SMART Maths

Mathematics Curriculum

2022 Guidance

Long term planning guidance for **mixed age** groups.

Contents

Year N

Counting (LO1)

Autumn	Spring	Summer
Rote count to 3	Rote count to 5	Rote count to 10 and beyond
Touch count objects up to 3.	Touch count objects up to 5	Count 0-10 forwards and backwards in everyday contexts e.g., countdowns/ footsteps/pennies
Count and copy up to 3 claps; 3 marching steps	Match number of objects to correct numeral at least to 3, then 5 (show finger numbers)	Match the number of objects (0–5) to the correct numeral
Sing 'Two Little Dickie birds' and 'When Goldilocks went to the house of the bears' counting with actions for one, two, three.	Recognise the numerals 0 -5 and say the number name	Say how many objects (0-3) when asked 'How many?' without touch counting (subitise)
Say how many objects (1–3) when asked to 'count how many'	Sing songs using counting actions up to 5 e.g., 5 Little men in a flying saucer	Count and match arrangements of up to six items, e.g., dice/dominoes (subitise)
Recognise the numerals 1, 2, 3, and say the number name	Know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle).	Count objects (inc Cups) up to 5 moving them from the Resources Table to the Maths table
		Begin to use the counting action and count out loud when asked to, 'Look at the Maths Table and count'
		Use the denomination of the object being counted, for example, [number] Cups/Teddies etc., when asked 'How much is there here?' (cardinal principle)
		Solve real world mathematical problems with numbers up to 5.
		Sing counting on and back songs to 10 (If taking away e.g., cakes, remove from the Maths Table, the Shop, back to the Resources Table, Home.)

Additional 2021 EYFS Framework guidance:

Nursery Learning Goals - Number	**Literacy**	**Expressive Arts & Design**
Rote count to 10	Count or clap syllables in a word	Clap or tap to the pulse of songs or music
Recognise the numerals from 0-5 and count the correct number of objects	Page sequencing	
Develop fast recognition of up to 3 objects, without having to count them individually ('subitising')		

Number (LO1)

Autumn	Spring	Summer
Recognise the numerals 1, 2, 3, and say the number name	Recognise numerals 0-5	Say number name when shown number symbol to at least 5
	Sequence numbers from 0 to 5	Make staircases to show the 'fiveness of 5' (subitise)
	Order objects or pictures and say: first, second, third	

	Explore the 'fiveness of 5' (subitise)	Sequence numbers from 0 to 10
		Compare quantities using language: 'more than', 'fewer than'.

Additional 2021 EYFS Framework guidance:

Nursery Learning Goals- Number

Recognise the numerals from 0-5

Develop fast recognition of up to 3 objects, without having to count them individually ('subitising')

Mathematics Number

Experiment with their own symbols and marks as well as numerals.

Writing (LO1)

Autumn	Spring	Summer
Experiment with their own symbols and marks as well as numerals.	Write some letters (numerals) accurately.	Copy the numerals 0, 1, 2, 3 with increasing accuracy using the large oval template.

Additional 2021 EYFS Framework guidance:

Mathematics Number

Experiment with their own symbols and marks as well as numerals.

Literacy

Write some letters (numerals) accurately.

Physical Development Fine motor

Use a comfortable grip with good control when holding pens and pencils.

Calculating (LO2)

Autumn	Spring	Summer
	Experiment with their own symbols and marks as well as numerals to solve real world mathematical problems	Solve real world mathematical problems with numbers up to 5.
		Sing counting on and back songs. (If taking away e.g., cakes, remove from the Maths Table side, the Shop, back to the Resources Table side, Home.) When asked e.g. How many more? How many left? Children respond by working out the quantity (count fingers and/or objects) and/or saying one more/less.
		Compare quantities using language: 'more than', 'fewer than'.

Additional 2021 EYFS Framework guidance:

Mathematics Number
Solve real world mathematical problems with numbers up to 5.
Compare quantities using language: 'more than', 'fewer than'.

Shape (LO5)

Autumn	Spring	Summer
Explore & talk about shape using informal language to describe it.	Talk about and recognise 2D shapes: rectangle, square, triangle, circle, oval	Match shapes by recognising similarities, e.g., same number of sides; straight/curved (bendy) sides
Walk on lines – curved and straight	Talk about and recognise 3D shapes: cube, cuboid (box); sphere (ball); cylinder (tube)	Notice simple symmetry
Draw lines (freehand)	Make and continue a pattern with, for example, repeated colours, shapes or sizes	Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc.
	Walk and ride on lines and around shapes on the playground, talk about the shapes	Combine shapes to make new ones - an arch, a bigger triangle etc.
	Create closed shapes with continuous lines	Begin to name 2D shapes in everyday contexts e.g., a drawing of a house with windows (square), door(rectangle) and a roof (triangle).

Additional 2021 EYFS Framework guidance:		
Nursery Learning Goal - Shape & Space	**Expressive Arts and Design**	**Physical Development Fine & Gross motor**
Talk about similarities and begin to use mathematical names for 2-D shapes (square, rectangle, triangle and circle)	Create closed shapes with continuous lines, and begin to use these shapes to represent objects.	Use a comfortable grip with good control when holding pens and pencils.
		Continue to develop their movement, balancing, riding

Position (LO5)

Autumn	Spring	Summer
Use positional language - behind/in front; up/down; inside/outside;	Use scales to weigh objects and ingredients: Use the vocabulary heavy, light, heavier, lighter, heaviest and lightest	Use positional language, e.g., left, right, top, middle (centre), bottom; next/beside/opposite/between
Notice patterns and arrange things in patterns	Use the vocabulary of height, e.g., tall, short, and weight, e.g., heavy, light	Use positional language to describe walks and journeys
	Use the vocabulary of capacity – full/empty/half-full; more/less	Notice and correct an error in a repeating pattern.
	Use positional language to order three objects of different size.	
	Extend and create ABAB patterns – stick, leaf, stick, leaf.	

Additional 2021 EYFS Framework guidance:

Measure (LO7)

Autumn	Spring	Summer
Compare sizes, weights etc. using gesture and language - 'bigger/little/smaller', 'high/low', 'tall', 'heavy' Uses early vocabulary of time e.g., today, the day before/after this day.	Make comparisons between objects relating to size, length, weight and capacity. Knows some names of days of the week	Arranges objects in order of size using a more mathematical vocabulary with comparatives & superlatives e.g., short, shorter/shortest Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...yesterday/today/tomorrow Refers to days of the week, begins to sequence. Knows some months of the year and season names. Use vocabulary like 'morning', 'afternoon', 'evening' and 'night-time', 'earlier', 'later', 'too late', 'too soon', 'in a minute'.

Additional 2021 EYFS Framework guidance:

Nursery Learning Goal - Shape & Space	Mathematics Shape and Space	Physical Development - Gross Motor
Make comparisons between objects relating to size, length, weight and capacity.	Begin to describe a sequence of events, real or fictional	Increasingly be able to use and remember sequences and patterns of movements which are related to music and rhythm. **Understanding the World** Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal.

Sorting and Data (LO8)

Autumn	Spring	Summer
	Sort objects and shapes according to own criteria e.g., animals; vehicles	Sort objects into groups of the same type, e.g., beads or pictures of frogs Sort and match objects according to size

Additional 2021 EYFS Framework guidance:

Nursery Learning Goal - Shape & Space	Understanding the World	
Make comparisons between objects relating to size, length, weight and capacity.	Explore collections of materials with similar and/or different properties.	

Daily Practice

Autumn	Spring	Summer
Counting forwards from zero to 5	Count forwards and backwards from 0 to 10	Count forwards and backwards from any single digit to 10 and back.
Recognise numerals 0-3	Touch count to 5	Touch count to 5 then 10
Match 1, 2 and 3 objects to numeral name	Subitise to 3	Subitise to 5
Use positional language – in front, behind; before/after; inside/outside	Talk about properties of 2D shapes (square, rectangle, circle and triangle) and 3D shapes (cube and cuboid)	Number formation (0-5
Sequence daily events First, Next, Then	Positional Language – Beginning (Start), Middle, End; First, Next, Last	Begin to name 2D shapes (circle, triangle, square, rectangle)
	Sequence real events - Yesterday; Today; Tomorrow	Positional Language
		Sequence events - Days of week, Seasons

Additional 2021 EYFS Framework guidance:

Nursery Learning Goals

Fast recognition of 3 items (subitising).

Recognise the numerals from 0 to 5 and count up to 5 objects

To rote count to 10.

Talk about similarities and begin to use mathematical names for 2-D shapes (square, rectangle, triangle and circle)

Follow some simple instructions using positional language

Make comparisons between objects relating to size, length, weight and capacity.

Notice and correct an error in a repeating pattern.

Year R

Counting (LO1)

Autumn	Spring	Summer
Count objects at least up to 5	Count objects & match to numeral at least to 10, then 20	Recognise and say a half when asked, How much is there here? and when shown the symbol ½
Say how many objects (1–5) when asked to 'count how many'	Use the counting action and count out loud when asked to, 'Look at the Maths Table and count'	Say 'a half cup' when shown a half cup and asked How much is there here?
Recognise the numerals 0, 1, 2, 3, 4, 5 and say the number		

Match the number of objects (0–5) to the correct numeral	Use denomination In Real-Stories/Real-Life Stories, say, for example, [number] cups/children when asked 'How much is there here?'	Say a quarter cup when shown a quarter cup and asked, how much is there here?
Develop fast recognition of up to 5 objects, without having to count them individually ('subitising')		Count forwards/backwards 0 to 20 and beyond (up to 99)
Count 0-10 forwards and backwards, count to 20 forwards inc everyday contexts e.g., footsteps/pennies	Count forwards/backwards from zero in ones to/from 20 and count up to 50 crossing 10's boundaries	
Count and match arrangements of up to six items, e.g., dice/dominoes (subitise)		
Use counting action for objects to at least 10, when asked to, 'Look at the Maths Table & count'. For Real-life story count e.g., pennies. Say, □ cups/pennies when asked, How much is there here?		

Additional 2021 EYFS Framework guidance:

ELG: Number	ELG: Numerical Patterns	Expressive Arts & Design
Have a deep understanding of number to 10, including the composition of each number;	Verbally count beyond 20, recognising the pattern of the counting system; Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;	Invent, adapt and recount narratives (involving number or size) and stories with peers and their teacher;
Subitise (recognise quantities without counting) up to 5;		Sing a range of well-known nursery rhymes and songs; (counting songs), and experiment with ways of changing them (What if not?)
Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	Explore and engage in music making and dance, performing solo or in groups and – when appropriate – try to move in time with music (counting a beat).

Number (LO1)

Autumn	Spring	Summer
Count objects (1–10) and match to the correct numeral	Sequence numbers from 0 to 10 then 0 to 20	Count and match pennies to objects costing up to 10p
	Order objects or pictures and say: first, second, third, etc up to tenth	Say 'a half' when shown the symbol ½ or words 'a half' or 'one half' and asked 'What does this say?'
	Match *pairs* of numbers (0–20) to a variety of objects	Then for ¼

Additional 2021 EYFS Framework guidance:

ELG: Number	ELG: Numerical Patterns	
Have a deep understanding of number to 10, including the composition of each number;	Verbally count beyond 20, recognising the pattern of the counting system; Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;	
Subitise (recognise quantities without counting) up to 5;	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	

Writing (LO1)

Autumn	Spring	Summer
Accurately, write numerals 0, 1, and 3 (which sit inside the oval 0 template) in a variety of contexts; numbers 4, 6, & 8 (inside oval 0) numbers 2, 5, 7, & 9 (outside oval 0)	Copy addition and subtraction Maths Stories with 1-digit whole numbers Read and Write the numbers to 10 then to 20	Write the symbol ½ accurately and then ¼ Copy addition and subtraction Maths Stories with 1-digit whole numbers and half

Additional 2021 EYFS Framework guidance:

Physical Development Fine Motor Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases; Use a range of small tools, including scissors; Begin to show accuracy and care when drawing. (Number formation, cutting on a line to cut out shapes, join dots)

Calculating (LO2)

Autumn	Spring	Summer
Act the Real Story (cups) for **addition** Maths Stories with 1-digit whole numbers by following *verbal instructions*, i.e., Get ready to get some more; then for *written* 1-digit Maths stories, including 0 Act out a basic Real-Life Story (counters/blocks/pennies following *verbal* instructions. Use vocabulary relating to addition. Look at an **addition** Maths Story with 1-digit whole numbers, read what it says: 2 + 4 + 3 = 9; means: two cups, add four cups, add three cups, equals nine cups Say one more than and one less than a given number (0–10)	Act the Real Story, using cups/blocks/counters, for **addition, then subtraction,** Maths Stories with 1-digit whole numbers Look at the Maths Story and read what it says /means for **addition/subtraction** Maths Stories with 1-digit whole numbers Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts). Use the words and actions for: **add, take away and equals** Say one more than or one less than for 1-digit whole numbers up to 20 Double up to 5 **+** 5 objects Share up to 15 objects equally	Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. Use 10-frames to add/subtract by subitising and using known bonds to 5 (and 10) Begin to use more efficient strategies to Act a Real Story for **an addition and subtraction** Maths Story with 1-digit whole numbers (cups/blocks/counters) and halves, using whole and half cups, then quarter cups Act out **addition and subtraction** Real-Life Stories for 1-digit whole numbers, e.g., two parcels, add three parcels, take away one parcel, equals four parcels Link one more than/ one less than to Maths Stories **(+1 or -1)** saying 'one more/less than □ is □ (up to 99)

Additional 2021 EYFS Framework guidance:

ELG: Number	**ELG: Numerical Patterns** Compare quantities up to 10 in different contexts, recognising when one quantity

Have a deep understanding of number to 10, including the composition of each number; Subitise (recognise quantities without counting) up to 5; Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	is greater than, less than or the same as the other quantity; Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	

Shape (LO5)

Autumn	Spring	Summer
Match shapes by recognising similarities, e.g., same number of sides Begin to use mathematical names for 2D shapes	Recognise and name 2D shapes: rectangle, square, triangle, circle, oval Find half of shapes (symmetry) Sort and match 2D shapes (rectangle, square, triangle, circle, oval) by counting the number of *straight* sides. Recognise & name 3D shapes: cube, cuboid Make and continue a pattern with, for example, repeated colours, shapes or sizes	Identify and name 2D shapes Sort 2D shapes by type, i.e., tessellating and non-tessellating Identify and name 2D & 3D shapes in everyday contexts, e.g., a sphere-shaped ball; a tin of beans as a cylinder; ice-cream cornet as a cone

Additional 2021 EYFS Framework guidance:

Mathematics: Shape & Space Select, rotate and manipulate shapes in order to develop spatial reasoning skills Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.		**Understanding the World** Draw information from a simple map. Recognise some environments that are different to the one in which they live - compare similarities and differences in relation to places, objects, materials and living things (shape/space, positional vocabulary, comparatives & superlatives) **Expressive Arts & Design-Creating with Materials** Use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; - Share their creations, explaining the process they have used; - Make use of props and materials when role playing characters in narratives and stories. (Shape & Space)

Position (LO5)

Autumn	Spring	Summer
Use positional language, such as over/ under/through; behind/in front; up/down; over/under, straight /curved; inside/outside; after/before	Use scales to weigh objects and ingredients: Use the vocabulary heavy, light, heavier, lighter, heaviest and lightest	Use positional language, e.g., left, right, top, middle (centre), bottom; next/beside/opposite/between

| | Use the vocabulary of height, e.g., tall, short and use comparative/superlative, and weight, e.g., heavy, light | Use positional language to describe walks and journeys |
| | Use the vocabulary of capacity – full/empty/half-full; more/less | Continue, copy and create repeating patterns |

Additional 2021 EYFS Framework guidance:		
Mathematics: Shape & Space Continue, copy and create repeating patterns Select, rotate and manipulate shapes in order to develop spatial reasoning skills. Compare length (distance), weight (mass) & capacity.	**Physical Development Gross Motor** Revise and refine the fundamental movement skills they have already acquired e.g., walk forwards/backwards in a straight line	**Understanding the World** Draw information from a simple map. Recognise some environments that are different to the one in which they live - compare similarities and differences in relation to places, objects, materials and living things (shape/space, positional vocabulary, comparatives & superlatives)

Measure (LO7)

Autumn	Spring	Summer
Use vocabulary related to size, e.g., little, medium, big, huge	Compare heights using vocabulary of short and tall Order height as shorter than and taller than, shortest, tallest Use the vocabulary heavy, light, heavier, lighter, heaviest and lightest Compare capacity using vocabulary of empty/full	Weigh parcels/objects and say /order which is heavier/lighter or heaviest/lightest Say o'clock for time on the hour Measure one- or five-minutes using sand timers Count the number of actions done within a time limit, e.g., counting jumps or numbers with a sand timer Talk about time using the vocabulary of minutes, hours, o'clock, early and late Talk about speed using the vocabulary of fast and slow

Additional 2021 EYFS Framework guidance:		
	Understanding the World Explore the natural world around them. Describe what they see, hear and feel whilst outside. - compare similarities and differences in relation to places, objects, materials and living things (shape/space, positional vocabulary, comparatives & superlatives)	**Mathematics: Shape & Space** Compare length (distance), weight (mass) & capacity. Use vocabulary of position and time to compare quantities and objects and to solve problems

Sorting and Data (LO8)

Autumn	Spring	Summer
Sort objects into groups of the same type, e.g., beads or pictures of frogs Sort and match objects according to size	Sort 2D and 3D shapes according to criteria	Collect information to make a block graph Find and talk about the information on a block graph

Additional 2021 EYFS Framework guidance:		
	Mathematics: Shape & Space	**ELG: Numerical Patterns**
	Select, rotate and manipulate shapes in order to develop spatial reasoning skills	Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity
		Mathematics: Shape & Space
		Compare length (distance), weight (mass) & capacity.
		Use vocabulary of position and time to compare quantities and objects and to solve problems

Daily Practice

Autumn	Spring	Summer
Number formation 0-9; then 0-20	Find one more and one less	Find one more and one less
Counting forwards and backwards	Count forwards and backwards	Count forwards and backwards
Recognise numerals 0-9; then 0-20	Number formation (0-20)	Subitise to state number bonds to 10
Subitise to 5	Subitise to 10	Number formation (0-20)
Days of the week; Months of the year	Recognise and name 2D shapes (square, rectangle, circle and triangle); 3D shapes cube and cuboid	Name 3D shapes cube and cuboid; then sphere, cone; cylinder, pyramid
Recognise and name 2D shapes (square, rectangle, circle and triangle)	Months of the year	Double numbers up to 10
		Dates
Additional 2021 EYFS Framework guidance:		
Expressive Arts & Design	**ELG: Number**	**ELG: Numerical Patterns**
Sing a range of well-known nursery rhymes and songs; (counting songs), and experiment with ways of changing them (What if not?)	Have a deep understanding of number to 10, including the composition of each number;	Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
	Subitise (recognise quantities without counting) up to 5;	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.
	Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	

Year 1/2 Mixed age

A rolling programme across two years cannot work with mathematics. In order to achieve the best curriculum match, the objectives for Y1 (*italicised*) and Y2 are re-ordered to allow for necessary repetition and progression.

Some Y1 objectives have been moved to match Y2 best fit, their origins from the Teacher Guides are referenced. Inevitably, this means that some aspects of the Y1/2 small-step progression documents have been re-ordered.

Arithmetic

Autumn	Spring	Summer
Calculate and record addition and subtraction maths stories within 20	*Copy and solve vertical addition (up to 3-digit numbers, not tricky)*	Copy and solve vertical addition and subtraction (up to 4-digit numbers, not tricky)
Add and subtract ½ and ¼	Partition numbers (Y2 A2 Spr1) *note Language: Ty as Tens and Cups as Ones interchangeably from this point onwards through KS2, but do not drop Logic of the Language!*	Solve word problems involving all four operations
Calculate vertical + and - maths stories (no tricky)		
Calculate + - x and ÷ maths stories involving $\frac{1}{2}$ and $\frac{1}{4}$	Write numbers shown on an abacus (Y2 A2 Sum2)	*Copy and solve vertical addition and subtraction (up to 4-digit numbers)*
	Complete vertical subtraction with one tricky column	Write horizontal maths stories vertically and solve with one tricky column
Use facts to 10 to Create addition and subtraction maths stories about 0, 00 and 000		
Calculate vertical addition with one tricky column	*Copy and solve vertical addition and subtraction (up to 3-digit numbers)*	
	Solve addition and subtraction word problems	

Additional National Curriculum guidance:		
Add and subtract one and two-digit numbers to 20	*Read and write numbers to 100*	Use related facts e.g. 3+4=7 therefore 30+40=70
Use known facts to 10 to calculate to 20	Partition in different ways (when teaching funny counting) e.g. 53=50+3 or 40+13	
Recall addition and subtraction facts to 20	Use pictorial representations	
Use language: sum and difference		
Recognise place value of each digit		

Geometry

Autumn	Spring	Summer
Draw lines and shapes with a ruler (Y1 Aut1)	*Name 2D shapes: square, rectangle, triangle and circle (Y1 Sp2)*	Name 2D shapes: polygons, quadrilaterals, hexagon, pentagon, octagon (Y2 Sum1)
Measure the length of lines in cm (Y1 Aut2)	Identify lines of symmetry in 2D shapes (Y2 Sp2)	Name special 2D shapes: isosceles triangle, equilateral triangle, right-angled triangle, rectangle, square (Y2 Sum1)
Make & name 2D shapes using dm sticks and find the perimeter (Y1 Aut2)	Identify angles using < > compared to a right angle (Y2 Sp2)	
Make & name 2D closed shapes using dm sticks and measure perimeter (Y2 Aut1)	Recognise squares, rectangles & triangles in *different orientations* ==(moved from MMS2 Ge B6 for SATs)==	
		Recognise 3D shapes: name prisms and pyramids (Y2 Sum2)
Identify lines of symmetry in 2D shapes (Y2 Aut1)	*Recognise and compare 1D, 2D and 3D shapes (Y1 Sum1)*	Recognise a 2D image of a 3D shape (Y2 Sum2)
Make whole, half, quarter and three-quarter turns (Y1 Sp1)	*Identify 2D faces on 3D shapes (Y1 Sum1)*	Use nets for 3D shapes (Y2 Sum2)
Identify right angles (Y2 Aut2)	*Name 3D shapes: cuboid, cube, pyramid and sphere (Y1 Sum2)*	
	Describe the properties of 3D shapes: number of faces, vertices, edges and shape of faces (Y2 Sp1)	

Additional National Curriculum guidance:		
Use positional language: top/middle/bottom left/right	*Use positional vocabulary - left/right, top/middle/bottom, close/far, inside/outside, between/above*	
	Recognise shapes in different orientations and sizes	
2D shape properties: corner, sides, diagonal, vertical, horizontal, symmetry	Rotation as a turn or in terms of right angles for 1/4, 1/2 and 3/4 turns	Name 3D shapes: cuboid, prism, cylinder, cone, pyramid
	Rotate clockwise and anti-clockwise	Sort 3D shape
	Sort 2D shapes	Name 2D and 3D shapes in different orientations
	Patterns/sequences of shape in different orientations	

Data & Measure

Autumn	Spring	Summer
Measure the length of shapes using dm (Y1 Aut1)	*Draw hands on a clock face in preparation for telling the time (Y1 Sum2)*	*Calculate change within 10 (not mixing pounds and pence) (Y1 Sum1)*
Find the perimeter of shapes using dm (Y1 Aut1)	Read times: o'clock, quarter past, half past, quarter to (Y2 Aut1)	Calculate change from £1 (Y2 Spr2) money word problems
Use actions: 1cm/1dm/1m (Y1 Aut2)	Draw hands on analogue clock face as above (Y2 Aut1)	(NB Y2 Reasoning Strand reviews all aspects of measure in U&A contexts this term for EOY assessment)
Use a metre ruler to measure a straight line between dots (Y1 Aut2)	Read and write digital times as above Y2 Aut1)	Interpret bar charts and pictograms
Measure length using mixed units cm, dm, m (Y2 Sp2)		
Select and use measuring tools for length cm/m (Y2 Aut2)		*Order days of week/months of year (Y1 DP)*
Identify grid/row/column/cell (Y1 DP Aut1)	Measure and record length cm (Y1 Sp1)	*Months of the year (Y1 Re Sum2)*
DP Find information in images (Y1 DP Aut1)	Measure length using mm & mixed units mm, cm, dm, m (Y2 Sp2)	*Create a bar chart (Y1 Re Sum2)*
	Select coins for different amounts (not mixing pounds and pence) (Y1 Sp2)	Know number of days in months (Y2 DP)
Use actions: 1g/1kg (Y1 Aut2)	*Recognise the value of coins and notes (NC obj Step 7)*	*Read times: o'clock and half past (NC Y1)*
Say and write mass 1kg=1000g (Y1 Sp1)	Use symbol £ and p separately (NC Y2)	Read and write analogue/digital times to 5min intervals (Y2 Sum 2)
Measure & compare mass in kg and g (Y1 Sp1)	Find combinations of coins to make totals (NC Y2)	Intervals of time, durations earlier/later (Y2 Sum2)
Say and write volume in ml (Y1 Sp2)	Money word problems (NC Y2)	
Select and use measuring tools for mass kg/g and volume l/ml (Y2 Aut2)		
Identify explicit and implicit information in grids and bar charts (Y2 Sp1)		

Additional National Curriculum guidance:		
Use a range of measuring tools (Y1)	*Recognise the value of coins and notes (Y1)*	*Read times: o'clock and half past (NC Y1)*
Measure and record using dm/cm, g/kg and l (Y1)		*Use time vocabulary: before, after, today, tomorrow, yesterday, seconds, minutes, hours, morning, afternoon, quicker/slower, earlier/later Y1*
Compare measurement using vocabulary: long/short, heavier/lighter, half full/quarter full, full/empty (Y1)		

Estimate and measure in mm, cm, m, g, kg, ml, l , °C	Know the number of minutes in an hour and hours in a day	Read and write time to 5 minutes
Compare measurements using <>= and 'twice as high' 'half as wide'	Use symbol £ and p separately	Pictograms and bar charts in units of 2, 5 and 10
	Find combinations of coins to make totals	Interpret tally charts and tables
	Money word problems	Construct simple pictograms, tally charts, block diagrams and tables
		Compare and sequence intervals of time

Arithmetic 2

Autumn	Spring	Summer
Calculate + and - maths stories (see A1, these run back-to-back for Y1) Identify maths stories and basic real-life story in embellished stories	*Calculate ÷ maths stories* Type 1 and Type 2 division (Y2 Re Spr2, L1&2)	*Understand embellished and basic real-life stories* Number puzzles: order numbers, create numbers, money puzzles, missing numbers and symbols
Calculate x maths stories(not ÷ yet) Inverse of multiplication (Y2 Re Aut2) Grid method x and ÷ as a picture of the Maths Story (Y2 Re Aut2)	*Calculate maths stories involving all four operations* *Calculate addition and subtraction maths stories involving whole, ½ and ¼* Write mixed numbers (Y2 A2 Spr1 L3) Solve word problems involving all four operations (also include Y2 Re Spr2, L3&4 Type 1 & Type 2 division))	Shade $^1/_2$, $^1/_4$ and $^3/_4$ of a shape Find $^1/_2$ and $^1/_4$ and $^1/_3$ of numbers and objects *Solve addition and subtraction word problems* Sorting (number & shape) by Venn/Carroll diagrams (Y2 A2 Sum2 link Ge)
Additional National Curriculum guidance:		
+ and - using concrete objects and pictorial representation x using concrete objects, pictorial representations and arrays	÷ using concrete objects, pictorial representations and arrays	*Recognise and find ½ and ¼ of an object, shape and quantity* Find, name, write fractions of a length, shape, quantity: $^1/_2$, $^1/_4$, $^3/_4$, $^2/_4$, $^1/_3$ Recognise the equivalence of $^2/_4$ and $^1/_2$ Solve problems using pictorial representations

Reasoning

Autumn	Spring	Summer
Write numbers 0-9 and fractions *Calculate + and - maths stories* Inverse of addition Commutative law	*Create and draw basic and embellished real-life addition and subtraction stories(difference)* Solve word problems involving all four operations	*Practice using measuring instruments* Select and use measuring tools Solve measuring word problems
Say & show comparative language bigger/smaller, equal to, difference between Difference between (Y2 A2 Spr1 L4)) Identify implicit and explicit information (Y2 A2 Aut2)	*Create and draw basic and embellished real-life addition and subtraction stories(difference)* Number sequences (Y2 A2 Spr2) Number puzzles: totals of money, missing numbers, find ways to make a total (Y2 A2 Spr 2)	*Consolidate multiplication and division* Type 1 and Type 2 multiplication Create x and ÷ maths stories about 0, 00 and 000
Additional National Curriculum guidance:		
Understand language involved: add, altogether, total, take away, more than, less than	Use arrays & pictorial eg number line / bar model Solve missing number problems	Recall multiplication and division facts for 2-, 5- and 10-times tables

Daily Practice Y1

Count in ones along a number line	Number bonds to 10
Use positional vocabulary: top, bottom, left and write	Number bonds to 20
Count days and dates on a calendar	Find 10 more or less than a number
Identify shapes: triangles, quadrilaterals, pentagons and hexagons	Fill in missing numbers
	Match coins to the price of an item
Draw straight lines between dots	Estimate number of objects using groups of 2, 5 and 10
Read and write fractions: $\frac{1}{2}$ and $\frac{1}{4}$	Complete a flow diagram: + - x
Calculate totals of money up to 10p	Compare times of the day
Recognise odd and even numbers	Compare prices of objects
Count movements on a number line	

Additional National Curriculum guidance:

Count forwards and backwards to and across 100	Create repeating patterns with objects and shapes
Read and write numbers to 100	Double numbers to 10
Count in 2s, 5s and 10s forwards and backwards	Halve numbers to 20
Identify 1 more and 1 less than numbers to 100	Know and order days of the week
Order: first, second, third	Know and order months of the year
Read and write numbers to 20 in numerals and words	Know number bonds to 20 and related subtraction facts
Order numbers	Solve missing number and symbol maths stories
Compare amounts: equal to, more than, less than, fewer than, most, least	

Find 10 more or less than a number	Repeated addition and multiplication SVDA
Find 20 more or less than a number	Repeated subtraction and division SVDA
Recall multiplication facts for 2-, 5- and 10-times tables	Missing number maths stories
Know months of the year and number of days in each month	Compare numbers to 100 using <>=
Recall addition facts and corresponding subtraction facts	Find missing tens or unit number
Number bonds to 50	Add, subtract and multiply cumulatively
Use number line to add	Round numbers to the nearest 10
Number pairs with 2-digit totals	Estimate answers to calculations
Money SVDA	Estimate number of objects
Identify totals of money	Compare time durations
Read information from calendars	Create and describe number patterns
Use a calculator for all four operations	Identify symmetrical patterns
Put events in chronological order	

Additional National Curriculum guidance:

Count in 2s, 3s, 5s and 10s forwards and backwards	Recognise odd and even numbers
Read and write 0-100 in numerals and words	Doubling and halving amounts to 100
Order numbers to 100	Recognise doubling as x 2 and halving as ÷ 2
Add and subtract mentally a 2-digit number and ones/tens	Count in fractions to 10 (e.g. 0 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ 1)
Add and subtract mentally two 2-digit numbers	Recognise odd and even numbers

Year 3/4 Mixed age

A rolling programme across two years cannot work with mathematics. In order to achieve the best curriculum match, unless specified, the objectives for Y4 are ordered as in the MMS Y4 Teacher Guide progression.

The Y3 objectives (*italicised*) have been moved to match Y4 best fit, their origins from the Y3 Teacher Guide are referenced. Inevitably, this means that some aspects of the Y3/4 small-step progression documents have been re-ordered.

Arithmetic

Autumn	Spring	Summer
Calculate + and - maths stories involving mixed numbers (Y3 A1 Aut1)	*Calculate + - x and ÷ maths stories involving fifths and sevenths (Y3 A1 Spr1)*	*Practise Calculate + - x and ÷ maths stories involving negative numbers (Y3 A1 Sum 1 & 2)* Apply to number line examples in context of e.g. temperature
Calculate + - x and ÷ maths stories involving fifths (Y3 A1 Aut2)	*Calculate + - x and ÷ maths stories involving other denominations & negative numbers (Y3 A1 Spr2)*	*Practise Calculate + - x and ÷ maths stories involving fifths and sevenths and tenths (Y3 A1 Sum 1 & 2)*
Calculate maths stories for all four operations involving mixed numbers, halves and quarters	Maths stories for all four operations involving fractions, mixed numbers and negative numbers	*Practise Vertical + and - with tricky columns (100 or 10 or 1)) (Y3 A1 Sum 1 & 2)*
Mentally Calculate maths stories for all four operations with vulgar fractions and negative numbers	Place value and ordering (4-digit whole numbers and 4-digit number to third decimal place)	Practise Vertical + and - involving decimals, up to 3dp - any column tricky (cont. from Y4 A1 Spr 2)
Mentally Calculate multiplication terms in an expression combining addition and subtraction		*Use vertical + and - to solve word problems (Y3 Re Aut 1; Spr2)*
Vertical + and - with tricky columns (1's then 10's) (Y3 A1 Aut1/2)	*Vertical + and - with tricky columns (1's or 10's) (Y3 A1 Spr 1 & 2)*	Calculate percentages of whole number quantity (from Y4 A1 Sum1)
Use all four operations including tenths interchanging vulgar & decimal fractions (Y3 A2 Sum1)	*Calculate vertical + and - including decimal, 1dp only (Y3 A2 Sum1)*	Calculate decimal number percentages using a calculator (from Y4 A1 Sum1)
Read, write, and convert between vulgar fractions and decimals to 3 places	*Vertical + and - with tricky columns (100 or 10 or 1)) (Y3 A1 Sum 1 & 2)*	Round decimal fractions to 1 dp and to nearest whole number, and order (from Y4 A1 Sum1)
Mentally Calculate maths stories for all four operations involving decimal fractions	Vertical + and - involving decimals, up to 3dp - any column tricky	Calculate + and - using negative numbers

Additional National Curriculum guidance:		
Compare and order fractions	Recognise place value of each digit	
Equivalent fractions (as same value swaps)	Partition in different ways e.g. 153=100+50+3 or 140+13	
Solve problems involving fractions		
Identify number of tenths e.g. 34.2 2 tenths.		
Count up and down in tenths		
Compare and order decimals (up to 2dp)		
Identify number of hundredths e.g. 34.12 12 hundredths		

Geometry

Autumn	Spring	Summer
Investigate properties of lines & line segments (Y3 Ge Aut1)	Use vocabulary for circles accurately	*Use a compass and ruler to copy triangles (Y3 Ge Sum1)*
Draw and measure lines (Y3 Ge Aut1)	Draw shapes using compasses *(Y3 practise flower patterns in a circle drawing arcs)*	*Compare triangles for congruency (Y3 Ge Sum1)*
Name polygons (DP Y3 Ge Aut1)	Calculate the circumference of circle (from Y4 DM Spr1)	*Draw triangles specified by co-ordinates (Y3 Ge Sum1)*
Distinguish between clockwise and anti-clockwise turns to draw arcs (Y3 Ge Aut1)		*Identify and draw types of triangles from co-ordinates – scalene, isosceles, equilateral (Y3 Ge Sum2)*
Identify degrees in $^1/_4$, $^1/_2$, $^3/_4$ turns (Y3 Ge Spr1)	*Recognise parallel, not parallel, and perpendicular lines (Y3 GE Spr2)*	Draw triangles of given dimensions using ruler & compasses
Use a set square as the angle template for a right-angle (Y3 Ge Spr1)	*Plot and draw lines on set of axes (Y3 Ge Spr2)*	
Use angle templates to draw angles multiples of 10° (Y3 Ge Spr1)	*Recognise a parallelogram (Y3 Ge Spr2)*	
Use a protractor to draw angles (from Y4 Ge Aut2)		
Identify angles – acute/obtuse/reflex (from Y4 Ge Aut2)		*Identify pyramid and prism from its net (Y3 Ge Sum2)*
		Recognise 3D shapes from 2D drawings (Y3 Ge Sum2)
Draw a pair of axes (1st quadrant) & plot co-ordinates (Y3 Ge Aut2)		Measure angles using a protractor
Draw objects in a mirror line (from Y4 Ge Aut1)		Use inside & outside protractors to draw acute and obtuse angles
Draw & label a pair of axes (4 quadrants) (from Y4 Ge Spr2)		
Draw circles & polygons on axes (from Y4 Ge Spr2)		
Name lines of symmetry (from Y4 Ge Spr2)		

Additional National Curriculum guidance:

Recognise symmetrical and non-symmetrical polygons l	Identify horizontal and vertical lines	Recognise symmetrical and non-symmetrical polyhedral
Identify whether angles are right angles, acute or obtuse		Make 3D shapes using modelling material
Compare and order angles		Recognise 3D shapes in different orientations
Describe position on a grid as co-ordinates		
Describe movements as translations		
Identify regular and irregular polygons		
Identify lines of symmetry in different orientations		
Complete a simple symmetric figure		

Data and Measures

Autumn	Spring	Summer
Draw/Write analogue/digital times (Y3 DM Aut1)	Compare measures using simple integer scaling (NC 3)	Calculate equivalent fractions 'Think Sticks'
Calculate time differences and durations (5 min intervals) (Y3 DM Aut1)	U&A Place value - Read metric prefixes for length, mass and volume relate to place value effect of multiplying/dividing by factors of 10 (from Y4 DM Aut 1)	Calculate fractions of quantities using equivalent fractions to simplify
Decide units to measure length and mass (Y3 DM Spr2)	Use ratio, vulgar fractions, and decimal fractions to compare metric units (including simple integer scaling) (from Y4 DM Aut1)	*Estimate and measure mass and capacity, understand difference between capacity and volume (Y3 DM Sum2)*
Calculate the area of a rectangle by counting squares (Y3 DM Spr2)		
Calculate the volume of a cuboid by counting cubes (Y3 DM Spr2)	Read metric equivalences using decimal point (from Y4 DM Aut1)	*Calculate area and volume recognising identical rows eg 3cm^2 x 4 (Y3 DM Sum2)*
Calculate lengths of edges and perimeter/area of named faces in 3D shapes (Y3 DM Spr2)		*Solve word problems involving subtraction of two areas (Y3 DM Sum2)*
Calculate area of rectangle and volume of cuboid using a multiplication basic real-life story (from Y4 DM Spr1)	*Copy grids and bar charts accurately (Y3 DM Aut1)*	
	Interpret data in grid, pie charts and bar charts, begin to use ratio (Y3 DM Spr1)	Use ratio to convert between measures e.g. miles to km; hours to minutes
Use ruler & compasses to draw and measure line segments, circles and hexagons (Y3 DM Aut2)	Find the mean of a sample	

Additional National Curriculum guidance:

Autumn	Spring	Summer
Read digital 12-hour clocks	Scaling - Units of 2, 5 and 10	Recognise equivalent fractions e.g. $\frac{6}{9} = \frac{2}{3}$
Tell the time using Roman numerals	Interpret pictograms	
Use vocabulary: o'clock, a.m., p.m., morning, afternoon, noon and midnight	Solve one and two step problems e.g. how many more/fewer?	
Measure using a range of units	Use mm/cm/m, g/kg and mixed units e.g. 1kg and 200g	
Measure and calculate perimeter	Compare measurements	
	Add and subtract measurements	
	Convert between units of measure	

Not explicitly covered in maths lessons, but needs to be taught perhaps in thematic or science:

* Read and write analogue and digital time (12 and 24 hour)

* Solve time problems using converting: hours to minutes, minutes to seconds, years to months and weeks to days

* Present discrete and continuous data using graphical methods including bar charts and time graphs

* Use a range of scales when presenting and interpreting data

* Answer comparison, sum and difference between problems about data presented in bar charts, pictograms, tables and graphs

Arithmetic 2

Autumn	Spring	Summer
Calculate fractions of quantities (Y3 A2 Aut1)	*Multiply TO x O by partitioning – Distributive Law (Y3 Re Spr1)*	*Multiply TO x O using grid method (Y3 Re Spr 2)*
Solve word problems involving fractions of quantities (Y3 A2 Aut2)	*Multiply a 2-digit by a 1-digit number using grid method (Y3 A2 Spr1)*	*Practise Solve division word problems (Y3 Re Sum2)*
Calculate one step word problems involving all four operations	Multiply two 2-digit numbers using grid method (from Y4 A2 Aut1; A1 Spr1 & A1 Sum2)	Divide up to 3-digit by 1-digit number using grid method (from Y4 A1 Spr2 & Sum2)
Use a calculator to solve one step measure word problems with 4-digit numbers including decimals	*Solve multiplication (include simple integer scaling twice/four times as many etc) and division word problems (Y3 Re Aut2)*	*Identify the operation required to solve a word problem (Y3 A2 Sum2)*
Group & rearrange calculations to solve maths stories (associative law) (from Y4 A2 Spr 1)	Solve word problems involving sum of two products and decimal quantities	Solve percentage word problems (from Y4 A2 Sum1)
Solve measure word problems applying associative law (from Y4 A2 Spr 1)	*Solve division word problems Type 1 and Type 2 (Y3 A2 Spr2)*	Solve word problems using all four operations, fraction of and percentage of quantities
	Express remainders as a fraction (Y3 A2 Spr2)	Use ≈ symbol. Round decimals to 1dp

Additional National Curriculum guidance:

Solve problems involving fractions	Multiply HTO x O using grid method	
Solve two step addition and subtraction word problems	Use distributive law e.g. 39x7=30x7+9x7	
	Solve problems involving four times as high, eight times as long	

Reasoning

Autumn	Spring	Summer
Round numbers to nearest 10 and nearest 100 using a number line (Y3 A2 Spr1)	Mentally multiply three 1-digit numbers	*Use complements of multiples of 10 to mentally calculate maths stories to 100 (Y3 Re Sum1)*
Order & compare whole numbers, mixed numbers & fractions on a number line (*NC3* & NC4).	Multiply three numbers with a decimal fraction using a calculator	*Use complements to 1 to calculate sum/difference with fractions (shaded/unshaded) (Y3 re Sum1)*
Place value Read and write numbers from tens up to billions	Use index notation for powers of 10	*Calculate totals and difference between prices by making adjustments (Y3 DM Sum1 & Re Sum2))*
Read and write powers of 10	Recognise that 'of' and 'x' have same value: different appearance (from y4 RE Spr2)	
	Use logic of language to calculate a product of two numbers, each a decimal fraction up to 2dp e.g. 0.2 x 0.04 (from Y4 Re Spr2)	
Recognise products & factor pairs a x b = c; a & b are factors; c is the product	*Write a ratio as a fraction recognising division (Y3 Re Spr2)*	*Investigate odd & even numbers (Y3 Re Sum2)*
Use known basic facts to calculate derived x and ÷ maths stories (understand effect of multiplying or dividing by factors of 10)	*Use inverse for division with remainders (Y3 Re Spr2)*	*Convert puzzles into simple drawings using algebraic notation (Y3 Re Sum2)*
	Partition and re-arrange numbers to calculate sums or differences of 2-digit numbers eg 67 − 26 = 60 − 20 + 7 − 6 (Y3 Re Sum1)	*Write squares and square roots (Y3 A2 Sum1)*
		Identify & calculate terms in an expression
		Use algebraic expressions e.g. 5y + 2x − 3y = 2y + 2x

Additional National Curriculum guidance:		
Recognise the place value of each digit Derive fact e.g. 600÷3=200 can be derived from 2x3=6	Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and correspondence problems such as n objects are connected to m objects	Add and subtract money (mixed units) and record £ and p separately Calculate change

Daily Practice

Round to the nearest 10 and 100

Recall multiplication and division facts up to 100

Convert m to cm, kg to g and ml to l

Find 1 more or less than any number (positive and negative)

Convert between decimal and vulgar fractions

Convert pence to pound

Convert time analogue and digital

Recall multiplication facts from 2-, 5- and 10-times tables

Recall multiplication facts from 3- and 4-times tables

Recognise equivalences e.g. 2m=200c

Multiply a 2-, 3- and 4-digit multiple of 10 by a 1-digit number

Recall multiples of 8, 9 and 10

Give factors of 4, 10, 12 and 15

Convert between g/kg, ml/l, mm/cm/dm/m

Convert mm to m and pounds to pence

Recall multiples of 3, 4, 5, 6, 7, 9 and 10

Give factors of 12, 15, 16 and 18

Find common equivalent fractions

Give multiples of 5, 7, 8 and 10

Give factors of 10, 15, 18, 20, 24 and 25

Convert between decimals and fractions for tenths, hundredths and thousandths

Add and subtract money mentally

Convert between miles and km

Additional National Curriculum guidance:

Count in 2s, 3s, 4s, 5s, 8s, 10s, 50s and 100s forwards and backwards

Count forwards and backwards in tenths

Recall division facts from 3-, 4- and 8-times tables

Find 10 more or less than a number

Find 100 more or less than a number

Read and write numbers to 1000 in numerals and words

Compare and order numbers to 1000

Count in multiples of 6, 7, 9, 25 and 1000

Find 1000 more or less than a given number

Count forwards and backwards (negative numbers)

Order and compare numbers beyond 1000

Round numbers to the nearest 10, 100 or 1000

Read Roman numerals to 100

Recall multiplication and division facts up to 12x12

Compare amounts of money in pounds and pence (using decimal notation)

Recognise acute, obtuse and right angles

Identify horizontal, vertical, parallel and perpendicular lines

Know number of seconds in a minute

Know number of days in each month

Know number of days in a year and leap year

Read analogue times to 5 minutes

Read and write times to the nearest minute

Add and subtract mentally a 3-digit number and ones/tens/hundreds

Recognise and use factor pairs up to 144

Count up and down in hundredths

Recognise and write decimal equivalents to

Compare and order decimals (up to 2dp)

Classify triangles: equilateral, isosceles, scalene

Classify quadrilaterals: parallelogram, rhombus, trapezium

Year 5/6 Mixed age

A rolling programme across two years cannot work with mathematics. In order to achieve the best curriculum match, unless specified, the objectives for Y6 are ordered as in the MMS Y6 Teacher Guide progression. The yellow highlighted objectives have been moved to ensure access & experience before SATs.

The Y5 objectives *(italicised)* have been moved to match Y6 best fit, their origins from the Y5 Teacher Guide are referenced. Inevitably, this means that some aspects of the Y5 & Y6 small-step progression documents have been re-ordered.

Arithmetic

Autumn	Spring	Summer
Use derived products to calculate x and ÷ Basic facts to derived facts (practised continuously from Y3/4)	*Use fractions as divisions a /b and a ÷ b interchangeably (from Y5 A1 Spr1)*	Review mental & standard methods in problem solving contexts (Y5 &Y6)
Multiply TOxTO using grid method (from Y5 A1 Spr2) to standard method (Y6 A2 Aut1)	*Convert vulgar fractions to finite decimal (from Y5 A1 Spr1)*	Use the formulae for diameter, circumference, and area (not needed for SATs) of a circle
Multiply HTOxTO using grid method (from Y5 A1 Spr 2) to standard short method (Y6 A2 Aut1)	*Calculate + - x ÷ maths stories involving vulgar fractions and mixed numbers (from Y5 A1 Aut1)*	Use the formulae for area and volume of cuboid & cylinder, area of a triangle and parallelogram
Multiply 3-digit x 2-digit with decimals using grid method (from Y5 A1 Spr 2) to standard short method (Y6 A2 Aut1)	Use equivalent fractions in addition and subtraction calculations (Y5 need this Y6 objective early to build experience)	
Estimate the value of products by rounding including decimals		Write recurring infinite decimals in abbreviated forms
	Multiply vulgar fractions as ratio; double replacement (from Y5 A1 Aut2)	Calculate all four operations using negative numbers (moved from MMS6 A1 B4 - not needed for SATs)
Divide HTO÷O using expanded grid method (from Y5 A1 Sum1) to standard short method (Y6 A2 Aut 1 & 2)	Calculate with vulgar fractions using the four operations (using equivalent fractions and improper fractions with tricky examples) (from Y6 A1 Spr1)	
Divide THTO÷O using expanded grid method to standard short method (Y6 A1 Aut2)	From MMS6 A1 B6 needed for SATs Write a vulgar fraction as a decimal fraction to three decimal places, using a calculator for division, e.g. 7/11 = .636	
Estimate the value of quotients, including decimals, by rounding (Y6 A1 Aut2)	From MMS6 A1 B6 needed for SATs Convert decimal fractions to vulgar fractions using tenths, hundredths and thousandths, e.g. .625 = 625/1000	
Multiply and divide decimals (up to 3dp) by multiples of powers of 10 (from Y5 A1 Sum2)		

Additional National Curriculum guidance:

Identify the value of each digit	Associate a fraction with division	Illustrate and name parts of a circle: radius, diameter, and circumference
Recognise and use thousandths	Order and compare fractions and decimals	
Multiply THTOxTO/O	Recognise and use thousandths	
Divide THTO÷O using grid method	When calculating with fractions write answers in its simplest form	
Multiply one digit number with 2dp by whole numbers	Divide proper fractions by whole numbers	
Divide decimal numbers by 1-digit whole number		
Multiply and Divide by 10, 100 and 1000		

Geometry

Autumn	Spring	Summer
Investigate properties of shape including congruence and symmetry (Y5 Ge Aut1)	*Calculate the circumference and area of a circle (Y5 Ge Spr1)*	*Investigate angles of polygons (Y5 Ge Sum 1)*
Name and draw angles: acute, obtuse, reflex and right (Y5 Ge Aut2)	*Explore the properties of angles (Y5 Ge Spr2)*	*Recognise, name and sketch polygons (Y5 Ge Sum2)*
Name and calculate vertically opposite and supplementary angles (Y5 Ge Aut2)	Measure angles & lengths to draw 2D shape	*Identify properties of polygons (Y5 Ge Sum2)*
Draw angles using a protractor (Y5 Ge Aut2)		Calculate interior, exterior and missing angles (include on straight line and around a point)
Find the sum of interior and exterior angles of a polygon ==include triangles which leads to NC6 objective 'Find missing angles' for SATs also in MMS6 Ge B3 & B5==	Co-ordinate Geometry - Draw images and complete shapes using lines of reflection (from Y6 Ge Spr1)	Calculate the third angle in a triangle.
	Calculate angles in isosceles triangle ==(include missing angles for SATs== from Y6 Ge Spr 1)	
Investigate nets of 3D shapes (Y5 DM Aut1)		Draw the perpendicular bisector of a line segment
Recognise reflection, translation, enlargement and rotation	Complete coordinates of shapes (from Y6 Ge Spr 1)	Draw the bisector of an angle
Name transformations of shapes	Identify and write the order of rotational symmetry	Draw the circum-circle of a triangle
		Draw the in-circle of a triangle

Additional National Curriculum guidance:

Estimate and compare angles	Draw 2D shapes using given dimensions and angles	Use properties of rectangles to find missing lengths and angles
Use markings for parallel lines and right angles (Y3 Spring 2)	Recognise, describe and build 3D shapes including making nets	Distinguish between regular and irregular shapes
	Compare and classify geometric shapes	
Draw and translate simple shapes and reflect them in axes	Draw and label a pair of axes in all four quadrants	Find unknown angles: triangles, quadrilaterals, and regular polygons
	Describe positions on the full co-ordinate grid	

Data and Measures

Autumn	Spring	Summer
Use ratio to convert between units of measure (Y5 DM Aut 2 & Sum1)	*Solve measure word problems involving all four operations and percentage increase/decrease (Y5 DM Aut1)*	Convert between yards and metres
Convert between metric or imperial units (Y5 DM Aut2 & Sum1)	*Solve measure and fraction problems by exploring relationships (Y5 Re Spr1)*	Calculate perimeter and area of compound shapes
Read scale intervals (Y5 DM Aut2)	*Solve one, two and three step money problems (Y5 re Spr1)*	Calculate surface area and volume of cuboids
Read scales (mass) (Y6 DM Spr1)	*Solve puzzles by calculating quantities (Y5 Re Spr2)*	problems with cuboids
Compare weighing scales (Y6 DM Spr1)	Solve problems involving ratio and proportion, scaling up or down	Calculate the area of parallelograms and triangles
Solve measuring word problem using km, ml, l, g and kg		Recognise when it is possible to use a formula for calculating area and volume of shapes
Estimate area of regular and irregular shapes (cm²) (Y5 DM Sum 1)	Draw a pie chart (Y6 DM Aut2)	
Calculate the perimeter and the area of compound shapes <mark>(From MMS6 DM B5 for earlier SATs experience)</mark>	Construct and interpret frequency tables, bar charts and pie charts	Understand the golden ratio
	Plan and carry out a survey using discrete and grouped data	Calculate ratios and use ratios to construct shapes
		Collect, organise, select, and present information

Additional National Curriculum guidance:		
Explain operations and methods when solving problems	Compare quantities using the notation a:b	Know approximate conversions
Convert between fractions, decimals and percentages	Solve problems involving the relative sizes of two quantities	Recognise shapes can have same area but different perimeter and vice versa
Solve problems involving conversion between units	Link percentages of 360º to calculating angles of pie charts	Calculate the area of parallelograms and triangles
Convert between miles and km		Estimate and compare volumes: cm^3, m^3, mm^3, km^3
Solve money problems		
Convert measurements using decimal notation up to 3dp		

Arithmetic 2

Autumn	Spring	Summer
Vertical + and - with more than one tricky column (from Y5 A1 Aut1)	Convert between vulgar fractions, decimals - tenths, hundredths (and thousandths from Y6 A1 B6), and percentages (from Y6 A2 Aut 2)	Use inequalities to identify a range of possible values for a number
Vertical + and—decimals with more than one tricky column (from Y5 A1 Aut2)		Use algebraic notation for the sum, difference, product, and quotient of two numbers
Solve money problems using all four operations	Express vulgar fractions as percentages ==Moved from B6 to B3, needed earlier for SATs==	Find the greatest or smallest sums, difference, products, and quotients of two numbers within a possible range
Solve one and two step word problems (from Y5 A2 Aut1)	Ratio of quantities	Identify and divide numbers by their factors using algebraic representation
Complete missing number grids and sentences (from Y5 A2 Aut1)	Write a quantity as a fraction or percentage of the total quantity	
Complete number sequences involving square numbers (from Y5 A2 Aut1)	Solve word problems by involving percentage increase/decrease (Link DM)	*Use four operations with positive and negative numbers (from Y5 A1 Spr1 & Y6 A1 Spr2)*
Add & Subtract squares & cubes of numbers (from Y6 A2 Spr2)		Solve number puzzles involving algebraic terms
Use < ≤ > ≥ (from Y5 A2 Aut2)	Solve money problems using all four operations	
Multiply HTO x O & TO using grid to standard method (from Y6 A2 Aut1 and link A1 Aut 1)	*Calculate products (from Y5 A2 Aut 2)*	
	Investigate factors and proper factors (from Y5 A2 Aut 2)	
Divide up to THTO by O & TO using expanded grid to standard short method, include with remainders (from Y6 A2 Aut1 and link A1 Aut 2)	*Use divisibility tests (from Y5 A2 Spr1)*	
	Identify prime numbers (0-100) (from Y5 A2 Spr2)	
	Write numbers as a product of their prime factors (from Y5 A2 Spr2)	
	Investigate factors using < ≤ (from Y5 A2 Spr2 & Sum 1)	

Additional National Curriculum guidance:

Identify the value of each digit	Use vocabulary: prime number, prime factors, composite (non-prime) number	Express missing number problems algebraically
Use notation (^{2}) and (^{3})	Find common factors of two numbers	
Interpret remainders as whole numbers, fractions or by rounding	Understand term: factor, multiple, square and cube number	
	Convert between fractions, decimals and percentages	
	Solve problems involving decimals	

Reasoning

Autumn	Spring	Summer
Use and interpret a calendar & timetables (Y5 DM Spr1)	Draw and interpret a distance-time graph *(also Y5 DM Spr2)*	*Carry out investigations involving shape, number and real-life situations using WifN? (Y5 re Sum1)*
Draw a tally chart & construct a bar chart (Y5 DM Spr 1)	*Round Measures (distance, time) (Y5 DM Spr2)*	Solve linear equations that involve one operation with whole and decimal numbers
Write and convert times using 24-hour notation (Y5 Re Aut1)	Solve speed/distance/time word problems *(also Y5 DM Sum2)*	
Calculate time duration (24 hour) (Y5 Re Aut1)	Interpret a temperature-time graph	Use the language of probability to describe outcomes
Use time durations in calculations and word problems (Y5 DM Spr1)	Count forwards and backwards across zero	Measure probability, e.g. of events- the probability of rolling a 3 on a fair dice numbered 1–6 is 1/6. *==Moved from B2 to B6 after SATs, not needed to meet NC Y6==*
Calculate mean, median, mode and range (Y6 Re Aut1)	Order a set of positive and negative numbers	
Calculate durations: difference between, total and mean (Y5 Re Sum2)	Use negative numbers in context, and calculate intervals across zero	
Calculate equivalences and fractions of periods of time (Y5 Re Sum2)		
	Evaluate terms and products in expressions including brackets (from Y5 A2 Sum 1 & Sum 2)	
	Insert brackets into an expression to a specified value (from Y5 A2 Sum2)	
Solve algebraic equations; sum of two terms; one term as a product of x (Y5 Re Aut2)	Evaluate terms and products in expressions including brackets	
	Identify terms and products in expressions	
	Evaluate expressions with and without brackets	

Additional National Curriculum guidance:

	Spring	Summer
	Construct line graphs	Enumerate possibilities of combinations of two variables
	Solve comparison, sum and difference problems about a line graph	
	Use negative numbers in context, and calculate intervals across zero	
	Explore the order of operations using brackets	

Daily Practice Y5/Y6 Mixed age

Recall multiplication and division facts (up to 12x12)

Convert between fractions, decimals and percentages

Multiply by 15

Multiply and divide by 15 and 20

Identify value of digits (including decimals)

Multiply by 25

Order decimal fractions using a number line

Multiply and divide pairs of multiples of 10 and 100

Round to the nearest 100

Find equivalent fractions

Round numbers to 1dp

Round numbers to 2dp

Add and subtract money

Write a number as product of its prime factor

Give/Write factors and multiples of given numbers

Round numbers to 3dp

Convert between m and km, cm and m, cm and mm, ml and l and g and kg

Find the mode and median of a data sample

Find a fraction or percentage of whole number

Convert times 12 hour to 24 hour

Calculate time duration

Calculate angles in a triangle

Additional National Curriculum guidance:

Read and write numbers to 10 000 000

Use the four operations mentally

Order numbers to 10 000 000

Identify common factors, common multiples and prime numbers

Compare numbers to 10 000 000

Round numbers to the nearest 10, 100, 1000, 10000, 100000

Partition decimals to 3dp

Round numbers with accuracy (nearest 10, 20, 50 etc.)

Round decimals to the nearest whole number

Count forwards or backwards in steps of 100, 1000 and 10000

Compare and order fractions including fractions >1

Count forwards and backwards (negative numbers)

Mentally add and subtract negative numbers

Mentally add and subtract tenths

Recognise and use square roots and square numbers

Add and subtract decimals finding complements of 1 e.g. 0.83+0.17

Read Roman numerals to 1000

Mentally add and subtract large numbers e.g. 12462-2300=10162

Recall prime numbers to 19

Recognise years written in Roman numerals