Year 4/5

National curriculum	Links
The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.	https://www.ncetm.org.uk/teaching-for-mastery/masterymaterials/primary-masteryprofessional-development/ https://www.activelearnprimary.co.uk/app/plans/powermaths2023/year/1101103

Long term overview



Year 4/5 – Autumn

Place value (4 weeks)

National Curriculum	Small steps	Vocabulary
	1. Roman numerals 2. 1000, 100, 10 and 1 3. Partitioning 4. Numbers to 100000 5. Numbers to one million 6. 1000 more or less 7. Count in 25s 8. Counting in powers of 10 9. Compare 4-digit numbers 10. Order numbers 11. Compare and order 12. Round to the nearest 10, 100,1000 13. Round within 100,000 14. Round within a million 15. Negative numbers	Numeral Ones Tens Hundreds Three-digit digit Equal to Equivalent to More, less Most, least Larger/bigger/greater Most, biggest, greatest Fewer, smaller, less Fewest, smallest, least Above/below Half-way between

Ready to progress criteria

3NPV – 1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10.

3NPV – 2 Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning.

3NPV – 3 Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10

3NPV – 4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.

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

Progression

Y2

- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forwards and backward.
- Read and write numbers to at least 100 in numerals and in words.
- Identify, represent and estimate numbers using different representation, including the number line.
- Recognise the place value of each digit in a two-digit number (tens, ones)
- Compare and order numbers from 0 up to 100 using the inequality signs.
- Use place value facts to solve problems.

Y3

- Count from 0 in multiples of 4, 8, 50 and 100.
- Find 10 or 100 more or less than a given number.
- Identify, represent and estimate numbers using different representations.
- Read and write numbers up to 1,000 in numerals and in words.
- Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).
- Compare and order numbers up to 1,000.
- Solve number problems and practical problems involving these ideas.

Y4

- Count in multiples of 6, 7, 9, 25 and 1,000.
- Count backwards through zero to include negative numbers.
- Identify, represent and estimate numbers using different representations.
- Read Roman numerals to 100.
- Find 1,000 more or less than a given number.
- Recognise the place value of each digit in a four-digit number.
- Order and compare numbers beyond 1,000.
- Round any number to the nearest 10, 100 or 1,000.
- Solve number and practical problems that involve all of the above and with increasingly large positive numbers.

Year 4/5 – Autumn

Addition and subtraction (3 weeks)

National Curriculum	Small steps	Vocabulary

• Estimate and use inverse operations to check answers to a calculation • Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why •	1. 1s, 10s, 100s and 1000s 2. Add two 4-digit numbers (1) 3. Add two 4-digit numbers (2) 4. Add two 4-digit numbers (3) 5. Add more than 4 digit 6. Subtract two 4-digit numbers (1) 7. Subtract two 4-digit numbers (2) 8. Subtract two 4-digit numbers (3) 9. Subtraction of more than 4-digit 10. Estimate answers 11. Checking strategies 12. Estimate and approximate 13. Inverse operations 14. Multi-step problems	Partitioned Addition Addend + addend = sum/total Add, plus, more, make, altogether Subtract, take away Equals/is equal to Number bonds/pairs Expression Equation Double, near double Tens boundary/hundreds boundary

Ready to progress criteria

3NF – 1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice.
3AS – 1 Calculate complements to 100.
3AS – 2 Add and subtract up to three-digit numbers using columnar methods.
3AS – 3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.
4NF – 3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)

Progression

Y2

- Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
- 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.
- 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 and adding three one-digit numbers.
- Solve problems with addition and subtraction.

Y3

- Estimate the answer to a calculation and use inverse operations to check answers.
- Add and subtract numbers mentally, including a 3 digit number and ones; a 3 digit number and tens; and a 3 digit number and hundreds.
- Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.
- Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.

Y4

- Estimate and use inverse operations to check answers to a calculation
- Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate

- Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Year 4/5 – Autumn

Multiplication and division A (3 weeks)

National Curriculum	Small steps	Vocabulary
• Count in multiples of 6, 7, 9, 25 and 1,000 • Recall multiplication and division facts for multiplication tables up to 12 x 12	1. Multiply by 1 and 0 2. Divide by 1 3. Multiply and divide by 6 4. 6 times table and division facts 5. Multiply and divide by 9 6. 9 times table and division facts 7. Multiply and divide by 7 8. 7 times table and division facts 9. 11 and 12 times-table 10. Multiples 11. Multiply 3 numbers 12. Factor pairs 13. Factors 14. Common factors 15. Prime numbers 16. Square numbers 17. Cube numbers 18. Multiply by 10 19. Multiply by 100 20. Divide by 10 21. Divide by 100	Multiple Factor Groups of Repeated addition grouping, sharing Array Factor x factor = product

Ready to progress criteria

3NF – 2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.

3NF – 3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).

3MD – 1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotative and partitive division.

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.

4NF – 1 Recall multiplication and division facts up to 12 × 12 and recognise products in multiplication tables as multiples of the corresponding number.

4NF – 2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.

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.

Progression

Y2

- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.
- Show that multiplication of 2 numbers can be done in any order (commutative) and division of one number by another cannot.
- Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs.

Y3

- Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.

Y4

- Count in multiples of 6, 7, 9, 25 and 1,000
- Recall multiplication and division facts for multiplication tables up to 12 x 12

Year 4/5 – Autumn

Length, perimeter and area (2 week)

National Curriculum	Small steps	Vocabulary
• Find the area of rectilinear shapes by counting squares • Estimate, compare and calculate different measures	1. Kilometres 2. Perimeter on a grid 3. Perimeter of a rectangle 4. Perimeter or rectilinear shapes 5. Measure perimeter 6. Calculate perimeter 7. What is area? 8. Counting squares 9. Making shapes 10. Comparing area 11. Are of rectangles 12. Area of compound shapes 13. Area of irregular shapes	Length, width, area, space, rectangle, square, rectilinear shape, unit, least, greatest, quadrilateral, reflection, rotation Square centimetre

Ready to progress criteria

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.

Progression

Y5

- Calculate and compare the area of rectangles, and including using standard units, square centimetres and square metres and estimate the area of irregular shapes.

Year 4/5 – Spring

Multiplication and division B (2 weeks)

National Curriculum	Small steps	Vocabulary
• Recognise and use factor pairs and commutativity in mental calculations • Use place value, known facts and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers. • Multiply two-digit and three digit numbers by a one-digit number using formal written layout 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.	1. Efficient multiplication 2. Written methods 3. Multiply 2-digits by 1-digit 4. Multiply 3-digit by 1-digit 5. Multiply 4-digit by 1-digit 6. Multiply 2-digit (area model) (1) 7. Multiply 2-digit (area model) (2) 8. Multiply 2-digit by 2-digit 9. Multiply 3-digit by 2-digit 10. Multiply 4-digit by 2-digit 11. Divide 2-digit by 1-digit (1) 12. Divide 2-digit by 1-digit (2) 13. Divide 3-digit by 1-digit 14. Divide 4-digit by 1-digit 15. Divide with remainders 16. Correspondence problems	Factor x factor=product dividend ÷ divisor = quotient Multiple Factor Product Groups of Repeated addition grouping, sharing Array Remainder Partition

Ready to progress criteria

3MD – 1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.

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 – 1 Recall multiplication and division facts up to 12 × 12 and recognise products in multiplication tables as multiples of the corresponding number.

4MD – 3 Understand and apply the distributive property of multiplication.

Progression

Y3

- Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.
- Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.

Y4

- Recognise and use factor pairs and commutativity in mental calculations
- Use place value, known facts and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers.
- Multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- 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.

Year 4/5 – Spring

Fractions (5 weeks)

National Curriculum	Small steps	Vocabulary
• Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by 10. • Recognise and show, using diagrams, families of common equivalent fractions • Add and subtract fractions with the same denominator • 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. • Solve simple measure and money problems involving fractions and decimals to two decimal places.	1. Equivalent fractions (1) 2. Equivalent fractions (2) 3. Equivalent fractions 4. Fractions greater than 1 5. Count in fractions 6. Improper to mixed numbers 7. Mixed numbers to improper 8. Number sequences 9. Compare and order (less than 1) (1) 10. Compare and order (less than 1) (2) 11. Add 2 or more fractions 12. Add and subtract fractions 13. Add fractions within 1 14. Add 3 or more fractions 15. Add fractions 16. Add mixed numbers 17. Subtract 2 fractions 18. Subtract from whole amounts 19. Subtract fractions 20. Subtract mixed numbers (1) 21. Subtract mixed numbers (2) 22. Subtract 2 mixed numbers 23. Multiply by an integer (1) 24. Multiply by an integer (2)	Numerator, denominator Parts of a whole Unit fractions Non-unit fractions Equivalent fraction Mixed number Improper fraction

	25. Multiply by an integer (3) 26. Fractions of a quantity 27. Calculate quantities 28. Fractions of an amount 29. Fractions as operators	

Ready to progress criteria

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.

Progression

Y2

- Recognise, find and name ¼, ⅓, ¾ and 2/4 of a length, set of objects, shape or quantity.
- Recognise the equivalence of 2/4 and ½.
- Write simple fractions for example ½ of 6 = 3

Y3

- 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.
- Recognise, find and write fractions and non-unit fractions with small denominators.
- Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.
- Recognise and show, using diagrams, equivalent fractions with small denominators.
- Compare and order unit fractions, and fractions with the same denominators.
- Add and subtract fractions with the same denominator within one whole e.g. 5/7 + 1/7 = 6/7)
- Solve problems that involve all of the above.

Y4

- Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by 10.
- Recognise and show, using diagrams, families of common equivalent fractions
- Add and subtract fractions with the same denominator
- 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.
- Solve simple measure and money problems involving fractions and decimals to two decimal places.

Year 4/5 – Spring

Decimals (4 weeks)

National Curriculum	Small steps	Vocabulary
•	1. Tenths and hundredths 2. Tenths as decimals 3. Tenths on a place value grid 4. Tenths on a number line 5. Hundredths 6. Hundredths as decimals 7. Hundredths on a place value grid 8. Write decimals 9. Halves and quarters 10. Decimals up to 2 d.p. 11. Decimals as fractions (1) 12. Decimals as fractions (2) 13. Understand percentages 14. Percentages as fractions and decimals 15. Equivalent F.D.P 16. Understand thousandths 17. Thousandths as decimals 18. Divide 1-digit by 10 19. Divide 2-digit by 10 20. Divide 1 or 2-digit by 100 21. Multiply by 10,100 and 1000 22. Divide by 10,100 and 1000 23. Make a whole 24. Adding decimals within 1 25. Subtracting decimals within 1 26. Complements to 1	

Ready to progress criteria

3NPV – 4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.

Progression

Y2

- Choose and use appropriate standard units to estimate and measure mass (kg/g) using scales and capacity (litres/ml) using measuring vessels.
- Compare and order mass and volume/capacity and record results using the inequality symbols.

Y4 – None

Year 4/5 – Summer

Time (1 weeks)

National Curriculum	Small steps	Vocabulary
• Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24hour clocks. • Estimate and read time with increasing accuaracy to the nearest minutes; 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. • Know the number of seconds in a minute and the number of days in each month, year and leap year. • Compare durations of events (for examples to calculate the time taken by particular events or tasks.	1. Hours, minutes and seconds 2. Years, months, weeks and days 3. Converting units of time 4. Analogue to digital – 12 hour 5. Analogue to digit – 24 hour 6. Timetables	Days of the week… Hour, o'clock Half past, quarter past, a.m./p.m. Morning, afternoon, midnight Clock face, Analogue 24-hour watch, hands, hour hand, minute hand Hours, minutes. Roman numerals

Ready to progress criteria

3NPV – 1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10.
3AS – 3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.

Progression

Y2

- Recognise the symbols for pounds and pence; combine the amounts to make a particular value.
- Find different combinations of coins that equal the same amounts of money.
- Solve simple problems in a context involving addition and subtraction of money of the same unit, including giving change.

Y4

- Solve simple measure and money problems involving fractions and decimals to two decimal places.
- Estimate, compare and calculate different measures, including money in pounds and pence

Year 4/5 – Summer

Decimals (2 weeks)

National Curriculum	Small steps	Vocabulary
• Recognise and write decimal equivalents of any number of tenths and hundredths • Recognise and write decimal equivalents to ¼, ½ and ¾ • Round decimals with one decimal place to the nearest whole number • Compare numbers with the same number of decimal places up to two decimal places • 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 Solve simple measure and money problems involving fractions and decimals to two decimal places.	1. Pounds and pence 2. Compare decimals 3. Order decimals 4. Ordering money 5. Order and compare decimals 6. Round decimals 7. Estimating money 8. Rounding decimals 9. Four operations 10. Adding – same decimals places 11. Subtract – same decimal places 12. Adding – different decimals places 13. Wholes and decimals 14. Decimal sequences	Tens, ones, tenths, hundredths Decimal fraction Decimal point Decimal place Decimal equivalent
Ready to progress criteria		
Progression •		

Year 4/5 – Summer

Statistics (2 weeks)

National Curriculum	Small steps	Vocabulary

•	1. Introducing line graphs 2. Line graphs 3. Read and Interpret line graphs 4. Draw line graphs 5. Problems with line graphs 6. Read and interpret tables 7. Two-way tables	

Ready to progress criteria

Progression

Y3

- Add and subtract amounts of money to give change, using both £ and p in practical contexts.

Y5

- Read and write decimal numbers as fractions
- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- Round decimals with two decimal places to the nearest whole number and to one decimal place
- Read, write, order and compare numbers with up to three decimal places
- Solve problems involving number up to three decimal places
- Recognise the % symbol and understand that percent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal
- 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

Year 4/5 – Summer

Properties of shape (3 weeks)

National Curriculum	Small steps	Vocabulary

• Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • Identify the lines of symmetry in 2-D shapes presented in different orientations • Complete a simple symmetric figure with respect to a specific line of symmetry Identify acute and obtuse angles and compare and order angles up to two right angles by size	1. Identify angles 2. Compare and order angles 3. Measure angles in degrees 4. Measuring with a protractor (1) 5. Measuring with a protractor (2) 6. Drawing accurately 7. Angles on a straight line 8. Angles around a point 9. Lengths and angles in shapes 10. Triangles	2D Corner, side, point, rectangle, square, circle, triangle, quadrilateral, kite, trapezium, rhombus, parallelogram 3D Face, edge, vertex, vertices, cube, cuboid, pyramid, sphere, cone, cylinder, cuboid, triangular prism, square based pyramid Angles Right angle, acute, obtuse Lines Horizontal, vertical, parallel and perpendicular Clockwise Anticlockwise

Ready to progress criteria

3G – 1 Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.

3G – 2 Draw polygons by joining marked points, and identify parallel and perpendicular sides.

Progression

Y2

- Identify and describe the properties of 2-D shapes, including the number of sides and line of symmetry in a vertical line.
- Identify 2-D shapes on the surface of 3D shapes.
- Compare and sort common 2-D shapes and everyday objects.
- Recognise and name common 3-D shapes.
- Compare and sort common 3-D shapes and everyday objects.

Y4

- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- Identify the lines of symmetry in 2-D shapes presented in different orientations
- Complete a simple symmetric figure with respect to a specific line of symmetry
- Identify acute and obtuse angles and compare and order angles up to two right angles by size

Year 4/5 – Summer

Position and direction (1 Week)

National Curriculum	Small steps	Vocabulary
• Describe positions on a 2-D grid as coordinates in the first quadrant • Describe movements between positions as translations of a given unit to the left/right and up/down • Plot specifies points and draw sides to complete a given polygon	1. Desccribe position 2. Draw on a grid 3. Position in the 1st quadrant 4. Move on a grid 5. Describe movement 6. Translation 7. Translation with coordinates 8. Reflection 9. Reflection with coordinates	Position Horizontal, vertical Up, down Left, right Coordinate Plot Vertex Vertices Point grid

Ready to progress criteria

3G -2 Draw polygons by joining marked points, and identify parallel and perpendicular sides
4G – 1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.

Progression

Y5

- • 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

Year 4/5 – Summer

Converting units and volume (2 Weeks, Y5)

National Curriculum	Small steps	Vocabulary
•	1. Kilograms and kilometres 2. Milligrams and millimetres 3. Metric units 4. Imperial units 5. What is Volume? 6. Compare volume 7. Estimate Volume 8. Estimate Capacity	

Ready to progress criteria

Progression