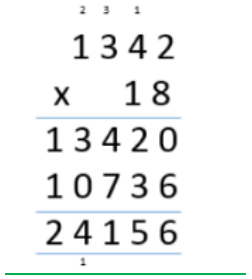
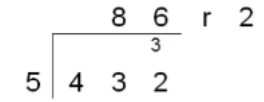
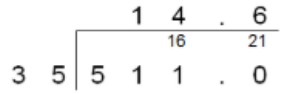
Recall all multiplicative facts and related division facts including, missing numbers and decimals.

Number Talk/STEM sentences

I noticed that…
My first step…
The answer is…because…
I think…because…
…reminds me of …
I predict that…
I know the problems is asking me to…
I can defend my answer by…
I agree/disagree with your answer because…
I want to add to what…said about…
Next time I solve a problem like this, I will…
My strategy is the same/different to yours because…
I still have a question about…
The most efficient strategy would be…

Maths Curriculum Map
Year 6

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
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) • 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	**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 • 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: 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 **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	**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 • Draw nets of 3-D shapes • Properties of circles **Statistics** • Read and interpret pie charts • Pie charts with percentages • Draw pie charts	Targeted gap analysis	Variation is applied to practice questions where attention is paid to the selection and order of the examples. Often just one aspect is changed whilst others are kept the same. The intention is to avoid mechanical repetition but instead to promote thinking to make connections; known as 'intelligent practice'.

	Addition	Subtraction	Multiplication	Division
Calculation Methods: Concrete Pictorial Abstract	**Column addition including the expanded form to develop reasoning skills** 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 As the children move on, introduce decimals with the same number of decimal places and different.	**Expanded subtraction** 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.  	**Column Multiplication** Start with short multiplication **Long Multiplication** If it helps, children can write out what they are solving next to their answer.   	**Short Division**  Move into decimal places to divide the total accurately  **Long Division** 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	**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			

(Maths Meetings)	**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 Autum 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 *e.g. what is the vale of 8 in 8,239,146?* **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 ….? e*.g. 1 million – 1 1 million – 5 etc;* What is 0.1, 0.01 more than/less than ….?; Round any whole number to a required degree of accuracy *e.g. round 3,819,278 to nearest million*; round any whole number or decimal to a required degree of accuracy; Use negative numbers in context and calculate intervals across zero *e.g. What is difference between -37.4°C and 29.8 °C* **Addition and Subtraction (Multiples):** Perform mental calculations, including with mixed operations and large numbers *e.g. 700,000 - 904*; Use knowledge of the order of operations to carry out calculations involving the four operations *e.g. what is 2 + 7 x 6?;* Solve addition and subtractions multi-step problems in contexts, deciding which operations and methods to use and why *e.g. How much change from £10 if you spend £1.45 and then £2.57?*; Perform mental calculations, including with mixed operations and large numbers *e.g. 7000 x 0.9*					

	Multiplication and Division (Doubling Numbers / Near Doubles): Double decimals to 1dp *e.g. 0.3 x 2* (no regrouping), *0.6 + 0.6 or 0.6 x 2* (regrouping) Near doubles *e.g. 0.16 + 0.17 or 0.16 x 2*; Focus on regrouping after not regrouping **Multiplication and Division (Order of Operations):** Multiply and divide decimals using knowledge of place value *e.g.3 x 0.5, 15 x 0.6;* Revisit mental skills of partitioning and recombining and using place value. Perform mental calculations, including with mixed operations and large numbers *e.g., 7000 x 0.9*; BIDMAS **Multiplication and Division (Rounding and Adjusting):** *999 x 16, 1000 x 16 and adjust, 101 x 16*; Explore efficiency of methods *e.g. 20 x 399, 20 x (400 – 20);* Multiply decimals *e.g. 0.99 x 16* **Fractions Decimals and Percentages (Comparing, Ordering and Calculating):** Compare and order fractions including those >1; *e.g. enter the correct sign between the fractions (< or > or =) 14/6 139/48*; Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions *e.g. 1 ¾ + 2 ½*; Multiply simple pairs of proper fractions *e.g. ¾ x 2/5*; Divide proper fractions by whole numbers *e.g. 1/3 ÷ 2*; Identify the value of each digit in numbers given to 3DP; x and ÷ numbers by 10, 100 and 1000 giving answers up to 3DP; *e.g. 47 ÷ 1000;* Multiply 1 digit number with up to 2DP by whole numbers *e.g. 0.09 x 12*; Recall and use equivalences between F D and P *e.g. 78% as a fraction*; associate a fraction with division and calculate decimal fraction equivalents *e.g. 0.375 for a simple fraction (3/8)*

Multiplication and Division Facts

Recall all multiplicative facts and related division facts including, missing numbers and decimals.

Number Talk

STEM sentences

I noticed that…
My first step…
The answer is…because…
I think…because…
…reminds me of …
I predict that…
I know the problems is asking me to…
I can defend my answer by…
I agree/disagree with your answer because…
I want to add to what…said about…
Next time I solve a problem like this, I will…
My strategy is the same/different to yours because…
I still have a question about…
The most efficient strategy would be…