Mathematics

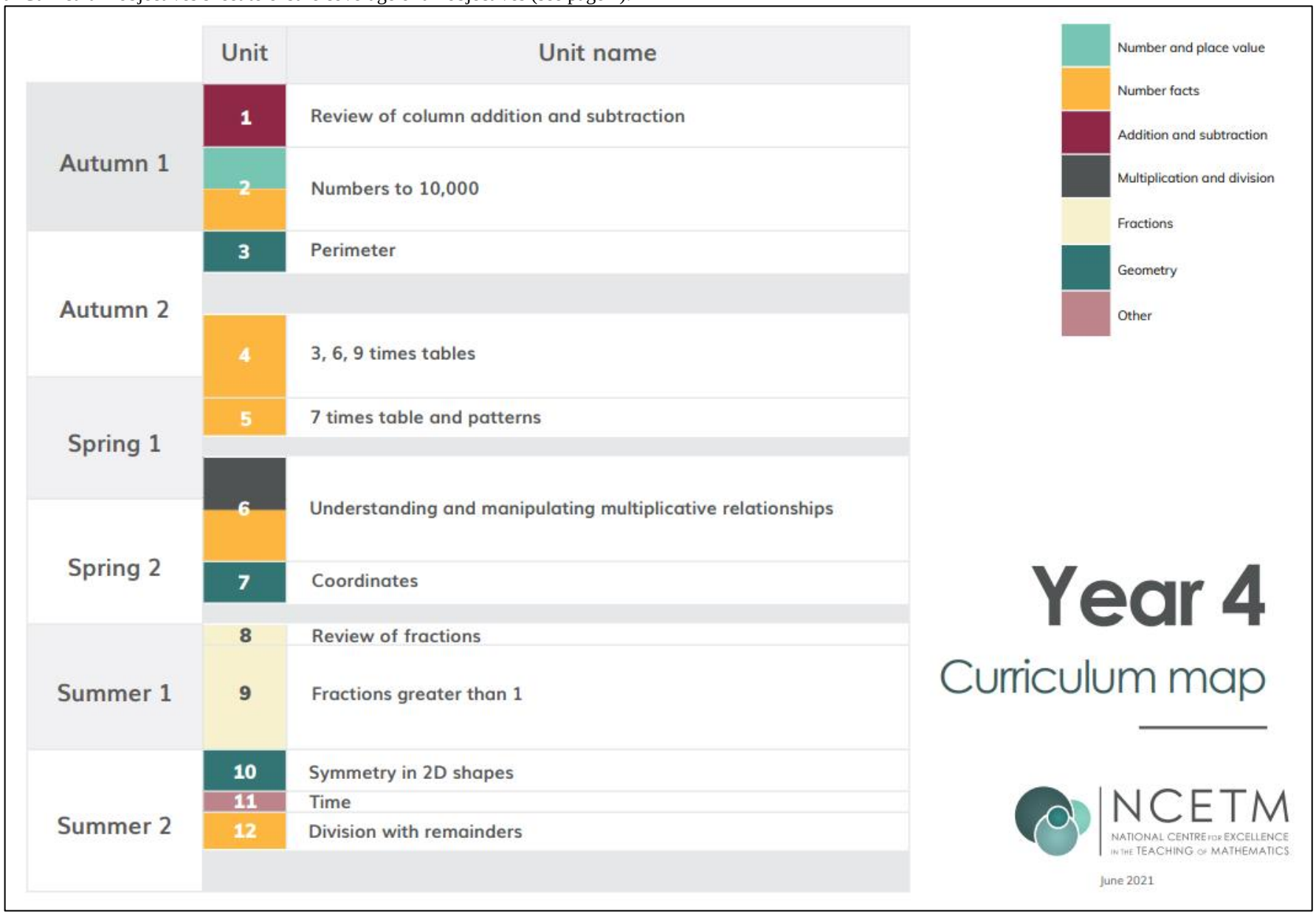
Year 4 Planning 2023-24

(Updated September, 2023)

This is a working document.

Teachers to make changes, where appropriate, based on both formative and summative assessment. Rich tasks and curriculum links are also to be identified and added to planning.

To build on from the Ready to Progress Criteria which supported the post-pandemic catch-up, we will be using the NCETM Progression documents.
Follow the link below to access the interactive copy of this curriculum map. Click on the domain to download the learning objectives for each domain.
https://www.ncetm.org.uk/classroom-resources/cp-year-4-curriculum-map/
Use the National Curriculum objectives sheet to ensure coverage of all objectives (see page 4).



Year 4

1	**Review of column addition and subtraction** • 3AS–2 Add and subtract up to three-digit numbers using columnar methods. • 1.20 Algorithms: column addition • 1.21 Algorithms: column subtraction
2	**Numbers to 10,000** • 4NPV–1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100. • 4NPV–2 Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning. • 4NPV–3 Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each. • 4NPV–4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts. • 4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100). • 1.22 Composition and calculation: 1,000 and four-digit numbers
3	**Perimeter** • 4G–2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons. • 2.16 Multiplicative contexts: area and perimeter 1
4	**3, 6, 9 times tables** • 4NF–1 Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number. • 2.8 Times tables: 3, 6 and 9, and the relationship between them
5	**7 times table and patterns** • 4NF–1 Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number. • 2.9 Times tables: 7 and patterns within/across times tables
6	**Understanding and manipulating multiplicative relationships** • 4MD–1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. • 4MD–2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication. • 4MD–3 Understand and apply the distributive property of multiplication. • 4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100) • 2.10 Connecting multiplication and division, and the distributive law • 2.13 Calculation: multiplying and dividing by 10 or 100
7	**Coordinates** • 4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.
8	**Review of fractions** • 3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts. • 3.1 Preparing for fractions: the part–whole relationship
9	**Fractions greater than 1** • 4F–1 Reason about the location of mixed numbers in the linear number system. • 4F–2 Convert mixed numbers to improper fractions and vice versa. • 4F–3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers. • 3.5 Working across one whole: improper fractions and mixed numbers
10	**Symmetry in 2D shapes** • 4G–3 Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.
11	**Time** • This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery PD Materials.
12	**Division with remainders** • 4NF–2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders. • 2.12 Division with remainders

Number and place value

Number facts

Addition and subtraction

Multiplication and division

Fractions

Geometry

Other

Dark grey references are ready-to-progress criteria from the DfE Guidance 2020

Light grey references are from the NCETM Primary Mastery Professional Development materials

Both are available online

Where year group objectives have not been covered by the NCETM Prioritisation Guidance, these will be covered in additional units. These objectives will also be covered in **daily Memory Jogger activities** and the **Daily Maths Meeting.**

Teachers will add support their children's Problem Solving and Reasoning skills with planned rich tasks and wider curriculum links as they deliver each objectives.

Term	Unit	Unit name	Learning Objectives/ Outcomes	Rich Tasks	Wider Curriculum Links
Autumn 1	1	Review of column addition and subtraction	*see learning outcomes detailed in curriculum map on website*		
	2	Numbers to 10,000	*see learning outcomes detailed in curriculum map on website*		
Autumn 2	3	Perimeter	*see learning outcomes detailed in curriculum map on website*		
	4	3, 6, 9 times tables	*see learning outcomes detailed in curriculum map on website*		
Spring 1	5	7 times table & patterns	*see learning outcomes detailed in curriculum map on website*		
	6	Understanding & manipulating multiplicative relationships	*see learning outcomes detailed in curriculum map on website*		
Spring 2	7	Coordinates	*see learning outcomes detailed in curriculum map on website*		
Summer 1	8	Review of fractions	*see learning outcomes detailed in curriculum map on website*		
	9	Fractions greater than 1	*see learning outcomes detailed in curriculum map on website*		
Summer 2	10	Symmetry in 2D shapes	*see learning outcomes detailed in curriculum map on website*		
	11	Time	Read, write and convert time between analogue and digital 12/24-hour clocks Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. Convert between different units of measure (e.g. hour to minute).		
	12	Division with remainders	*see learning outcomes detailed in curriculum map on website*		
	See National Curriculum	**Statistics**	Interpret and present data using, including bar charts. Interpret and present data using, including time graphs. Solve comparison, problems using information presented in bar charts, pictograms, tables and other graphs. Solve sum, problems using information presented in bar charts, pictograms, tables and other graphs. Solve difference problems using information presented in bar charts, pictograms, tables and other graphs.		

Strand	**Year 4 National Curriculum Objectives** showing coverage through NCETM Curriculum Prioritisation Guidance (COVID recovery)
Number & Place value	I can count backwards through zero to include negative numbers.
	I can count in multiples of ***3***, 6, 7, 9, ***25 and 1000. (linked to block 2)***
	I can find 1000 more or less than a given number.
	I can order and compare numbers beyond 1000 (10,000 & 100,000).
	I can identify, represent and estimate numbers using different representations.
	I can read Roman numerals to 100 (I to C) and know that the numeral system changed to include the concept of zero and place value.
	I can round any number to the nearest 10, 100 or 1 000 .
	I can recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).
	I can find the effect of dividing a one or two digit number by 10 and 100, identifying the value of the digits in the answer.
	I can solve number and practical problems using the above skills and with increasingly large positive numbers.
Addition & Subtraction	I can add numbers with up to ***4 digits*** using the formal written method. ***(2 digits then build to 4 in block 2)***
	I can subtract numbers with up to ***4 digits*** using the formal written method. ***(2 digits then build to 4 in block 2)***
	I can estimate to check answers to a calculation.
	I can use inverse operations to check answers to a calculation.
	I can solve addition two-step problems in contexts, deciding which operations and methods to use and why.
	I can solve subtraction two-step problems in contexts, deciding which operations and methods to use and why.
Multiplication and Division	I can recall multiplication facts for multiplication tables ***up to 12 × 12. (x11 and x12 not taught in objectives)***
	I can recall division facts for multiplication tables ***up to 12 × 12. (x11 and x12 not taught in objectives)***
	I can use place value, known and derived facts to multiply mentally, including: multiplying by 0 and 1; dividing by 1;
	I can use place value, known and derived facts to divide mentally, including: multiplying by 0 and 1; dividing by 1;
	I can multiply together three numbers.
	I can recognise and use factor pairs and commutativity in mental calculations.
	I can multiply two-digit numbers by a one-digit number using formal written layout.
	I can multiply three-digit numbers by a one-digit number using formal written layout.
	I can solve multiplication and ***division problems (linked to block 12).***
Measurement	I can ***estimate,*** compare ***and calculate*** different measures, ***including money in pounds and pence***.
	I can measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.
	I can find the area of rectilinear shapes by counting squares.
	I can read, write and convert time between analogue and digital 12 and 24-hour clocks.
	I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
	I can convert between different units of measure (e.g. kilometre to metre; ***hour to minute***).
	I know that perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit. (NSG).
Fractions and Decimals	I can count up and down in hundredths.
	I can recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
	I can compare numbers with the same number of decimal places up to two decimal places.
	I can round decimals with one decimal place to the nearest whole number.
	I can recognise and show, using diagrams, families of common equivalent fractions.
	I can recognise and write decimal equivalents of any number of tenths or hundredths.
	I can recognise and write decimal equivalents to ¼ ½ ¾.
	I can add and subtract fractions with the same denominator.
	I can solve problems involving increasingly harder fractions to calculate quantities, e.g. ¼ of 24 = ½ of?
	I can solve simple measure and money problems involving fractions and decimals to two decimal places.
Geometry	I can identify lines of symmetry in 2-D shapes presented in different orientations.
	I can complete a simple symmetric figure with respect to a specific line of symmetry.
	I can compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.
	I can identify acute and obtuse angles and compare and order angles up to two right angles by size.
	I can describe positions on a 2-D grid as coordinates in the first quadrant.
	I can describe movements between positions as translations of a given unit to the left/right and up/down.
	I can plot specified points and draw sides to complete a given polygon.
Statis	I can interpret and present discrete data using appropriate graphical methods (bar charts, time graphs)
	I can interpret and present continuous data using appropriate graphical methods (bar charts, time graphs)
	I can solve comparison, sum and difference problems using info presented in bar charts, pictograms, tables and other graphs.

	1. Review of column addition and subtraction		7. Coordinates
	2. Numbers to 10,000		8. Review of fractions
	3. Perimeter		9. Fractions greater than 1
	4. 3, 6, 9 times table		10. Symmetry in 2D shapes
	5. 7 times table and patterns (see unit 4)		11. Time
	6. Understanding & manipulating multiplicative relationships		12. Division with remainders

Pupils are to be given opportunities to apply their knowledge and understanding through problem solving and reasoning activities using the following criteria:

Problem Solving	Reasoning
Engage with mathematical activities and problems, making links and moving between different representations (concrete, pictorial, abstract) Independently choose to scaffold thinking using concrete, pictorial or abstract representations, if required Independently choose to represent thinking using concrete, pictorial or abstract representations, as appropriate Make suggestions of ways to solve a range of problems Develop and apply a systematic approach Find and predict possibilities that match the context using patterns spotted to support Independently check and improve work (e.g. look for other possibilities, repeats, missing answers, errors and ways to improve) Pattern spot and with support, express generalisations/rules in words Make and investigate conjectures and provide examples and counter-examples When they have solved a problem, pose a similar problem for a peer	Provide a clear, correct, logical justification and with support, express generalisation/rules formed in words with support. Reflect on others' justifications and use this to improve their work Edit and improve their own and a peer's justification Investigate 'what if?' questions Create 'what if?' questions