#### 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

#### 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

#### 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

#### 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

#### 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

#### **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

#### 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

#### Numbers 0 to 20

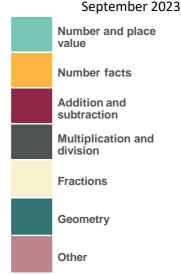
- 1NPV-2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =.
- 1.10 Composition of numbers: 11–19

#### 5 weeks

#### 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



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#### **Position and direction**

describe position, direction and movement, including whole, half, quarter and three-quarter turns.

1 week

#### 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.

#### September 2023

# Number and place value Number facts

Addition and subtraction

division

Multiplication and

Geometry

Other

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Both are available online

#### Year 2

#### **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

#### 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

#### 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

#### 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

#### 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

#### 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

#### 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

#### 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

#### 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

#### Fractions

3.0 Guidance on the teaching of fractions in Key Stage 1

2 weeks

#### Time

- 11 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

#### Position and direction

12 • 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

#### 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

#### 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 >, <</li>

#### 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

#### 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

#### 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

#### 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

#### Column addition

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

#### 2 weeks

#### 2, 4, 8 times tables

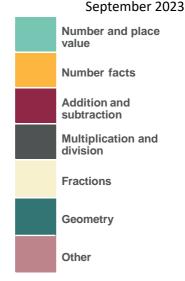
- 3MD-1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.
- 3NF-2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these 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

#### Column subtraction

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

#### 1 week



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#### **Unit fractions**

- 3F-1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.
- 8 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

#### 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

#### Parallel and perpendicular sides in polygons

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

#### 2 weeks

#### 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

#### 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

#### 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

#### Perimeter

3

 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

#### 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

#### 7 times table and patterns

 4NF-1 Recall multiplication and division facts up to 12x12, 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

#### Understanding and manipulating multiplicative relationships

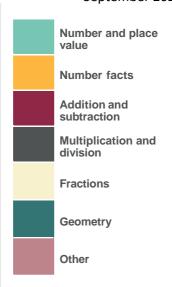
- 4MD-1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.
- 4MD–2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.
  - 4MD-3 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

#### Coordinates

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

#### 2 weeks



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#### **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

#### 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

#### 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

#### 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

#### Division with remainders

- 4NF–2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders.
  - 2.12 Division with remainders

#### **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 nonstandard 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

#### Money

• 1.25 Addition and subtraction: money

#### 2 weeks

#### **Negative numbers**

• 1.27 Negative numbers: counting, comparing and calculating

#### 2 weeks

#### 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

#### 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

#### Calculating with decimal fractions

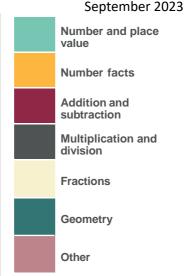
- 5MD-1 Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.
- 2.19 Calculation: x/÷ decimal fractions by whole numbers
- 2.29 Decimal place-value knowledge, multiplication and division

#### 3 weeks

#### 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



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#### 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

#### Converting units

5NPV-5 Convert between units of measure, including using common decimals and fractions.

2 weeks

## Angles and transformations

 5G–1 Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.

#### 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

#### Multiples of 1,000

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

2 weeks

#### 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

#### 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

#### 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

#### Area, perimeter, position and direction

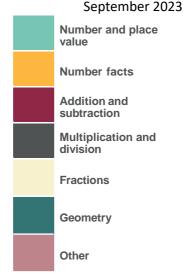
• 2.30 Multiplicative contexts: area and perimeter 2

2 weeks

#### 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



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#### **Statistics**

interpret and construct pie charts and line graphs and use these to solve problems

1 week

#### Ratio and proportion

- 6AS/MD-3 Solve problems involving ratio relationships.
- 2.27 Scale factors, ratio and proportional reasoning

2 weeks

#### 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

#### Order of operations

• 2.22 Combining multiplication with addition and subtraction

• 2.28 Combining division with addition and subtraction

1 week

#### Mean average

2.26 Mean average and equal shares

1 week