Brettenham Primary School

Mathematics Planning

National Curriculum

2022

Year 2

Key Principles:

The curriculum builds on prior learning with progression throughout the school. Consideration is given to the order in which knowledge is taught so that children can relate their learning to previous learning. There are key concepts that children must know by the end of year 6 – these are the 'nuggets' of learning in this subject (sticky knowledge, components). Recall opportunities relating to the key concepts are built into the planning regularly so that children retain these 'nuggets' so that they 'know more, remember more and can do more'.

How to Use the Medium Term Planning

This planning document is intended to provide planning support to meet all statutory requirements of the National Curriculum and to aid teachers in planning a progressive learning journey for children within Year 2.

Overview Documents

This document starts with the mathematics skills and the coverage of each strand across the entire year of planning. Teachers and TAs can use this to plan mixed starters in order to pre-teach, consolidate learning or as revision, as well as guidance for day-to-day planning, assessment (linked to ScholarPack) and establishing how long until a topic will next be revisited or if additional lessons to achieve the skill are necessary.

Number - number and place value	Coverage					
	Aut1	Aut2	Spr1	Spr2	Sum1	Sum2
(2N1) Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	W2	W1	W1 W2 W4		W1	
(2N2a) Read and write numbers to at least 100 in numerals and in words	W1		W1			
(2N2b) Compare and order numbers from 0 up to 100; use <, > and = signs	W1		W1		W1	
(2N3) Recognise the place value of each digit in a two-digit number (tens and ones)	W1		W1		W1	
(2N4) Identify, represent and estimate numbers using different representations, including the number line	W1 W2		W1		W1	
(2N6) Use place value and number facts to solve problems	W1 W2				W1	
Number - addition and subtraction (calculations)	**Coverage**					
	Aut1	Aut2	Spr1	Spr2	Sum1	Sum2
(2C1a) Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	W4 W5			W2	W2	W3
(2C1b) Add and subtract numbers mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers	W4 W5			W2	W2	W3
(2C2) Add and subtract numbers using concrete objects and pictorial representations, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers	W4 W5			W2	W2	W3

Year 2 Mathematics Yearly Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Week 1	Number and Place value	Counting, multiplication and sorting	Number and Place value	Length and Mass/weight	Number and Place value and statistics	Time
Week 2	Number and Place value	Statistics	Mass/weight	Addition and subtraction	Addition and subtraction	Multiplication and division
Week 3	Length and Mass/weight	Fractions Capacity and volume	2-D and 3-D Shape	Fractions	Capacity and volume and temperature	Statistics including finding the difference
Week 4	Addition and subtraction	Money	Counting and money	Position and direction	Fractions	Measurement
Week 5	Addition and subtraction	Time	Multiplication	Time	Position and direction Time	Sorting
Week 6	2-D and 3-D shape	Assess and review week	Division	Assess and review week	2-D and 3-D shape	Assess and review week

'Ctrl' and clicking on each week will take you to the associated Half Termly Planning, outlining the focus area for each week in more detail.

This is followed by an overview document. This identifies six half termly blocks of six weeks with focus areas of mathematics for each week. The units are designed to be cohesive and allow for application of learning and skills across the mathematics curriculum. The 'assess and review' weeks can be used to gain information for teacher assessments or can be used to pick up elements that need further support. It is not designed to be used as an entire week of testing with no teaching. This is a suggested layout and teachers should adapt to meet the needs of their class as required.

Half Termly Planning Documents

The half termly planning documents have been compiled to the following principles:

- Each half term is predominantly learning about number.
- Almost all weeks are focused on one area of mathematics, giving children time to focus on a single area for a longer amount of time.
- The 'knowledge' explains the understanding the child will need to achieve the skills. This also explains why specific skills have been put together and how to enhance the teaching and learning during that week, e.g. number work is often given a context of data, measures, money or problem solving.
- The skills are the end of year expectations and it is the decision of teachers whether to visit the whole objective more than once throughout the year or to organise progression within each objective.
- Every skill is covered at least twice within the year.

Adaptive teaching

At Brettenham, we help children develop their conceptual understanding of mathematics by using concrete objects, pictorial representations and abstract thinking, therefore if a child is struggling with a particular abstract concept, we adapt and take a step back to concrete or pictorial, providing them with resources to enable them to understand. As the objectives in the yearly plans are based on age related expectations, children who may struggle to reach the objectives independently will be provided with scaffolds to provide extra support. Scaffolding supports mathematical understanding by providing the necessary support in applying new information. These approaches help children achieve in lessons which they would not be able to on their own.

Progression

The planning documents are followed by a table showing skill progression from Early Years to Year 6. This can be used to establish and build upon previous knowledge, see where children's learning is heading and to also easily identify and fill any gaps in their knowledge.

Addition, subtraction, multiplication and division (calculations)							
Strand	Early Years outcomes	National Curriculum reference Year 1	National Curriculum reference Year 2	National Curriculum reference Year 3	National Curriculum reference Year 4	National Curriculum reference Year 5	National Curriculum reference Year 6
C1 Add / subtract mentally		1C1 Represent and use number bonds and related subtraction facts within 20	2C1a Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	3C1 Add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds		5C1 Add and subtract numbers mentally with increasingly large numbers	
			2C1b Add and subtract numbers mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers				
	40 – 60 months To find the total of items in	1C2a Add and subtract one-digit	2C2 Add and subtract numbers	3C2 Add and subtract numbers	4C2 Add and subtract numbers	5C2 Add and subtract whole	

National Curriculum Documentation

At the end of this document is the National Curriculum programme of study for Year 2. This contains the skills for Year 2 along with the non-statutory guidance to help with interpretation.

Yearly skills and coverage for Year 2 Mathematics

With links to the Content Domain

Number - number and place value	Coverage					
	Aut1	Aut2	Spr1	Spr2	Sum1	Sum2
(2N1) Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS)	W2	W1	W1 W2 W4		W1	
(2N2a) Read and write numbers to at least 100 in numerals and in words **EXEMP.** Read and write numbers in numerals up to 100 (WTS)	W1		W1			
(2N2b) Compare and order numbers from 0 up to 100; use <, > and = signs	W1		W1		W1	
(2N3) Recognise the place value of each digit in a two-digit number (tens and ones) **EXEMP.** Partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources to support them (WTS) **EXEMP.** Partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus (EXS)	W1		W1		W1	
(2N4) Identify, represent and estimate numbers using different representations, including the number line	W1 W2		W1		W1	
(2N6) Use place value and number facts to solve problems **EXEMP.** Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4) (WTS) **EXEMP.** Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14) (EXS) **EXEMP.** Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. 29 + 17 = 15 + 4 + ¨ ; 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc.) (GDS)	W1 W2				W1	

Number - addition and subtraction (calculations)	Coverage					
	Aut1	Aut2	Spr1	Spr2	Sum1	Sum2
(2C1a) Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 **EXEMP.** Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4) (WTS) **EXEMP.** Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14) (EXS) **EXEMP.** Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. 29 + 17 = 15 + 4 + ¨ ; 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc.) (GDS)	W4 W5			W2	W2	W3
(2C1b) Add and subtract numbers mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers	W4 W5			W2	W2	W3
(2C2) Add and subtract numbers using concrete objects and pictorial representations, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers **EXEMP.** Add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30) (WTS) **EXEMP.** Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17) (EXS)	W4 W5			W2	W2	W3
(2C3) Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems	W5					W3
(2C4) Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures **EXEMP.** Add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30) (WTS) **EXEMP.** Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17) (EXS)	W4 W5			W5	W2	
(2C9a) Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	W4			W2	W2	

Number - multiplication and division (calculations)	Coverage					
	Aut1	Aut2	Spr1	Spr2	Sum1	Sum2
(2C6) Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS) **EXEMP.** Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary (EXS) **EXEMP.** recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts (GDS)		W1	W5 W6			W2
(2C7) Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs		W1	W5 W6			W2
(2C8) Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts **EXEMP.** Solve unfamiliar word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?') (GDS)			W5 W6			W2

(2C9b) Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		W1	W5 W6			W2
Number - fractions	**Coverage**					
	Aut1	**Aut2**	**Spr1**	**Spr2**	**Sum1**	**Sum2**
(2F1a) Recognise, find, name and write fractions 1/3 , 1/4 , 2/4 and 3/4 of a length, shape, set of objects or quantity **EXEMP.** Identify $^1/_4$,$^1/_3$,$^1/_2$,$^2/_4$,$^3/_4$ of a number or shape, and know that all parts must be equal parts of the whole (EXS)		W3		W3	W4	
(2F1b) Write simple fractions for example, 1/2 of 6 = 3				W3	W4	
(2F2) Recognise the equivalence of 2/4 and 1/2				W3	W4	
Measurement	**Coverage**					
	Aut1	**Aut2**	**Spr1**	**Spr2**	**Sum1**	**Sum2**
(2M1) Compare and order lengths, mass, volume/capacity and record the results using >, < and =	W3	W3	W2	W1	W3	W4
(2M2) Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) in divisions of ones, twos, fives and tens (EXS) **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) where not all numbers on the scale are given and estimate points in between (GDS)	W3	W3	W2	W1	W3	W4
(2M3a) Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value **EXEMP.** Know the value of different coins (WTS) **EXEMP.** Use different coins to make the same amount (EXS)		W4	W4			
(2M3b) Find different combinations of coins that equal the same amounts of money		W4	W4			
(2M4a) Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times **EXEMP.** Read the time on a clock to the nearest 15 minutes (EXS) **EXEMP.** Read the time on a clock to the nearest 5 minutes (GDS)		W5		W5	W5	W1
(2M4b) Compare and sequence intervals of time		W5		W5	W5	W1
(2M4c) Know the number of minutes in an hour and the number of hours in a day		W5		W5	W5	W1
(2M9) Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change		W4	W4			
Geometry - properties of shapes	**Coverage**					
	Aut1	**Aut2**	**Spr1**	**Spr2**	**Sum1**	**Sum2**
(2G1a) Compare and sort common 2-D shapes and everyday objects	W6		W3		W6	W5
(2G1b) Compare and sort common 3-D shapes and everyday objects	W6		W3		W6	W5
(2G2a) Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line **EXEMP.** Name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres) (WTS) **EXEMP.** Name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry (EXS) **EXEMP.** Describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions) (GDS)	W6		W3		W6	
(2G2b) Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces **EXEMP.** Name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres) (WTS) **EXEMP.** Name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry (EXS) **EXEMP.** Describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions) (GDS)	W6		W3		W6	
(2G3) Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]	W6		W3		W6	
Geometry – position and direction	**Coverage**					
	Aut1	**Aut2**	**Spr1**	**Spr2**	**Sum1**	**Sum2**
(2P1) Order and arrange combinations of mathematical objects in patterns and sequences				W4		
(2P2) Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise)				W4	W5	
Statistics	**Coverage**					
	Aut1	**Aut2**	**Spr1**	**Spr2**	**Sum1**	**Sum2**
(2S1) Interpret and construct simple pictograms, tally charts, block diagrams and simple tables		W2				W3
(2S2a) Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity		W2				
(2S2b) Ask and answer questions about totalling and comparing categorical data		W2				W3

Exemplification Statements

WTS

Working towards the expected standard

The pupil can:

- read and write numbers in numerals up to 100
- partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources[1] to support them
- add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30)
- recall at least four of the six[2] number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4)
- count in twos, fives and tens from 0 and use this to solve problems
- know the value of different coins
- name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres).

[1] For example, base 10 apparatus.

[2] Key number bonds to 10 are: 0+10, 1 + 9, 2 + 8, 3 + 7, 4 + 6, 5 + 5.

EXS

Working at the expected standard

The pupil can:

- read scales* in divisions of ones, twos, fives and tens
- partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus
- add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17)
- recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14)
- recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary
- identify $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$, of a number or shape, and know that all parts must be equal parts of the whole
- use different coins to make the same amount
- read the time on a clock to the nearest 15 minutes
- name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry.

* The scale can be in the form of a number line or a practical measuring situation.

GDS

Working at greater depth

The pupil can:

- read scales* where not all numbers on the scale are given and estimate points in between
- recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts
- use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. 29 + 17 = 15 + 4 + □ ; 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc)
- solve unfamiliar word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?')
- read the time on a clock to the nearest 5 minutes
- describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions).

* The scale can be in the form of a number line or a practical measuring situation.

Year 2 Mathematics Yearly Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Week 1	Number and Place value	Counting, multiplication and sorting	Number and Place value	Length and Mass/weight	Number and Place value and statistics	Time
Week 2	Number and Place value	Statistics	Mass/weight	Addition and subtraction	Addition and subtraction	Multiplication and division
Week 3	Length and Mass/weight	Fractions Capacity and volume	2-D and 3-D Shape	Fractions	Capacity and volume and temperature	Statistics including finding the difference
Week 4	Addition and subtraction	Money	Counting and money	Position and direction	Fractions	Measurement
Week 5	Addition and subtraction	Time	Multiplication	Time	Position and direction Time	Sorting
Week 6	2-D and 3-D shape	Assess and review week	Division	Assess and review week	2-D and 3-D shape	Assess and review week

Year 2 Autumn 1			
	Links to Content Domain	Skills	Knowledge
Week 1 *Number and Place value*	2N2a 2N3 2N4 2N2b 2N6	• Read and write numbers to at least 100 in numerals and in words. **EXEMP.** Read and write numbers in numerals up to 100 (WTS) • Recognise the place value of each digit in a two-digit number (tens, ones). **EXEMP.** Partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources to support them (WTS) **EXEMP.** Partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus (EXS) • Identify, represent and estimate numbers using different representations, including the number line. • Compare and order numbers from 0 up to 100; use <, > and = signs. • *Round numbers to at least 100 to the nearest 10.* • Use place value and number facts to solve problems. **EXEMP.** Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4) (WTS) **EXEMP.** Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14) (EXS) **EXEMP.** Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. 29 + 17 = 15 + 4 + ¨ ; 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc.) (GDS)	Children develop their understanding of the number system to include numbers up to and beyond 100. They should use practical equipment, familiar items and pictures to represent the numbers they are working with – children should understand the notion of grouping in tens i.e. 10 ones is the same as 1 ten and that in two-digit number the first digit refers to the number of groups of ten. Children should experience numbers in different ways to support other place value understanding e.g. ordering numbers on a number line to support comparing and rounding numbers, and also make links between the number line and measuring scales and scales on a graph. https://nrich.maths.org/8303 Real-life: Look at 2digit door numbers Make links to numbers at school- number of pupils in our class/ in our year group etc. GDS – Ben's numbers - 24 https://www.egfl.org.uk/sites/default/files/maths%20puzzles%20all.pdf
Week 2 *Number and Place value*	2N1 2N4 2N6	• Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS) • *Find 1 or 10 more or less than a given number.* • *Partition numbers in different ways (for example, 23 = 20 + 3 and 23 = 10 + 13).* • Identify, represent and estimate numbers using different representations, including the number line. • Use place value and number facts to solve problems. **EXEMP.** Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4) (WTS) **EXEMP.** Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14) (EXS) **EXEMP.** Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. 29 + 17 = 15 + 4 + ¨ ; 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc.) (GDS)	Children build on their understanding of numbers from the previous week, including using place value to identify numbers 1 and 10 more or less than a given number. At this stage, children should discover for themselves the structure of a 100 square by counting on or back 10 from a given number and realising where they finish. When counting, children should be encouraged to identify patterns in the sequences and reason as to why these patterns emerge. Partitioning numbers in different ways helps children understand the flexibility of how numbers can be made, and that thinking of numbers in different ways is useful when calculating in different contexts e.g. when adding 36 and 7, it is useful to think of 7 as 4 + 3 to help bridge through 40. https://nrich.maths.org/194 Real-life: Counting rhymes, songs and stories Use number lines, 100sq, practical resources, Numicon etc Link counting in 2s to odd/ even numbers GDS – Snakes and Ladders – 4 https://www.egfl.org.uk/sites/default/files/maths%20puzzles%20all.pdf
Week 3 *Measurement - length and mass*	2M2 2M1 2M2 2M1	• Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) to the nearest appropriate unit using rulers. • Compare and order lengths and record the results using >, < and =. • Choose and use appropriate standard units to estimate and measure mass (kg/g) to the nearest appropriate unit using scales. • Compare and order mass and record the results using >, < and =. **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) in divisions of ones, twos, fives and tens (EXS) **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) where not all numbers on the scale are given and estimate points in between (GDS)	Children should use the term mass instead of weight. Children should work practically to measure length and height, recognising that both are measurements of distance. Children should use standard units and then consolidate their place value knowledge by comparing and ordering lengths and masses. The understanding of positioning numbers on a number line is applied to measuring scales and identifying lengths and masses of familiar items.
Week 4 *Addition and subtraction*	2C9a 2C1a	• Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. **EXEMP.** Recall at least	Children should use familiar items to create number stories e.g. 24 children in the class and 7 more come in, how many children are in the class now? This gives rise to the number sentence 24 + 7 = ? Continuing the theme of number stories can give rise to other number sentences such as 24 + ? = 31. This

	       2C2 2C1b 2C4	four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4) (WTS) **EXEMP.** Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (EXS) **EXEMP.** Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (GDS) • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. **EXEMP.** Add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30) (WTS) **EXEMP.** Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17) (EXS) • Solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures. - applying their increasing knowledge of mental and written methods.	could be explained as, there are 24 children in the class. How many more children come into the class if in the end there are 31 children in class? The use of physical objects to tell a number story and the creation of numbers sentences helps children to understand the relationship between addition and subtraction. Children should also use practical models and visual images to support the place value understanding when calculating with 2-digit numbers. https://nrich.maths.org/188 https://nrich.maths.org/179 https://nrich.maths.org/6589 https://nrich.maths.org/4348 https://nrich.maths.org/7471 https://nrich.maths.org/4725 Real-life: Use concrete objects in the classroom to support addition GDS – Number Lines-11 Card Sharp- 14 Cross Roads-17 https://www.egfl.org.uk/sites/default/files/maths%20puzzles%20all.pdf
Week 5 *Addition and subtraction*	2C1a 2C2 2C1b 2C4 2C3	• Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. **EXEMP.** Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4) (WTS) **EXEMP.** Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (EXS) **EXEMP.** Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (GDS) • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. **EXEMP.** Add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30) (WTS) **EXEMP.** Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17) (EXS) • Solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures. - applying their increasing knowledge of mental and written methods. • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. • *Understand subtraction as take away and difference (how many more, how many less/fewer).*	This week is a continuation of last week. Children are introduced to 'difference' in the summer term of Year 1. This understanding should be made more secure and the term difference should be used by children. Children should also learn the term sum and how this applies to addition. Children should also use knowledge of number bonds for each number up to 20 in calculations involving larger numbers e.g. knowing that 8 + 7 = 15 can support children answering questions such as 28 + 7, 58 + 7 and 38 + 47. https://nrich.maths.org/136 https://nrich.maths.org/2002 https://nrich.maths.org/2003 https://nrich.maths.org/246 https://nrich.maths.org/7228 https://nrich.maths.org/2724 Real Life: Use concrete objects to show commutatively GDS – Number Lines – 11 Cross-road – 17 Card Sharp- 14 https://www.egfl.org.uk/sites/default/files/maths%20puzzles%20all.pdf
Week 6 *Shape*	2G2a 2G3 2G2b 2G1a 2G1b	• Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. • Identify 2-D shapes on the surface of 3-D shapes, (for example, a circle on a cylinder and a triangle on a pyramid). • Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. • Compare and sort common 2-D and 3-D shapes and everyday objects. **EXEMP.** Name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres) (WTS) **EXEMP.** Name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry (EXS) **EXEMP.** Describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions) (GDS)	When learning about shapes, children should handle them, name them and begin to describe them. Children should recognise shapes in different orientations and also in different sizes, and know that some shapes can look differently to other shapes with the same name. When describing 2-D shapes, it is useful for children to consistently use the terms side and corner. When describing 3-D shapes, it is useful for children to consistently use the terms face, edge and vertex (vertices). When sorting shapes in different ways, children should use various diagrams including sorting tables, Venn and Carroll diagrams. https://nrich.maths.org/7009 https://nrich.maths.org/7008 https://nrich.maths.org/93 https://nrich.maths.org/7511 https://nrich.maths.org/2526 https://nrich.maths.org/239 https://nrich.maths.org/7299 https://nrich.maths.org/7515 https://nrich.maths.org/7128

			Real Life: Shape hunt in school grounds/ local area. Sorting circles- sort shapes according to properties. GDS – Odd one out- 12 Spot the shapes 1 – 25 Christmas Tree – 2 https://www.egfl.org.uk/sites/default/files/maths%20puzzles%20all.pdf

Year 2 Autumn 2

	Links to Content Domain	Skills	Knowledge
Week 1 *Counting, Multiplication and Sorting*	2N1 2C9b 2C6 2C7	• Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS) • *Understand multiplication as repeated addition.* • Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS) **EXEMP.** Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary (EXS) **EXEMP.** recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts (GDS) • Calculate mathematical statements for multiplication *(using repeated addition)* within the multiplication tables and write them using the multiplication (×),and equals (=) signs. • *Compare and sort numbers according to their properties.*	When counting, children should be encouraged to identify patterns in the sequences and reason as to why these patterns emerge. Rote counting should be linked to repeated addition and the creation of arrays. Children should learn that multiplication is a convenient way of repeatedly adding a number to itself e.g. 2+2+2+2+2+2 can be said as 2x6 (2 added to itself 6 times). The array created can then be used to demonstrate commutativity i.e. that 2x6 is the same as 6x2. Children should make links to real life application of multiplication as repeated addition. Children should begin to relate counting in steps of 2, 3, 5 and 10 to the multiplication tables. The 2x table and counting in 2s from different starting points should be used alongside practical equipment to enable children to understand even and odd numbers. Children's work on sorting can be used to consolidate understanding of the properties of numbers, including comparing numbers, odd and even and sequences. Real-life: Link back to work on addition and introduce multiplication as repeated addition. Look at odd and even door numbers. GDS – One and twos- 20 Birthdays-21 At the Toy shop – 23 https://www.egfl.org.uk/sites/default/files/maths%20puzzles%20all.pdf
Week 2 *Statistics*	2S1 2S2a 2S2b	• Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. • Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. • Ask and answer questions about totalling and comparing categorical data. • *Understand subtraction as take away and difference (how many more, how many less/fewer).*	Children apply their knowledge of counting in equal steps to work with scales on graphs and charts that count in steps of 2, 5 or 10 or to pictograms in which each symbol is worth more than 1. They also apply their knowledge of place value and calculation to the context of statistics, with a particular focus on difference *'How many more…?'* and *'How many fewer/less…?*
Week 3 *Fractions Measurement – capacity and volume*	2F1a 2M2 2M1	• *Understand and use the terms numerator and denominator.* • *Understand that a fraction can describe part of a set.* • *Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be.* • Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity. **EXEMP.** Identify $^1/_4$, $^1/_3$, $^1/_2$, $^2/_4$, $^3/_4$ of a number or shape, and know that all parts must be equal parts of the whole (EXS) • *Count on and back in steps of* $\frac{1}{2}$ *and* $\frac{1}{4}$. • Choose and use appropriate standard units to estimate and measure capacity and volume (litres/ml) to the nearest appropriate unit using measuring vessels. • Compare and order volume/capacity and record the results using >, < and =. **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) in divisions of ones, twos, fives and tens (EXS) **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) where not all numbers on the scale are given and estimate points in between (GDS)	Children's knowledge and understanding of fractions develops to include the names of each number in a written fraction and what each number represents. Practical and visual approaches should be used to allow children to see what the numerator and denominator are and how they go together to form a fraction of a shape or quantity. Children are introduced to $\frac{2}{4}$ and $\frac{3}{4}$ as the first examples of non-unit fractions. Children also count in fraction steps and see these on a number line, understanding how many halves, quarters and thirds make one whole one/unit. Children learn about liquid volume and use standard units to measure volume and capacity. Place value knowledge is applied in this context when ordering volumes and capacities. The fraction understanding can also be applied to volume and capacity, finding out that it takes four cupfuls to fill the jug, therefore one cupful is $\frac{1}{4}$ of the capacity of the jug and using this information to estimate when the jug is three-quarters full. This should be extended to thirds.
Week 4 *Money*	2M3a 2M3a 2M3b 2M9 2M9	• Recognise and use symbols for pounds (£) and pence (p). • Combine amounts to make a particular value. **EXEMP.** Know the value of different coins (WTS) **EXEMP.** Use different coins to make the same amount (EXS) • Find different combinations of coins that equal the same amounts of money. • Add and subtract money of the same unit, including giving change. • Solve simple problems in a practical context involving addition and subtraction of money.	Children should become fluent in recognising the values of different coins. Children continue to understand how many pennies each coin is worth and exchange between pennies and 2p, 5p, 10p and 20p coins. This could be done in a Bank role play area. Shop role play could be used when teaching about paying for amounts exactly. This is a good opportunity for children to experience finding all possibilities problems. Combining coins to make given amounts should be linked to addition and number sentences e.g. how many ways can you pay exactly for an item costing 14p? At this stage, children should record £ and p separately. Formal recording of money using decimal places occurs in Year 4.

Week 5 *Time*	2M4a 2M4c 2M4b	• Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. **EXEMP.** Read the time on a clock to the nearest 15 minutes (EXS) **EXEMP.** Read the time on a clock to the nearest 5 minutes (GDS) • Know the number of minutes in an hour and the number of hours in a day. • Compare and sequence intervals of time.	When teaching time, links need to be made with fractions half and quarter, and also counting in 5s. Children should experience geared analogue clocks to recognise how the hour hand moves as the minute hand moves around the clock. The idea of minutes past the hour and minutes to the next hour can be explored and linked to rounding numbers and also number bonds of multiples of 5 to 60. Children should explore how long certain activities take and also how many times certain things can be done in a given time period e.g. one minute. https://nrich.maths.org/7377 https://nrich.maths.org/6071 Real-life: How long is playtime/ lunchtime/ assembly? What's the time Mr Wolf?
Week 6 Assess and review		Assess and review week	It is useful at regular intervals for teachers to consider the learning that has taken place over a term (or half term), assess and review children's understanding of the learning and use this to inform where the children need to go next.

Year 2 Spring 1			
	Links to Content Domain	**Skills**	**Knowledge**
Week 1 *Number, place value and measures*	2N1 2N2a 2N3 2N4 2N2b	• Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS) • Read and write numbers to at least 100 in numerals. **EXEMP.** Read and write numbers in numerals up to 100 (WTS) • Recognise the place value of each digit in a two-digit number (tens, ones). **EXEMP.** Partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources to support them (WTS) **EXEMP.** Partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus (EXS) • Identify, represent and estimate numbers using different representations, including the number line. • Compare and order numbers from 0 up to 100; use <, > and = signs. • *Find 1 or 10 more or less than a given number.* • *Round numbers to at least 100 to the nearest 10.*	Children's understanding of the number system should now include numbers up to and beyond 100. They should use practical equipment, familiar items and pictures to represent the numbers they are working with – children should understand the notion of grouping in tens i.e. 10 ones is the same as 1 ten and that in two-digit number the first digit refers to the number of groups of ten. Children should experience numbers in different ways to support other place value understanding e.g. ordering numbers on a number line to support comparing and rounding numbers, and also make links between the number line and measuring scales. All of the place value objectives in this week should be presented in the context of measurement. https://nrich.maths.org/194 https://nrich.maths.org/6962 https://nrich.maths.org/7044 https://nrich.maths.org/7431 https://nrich.maths.org/5897 Real Life: Look at patterns on 100 sq. What happens when we count in tens starting on 3 or 7 etc? More able children may be ready to move onto adding on 10 to a 3digit number GDS – Fireworks – 18 https://www.egfl.org.uk/sites/default/files/maths%20puzzles%20all.pdf
Week 2 *Measurement - mass*	2M2 2M1 2N1	• Choose and use appropriate standard units to estimate and measure mass (kg/g) to the nearest appropriate unit using scales. • Compare and order mass and record the results using >, < and =. **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) in divisions of ones, twos, fives and tens (EXS) **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) where not all numbers on the scale are given and estimate points in between (GDS) • Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS)	Children should use the term mass instead of weight. Children should work practically to measure the mass of different items. They should use standard units and then consolidate their place value knowledge by comparing and ordering masses. The understanding of positioning numbers on a number line is applied to measuring scales and estimating and identifying masses of familiar items. Children should use measuring scales that use increments of 1, 2, 3, 5 or 10 and should be using numbers up to and beyond 100.
Week 3 *Shape*	2G2a 2G3 2G2b 2G1a 2G1b	• Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. • Identify 2-D shapes on the surface of 3-D shapes, (for example, a circle on a cylinder and a triangle on a pyramid). • Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. • Compare and sort common 2-D and 3-D shapes and everyday objects. **EXEMP.** Name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres) (WTS) **EXEMP.** Name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry (EXS) **EXEMP.** Describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions) (GDS)	When learning about shapes, children should handle, name and describe them. Children should recognise shapes in different orientations and also in different sizes, and know that some shapes can look differently to other shapes with the same name. When describing 2-D shapes, it is useful for children to consistently use the terms side and corner. When describing 3-D shapes, it is useful for children to consistently use the terms face, edge and vertex (vertices). When sorting shapes in different ways, children should use various diagrams including sorting tables, Venn and Carroll diagrams. https://nrich.maths.org/221 https://nrich.maths.org/171 https://nrich.maths.org/1156 https://nrich.maths.org/5742 https://nrich.maths.org/183 Real Life: Shape hunt in school grounds/ local area. Sorting circles- sort shapes according to properties. GDS – Odd one out- 12 Spot the shapes 1 – 25 Christmas Tree – 2 https://www.egfl.org.uk/sites/default/files/maths%20puzzles%20all.pdf
Week 4 *Counting and money*	2N1 2M3a	• Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS) • Recognise and use symbols for pounds (£) and pence (p).	Children should become fluent in recognising the values of different coins. Children continue to understand how many pennies each coin is worth and exchange between pennies and 2p, 5p, 10p and 20p coins. This could be done in a Bank role play area. Children should apply their skill of counting in 2s, 5s and 10s to counting coins of these values.

	2M3a 2M3b 2M9 2M9	• Combine amounts to make a particular value. **EXEMP.** Know the value of different coins (WTS) **EXEMP.** Use different coins to make the same amount (EXS) • Find different combinations of coins that equal the same amounts of money. • Add and subtract money of the same unit, including giving change. • Solve simple problems in a practical context involving addition and subtraction of money.	Shop role play could be used when teaching about paying for amounts exactly. This is a good opportunity for children to experience finding all possibilities problems. Combining coins to make given amounts should be linked to addition and number sentences e.g. how many ways can you pay exactly for an item costing 14p? At this stage, children should record £ and p separately. Formal recording of money using decimal places occurs in Year 4.
Week 5 *Multiplication – problem solving*	2C9b 2C6 2C7 2C8	• *Understand multiplication as repeated addition.* • Show that multiplication of two numbers can be done in any order (commutative). • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS) **EXEMP.** Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary (EXS) **EXEMP.** recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts (GDS) • *Understand the connection between the 10 multiplication table and place value.* • Calculate mathematical statements for multiplication *(using repeated addition)* within the multiplication tables and write them using the multiplication (×) and equals (=) signs. • Solve problems involving multiplication, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. **EXEMP.** Solve unfamiliar word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?') (GDS)	When counting, children should be encouraged to identify patterns in the sequences and reason as to why these patterns emerge. Rote counting should be linked to repeated addition and the creation of arrays. Children should learn that multiplication is a convenient way of repeatedly adding a number to itself e.g. 2+2+2+2+2+2 can be said as 2x6 (2 added to itself 6 times). The array created can then be used to demonstrate commutativity i.e. that 2x6 is the same as 6x2. Children should make links to real life application of multiplication as repeated addition. Children should begin to relate counting in steps of 2, 3, 5 and 10 to the multiplication tables. The 2x table and counting in 2s from different starting points should be used alongside practical equipment to enable children to understand even and odd numbers.
Week 6 *Division – problem solving*	2C9b 2C6 2C7 2C8	• *Understand division as sharing and grouping.* • Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS) **EXEMP.** Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary (EXS) **EXEMP.** recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts (GDS) • Calculate mathematical statements for division within the multiplication tables and write them using the division (÷) and equals (=) signs. • Solve problems involving division, using materials, arrays, *repeated subtraction and sharing*, mental methods, and multiplication and division facts, including problems in contexts. **EXEMP.** Solve unfamiliar word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?') (GDS)	Children should be introduced to division using contexts that involve sharing. Division as grouping should also be explored practically and linked to the arrays from the previous week. This helps children see the inverse relationship between multiplication and division by exploring 'How many groups of… are there in…? The contexts for grouping should be ones children can relate to, for example making teams of equal size from a given number of children; putting 5 sweets in each bag and finding how many bags can be filled using 47 sweets? These real life scenarios support children in understanding that some numbers do not divide equally and this gives rise to remainders. https://nrich.maths.org/8062 https://nrich.maths.org/8059 https://nrich.maths.org/6895 https://nrich.maths.org/2782 https://nrich.maths.org/2783 https://nrich.maths.org/7190 Real Life: Practical activities linked to sharing and grouping objects.

Year 2 Spring 2			
	Links to Content Domain	**Skills**	**Knowledge**
Week 1 *Measurement – length and height, mass/weight*	2M2 2M1 2M2 2M1	• Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) to the nearest appropriate unit using rulers. • Compare and order lengths and record the results using >, < and =. • Choose and use appropriate standard units to estimate and measure mass (kg/g) to the nearest appropriate unit using scales. • Compare and order mass and record the results using >, < and =. **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) in divisions of ones, twos, fives and tens (EXS) **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) where not all numbers on the scale are given and estimate points in between (GDS)	Children should use the term mass instead of weight. Children should work practically to measure length and height, recognising that both are measurements of distance. Children should use standard units and then consolidate their place value knowledge by comparing and ordering lengths and masses. The understanding of positioning numbers on a number line is applied to measuring scales and identifying lengths and masses of familiar items.
Week 2 *Mental addition and subtraction facts in context of measurement*	2C9a 2C1a 2C2 2C1b 2C4	• Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. **EXEMP.** Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4) (WTS) **EXEMP.** Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (EXS) **EXEMP.** Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (GDS) • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. **EXEMP.** Add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30) (WTS) **EXEMP.** Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17) (EXS) • Solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures. - applying their increasing knowledge of mental and written methods.	Children should use measures from the previous week to create number stories e.g. How much longer is Alice's foot than Freya's if Alice is 116cm tall and Freya is 98cm tall? This gives rise to the number sentence 24 + 7 = ? Continuing the theme of number stories can give rise to other number sentences such as 24 + ? = 31. This could be explained as, there are 24 children in the class. How many more children come into the class if in the end there are 31 children in class? The use of physical objects to tell a number story and the creation of numbers sentences helps children to understand the relationship between addition and subtraction. Children should also use practical models and visual images to support the place value understanding when calculating with 2-digit numbers. https://nrich.maths.org/4348 https://nrich.maths.org/7471 https://nrich.maths.org/4725
Week 3 *Fractions*	2F1a 2F1b 2F2	• *Understand and use the terms numerator and denominator.* • *Understand that a fraction can describe part of a set.* • *Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be.* • Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity. **EXEMP.** Identify $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$ of a number or shape, and know that all parts must be equal parts of the whole (EXS) • *Count on and back in steps of $\frac{1}{2}$ and $\frac{1}{4}$.* • Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.	Children's knowledge and understanding of fractions develops to include the names of each number in a written fraction and what each number represents. Practical and visual approaches should be used to allow children to see what the numerator and denominator are and how they go together to form a fraction of a shape or quantity. Children are introduced to $\frac{2}{4}$ and $\frac{3}{4}$ as the first examples of non-unit fractions. Using shapes, practical and pictorial representations, children understand the concept of equivalent fractions e.g. $\frac{2}{4}$ and $\frac{1}{2}$ Children should understand the connection between finding a fraction of an amount and division by sharing. This can be supported by using shapes divided into equal fractions and sharing real items equally on to each fraction part.
Week 4 *Position and direction*	2P1 2P2	• Order and arrange combinations of mathematical objects in patterns and sequences. • Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three- quarter turns (clockwise and anti-clockwise).	Children identify and create sequences and patterns using mathematical objects. They develop their skills in reasoning and communicating by describing how they know what will come next and where certain shapes always appear in the sequence. Children's understanding of position and direction is developed through practical work describing routes and relating turns to the movement of the hands on a clock.

Week 5 *Measurement - time*	2M4a 2M4c 2M4b	• Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. **EXEMP.** Read the time on a clock to the nearest 15 minutes (EXS) **EXEMP.** Read the time on a clock to the nearest 5 minutes (GDS) • Know the number of minutes in an hour and the number of hours in a day. • Compare and sequence intervals of time.	When teaching time, links need to be made with fractions half and quarter, and also counting in 5s. Children should experience geared analogue clocks to recognise how the hour hand moves as the minute hand moves around the clock. The idea of minutes past the hour and minutes to the next hour can be explored and linked to rounding numbers and also number bonds of multiples of 5 to 60. Children should explore how long certain activities take and also how many times certain things can be done in a given time period e.g. one minute. https://nrich.maths.org/7377 https://nrich.maths.org/6071 Real-life: How long is playtime/ lunchtime/ assembly? What's the time Mr Wolf?
Week 6 Assess and review		Assess and review week	It is useful at regular intervals for teachers to consider the learning that has taken place over a term (or half term), assess and review children's understanding of the learning and use this to inform where the children need to go next.

Year 2 Summer I			
	Links to Content Domain	**Skills**	**Knowledge**
Week 1 *Number and place value and statistics*	2N3 2N4 2N2b 2N6 2N1	• Recognise the place value of each digit in a two-digit number (tens, ones). **EXEMP.** Partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources to support them (WTS) **EXEMP.** Partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus (EXS) • Identify, represent and estimate numbers using different representations, including the number line. • Compare and order numbers from 0 up to 100; use <, > and = signs. • *Round numbers to at least 100 to the nearest 10.* • Use place value and number facts to solve problems. **EXEMP.** Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4) (WTS) **EXEMP.** Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14) (EXS) **EXEMP.** Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. 29 + 17 = 15 + 4 + ¨ ; 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc.) (GDS) • Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS) • *Find 1 or 10 more or less than a given number.* • *Partition numbers in different ways (for example, 23 = 20 + 3 and 23 = 10 + 13).*	Children develop their understanding of the number system to include numbers up to and beyond 100. They should use practical equipment, familiar items and pictures to represent the numbers they are working with – children should understand the notion of grouping in tens i.e. 10 ones is the same as 1 ten and that in two-digit number the first digit refers to the number of groups of ten. Children should experience numbers in different ways to support other place value understanding e.g. ordering numbers on a number line to support comparing and rounding numbers, and also make links between the number line and measuring scales and scales on a graph. These scales should go up to 100 and use intervals of 2, 3, 5 or 10. When counting, children should be encouraged to identify patterns in the sequences and reason as to why these patterns emerge. Partitioning numbers in different ways helps children understand the flexibility of how numbers can be made, and that thinking of numbers in different ways is useful when calculating in different contexts e.g. when adding 36 and 7, it is useful to think of 7 as 4 + 3 to help bridge through 40. https://nrich.maths.org/8303 Real-life: Look at 2digit door numbers Make links to numbers at school-number of pupils in our class/ in our year group etc. GDS – Ben's numbers - 24 https://www.egfl.org.uk/sites/default/files/maths%20puzzles%20all.pdf
Week 2 *Addition and subtraction*	2C9a 2C1a 2C2 2C1b 2C4	• Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. **EXEMP.** Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4) (WTS) **EXEMP.** Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (EXS) **EXEMP.** Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (GDS) • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. **EXEMP.** Add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30) (WTS) **EXEMP.** Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17) (EXS) • Solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures. - applying their increasing knowledge of mental and written methods.	Children should use familiar items to create number stories e.g. 24 children in the class and 7 more come in, how many children are in the class now? This gives rise to the number sentence 24 + 7 = ? Continuing the theme of number stories can give rise to other number sentences such as 24 + ? = 31. This could be explained as, there are 24 children in the class. How many more children come into the class if in the end there are 31 children in class? The use of physical objects to tell a number story and the creation of numbers sentences helps children to understand the relationship between addition and subtraction. Children should also use practical models and visual images to support the place value understanding when calculating with 2-digit numbers. Children should confidently use the terms difference and sum. Children should also use knowledge of number bonds for each number up to 20 in calculations involving larger numbers e.g. knowing that 8 + 7 = 15 can support children answering questions such as 28 + 7, 58 + 7 and 38 + 47. https://nrich.maths.org/136 https://nrich.maths.org/2002 https://nrich.maths.org/2003 https://nrich.maths.org/246 https://nrich.maths.org/7228 https://nrich.maths.org/2724 Real Life: Use concrete objects to show commutatively GDS – Number Lines – 11 Cross-road – 17 Card Sharp- 14 https://www.egfl.org.uk/sites/default/files/maths%20puzzles%20all.pdf

Week 3 *Measurement – capacity/volume and temperature*	2M2 2M1 2M2	• Choose and use appropriate standard units to estimate and measure capacity and volume (litres/ml) to the nearest appropriate unit using measuring vessels. • Compare and order volume/capacity and record the results using >, < and =. • Choose and use appropriate standard units to estimate and measure temperature to the nearest degree (˚C) using thermometers. **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) in divisions of ones, twos, fives and tens (EXS) **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) where not all numbers on the scale are given and estimate points in between (GDS)	Children learn about liquid volume and use standard units to measure volume and capacity. Place value knowledge is applied in this context when ordering volumes and capacities and reading scales. Children are introduced to temperature in the summer term, where they can sense differences in temperature between inside and outside and in the shade and in the sunshine. They learn that temperature is measured in degrees Celsius (˚C) and we use thermometers to measure temperature. Measuring different temperatures allows children to understand that the average room temperature is approximately 20˚C.
Week 4 *Fractions*	 2F1a 2F1b 2F2	• *Understand and use the terms numerator and denominator.* • *Understand that a fraction can describe part of a set.* • *Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be.* • Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity. **EXEMP.** Identify $^1/_4$, $^1/_3$, $^1/_2$, $^2/_4$, $^3/_4$ of a number or shape, and know that all parts must be equal parts of the whole (EXS) • *Count on and back in steps of* $\frac{1}{2}$ *and* $\frac{1}{4}$. • Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.	Children's knowledge and understanding of fractions develops to include the names of each number in a written fraction and what each number represents. Practical and visual approaches should be used to allow children to see what the numerator and denominator are and how they go together to form a fraction of a shape or quantity. Children are introduced to $\frac{2}{4}$ and $\frac{3}{4}$ as the first examples of non-unit fractions. Using shapes, practical and pictorial representations, children understand the concept of equivalent fractions e.g. $\frac{2}{4}$ and $\frac{1}{2}$ Children should understand the connection between finding a fraction of an amount and division by sharing. This can be supported by using shapes divided into equal fractions and sharing real items equally on to each fraction part.
Week 5 *Position, direction and time*	2P2 2M4a 2M4c 2M4b	• Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three- quarter turns (clockwise and anti-clockwise). • Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. **EXEMP.** Read the time on a clock to the nearest 15 minutes (EXS) **EXEMP.** Read the time on a clock to the nearest 5 minutes (GDS) • Know the number of minutes in an hour and the number of hours in a day. • Compare and sequence intervals of time.	Children's understanding of position and direction is developed through practical work describing routes and relating turns to the movement of the hands on a clock. When teaching time, links need to be made with fractions half and quarter, and also counting in 5s. Children should experience geared analogue clocks to recognise how the hour hand moves as the minute hand moves around the clock. The idea of minutes past the hour and minutes to the next hour can be explored and linked to rounding numbers and also number bonds of multiples of 5 to 60. Children should explore how long certain activities take and also how many times certain things can be done in a given time period e.g. one minute.
Week 6 *Shape*	2G2a 2G3 2G2b 2G1a 2G1b	• Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. • Identify 2-D shapes on the surface of 3-D shapes, (for example, a circle on a cylinder and a triangle on a pyramid). • Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. • Compare and sort common 2-D and 3-D shapes and everyday objects. **EXEMP.** Name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres) (WTS) **EXEMP.** Name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry (EXS) **EXEMP.** Describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions) (GDS)	When learning about shapes, children should handle, name and describe them. Children should recognise shapes in different orientations and also in different sizes, and know that some shapes can look differently to other shapes with the same name. When describing 2-D shapes, it is useful for children to consistently use the terms side and corner. When describing 3-D shapes, it is useful for children to consistently use the terms face, edge and vertex (vertices). When sorting shapes in different ways, children should use various diagrams including sorting tables, Venn and Carroll diagrams. https://nrich.maths.org/221 https://nrich.maths.org/171 https://nrich.maths.org/1156 https://nrich.maths.org/5742 https://nrich.maths.org/183 https://nrich.maths.org/2910 *** https://nrich.maths.org/5648 *** Real Life: Shape hunt in school grounds/ local area. Sorting circles- sort shapes according to properties. GDS – Odd one out- 12 Spot the shapes 1 – 25 Christmas Tree – 2 https://www.egfl.org.uk/sites/default/files/maths%20puzzles%20all.pdf

Year 2 Summer 2			
	Links to Content Domain	**Skills**	**Knowledge**
Week 1 *Time*	2M4a 2M4c 2M4b	• Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. **EXEMP.** Read the time on a clock to the nearest 15 minutes (EXS) **EXEMP.** Read the time on a clock to the nearest 5 minutes (GDS) • Know the number of minutes in an hour and the number of hours in a day. • Compare and sequence intervals of time.	When teaching time, links need to be made with fractions half and quarter, and also counting in 5s. Children should experience geared analogue clocks to recognise how the hour hand moves as the minute hand moves around the clock. The idea of minutes past the hour and minutes to the next hour can be explored and linked to rounding numbers and also number bonds of multiples of 5 to 60. https://nrich.maths.org/7377 https://nrich.maths.org/6071 Real-life: How long is playtime/ lunchtime/ assembly? What's the time Mr Wolf?
Week 2 *Multiplication and division*	2C9b 2C6 2C7 2C8	• *Understand multiplication as repeated addition.* • *Understand division as sharing and grouping.* • Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. **EXEMP.** Count in twos, fives and tens from 0 and use this to solve problems (WTS) **EXEMP.** Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary (EXS) **EXEMP.** recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts (GDS) • *Understand the connection between the 10 multiplication table and place value.* • Calculate mathematical statements for multiplication *(using repeated addition)* and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. **EXEMP.** Solve unfamiliar word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?') (GDS)	Rote counting should be linked to repeated addition and the creation of arrays. Children should learn that multiplication is a convenient way of repeatedly adding a number to itself e.g. 2+2+2+2+2+2 can be said as 2x6 (2 added to itself 6 times). The array created can then be used to demonstrate commutativity i.e. that 2x6 is the same as 6x2. Children should make links to real life application of multiplication as repeated addition. Children should begin to relate counting in steps of 2, 3, 5 and 10 to the multiplication tables. Children should be introduced to division using contexts that involve sharing. Division as grouping should also be explored practically and linked to the arrays created when learning about multiplication. This helps children see the inverse relationship between multiplication and division by exploring 'How many groups of… are there in…? The contexts for grouping should be ones children can relate to, for example making teams of equal size from a given number of children; putting 5 sweets in each bag and finding how many bags can be filled using 47 sweets? These real life scenarios support children in understanding that some numbers do not divide equally and this gives rise to remainders.
Week 3 *Statistics including subtraction (finding the difference)*	2S1 2S2b 2C1a 2C2 2C1b 2C3	• Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. • Ask and answer questions about totalling and comparing categorical data. • *Understand subtraction as take away and difference (how many more, how many less/fewer).* • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. **EXEMP.** Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4) (WTS) **EXEMP.** Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (EXS) **EXEMP.** Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (GDS) • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers. **EXEMP.** Add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30) (WTS) **EXEMP.** Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17) (EXS) • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	Children apply their knowledge of counting in equal steps to work with scales on graphs and charts that count in steps of 2, 5 or 10 or to pictograms in which each symbol is worth more than 1. They also apply their knowledge of place value and calculation to the context of statistics, with a particular focus on difference '*How many more…?*' and '*How many fewer/less…?*

Week 4 *Measurement*	2M2 2M1 2M2 2M1 2M2 2M1	• Choose and use appropriate standard units to estimate and measure capacity and volume (litres/ml) to the nearest appropriate unit using measuring vessels. • Compare and order volume/capacity and record the results using >, < and =. • Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) to the nearest appropriate unit using rulers. • Compare and order lengths and record the results using >, < and =. • Choose and use appropriate standard units to estimate and measure mass (kg/g) to the nearest appropriate unit using scales. • Compare and order mass and record the results using >, < and =. **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) in divisions of ones, twos, fives and tens (EXS) **EXEMP.** Read scales (can be in the form of a number line or a practical measuring situation) where not all numbers on the scale are given and estimate points in between (GDS)	Children should use the term mass instead of weight. Children should work practically to measure length and height, recognising that both are measurements of distance. Children should use standard units and then consolidate their place value knowledge by comparing and ordering lengths and masses. The understanding of positioning numbers on a number line is applied to measuring scales and identifying lengths and masses of familiar items. Children can apply their measuring skills in PE lessons, when measuring how far they jump or throw.
Week 5 *Sorting*	2G1a 2G1b	• Compare and sort common 2-D and 3-D shapes and everyday objects. • *Compare and sort numbers according to their properties.*	Children's work on sorting can be used to consolidate understanding of the properties of numbers, including comparing numbers, odd and even and sequences.
Week 6 Assess and review		Assess and review week	It is useful at regular intervals for teachers to consider the learning that has taken place over a term (or half term), assess and review children's understanding of the learning and use this to inform where the children need to go next.

Whole School Domain Progression

Number and place value; approximation and estimation / rounding (KS2)							
Strand	**Early Years outcomes**	**National Curriculum reference Year 1**	**National Curriculum reference Year 2**	**National Curriculum reference Year 3**	**National Curriculum reference Year 4**	**National Curriculum reference Year 5**	**National Curriculum reference Year 6**
N1 Counting (in multiples)	Nursery Outcomes Recite numbers past 5. Say one number name for each item from 1-5. Know that the last number reached when counting a set of objects tells you have many there is in total. Reception Outcomes (ELG) Verbally count beyond 20, recognising the pattern of the counting system.	**1N1a** Count to and across 100, forward and backwards, beginning with 0 or 1, or from any given number	**2N1** Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward		**4N1** Count in multiples of 6, 7, 9, 25 and 1000	**5N1** Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	
		1N1b Count in multiples of twos, fives and tens		**3N1b** Count from 0 in multiples of 4, 8, 50 and 100			
N2 Read, write, order and compare numbers	Nursery Outcomes Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. Experiment with their own symbols and marks as well as numerals. Reception Outcome Link the number symbol (numeral) with its cardinal number value. (1-10)	**1N2a** Count, read and write numbers to 100 in numerals	**2N2a** Read and write numbers to at least 100 in numerals and in words	**3N2a** Compare and order numbers up to 1000 Read and write numbers to 1000 in numerals and in words	**4N2a** Order and compare numbers beyond 1000	**5N2** Read, write, order and compare numbers to at least 1 000 000	**6N2** Read, write, order and compare numbers up to 10 000 000
	Nursery Outcomes Compare quantities saying 'lots' 'more' and 'same'. Reception Outcomes (ELG) Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.	**1N2b** Given a number, identify one more and one less	**2N2b** Compare and order numbers from 0 up to 100; use <, > and = signs	3N2b Find 10 or 100 more or less than a given number	4N2b Find 1000 more or less than a given number		
		1N2c Read and write numbers from 1 to 20 in numerals and words					
N3 Place value; Roman numerals			**2N3** Recognise the place value of each digit in a two-digit number (tens, ones)	**3N3** Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	**4N3a** Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones)	**5N3a** Determine the value of each digit in numbers up to 1 000 000	**6N3** Determine the value of each digit in numbers up to 10 000 000
					4N3b Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the	**5N3b** Read Roman numerals to1000 (M) and recognise years written in Roman numerals	

					concept of zero and place value		
N4 Identify, represent and estimate; rounding	Nursery Outcomes Show 'finger numbers' up to 5. Subitise up to 3 objects. Link numerals and amounts: for example, showing the right number of objects up to 5. Reception Outcome (ELG) Link numeral with cardinal number value (1-10) Subitise (recognise quantities without counting) up to 5	**1N4** Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least	**2N4** Identify, represent and estimate numbers using different representations, including the number line	**3N4** Identify, represent and estimate numbers using different representations	**4N4a** Identify, represent and estimate numbers using different representations	**5N4** Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	**6N4** Round any whole number to a required degree of accuracy
					4N4b Round any number to the nearest 10, 100 or 1000		
N5 Negative numbers					**4N5** Count backwards through zero to include negative numbers	**5N5** Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	**6N5** Use negative numbers in context, and calculate intervals across zero
N6 Number problems			**2N6** Use place value and number facts to solve problems	3N6 Solve number problems and practical problems involving **3N1–3N5**	**4N6** Solve number and practical problems that involve **4N1–4N5** and with increasingly large positive numbers	**5N6** Solve number problems and practical problems that involve **5N1–5N5**	**6N6** Solve number problems and practical problems that involve **6N2–6N5**

Addition, subtraction, multiplication and division (calculations)

Strand	Early Years outcomes	National Curriculum reference Year 1	National Curriculum reference Year 2	National Curriculum reference Year 3	National Curriculum reference Year 4	National Curriculum reference Year 5	National Curriculum reference Year 6
C1 Add / subtract mentally	Reception Outcome (ELG) Automatically recall number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	**1C1** Represent and use number bonds and related subtraction facts within 20	**2C1a** Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	**3C1** Add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds		**5C1** Add and subtract numbers mentally with increasingly large numbers	
			2C1b Add and subtract numbers mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers				
		1C2a	**2C2**	**3C2**	**4C2**	**5C2**	

C2 Add / subtract using written methods		Add and subtract one-digit and two-digit numbers to 20, including zero	Add and subtract numbers using concrete objects and pictorial representations, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers -adding three one-digit numbers	Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	
		1C2b Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs					
C3 Estimate, use inverses and check			**2C3** To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems	**3C3** Estimate the answer to a calculation and use inverse operations to check answers	**4C3** Estimate and use inverse operations to check answers to a calculation	**5C3** Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	**6C3** Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
C4 Add/subtract to solve problems		**1C4** Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9	**2C4** Solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods	**3C4** Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	**4C4** Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	**5C4** Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	**6C4** Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
C5 Properties of number (multiples, factors, primes, squares and cubes)						**5C5a** Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers	**6C5** Identify common factors, common multiples and prime numbers
						5C5b Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	
						5C5c Establish whether a number up to 100 is prime and recall prime numbers up to 19	
						5C5d Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})	
C6			**2C6** Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables,	**3C6** Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	**4C6a** Recall multiplication and division facts for multiplication tables up to 12 × 12	**5C6a** Multiply and divide numbers mentally drawing upon known facts	**6C6** Perform mental calculations, including with mixed operations and large numbers

Multiply / divide mentally			including recognising odd and even numbers				
					4C6b 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	**5C6b** Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	
					4C6c Recognise and use factor pairs and commutativity in mental calculations		
C7 Multiply / divide using written methods			**2C7** Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	**3C7** Write and calculate mathematical statements for multiplication and division using the multiplication tables that children know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	**4C7** Multiply two-digit and three-digit numbers by a one-digit number using formal written layout	**5C7a** 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	**6C7a** Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
						5C7b 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	**6C7b** Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
							6C7c Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
C8 Solve problems (commutative, associative, distributive and all four operations)	<u>**Nursery Outcomes**</u> Solve some real-world mathematical problems with numbers up to 5, <u>**Reception Outcomes (ELG)**</u> Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly.	**1C8** Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	**2C8** Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	**3C8** Solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects	**4C8** Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	**5C8a** Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	**6C8** Solve problems involving addition, subtraction, multiplication and division
						5C8b	

						Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	
						5C8c Solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates	
C9 Order of operations			**2C9a** Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot				**6C9** Use their knowledge of the order of operations to carry out calculations involving the four operations
			2C9b Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot				

Fractions, decimals and percentages

Strand	Early Years outcomes	National Curriculum reference Year 1	National Curriculum reference Year 2	National Curriculum reference Year 3	National Curriculum reference Year 4	National Curriculum reference Year 5	National Curriculum reference Year 6
F1 Recognise, find, write, name and count fractions	**Reception Outcomes** Halving and sharing objects practically.	**1F1a** Recognise, find and name a half as one of two equal parts of an object, shape or quantity	**2F1a** Recognise, find, name and write fractions 1/3, ¼ , 2/4 and ¾ of a length, shape, set of objects or quantity	**3F1a** 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	**4F1** Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten		
		1F1b Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	**2F1b** Write simple fractions [e.g.: ½ of 6 = 3]	**3F1b** Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators			
				3F1c Recognise and use fractions as numbers:			

				unit fractions and non-unit fractions with small denominators				
F2 Equivalent fractions			**2F2** Recognise the equivalence of 2/4 and ½	**3F2** Recognise and show, using diagrams, equivalent fractions with small denominators	**4F2** Recognise and show, using diagrams, families of common equivalent fractions	**5F2a** Recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements >1 as a mixed number [e.g.: 2/5 + 4/5 = 6/5= 1 1/5]	**6F2** Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
							5F2b Identify name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	
F3 Comparing and ordering fractions				**3F3** Compare and order unit fractions and fractions with the same denominators		**5F3** Compare and order fractions whose denominators are all multiples of the same number	**6F3** Compare and order fractions, including fractions >1
F4 Add / subtract fractions				3F4 Add and subtract fractions with the same denominator within one whole [e.g.: 5/7 + 1/7= 6/7]	**4F4** Add and subtract fractions with the same denominator	**5F4** Add and subtract fractions with the same denominator and denominators that are multiples of the same number	**6F4** Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
F5 Multiply / divide fractions						**5F5** Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	**6F5a** Multiply simple pairs of proper fractions, writing the answer in its simplest form [e.g.: ¼ × ½ = 1/8]
								6F5b Divide proper fractions by whole numbers [e.g.: 1/3 ÷ 2 = 1/6]
F6 Fractions / decimals equivalence					**4F6a** Recognise and write decimal equivalents to ¼, ½, 3/4	**5F6a** Read and write decimal numbers as fractions [e.g.: 0.71 = 71/100]	**6F6** Associate a fraction with division to calculate decimal fraction equivalents (e.g.: 0.375) for a simple fraction [e.g.: 3/8]
					4F6b Recognise and write decimal equivalents of any number of tenths or hundredths	**5F6b** Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	
F7 Rounding decimals [KS2]					**4F7** Round decimals with one decimal place to the nearest whole number	**5F7** Round decimals with two decimal places to the nearest whole number and to one decimal place	

F8 Compare and order decimals					**4F8** Compare numbers with the same number of decimal places up to two decimal places	**5F8** Read, write, order and compare numbers with up to three decimal places	
F9 Multiply / divide decimals					**4F9** 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		**6F9a** Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
							6F9b Multiply one-digit numbers with up to two decimal places by whole numbers
							6F9c Use written division methods in cases where the answer has up to two decimal places
F10 Solve problems with fractions and decimals				**3F10** Solve problems that involve 3F1–3F4	**4F10a** Solve problems involving increasingly harder fractions to calculate quantities and fractions to divide quantities, including non-unit fractions where the answer is a whole number	**5F10** Solve problems involving numbers up to three decimal places	**6F10** Solve problems which require answers to be rounded to specified degrees of accuracy
					4F10b Solve simple measure and money problems involving fractions and decimals to two decimal places		
F11 Fractions / decimal / percentage equivalence						**5F11** Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred'; write percentages as a fraction with denominator hundred, and as a decimal	**6F11** Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
F12 Solve problems with percentages						**5F12** Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25	

Ratio and proportion

Strand	Early Years outcomes	National Curriculum reference Year 1	National Curriculum reference Year 2	National Curriculum reference Year 3	National Curriculum reference Year 4	National Curriculum reference Year 5	National Curriculum reference Year 6

R1 Relative sizes, similarity							**6R1** Solve problems involving the relative sizes of two quantities, where missing values can be found by using integer multiplication and division facts
R2 Use of percentages for comparison							**6R2** Solve problems involving the calculation of percentages [e.g.: of measures such as 15% of 360] and the use of percentages for comparison
R3 Scale factors							**6R3** Solve problem involving similar shapes where the scale factor is known or can be found
R4 Unequal sharing and grouping							**6R4** Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

Algebra

Strand	Early Years outcomes	National Curriculum reference Year 1	National Curriculum reference Year 2	National Curriculum reference Year 3	National Curriculum reference Year 4	National Curriculum reference Year 5	National Curriculum reference Year 6
A1 Missing number problems expressed in algebra							**6A1** Express missing number problems algebraically
A2 Simple formulae expressed in words							**6A2** Use simple formulae
A3 Generate and describe linear number sequences							**6A3** Generate and describe linear number sequences
A4 Number sentences involving two unknowns							**6A4** Find pairs of numbers that satisfy an equation with two unknowns
A5							**6A5**

Enumerate all possibilities of combinations of							Enumerate possibilities of combinations of two variables
Measurement							
Strand	**Early Years outcomes**	**National Curriculum reference Year 1**	**National Curriculum reference Year 2**	**National Curriculum reference Year 3**	**National Curriculum reference Year 4**	**National Curriculum reference Year 5**	**National Curriculum reference Year 6**
M1 Compare, describe and order measures	**Reception Outcomes** Make comparisons between 2 objects relating to their size, length, weight and capacity. **Reception Outcomes** Compare length, weight and capacity.	**1M1** Compare, describe and solve practical problems for: - lengths and heights [e.g.: long/short, longer/ shorter, tall/short, double/half] - mass/weight [e.g.: heavy/light, heavier than, lighter than] - capacity and volume [e.g.: full/empty, more than, less than, half, half full, quarter] - time [e.g.: quicker, slower, earlier, later]	**2M1** Compare and order lengths, mass, volume/ capacity and record the results using >, < and =	**3M1a** Compare lengths(m/cm/mm)	**4M1** Compare different measures, including money in pounds and pence		
				3M1b Compare mass (kg/g)			
				3M1c Compare volume / capacity (l/ml)			
M2 Estimate, measure and read scales		**1M2** Measure and begin to record the following: - lengths and heights - mass/weight - capacity and volume - time (hours, minutes, seconds)	**2M2** Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels	**3M2a** Measure lengths (m/cm/mm)	**4M2** Estimate different measures, including money in pounds and pence		
				3M2b Measure mass (kg/g)			
				3M2c Measure volume / capacity (l/ml)			
M3 Money	**Reception Outcome** To use everyday language related to money.	**1M3** Recognise and know the value of different denominations of coins and notes	**2M3a** Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value				
			2M3b Find different combinations of coins that equal the same amounts of money				
M4	**Reception Outcome** To use everyday language related to time.	**1M4a** Tell the time to the hour and half past the hour and draw	**2M4a** Tell and write the time to five minutes, including quarter	**3M4a**	**4M4a**		

Telling time, ordering time, duration and units of time		the hands on a clock face to show these times	past/to the hour and draw the hands on a clock face to show these times	Tell and write the time from an analogue clock; 12-hour clocks	Read, write and convert time between analogue and digital 12-hour clocks		
		1M4b Sequence events in chronological order using language [e.g.: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	**2M4b** Compare and sequence intervals of time	**3M4b** Tell and write the time from an analogue clock; 24-hour clocks	**4M4b** Read, write and convert time between analogue and digital 24-hour clocks		
		1M4c Recognise and use language relating to dates, including days of the week, weeks, months and years	**2M4c** Know the number of minutes in an hour and the number of hours in a day	**3M4c** Tell and write the time from an analogue clock, including using Roman numerals from I to XII	**4M4c** Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	**5M4** Solve problems involving converting between units of time	
				3M4d Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock/a.m./p.m., morning, afternoon, noon and midnight			
				3M4e Know the number of seconds in a minute and the number of days in each month, year and leap year			
				3M4f Compare durations of events, [e.g.: to calculate the time taken by particular events or tasks]			
M5 Convert between metric units					**4M5** Convert between different units of measurement [e.g.: kilometre to metre; hour to minute]	**5M5** Convert between different units of metric measure [e.g.: kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]	**6M5** Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation of up to three decimal places
M6 Convert metric/imperial						**5M6** Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	**6M6** Convert between miles and kilometres
M7 Perimeter, area				**3M7** Measure the perimeter of simple 2–D shapes	**4M7a** Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	**5M7a** Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	**6M7a** Recognise that shapes with the same areas can have different perimeters and vice versa

					4M7b Find the area of rectilinear shapes by counting squares	**5M7b** Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes	**6M7b** Calculate the area of parallelograms and triangles
							6M7c Recognise when it is possible to use the formulae for the area of shapes
M8 Volume						**5M8** Estimate volume [e.g.: using 1cm3 blocks to build cuboids (including cubes)] and capacity [e.g.: using water]	**6M8a** Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units [e.g.: mm^3 and km^3]
							6M8b Recognise when it is possible to use the formulae for the volume of shapes
M9 Solve problems (a: money; b: length; c: mass / weight; d: capacity / volume)			**2M9** Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	**3M9a** Add and subtract amounts of money to give change, using both £ and p in practical contexts	**4M9** Calculate different measures, including money in pounds and pence	**5M9a** Use all four operations to solve problems involving measure [money] using decimal notation, including scaling	**6M9** Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
				3M9b Add and subtract lengths (m/cm/mm)		**5M9b** Use all four operations to solve problems involving measure [e.g.: length] using decimal notation, including scaling	
				3M9c Add and subtract mass (kg/g)		**5M9c** Use all four operations to solve problems involving measure [e.g.: mass] using decimal notation, including scaling	
				3M9d Add and subtract volume / capacity (l/ml)		**5M9d** Use all four operations to solve problems involving measure [e.g.: volume] using decimal notation, including scaling	
Geometry: properties of shape							

Strand	Early Years outcomes	National Curriculum reference Year 1	National Curriculum reference Year 2	National Curriculum reference Year 3	National Curriculum reference Year 4	National Curriculum reference Year 5	National Curriculum reference Year 6
G1 Recognise and name common shapes	Beginning to talk about the shapes of everyday objects, e.g. 'round' and 'tall'. Shows interest in shape by sustained construction activity or by talking about shapes or arrangements. Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat'.	**1G1a** Recognise and name common 2-D shapes [e.g.: rectangles (including squares), circles and triangles]	**2G1a** Compare and sort common 2-D shapes and everyday objects				
		1G1b Recognise and name common 3-D shapes [e.g.: cuboids (including cubes), pyramids and spheres]	**2G1b** Compare and sort common 3-D shapes and everyday objects				
G2 Describe properties and classify shapes			**2G2a** Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line	**3G2** Identify horizontal, vertical lines and pairs of perpendicular and parallel lines	**4G2a** Compare and classify geometric shapes, including quadrilaterals and triangles based on their properties and sizes	**5G2a** Use the properties of rectangles to deduce related facts and find missing lengths and angles	**6G2a** Compare and classify geometric shapes based on their properties and sizes
			2G2b Identify and describe the properties of 3-D shapes including the number of edges, vertices and faces		**4G2b** Identify lines of symmetry in 2–D shapes presented in different orientations	**5G2b** Distinguish between regular and irregular polygons based on reasoning about equal sides and angles	**6G2b** Describe simple 3–D shapes
					4G2c Complete a simple symmetric figure with respect to a specific line of symmetry		
G3 Draw and make shapes and relate 2-D to 3-D shapes (including nets)			**2G3** Identify 2-D shapes on the surface of 3-D shapes, [e.g.: a circle on a cylinder and a triangle on a pyramid]	**3G3a** Draw 2–D shapes			**6G3a** Draw 2–D shapes using given dimensions and angles
				3G3b Make 3–D shapes using modelling materials; recognise 3–D shapes in different orientations and describe them		**5G3b** Identify 3–D shapes including cubes and other cuboids, from 2–D representations	**6G3b** Recognise and build simple 3D shapes, including making nets
G4 Angles – measuring and properties				**3G4a** Recognise that angles are a property of shape or a description of a turn	**4G4** Identify acute and obtuse angles and compare and order angles up to two right angles by size	**5G4a** Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	**6G4a** Find unknown angles in any triangles, quadrilaterals and regular polygons
				3G4b Identify right angles, recognise that two right		**5G4b** Identify:	**6G4b** Recognise angles where they meet at a point, are on a

				angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle		- angles at a point and one whole turn (total 360°) - angles at a point on a straight line and ½ a turn (total 180°) - other multiples of 90°	straight line, or are vertically opposite, and find missing angles
						5G4c Draw given angles and measure them in degrees (°)	
G5 Circles							**6G5** Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

Geometry: position and direction

Strand	Early Years outcomes	National Curriculum reference Year 1	National Curriculum reference Year 2	National Curriculum reference Year 3	National Curriculum reference Year 4	National Curriculum reference Year 5	National Curriculum reference Year 6
P1 Patterns	Talk about patterns in the environment. For example, stripes on clothes. Use informal language like 'pointy', 'spotty'. Continue, copy and create repeating patterns.		**2P1** Order and arrange combinations of mathematical objects in patterns and sequences				
P2 Describe position, direction and movement	Understand positional language with focus on under, over, behind, infront, forwards, backwards.	**1P2** Describe position, directions and movement, including half, quarter and three-quarter turns	**2P2** Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clock-wise and anti-clockwise)		**4P2** Describe movements between positions as translations of a given unit to the left/right and up/down	**5P2** Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed	**6P2** Draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes
P3 Coordinates					**4P3a** Describe positions on a 2–D grid as co-ordinates in the first quadrant		**6P3** Describe positions on the full co-ordinate grid (all four quadrants)
					4P3b Plot specified points and draw sides to complete a given polygon		

Statistics

Strand	Early Years outcomes	National Curriculum reference Year 1	National Curriculum reference Year 2	National Curriculum reference Year 3	National Curriculum reference Year 4	National Curriculum reference Year 5	National Curriculum reference Year 6
S1 Interpret and represent data			**2S1** Interpret and construct simple pictograms, tally charts, block diagrams and simple tables	**3S1** Interpret and present data using bar charts, pictograms and tables	**4S1** Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	**5S1** Complete, read and interpret information in tables, including timetables	**6S1** Interpret and construct pie charts and line graphs and use these to solve problems
S2 Solve problems involving data			**2S2a** Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity	**3S2** Solve one-step and two step questions [e.g.: 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts, pictograms and tables	**4S2** Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	**5S2** Solve comparison, sum and difference problems using information presented in a line graph	
			2S2b Ask and answer questions about totalling and comparing categorical data				
S3 Mean average							**6S3** Calculate and interpret the mean as an average

National Curriculum

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/381344/Master_final_national_curriculum_28_Nov.pdf

Year 2 programme of study

Number – number and place value

Statutory requirements

Pupils should be taught to:

- count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward; *(from Year 3)*
- recognise the place value of each digit in a two-digit number (tens, ones);
- identify, represent and estimate numbers using different representations, including the number line;
- compare and order numbers from 0 up to 100; use <, > and = signs;
- read and write numbers to at least 100 in numerals and in words;
- use place value and number facts to solve problems. *(from Year 3)*

Notes and guidance (non-statutory)

Using materials and a range of representations, pupils practise counting, reading, writing and comparing numbers to at least 100 and solving a variety of related problems to develop fluency. They count in multiples of three to support their later understanding of a third.

As they become more confident with numbers up to 100, pupils are introduced to larger numbers to develop further their recognition of patterns within the number system and represent them in different ways, including spatial representations.

Pupils should partition numbers in different ways (for example, 23 = 20 + 3 and 23 = 10 + 13) to support subtraction. They become fluent and apply their knowledge of numbers to reason with, discuss and solve problems that emphasise the value of each digit in two-digit numbers. They begin to understand zero as a place holder.

Number – addition and subtraction

Statutory requirements

Pupils should be taught to:

- solve problems with addition and subtraction:
  - using concrete objects and pictorial representations, including those involving numbers, quantities and measures;
  - applying their increasing knowledge of mental and written methods;
- recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100;
- add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
  - a two-digit number and ones;
  - a two-digit number and tens;
  - two two-digit numbers;
  - adding three one-digit numbers;

- show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot;
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Notes and guidance (non-statutory)

Pupils extend their understanding of the language of addition and subtraction to include sum and difference.

Pupils practise addition and subtraction to 20 to become increasingly fluent in deriving facts such as using 3 + 7 = 10; 10 – 7 = 3 and 7 = 10 – 3 to calculate 30 + 70 = 100; 100 – 70 = 30 and 70 = 100 – 30. They check their calculations, including by adding to check subtraction and adding numbers in a different order to check addition (for example, 5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5). This establishes commutativity and associativity of addition.

Recording addition and subtraction in columns supports place value and prepares for formal written methods with larger numbers.

Number – multiplication and division

Statutory requirements

Pupils should be taught to:

- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers;
- calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs;
- show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot;
- solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

Notes and guidance (non-statutory)

Pupils use a variety of language to describe multiplication and division.

Pupils are introduced to the multiplication tables. They practise to become fluent in the 2, 5 and 10 multiplication tables and connect them to each other. They connect the 10 multiplication table to place value, and the 5 multiplication table to the divisions on the clock face. They begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.

Pupils work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition. They begin to relate these to fractions and measures (for example, 40 ÷ 2 = 20, 20 is a half of 40). They use commutativity and inverse relations to develop multiplicative reasoning (for example, 4 × 5 = 20 and 20 ÷ 5 = 4).

Number – fractions

Statutory requirements

Pupils should be taught to:

- recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity; *(from Year 3)*
- write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.

Notes and guidance (non-statutory)

Pupils use fractions as 'fractions of' discrete and continuous quantities by solving problems using shapes, objects and quantities. They connect unit fractions to equal sharing and grouping, to numbers when they can be calculated, and to measures, finding fractions of lengths, quantities, sets of objects or shapes. They meet $\frac{3}{4}$ as the first example of a non-unit fraction.

Pupils should count in fractions up to 10, starting from any number and using the $\frac{1}{2}$ and $\frac{2}{4}$ equivalence on the number line (for example, $1\frac{1}{4}$, $1\frac{2}{4}$ (or $1\frac{1}{2}$), $1\frac{3}{4}$, 2). This reinforces the concept of fractions as numbers and that they can add up to more than one.

Measurement

Statutory requirements

Pupils should be taught to:

- choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels; *(from Year 3)*
- compare and order lengths, mass, volume/capacity and record the results using >, < and =;
- recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value;
- find different combinations of coins that equal the same amounts of money;
- solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change;
- compare and sequence intervals of time;
- tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times; *(from Year 3)*
- know the number of minutes in an hour and the number of hours in a day.

Notes and guidance (non-statutory)

Pupils use standard units of measurement with increasing accuracy, using their knowledge of the number system. They use the appropriate language and record using standard abbreviations.

Comparing measures includes simple multiples such as 'half as high'; 'twice as wide'.

They become fluent in telling the time on analogue clocks and recording it.
Pupils become fluent in counting and recognising coins. They read and say amounts of money confidently and use the symbols £ and p accurately, recording pounds and pence separately.

Geometry – properties of shapes

Statutory requirements

Pupils should be taught to:

- identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line;
- identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces;
- identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid];
- compare and sort common 2-D and 3-D shapes and everyday objects.

Notes and guidance (non-statutory)

Pupils handle and name a wide variety of common 2-D and 3-D shapes including: quadrilaterals and polygons, and cuboids, prisms and cones, and identify the properties of each shape (for example, number of sides, number of faces). Pupils identify, compare and sort shapes on the basis of their properties and use vocabulary precisely, such as sides, edges, vertices and faces.

Pupils read and write names for shapes that are appropriate for their word reading and spelling.

Pupils draw lines and shapes using a straight edge.

Geometry – position and direction

Statutory requirements

Pupils should be taught to:

- order and arrange combinations of mathematical objects in patterns and sequences;
- use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).

Notes and guidance (non-statutory)

Pupils should work with patterns of shapes, including those in different orientations.

Pupils use the concept and language of angles to describe 'turn' by applying rotations, including in practical contexts (for example, pupils themselves moving in turns, giving instructions to other pupils to do so, and programming robots using instructions given in right angles).

Statistics

Statutory requirements

Pupils should be taught to:

- interpret and construct simple pictograms, tally charts, block diagrams and simple tables;
- ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity;
- ask and answer questions about totalling and comparing categorical data.

Notes and guidance (non-statutory)

Pupils record, interpret, collate, organise and compare information (for example, using many-to-one correspondence in pictograms with simple ratios 2, 5, 10).