Collierley Nursery and Primary School
Ready to Progress Criteria
2021- 2022

Year 1

Ready-to-progress criteria

Previous experience	Year 1 ready-to-progresscriteria	Future applications
Begin to develop a sense ofthe number system by verbally counting forward toand beyond 20, pausing at each multiple of 10.	**1NPV–1** Count within 100,forwards and backwards, starting with any number.	Count through the numbersystem. Place value within 100. Compare and ordernumbers. Add and subtract within100.
Play games that involve moving along a numberedtrack, and understand thatlarger numbers are further along the track.	**1NPV–2** Reason about the location of numbers to 20 within the linear numbersystem, including comparing using < > and =	Reason about the location of larger numbers within thelinear number system. Compare and ordernumbers. Read scales.
Begin to experience partitioning and combiningnumbers within 10.	**1NF–1** Develop fluency inaddition and subtraction facts within 10.	Add and subtractacross 10. All future additive calculation. Add within a column duringcolumnar addition when thecolumn sums to less than 10 (no regrouping). Subtract within a column during columnar subtractionwhen the minuend of the column is larger than the subtrahend (no exchanging).

Distribute items fairly, for example, put 3 marbles ineach bag. Recognise when items aredistributed unfairly.	**1NF–2** Count forwards and backwards in multiples of 2,5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.	Recall the 2, 5 and 10multiplication tables. Carry out repeated additionand multiplication of 2, 5, and 10, and divide by 2, 5 and 10. Identify multiples of 2, 5 and 10. Unitise in tens. Identify odd and evennumbers.

Previous experience	Year 1 ready-to-progress criteria	Future applications
Understand the cardinal value of number words, for example understanding that 'four' relates to 4 objects. Subitise for up to to 5 items. Automatically show a given number using fingers.	**1AS–1** Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.	Add and subtract within 10.
Devise and record number stories, using pictures, numbers and symbols (such as arrows).	**1AS–2** Read, write and interpret equations containing addition (+), subtraction ( ) and equals( ) symbols, and relate additive expressions and equations to real-life contexts.	Represent composition and decomposition of numbers using equations.
See, explore and discuss models of common 2D and 3D shapes with varied dimensions and presented in different orientations (for example, triangles not always presented on their base).	**1G–1** Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.	Describe properties of shape. Categorise shapes. Identify similar shapes.
Select, rotate and manipulate shapes for a particular purpose, for example: • rotating a cylinder so it can be used to build a tower • rotating a puzzle piece to fit in its place	**1G–2** Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.	Find the area or volume of a compound shape by decomposing into constituent shapes. Rotate, translate and reflect 2D shapes. Identify congruent shapes.

Year 2 guidance

Ready-to-progress criteria

Year 1 conceptual prerequesites	Year 2 ready-to-progress criteria	Future applications
Know that 10 ones areequivalent to 1 ten. Know that multiples of 10 aremade up from a number of tens, for example, 50 is 5 tens.	**2NPV–1** Recognise theplace value of each digit in two-digit numbers, and composeand decompose two-digit numbers using standard and non-standard partitioning.	Compare and order numbers. Add and subtract using mental and formal writtenmethods.
Place the numbers 1 to 9 on amarked, but unlabelled, 0 to 10 number line. Estimate the position of thenumbers 1 to 9 on an unmarked 0 to 10 numberline. Count forwards and backwards to and from 100.	**2NPV–2** Reason aboutthe location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10.	Compare and order numbers.Round whole numbers. Subtract ones from a multipleof 10, for example: $30 - 3 = 27$
Develop fluency in additionand subtraction facts within10.	**2NF–1** Secure fluencyin addition and subtraction facts within10, through continued practice.	All future additive calculation. Add within a column during columnar addition when the column sums to less than 10(no regrouping). Subtract within a column during columnar subtraction when the minuend of the column is larger than the subtrahend (no exchanging).

Year 1 conceptual prerequesites	Year 2 ready-to-progress criteria	Future applications
Learn and use number bondsto 10, for example: $8 + ? = 10$ Partition numbers within 10,for example: $5 = 2 + 3$	**2AS–1** Add and subtract across 10, forexample: $8 + 5 = 13$ $13 - 5 = 8$	Add and subtract within 100:add and subtract any 2 two- digit numbers, where the ones sum to 10 or more, for example: $26 + 37 = 63$ Use knowledge of unitising toadd and subtract across other boundaries, for example: $1.3 - 0.5 = 0.8$ Add within a column during columnar addition when the column sums to more than 10(regrouping), for example, for: $12\mathbf{6} + 14\mathbf{8}$ Subtract within a column during columnar subtraction when the minuend of the column is smaller than the subtrahend (exchanging), forexample, for: $45\mathbf{3} - 12\mathbf{4}$
Solve missing addend problems within 10, for example: $4 + \boxed{} = 10$	**2AS–2** Recognise the subtraction structure of'difference' and answerquestions of the form, "How many more…?".	Solve contextual subtractionproblems for all three subtraction structures (reduction, partitioning and difference) and combining with other operations.
Add and subtract within 10,for example: $6 + 3 = 9$ $6 - 2 = 4$ Know that a multiple of 10 ismade up from a number of tens, for example, 50 is 5 tens.	**2AS–3** Add and subtract within 100 by applying related one- digit addition and subtraction facts: add and subtract only onesor only tens to/from a two-digit number.	Add and subtract using mental and formal writtenmethods.

Year 1 conceptual prerequesites	Year 2 ready-to-progress criteria	Future applications
Add and subtract within 10. Know that a multiple of 10 ismade up from a number of tens, for example, 50 is 5 tens.	**2AS–4** Add and subtract within 100 by applying related one- digit addition and subtraction facts: add and subtract any 2 two-digit numbers.	Add and subtract numbers greater than 100, recognisingunitising, for example: $32 \text{ ones} + 23 \text{ ones} = 55 \text{ ones}$ so $32 \text{ tens} + 23 \text{ tens} = 55 \text{ tens}$ $320 + 230 = 550$
Count in multiples of 2, 5 and 10.	**2MD–1** Recognise repeated addition contexts, representing them with multiplication equations and calculating the product,within the 2, 5 and 10 multiplication tables.	Use multiplication to represent repeated additioncontexts for other group sizes. Memorise multiplicationtables.
Count in multiples of 2, 5 and10 to find how many groups of 2, 5 or 10 there are in a particular quantity, set in everyday contexts.	**2MD–2** Relate groupingproblems where the number of groups is unknown to multiplication equationswith a missing factor, and to division equations (quotitive division).	Division with other divisors.

Recognise common 2D and 3D shapes presented in different orientations.	**2G–1** Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.	Identify similar shapes. Describe and compare angles. Draw polygons by joining marked points Identify parallel and perpendicular sides. Identify regular polygons Find the perimeter of regular and irregular polygons. Compare areas and calculate the area of rectangles (including squares) using standard units. Compare areas and calculate the area of rectangles (including squares) using standard units.

Year 3 guidance

Ready-to-progress criteria

Year 2 conceptual prerequisite	Year 3 ready-to-progresscriteria	Future applications
Know that 10 ones are equivalent to 1 ten, and that 40 (for example) can be composed from 40 ones or 4 tens. Know how many tens there are in multiples of 10 up to 100.	**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.	Solve multiplication problems that that involve a scaling structure, such as 'ten times as long'.
Recognise the place value of each digit in *two*-digit numbers, and compose and decompose *two*-digit numbers using standard and non-standard partitioning.	**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.	Compare and order numbers. Add and subtract using mental and formal written methods.
Reason about the location of any *two*-digit number in the linear number system, including identifying the previous and next multiple of 10.	**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.	Compare and order numbers. Estimate and approximate to the nearest multiple of 1,000, 100 or 10.
Count in multiples of 2, 5 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.	Read scales on graphs and measuring instruments.

Year 2 conceptual prerequisite	Year 3 ready-to-progress criteria	Future applications
Add and subtract across 10, for example: $8 + 5 = 13$ $13 - 5 = 8$	**3NF–1** Secure fluency in addition and subtraction facts that bridge 10, through continued practice.	Add and subtract mentally where digits sum to more than 10, for example: $26 + 37 = 63$ Add and subtract across other powers of 10, without written methods, for example: $1.3 - 0.4 = 0.9$ Add within a column during columnar addition when the column sums to more than 10 (regrouping), for example, for: $126 + 148$ Subtract within a column during columnar subtraction when the minuend of the column is smaller than the subtrahend (exchanging), for example, for: $453 - 124$
Calculate products within the 2, 5 and 10 multiplication tables.	**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.	Use multiplication facts during application of formal written layout. Use division facts during short division and long division.

Automatically recall addition and subtraction facts within 10, and across 10. Unitise in tens: understand that 10 can be thought of as a single unit of 1 ten.	**3NF–3** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10), for example: 80 + 60 = 140 140 − 60 = 80 30 × 4 = 120 120 ÷ 4 = 30	Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100), for example: 14 − 6 = 8 so 800 + 600 = 1,400 1,400 − 600 = 800 3 × 4 = 12 and 12 ÷ 4 = 3 so

Year 2 conceptual prerequisite	Year 3 ready-to-progress criteria	Future applications
Automatically recall number bonds to 9 and to 10. Know that 10 ones are equivalent to 1 ten, and 10 tens are equivalent to 1 hundred.	**3AS–1** Calculate complements to 100, for example: $46 + ? = 100$	Calculate complements to other numbers, particularly powers of 10. Calculate how much change is due when paying for an item.
Automatically recall addition and subtraction facts within 10 and across 10. Recognise the place value of each digit in two- and three-digit numbers. Know that 10 ones are equivalent to 1 ten, and 10 tens are equivalent to 1 hundred.	**3AS–2** Add and subtract up to three-digit numbers using columnar methods.	Add and subtract other numbers, including four- digits and above, and decimals, using columnar methods.
Have experience with the commutative property of addition, for example, have recognised that $3 + 2$ and $2 + 3$ have the same sum. Be able to write an equation in different ways, for example, $2 + 3 = 5$ and $5 = 2 + 3$ Write equations to represent addition and subtraction contexts.	**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.	All future additive reasoning.

Recognise repeated addition contexts and represent them with multiplication equations. Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).	**3MD-1** Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.	

Year 2 conceptual prerequisite	Year 3 ready-to-progress criteria	Future applications
	3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.	Use unit fractions as the basis to understand non-unit fractions, improper fractions and mixed numbers, for example: $\frac{2}{5}$ is 2 one-fifths $\frac{6}{5}$ is 6 one-fifths, so $\frac{6}{5} = 1\frac{1}{5}$
	3F–2 Find unit fractions of quantities using known division facts (multiplication tables fluency).	Apply knowledge of unit fractions to non-unit fractions.
Reason about the location of whole numbers in the linear number system.	**3F–3** Reason about the location of any fraction within 1 in the linear number system.	Compare and order fractions.
Automatically recall addition and subtraction facts within 10. Unitise in tens: understand that 10 can be thought of as a single unit of 1 ten, and that these units can be added and subtracted.	**3F–4** Add and subtract fractions with the same denominator, within 1.	Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.
Recognise standard and non-standard examples of 2D shapes presented in different orientations. Identify similar shapes.	**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.	Compare angles. Estimate and measure angles in degrees.
Compose 2D shapes from smaller shapes to match an exemplar, rotating and turning over shapes to place them in specific orientations.	**3G–2** Draw polygons by joining marked points, and identify parallel and perpendicular sides.	Find the area or volume of a compound shape by decomposing into constituent shapes. Find the perimeter of regular and irregular polygons.

Year 4 guidance

Ready-to-progress criteria

Year 3 conceptual prerequisite	Year 4 ready-to-progresscriteria	Future applications
Know that 10 tens are equivalent to 1 hundred,and that 100 is 10 timesthe size of 10.	**4NPV–1** Know that 10 hundreds are equivalent to1 thousand, and that 1,000is 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.	Solve multiplication problems that that involve a scaling structure, such as '10 times aslong'.
Recognise the place value of each digit in *three*-digit numbers, andcompose and decompose *three*-digit numbers using standardand non-standard partitioning.	**4NPV–2** Recognise the place value of each digit in*four*-digit numbers, and compose and decompose *four*-digit numbers using standard and non-standardpartitioning.	Compare and order numbers. Add and subtract using mentaland formal written methods.
Reason about the location of any *three*- digit number in the linear number system, including identifying the previous and next multiple of 10 and 100.	**4NPV–3** Reason about thelocation 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.	Compare and order numbers. Estimate and approximate to thenearest multiple of 1,000, 100 or 10.
Divide 100 into 2, 4, 5 and 10 equal parts, andread scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.	**4NPV–4** Divide 1,000 into2, 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.	Read scales on graphs andmeasuring instruments.

Recall multiplication and division facts in the 5 and 10, and 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	**4NF–1** Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number.	Use multiplication facts during application of formal written methods. Use division facts during application of formal written methods.

Year 3 conceptual prerequisite	Year 4 ready-to-progresscriteria	Future applications
Use known division facts to solve divisionproblems. Calculate small differences, forexample: 74 − 72 = 2	**4NF–2** Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, for example: 74 ÷ 9 = 8 r 2 and interpret remainders appropriately according tothe context.	Correctly represent and interpretremainders when using short and long division.
Apply place-value knowledge to known additive and multiplicative numberfacts (scaling facts by 10), for example: 80 + 60 = 140 140 − 60 = 80 30 × 4 = 120 120 ÷ 4 = 30	**4NF–3** Apply place-value knowledge to known additive and multiplicative number facts (scaling factsby 100), for example: and 14 − 6 = 8 so 800 + 600 = 1,400 1,400 − 600 = 800 3 × 4 = 12 and 12 ÷ 4 = 3 so	Apply place-value knowledge toknown additive and multiplicative number facts, extending to a whole number of larger powers of ten and powersof ten smaller than one, for example: 800,000 + 600,000 = 1,400,000 1,400,000 − 600,000 = 800,000 0.03 × 4 = 0.12 0.12 ÷ 4 = 0.03
Multiply two-digit numbers by 10, and divide three-digit multiples of 10 by 10.	**4MD–1** Multiply and dividewhole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.	Convert between differentmetric units of measure. Apply multiplication and divisionby 10 and 100 to calculations involving decimals, for example: 0.03 × 100 = 3 3 ÷ 100 = 0.03

Understand the inverserelationship between multiplication and division. Write and use multiplication table factswith the factors presented in either order.	**4MD–2** Manipulate multiplication and division equations, and understandand apply the commutative property of multiplication.	Recognise and apply the structures of multiplication and division to a variety of contexts.
	4MD–3 Understand and apply the distributive property of multiplication.	Recognise when to use and apply the distributive property ofmultiplication in a variety of contexts.

Year 3 conceptual prerequisite	Year 4 ready-to-progress criteria	Future applications
Reason about the location of fractions less than 1 in the linear number system.	**4F–1** Reason about the location of mixed numbers in the linear number system.	Compare and order fractions.
Identify unit and non-unit fractions.	**4F–2** Convert mixed numbers to improper fractions and vice versa.	Compare and order fractions. Add and subtract fractions where calculation bridges whole numbers.
Add and subtract fractions with the same denominator, within 1 whole, for example: $\frac{2}{5} + \frac{2}{5} = \frac{4}{5}$	**4F–3** Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers, for example: $\frac{7}{5} + \frac{4}{5} = \frac{11}{5}$ $3\frac{7}{8} - \frac{2}{8} = 3\frac{5}{8}$ $7\frac{2}{5} + \frac{4}{5} = 8\frac{1}{5}$ $8\frac{1}{5} - \frac{4}{5} = 7\frac{2}{5}$	
Draw polygons by joining marked points.	**4G–1** Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.	Draw polygons, specified by coordinates in the 4 quadrants.
Measure lines in centimetres and metres. Add more than 2 addends. Recall multiplication table facts.	**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.	Draw, compose and decompose shapes according to given properties, dimensions, angles or area.

	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 patternwith respect to a specified line of symmetry.	Draw polygons, specified by coordinates in the 4 quadrants:draw shapes following translation or reflection in the axes.

Year 5 guidance

Ready-to-progress criteria

Year 4 conceptual prerequisite	Year 5 ready-to-progresscriteria	Future applications
Know that 10 hundreds are equivalent to 1 thousand, andthat 1,000 is 10 times the sizeof 100; apply this to identify and work out how many 100sthere are in other four-digit multiples of 100.	**5NPV–1** Know that 10 tenths are equivalent to1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredthsare equivalent to 1 one, and that 1 is 100 times thesize of 0.01. Know that 10 hundredthsare equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.	Solve multiplication problems that have the scaling structure, such as'ten times as long'. Understand that per cent relates to 'number of partsper hundred', and write percentages as a fraction with denominator 100, and as a decimal fraction.
Recognise the place value ofeach digit in four-digit numbers, and compose and decompose four-digit numbers using standard andnon-standard partitioning.	**5NPV–2** Recognise the place value of each digit innumbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non- standard partitioning.	Compare and order numbers, including thosewith up to 2 decimal places. Add and subtract using mental and formal writtenmethods.
Reason about the location ofany four-digit number in the linear number system, including identifying the previous and next multiple of1,000 and 100, and roundingto the nearest of each.	**5NPV–3** Reason about thelocation of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to thenearest of each.	Compare and order numbers, including thosewith up to 2 decimal places. Estimate and approximateto the nearest 1 or 0.1.
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,	**5NPV–4** Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with	Read scales on graphsand measuring instruments.

5 and 10 equal parts.	2,4, 5 and 10 equal parts.	

Year 4 conceptual prerequisite	Year 5 ready-to-progress criteria	Future applications
Divide 100 and 1,000 into 2, 4, 5 and 10 equal parts. Find unit fractions of quantities using known division facts (multiplication tables fluency).	**5NPV–5** Convert between units of measure, including using common decimals and fractions.	Read scales on measuring instruments, and on graphs related to measures contexts. Solve measures problems involving different units by converting to a common unit.
Recall multiplication and division facts up to 12 × 12. Solve division problems, with two-digit dividends and one- digit divisors, that involve remainders, for example: 74 ÷ 9 = 8 r 2	**5NF–1** Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.	Use multiplication facts during application of formal written layout. Use division facts during short division and long division.
Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10 or 100), for example: 8 + 6 = 14 80 + 60 = 140 800 + 600 = 1,400 3 × 4 = 12 30 × 4 = 120 300 × 4 = 1,200	**5NF–2** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth), for example: 8 + 6 = 14 0.8 + 0.6 = 1.4 0.08 + 0.06 = 0.14 3 × 4 = 12 0.3 × 4 = 1.2 0.03 × 4 = 0.12	Recognise number relationships within the context of place value to develop fluency and efficiency in calculation.
Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to scaling a number by 10 or 100.	**5MD–1** Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.	Convert between different metric units of measure.

Year 4 conceptual prerequisite	Year 5 ready-to-progress criteria	Future applications
Recall multiplication and division facts up to 12 × 12, and recognise products in multiplication tables as multiples of the corresponding number. Recognise multiples of 10, 100 and 1,000. Apply place-value knowledge to known additive and multiplicative number facts. Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients).	**5MD–2** Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.	Solve contextual division problems. Simplify fractions. Express fractions in the same denomination.
Recall multiplication facts up to 12 × 12. Manipulate multiplication and division equations.	**5MD–3** Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.	Solve contextual and non-contextual multiplication problems using a formal written method.
Recall multiplication and division facts up to 12 × 12. Manipulate multiplication and division equations. Solve division problems, with two-digit dividends and one- digit divisors, that involve remainders, for example: 74 ÷ 9 = 8 r 2 and interpret remainders appropriately according to the context.	**5MD–4** Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.	Solve contextual and non-contextual division problems using a formal written method.

Recall multiplication and division facts up to 12 × 12.	**5F–1** Find non-unit fractions of quantities.	Solve multiplication problems that have thescaling structure.
Find unit fractions of quantities using known division facts (multiplication-tables fluency).		
Unitise using unit fractions (for example, understand thatthere are 3 one-fifths in three-fifths).		

Year 4 conceptual prerequisite	Year 5 ready-to-progress criteria	Future applications
Recall multiplication and division facts up to 12 × 12. Reason about the location of fractions in the linear number system.	**5F–2** Find equivalent fractions and understand that they have the same value and the same position in the linear number system.	Compare and order fractions. Use common factors to simplify fractions. Use common multiples to express fractions in the same denomination. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
Divide powers of 10 into 2, 4, 5 and 10 equal parts.	**5F–3** Recall decimal fraction equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$, and for multiples of these proper fractions.	Read scales on graphs and measuring instruments. Know percentage equivalents of common fractions.
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. Identify whether the interior angles of a polygon are equal or not.	**5G–1** Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.	Solve problems involving missing angles.
Compose polygons from smaller shapes. Recall multiplication facts up to 12 × 12.	**5G–2** Compare areas and calculate the area of rectangles (including squares) using standard units.	Calculate the area of compound rectilinear shapes and other 2D shapes, including triangles and parallelograms, using standard units. Use the relationship between side-length and perimeter, and between side-length and area to calculate unknown values.

Year 6 guidance

Ready-to-progress criteria

Year 5 conceptual prerequisite	Year 6 ready-to-progress criteria	Key stage 3 applications
Understand the relationship between powers of 10 from 1 hundredth to 1,000 in terms of grouping and exchange (for example, 1 is equal to 10 tenths) and in terms of scaling (for example, 1 is ten times the size of 1 tenth).	**6NPV–1** Understand therelationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divideby 10, 100 and 1,000).	Understand and use placevalue for decimals, measures, and integers ofany size. Interpret and compare numbers in standard form $A \times 10^{n}$, $1 \leq A < 10$, where *n* isa positive or negative integer or zero.
Recognise the place value of each digit in numbers with units from thousands to hundredths and compose anddecompose these numbers using standard and non-standard partitioning.	6NPV**–2** Recognise the place value of each digitin numbers up to 10 million, including decimal fractions, and compose and decompose numbers upto 10 million using standard and non-standard partitioning.	Understand and use placevalue for decimals, measures, and integers ofany size. Order positive and negativeintegers, decimals, and fractions. Use a calculator and other technologies to calculate results accurately and then interpret them appropriately.

Reason about the location ofnumbers between 0.01 and 9,999 in the linear number system. Round whole numbers to the nearest multiple of 1,000, 100or 10, as appropriate. Round decimal fractions to thenearest whole number or nearest multiple of 0.01	**6NPV–3** Reason about the location of any number up to 10 million,including decimal fractions, in the linear number system, and round numbers, as appropriate, including incontexts.	Order positive and negativeintegers, decimals, and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥ Round numbers and measures to an appropriate degree of accuracy (for example, to a number of decimal places or significant figures). Use approximation throughrounding to estimate answers and calculate possible resulting errors expressed using inequalitynotation $a < x \leq b$

Year 5 conceptual prerequisite	Year 6 ready-to-progress criteria	Key stage 3 applications
Divide 1000, 100 and 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines with 2, 4, 5 and 10 equal parts.	**6NPV–4** Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.	Use standard units of mass, length, time, money, and other measures, including with decimal quantities. Construct and interpret appropriate tables, charts, and diagrams.
Be fluent in all key stage 2 additive and multiplicative number facts (see **Appendix: number facts fluency overview**) and calculation. Manipulate additive equations, including applying understanding of the inverse relationship between addition and subtraction, and the commutative property of addition. Manipulate multiplicative equations, including applying understanding of the inverse relationship between multiplication and division, and the commutative property of multiplication.	**6AS/MD–1** Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).	Understand that a multiplicative relationship between 2 quantities can be expressed as a ratio or a fraction. Express 1 quantity as a fraction of another, where the fraction is less than 1 and greater than 1. Interpret mathematical relationships both algebraically and geometrically. Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning.

Make a given number (up to 9,999, including decimal fractions) 10, 100, 1 tenth or 1 hundredth times the size (multiply and divide by 10 and 100). Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10, 100, 1 tenth or 1 hundredth). Manipulate additive equations. Manipulate multiplicative equations.	**6AS/MD–1** Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.	Recognise and use relationships between operations including inverse operations. Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships. Understand and use standard mathematical formulae; rearrange formulae to change the subject.

Year 5 conceptual prerequisite	Year 6 ready-to-progress criteria	Key stage 3 applications
Recall multiplication anddivision facts up to 12 × 12. Apply place-value knowledgeto known additive and multiplicative number facts.	**6AS/MD–3** Solve problems involving ratiorelationships.	Use ratio notation, includingreduction to simplest form. Divide a given quantity into 2 parts in a given part:part or part:whole ratio; express the division of a quantity into2 parts as a ratio.
Be fluent in all key stage 2 additive and multiplicative number facts and calculation. Manipulate additive equations. Manipulate multiplicative equations. Find a fraction of a quantity.	**6AS/MD–4** Solveproblems with 2 unknowns.	Reduce a given linear equation in two variables tothe standard form $y = mx + c$; calculate and interpret gradients and intercepts of graphs of suchlinear equations numerically, graphically andalgebraically. Use linear and quadratic graphs to estimate values ofy for given values of x and vice versa and to find approximate solutions of simultaneous linear equations.
Recall multiplication anddivision facts up to 12 × 12 . Find factors and multiples of positive whole numbers, including common factors andcommon multiples. Find equivalent fractions and understand that they have thesame value and the same position in the linear number system.	**6F–1** Recognise whenfractions can be simplified, and use common factors to simplify fractions.	Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, commonfactors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property. Simplify and manipulate algebraic expressions by taking out common factors.

Year 5 conceptual prerequisite	Year 6 ready-to-progress criteria	Key stage 3 applications
Recall multiplication anddivision facts up to 12×12 . Find factors and multiples ofpositive whole numbers. Find equivalent fractions. Reason about the location of fractions and mixed numbers in the linear number system.	**6F–2** Express fractions in a common denomination and use this to compare fractions that are similarin value.	Order positive and negativeintegers, decimals and fractions. Use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, andmixed numbers, all both positive and negative. Use and interpret algebraicnotation, including: a/b in place of $a \div b$ coefficients written as fractions rather than asdecimals.
Reason about the location of fractions and mixed numbers in the linear number system. Find equivalent fractions.	**6F–3** Compare fractionswith different denominators, includingfractions greater than 1,using reasoning, and choose between reasoning and common denomination as a comparison strategy.	Order positive and negativeintegers, decimals, and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥
Find the perimeter of regularand irregular polygons. Compare angles, estimate andmeasure angles in degrees (°)and draw angles of a given size. Compare areas and calculatethe area of rectangles (including squares) using standard units.	**6G–1** Draw, compose, and decompose shapes according to given properties, including dimensions, angles andarea, and solve related problems.	Draw shapes and solve more complex geometry problems (see Mathematics programmes of study: key stage 3 - Geometry and measures).