Year 1

1

Previous Reception experiences and counting within 100

- 1NPV–1 Count within 100, forwards and backwards, starting with any number.
- 1.9 Composition of numbers: 20–100

7 weeks

2

Comparison of quantities and part–whole relationships

- 1NPV–1 Count within 100, forwards and backwards, starting with any number.
- 1NPV–2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =.
- 1.1 Comparison of quantities and measures
- 1.2 Introducing 'whole' and 'parts': part–part–whole

3 weeks

3

Numbers 0 to 5

- 1NPV–2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =.
- 1AS–1 Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.
- 1.3 Composition of numbers: 0–5

2 weeks

4

Recognise, compose, decompose and manipulate 2D and 3D shapes

- 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.
- 1G–2 Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.

3 weeks

5

Numbers 0 to 10

- 1NPV–2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =.
- 1AS–1 Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.
- 1.4 Composition of numbers: 6–10

3 weeks

6

Additive structures

- 1AS–2 Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.
- 1.5 Additive structures: introduction to aggregation and partitioning
- 1.6 Additive structures: introduction to augmentation and reduction

4 weeks

7

Addition and subtraction facts within 10

- 1NF–1 Develop fluency in addition and subtraction facts within 10.
- 1.7 Addition and subtraction: strategies within 10

4 weeks

8

Numbers 0 to 20

- 1NPV–2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =.
- 1.10 Composition of numbers: 11–19

5 weeks

9

Unitising and coin recognition

- 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.
- 2.1 Counting, unitising and coins

1 week

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

10	**Position and direction** • **describe position, direction and movement, including whole, half, quarter and three-quarter turns.** **1 week**
11	**Time** • **sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]** • **recognise and use language relating to dates, including days of the week, weeks, months and years** • **tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.** **2 weeks**

Year 2

1 Numbers 10 to 100

- 2NPV–1 Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning.
- 2NPV–2 Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10.
- 1.8 Composition of numbers: multiples of 10 up to 100
- 1.9 Composition of numbers: 20–100

4 weeks

2 Calculations within 20

- 2AS–1 Add and subtract across 10.
- 2AS–2 Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?".
- 1.11 Addition and subtraction: bridging 10
- 1.12 Subtraction as difference

3 weeks

3 Fluently add and subtract within 10

- 2NF–1 Secure fluency in addition and subtraction facts within 10, through continued practice.
- 1.7 Addition and subtraction: strategies within 10

1 week

4 Addition and subtraction of two-digit numbers (1)

- 2AS–3 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.
- 1.13 Addition and subtraction: two-digit and single-digit numbers
- 1.14 Addition and subtraction: two-digit numbers and multiples of ten

2 weeks

5 Introduction to multiplication

- 2MD–1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.
- 2.2 Structures: multiplication representing equal groups
- 2.3 Times tables: groups of 2 and commutativity (part 1)
- 2.4 Times tables: groups of 10 and of 5, and factors of 0 and 1
- 2.5 Commutativity (part 2), doubling and halving

7 weeks

6 Introduction to division structures

- 2MD–2 Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).
- 2.6 Structures: quotitive and partitive division

2 weeks

7 Shape

- 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.

2 weeks

8 Addition and subtraction of two-digit numbers (2)

- 2AS–4 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.
- 1.15 Addition: two-digit and two-digit numbers
- 1.16 Subtraction: two-digit and two-digit numbers

3 weeks

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

9	**Money** • 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 1 week
10	**Fractions** • 3.0 Guidance on the teaching of fractions in Key Stage 1 2 weeks
11	**Time** • 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 • know the number of minutes in an hour and the number of hours in a day 1 week
12	**Position and direction** • 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 anticlockwise). 1 week
13	**Multiplication and division – doubling, halving, quotitive and partitive division** • 2.5 Commutativity (part 2), doubling and halving • 2.6 Structures: quotitive and partitive division 3 weeks
14	**Sense of measure – capacity, volume, mass** • 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 • compare and order lengths, mass, volume/capacity and record the results using >, < and = 2 weeks

Year 3

1 Adding and subtracting across 10

- 2AS–1 Add and subtract across 10.
- 3NF–1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice.
- 1.11 Addition and subtraction: bridging 10

2 weeks

2 Numbers to 1,000

- 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.
- 3AS–1 Calculate complements to 100.
- 3NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).
- 1.17 Composition and calculation: 100 and bridging 100
- 1.18 Composition and calculation: three-digit numbers

10 weeks

3 Right angles

- 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.

2 weeks

4 Manipulating the additive relationship and securing mental calculation

- 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.
- 1.19 Securing mental strategies: calculation up to 999

4 weeks

5 Column addition

- 3AS–2 Add and subtract up to three-digit numbers using columnar methods.
- 1.20 Algorithms: column addition

2 weeks

6 2, 4, 8 times tables

- 3MD–1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.
- 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).
- 2.7 Times tables: 2, 4 and 8, and the relationship between them

3 weeks

7 Column subtraction

- 3AS–2 Add and subtract up to three-digit numbers using columnar methods.
- 1.21 Algorithms: column subtraction

1 week

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

8	**Unit fractions** • 3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts. • 3F–2 Find unit fractions of quantities using known division facts (multiplication tables fluency). • 3.1 Preparing for fractions: the part–whole relationship • 3.2 Unit fractions: identifying, representing and comparing **5 weeks**
9	**Non-unit fractions** • 3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts. • 3F–3 Reason about the location of any fraction within 1 in the linear number system. • 3F–4 Add and subtract fractions with the same denominator, within 1. • 3.3 Non-unit fractions: identifying, representing and comparing • 3.4 Adding and subtracting within one whole **4 weeks**
10	**Parallel and perpendicular sides in polygons** • 3G–2 Draw polygons by joining marked points, and identify parallel and perpendicular sides. **2 weeks**
11	**Time** • tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks • 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 • 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 example to calculate the time taken by particular events or tasks]. **1 week**

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

3 weeks

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

5 weeks

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

2 weeks

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

4 weeks

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

2 weeks

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

5 weeks

7 Coordinates

- 4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.

2 weeks

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

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 **1 weeks**
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 **5 weeks**
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. **2 weeks**
11	**Time** • read, write and convert time between analogue and digital 12- and 24-hour clocks • solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. **1 week**
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 **2 weeks**

Year 5

1 Decimal fractions

- 5NPV–1 Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.
- 5NPV–2 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning.
- 5NPV–3 Reason about the location 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 the nearest of each.
- 5NPV–4 Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.
- 5NF–2 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).
- 1.23 Composition and calculation: tenths
- 1.24 Composition and calculation: hundredths and thousandths

5 weeks

2 Money

- 1.25 Addition and subtraction: money

2 weeks

3 Negative numbers

- 1.27 Negative numbers: counting, comparing and calculating

2 weeks

4 Short multiplication and short division

- 5MD–3 Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.
- 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.
- 2.14 Multiplication: partitioning leading to short multiplication
- 2.15 Division: partitioning leading to short division

6 weeks

5 Area and scaling

- 5G–2 Compare areas and calculate the area of rectangles (including squares) using standard units.
- 2.16 Multiplicative contexts: area and perimeter 1
- 2.17 Structures: using measures and comparison to understand scaling

5 weeks

6 Calculating with decimal fractions

- 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.
- 2.19 Calculation: ×/÷ decimal fractions by whole numbers
- 2.29 Decimal place-value knowledge, multiplication and division

3 weeks

7 Factors, multiples and primes

- 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.
- 2.20 Multiplication with three factors and volume
- 2.21 Factors, multiples, prime numbers and composite numbers

4 weeks

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

8	**Fractions** • 5NPV–5 Convert between units of measure, including using common decimals and fractions. • 5F–1 Find non-unit fractions of quantities. • 5F–2 Find equivalent fractions and understand that they have the same value and the same position in the linear number system. • 5F–3 Recall decimal fraction equivalents for 1/2, 1/4, 1/5 and 1/10, and for multiples of these proper fractions. • 3.6 Multiplying whole numbers and fractions • 3.7 Finding equivalent fractions and simplifying fractions • 3.10 Linking fractions, decimals and percentages 7 weeks
9	**Converting units** • 5NPV–5 Convert between units of measure, including using common decimals and fractions. 2 weeks
10	**Angles and transformations** • 5G–1 Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size. 3 weeks

Year 6

1 Calculating using knowledge of structures (1)

- 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).
- 6AS/MD–2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.
- 1.28 Common structures and the part–part–whole relationship
- 1.29 Using equivalence and the compensation property to calculate

6 weeks

2 Multiples of 1,000

- 1.26 Composition and calculation: multiples of 1,000 up to 1,000,000

2 weeks

3 Numbers up to 10,000,000

- 6NPV–1 Understand the relationship 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 divide by 10, 100 and 1,000).
- 6NPV–2 Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning.
- 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 in contexts.
- 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.
- 1.30 Composition and calculation: numbers up to 10,000,000

4 weeks

4 Draw, compose and decompose shapes

- 6G–1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.

2 weeks

5 Multiplication and division

- 6AS/MD–2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.
- 2.18 Using equivalence to calculate
- 2.23 Multiplication strategies for larger numbers and long multiplication
- 2.24 Division: dividing by two-digit divisors
- 2.25 Using compensation to calculate

4 weeks

6 Area, perimeter, position and direction

- 2.30 Multiplicative contexts: area and perimeter 2

2 weeks

7 Fractions and percentages

- 6F–1 Recognise when fractions can be simplified, and use common factors to simplify fractions.
- 6F–2 Express fractions in a common denomination and use this to compare fractions that are similar in value.
- 6F–3 Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy.
- 3.8 Common denomination: more adding and subtracting
- 3.9 Multiplying fractions and dividing fractions by a whole number
- 3.10 Linking fractions, decimals and percentages

6 weeks

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

8	**Statistics** • interpret and construct pie charts and line graphs and use these to solve problems 1 week
9	**Ratio and proportion** • 6AS/MD–3 Solve problems involving ratio relationships. • 2.27 Scale factors, ratio and proportional reasoning 2 weeks
10	**Calculating using knowledge of structures (2)** • 6AS/MD–2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding. • 1.29 Using equivalence and the compensation property to calculate 1 week
11	**Solving problems with two unknowns** • 6AS/MD–4 Solve problems with 2 unknowns. • 1.31 Problems with two unknowns 2 weeks
12	**Order of operations** • 2.22 Combining multiplication with addition and subtraction • 2.28 Combining division with addition and subtraction 1 week
13	**Mean average** • 2.26 Mean average and equal shares 1 week