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## Year 6, Autumn Term 1

### Wk Strands

- 1 **NPV** Number and place value; **MMD** Mental multiplication and division; **DPE** Decimals, percentages and their equivalence to fractions; **FRP** Fractions, ratio and proportion
- 2 **MAS** Mental addition and subtraction; **NPV** Number and place value; **WAS** Written addition and subtraction; **DPE** Decimals, percentages and their equivalence to fractions; **PRA** Problem solving, reasoning and algebra
- 3 **PRA** Problem solving, reasoning and algebra; **MAS** Mental addition and subtraction
- 4 **MEA** Measurement; **PRA** Problem solving, reasoning and algebra; **NPV** Number and place value
- 5 **MAS** Mental addition and subtraction; **WAS** Written addition and subtraction; **NPV** Number and place value; **PRA** Problem solving, reasoning and algebra
- 6 **MMD** Mental multiplication and division; **WMD** Written multiplication and division; **MAS** Mental addition and subtraction; **PRA** Problem solving, reasoning and algebra; **NPV** Number and place value

### Progression Focus

- Place value; addition**  
Weeks 1 and 2 focus on establishing a robust understanding of place value in relation to whole numbers and decimals, which is then used in written methods and mental strategies in addition.
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- Algebra**  
Week 3 focuses on algebra – developing the use of trial and improvement methods, knowledge of the order of operations including brackets, and the manipulation of sentences containing unknowns.
- Measures**  
Week 4 focuses on measurement in and conversion of SI and imperial units; it also covers the use of 24-hour clock and calculation of time intervals.
- Subtraction**  
Week 5 focuses on mental strategies and written methods in subtracting and the appropriate use of both with whole and decimal numbers, including money.
- Multiplication**  
Week 6 focuses on mental strategies and written methods in multiplying; both long and short multiplication are rehearsed, alongside a range of mental tactics.

### Weekly Summary

- Read, write and compare 6-digit numbers and know what each digit represents; read, write and compare 1-, 2- and 3-place decimal numbers; multiply and divide by 10, 100 and 1000; round decimals to nearest tenth and whole number and place on a number line; convert decimals (up to 3 places) to fractions and vice-versa.
- Use mental addition strategies to solve additions including decimal numbers; use column addition to add 5-digit numbers, decimal numbers and amounts of money; solve problems involving number up to 3 decimal places, choose an appropriate method to solve decimal addition.
- Express missing number problems algebraically and find pairs of numbers that satisfy equations involving two unknowns; find missing lengths and angles; understand how brackets can be used in calculation problems; use knowledge of the order of operations to carry out calculations involving the four operations, solve addition and subtraction multi-step problems using knowledge of the order of operations.
- Convert between grams and kilograms, millilitres and litres, millimetres and centimetres, centimetres and metres, metres and kilometres, and miles and kilometres; revise reading the 24-hour clock and convert 12-hour times to 24-hour; read and write Roman numerals; find time intervals using the 24-hour clock.
- Use mental addition, column subtraction and Counting up to solve subtractions of amounts of money and word problems; use mathematical reasoning to investigate.
- Use mental multiplication strategies to multiply by numbers such as 4, 8, 5, 25, 19, 29 and 99; revise using short multiplication to multiply 4-digit numbers by 1-digit numbers and use this to multiply amounts of money; solve word problems involving multiplication including two-step problems and finding change; use long multiplication to multiply 3-digit and 4-digit numbers by teens numbers.

## Year 6, Autumn Term 2

### Wk Strands

7 **NPV** Number and place value; **PRA** Problem solving, reasoning and algebra; **FRP** Fractions, ratio and proportion

8 **MEA** Measurement; **GPS** Geometry: properties of shapes

9 **MMD** Mental multiplication and division; **FRP** Fractions, ratio and proportion; **WMD** Written multiplication and division; **PRA** Problem solving, reasoning and algebra

10 **FRP** Fractions, ratio and proportion; **PRA** Problem solving, reasoning and algebra; **DPE** Decimals, percentages and their equivalence to fractions

11 **FRP** Fractions, ratio and proportion

### Progression Focus

#### Negative numbers; fractions

Week 7 focuses on positive and negative whole numbers, and then comparing, ordering, adding and subtracting fractions, including mixed numbers.

#### Shape, and measurement in relation to shape

Week 8 focuses on 2D shapes, their properties, areas, and perimeters, and 3D shapes, their nets, volumes and properties.

#### Division; fractions and percentages

Weeks 9, 10 and 11 focus on division and fractions; children rehearse mental strategies and short division, giving remainders as fractions; fractions are added, subtracted, multiplied and divided; finding percentages is also covered.

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### Weekly Summary

Understand negative numbers; calculate small differences between negative numbers and negative and positive numbers; add and subtract negative numbers; compare fractions with unlike, but related, denominators; correctly use the terms fraction, denominator and numerator; understand what improper fractions and mixed numbers are and add fractions with the same denominator, writing the answer as a mixed number

Calculate the perimeter, area and volume of shapes, and know their units of measurement; understand that shapes can have the same perimeters but different areas and vice versa; calculate the area of a triangle using the formula  $A = \frac{1}{2} b \times h$ ; find the area of parallelograms using the formula  $A = b \times h$ ; name and describe properties of 3D shapes; systematically find and compare nets for different 3D shapes.

Use mental strategies to divide by 2, 4, 8, 5, 20 and 25; find non-unit fractions of amounts; use short division to divide 3- and 4-digit numbers by 1-digit numbers, including those which leave a remainder; express a remainder as a fraction, simplifying where possible.

Add and subtract unit fractions with different denominators including mixed numbers; use mental strategies to find simple percentages of amounts, including money

Multiply fractions less than 1 by whole numbers, converting improper fractions to whole numbers; use commutativity to efficiently multiply fractions by whole numbers; divide unit and non-unit fractions by whole numbers; solve word problems involving fractions.

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## Year 6, Spring Term 1

### Wk Strands

12 **NPV** Number and place value; **WAS** Written addition and subtraction

### Progression Focus

#### Place value; subtraction

Week 12 focuses on a robust understanding of place value in large

### Weekly Summary

Read and write numbers with up to 7-digits, understanding what each digit represents; work systematically to find out how many numbers round to 500000; solve subtraction of 5- and 6-digit numbers using written column method

		numbers, which underpins the subtraction work that follows.	(decomposition).
13	<b>DPE</b> Decimals, percentages and their equivalence to fractions; <b>FRP</b> Fractions, ratio and proportion	<b>Multiplication of decimals and fractions</b> Weeks 13 and 14 focus on understanding decimal and proper fractions and their equivalences; calculations including multiplication of these numbers are rehearsed.	Multiply and divide by 10, 100 and 1000; compare and order numbers with up to three decimal places; know common fraction / decimal equivalents; multiply pairs of unit fractions and multiply unit fractions by non-unit fractions
14	<b>MMD</b> Mental multiplication and division; <b>WMD</b> Written multiplication and division; <b>PRA</b> Problem solving, reasoning and algebra; <b>NPV</b> Number and place value	<b>Multiplication of decimals and fractions</b> Weeks 13 and 14 focus on understanding decimal and proper fractions and their equivalences; calculations including multiplication of these numbers are rehearsed.	Use partitioning to mentally multiply 2-digit numbers with one decimal place by whole 1-digit numbers; multiply numbers with two decimal places; use short multiplication to multiply amounts of money; use estimation to check answers to calculations; use long multiplication to multiply 3-digit and 4-digit numbers by numbers between 10 and 30.
15	<b>GPS</b> Geometry: properties of shapes; <b>PRA</b> Problem solving, reasoning and algebra	<b>2D shapes; angles</b> Week 15 focuses on 2D shapes, particularly quadrilaterals, in relation to their diagonals and interior angles; circles are also taught, along with relevant terminology.	Name, classify and identify properties of quadrilaterals; explore how diagonal lines can bisect quadrilaterals; understand what an angle is and that it is measured in degrees; know what the angles of triangles, quadrilaterals, pentagons, hexagons and octagons add to and use these facts and mathematical reasoning to calculate missing angles; recognise and identify the properties of circles and name their parts; draw circles using pairs of compasses; draw polygons using a ruler and a protractor
16	<b>MAS</b> Mental addition and subtraction; <b>NPV</b> Number and place value; <b>WAS</b> Written addition and subtraction; <b>PRA</b> Problem solving, reasoning and algebra	<b>Addition and subtraction</b> Week 16 focuses on mental and written addition and subtraction methods, including solving word problems.	Add and subtract numbers using mental strategies; solve addition of 4- to 7-digit numbers using written column addition; identify patterns in the number of steps required to generate palindromic numbers; solve subtraction of 5-, 6- and 7-digit numbers using written column method (decomposition); solve additions and subtractions choosing mental strategies or written procedures as appropriate; read, understand and solve word problems
17	<b>WMD</b> Written multiplication and division; <b>NPV</b> Number and place value; <b>PRA</b> Problem solving, reasoning and algebra	<b>Multiplication and division</b> Week 17 focuses on number patterns involving factors and multiples, and on long division.	Identify common factors and common multiples; understand that a prime number has exactly two factors and find prime numbers less than 100; understand what a composite (non-prime) number is; use long division to divide 3- and 4-digit numbers by 2-digit numbers, giving remainders as a fraction, simplifying where possible

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## Year 6, Spring Term 2

### Wk Strands

18 **MAS** Mental addition and subtraction; **WAS** Written addition and subtraction; **PRA** Problem solving, reasoning and algebra

### Progression Focus

**Addition and subtraction**  
Week 18 focuses on solving addition and subtraction problems involving money and decimals.

### Weekly Summary

Solve addition and subtraction multi-step problems in shopping contexts, and add and subtract money using column addition and counting up; add and subtract decimal numbers choosing an appropriate strategy, and add decimal numbers with different numbers of places using column addition; use mathematical reasoning to investigate and solve problems, and solve subtractions of decimal numbers with different numbers of places (2-places) using counting up

19	<b>STA</b> Statistics; <b>DPE</b> Decimals, percentages and their equivalence to fractions	<b>Statistics and data</b> Week 19 focuses on data representation and manipulation, including line graphs, pie charts and the use and calculation of averages.	Calculate and understand the mean average; construct and interpret distance/time line graphs where intermediate points have meaning, including conversion line graphs; understand pie charts are a way of representing data using percentages, interpret and construct pie charts
20	<b>GPD</b> Geometry: position and direction; <b>NPV</b> Number and place value; <b>PRA</b> Problem solving, reasoning and algebra; <b>GPS</b> Geometry: properties of shapes	<b>Coordinate geometry; angles</b> Week 20 focuses on position on a 4-quadrant coordinate grid, with polygons being plotted, translated and reflected; the week concludes with angle theorems.	Read and plot coordinates in all four quadrants, draw and translate simple polygons using coordinates and find missing coordinates for a vertex on a polygon; draw and reflect simple polygons in both the x-axis and y-axis using coordinates; find unknown angles around a point, on a line, in a triangle or vertically opposite and in polygons where diagonals intersect
21	<b>WMD</b> Written multiplication and division; <b>PRA</b> Problem solving, reasoning and algebra	<b>Multiplication and division</b> Week 21 focuses on the use of written algorithms in multiplying and dividing large numbers; both long and short versions of these methods are taught.	Multiply 4-digit numbers including those with two decimal places by 1-digit numbers; use long multiplication to multiply 4-digit numbers by numbers between 10 and 30, including those with two decimal places; revise using short division to divide 4-digit by 1-digit and 2-digit numbers including those which leave a remainder, and divide the remainder by the divisor to give a fraction, simplifying where possible, and make approximations; use long division to divide 4-digit by 2-digit numbers, and use a systematic approach to solve problems
22	<b>PRA</b> Problem solving, reasoning and algebra; <b>FRP</b> Fractions, ratio and proportion	<b>Algebra; ratio</b> Week 22 focuses on the use of generalisations and simple formula, including to find the $n$ th term in a sequence; then moves on to ratio.	Generalise a relationship between pairs of numbers, express simple formulae in words, then using letters; describe and continue sequences, generalise to predict the tenth term, begin to generalise a term in a sequence using $n$ to stand for the number of the term in a sequence; describe ratio and use ratio to solve problems; find fractions and simplify ratios

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## Year 6, Summer Term 1

### Wk Strands

23 **NPV** Number and place value; **DPE** Decimals, percentages and their equivalence to fractions

### Progression Focus

**Revision: place value and decimals**  
Week 23 focuses on revision of place value in large numbers and in decimal fractions.

### Weekly Summary

Revise reading, writing, comparing and ordering numbers with up to seven digits and decimal numbers with up to three decimal places; revise rounding decimal numbers to the nearest tenth and whole number; revise rounding big numbers to the nearest thousand, ten thousand, hundred thousand and million; revise locating a number on a number line marking numbers it lies between; revise comparing and ordering negative numbers including calculating differences between negative numbers and positive and negative numbers

24 **NPV** Number and place value; **MAS** Mental addition and subtraction; **WAS** Written addition and subtraction; **DPE** Decimals, percentages and their equivalence to fractions; **FRP** Fractions, ratio and proportion; **PRA** Problem solving, reasoning and algebra; **GPS** Geometry: properties of shapes

### Revision

Week 24 focuses on revision of: mental and written strategies in addition and subtraction; finding percentages; order of operations; and finding unknowns in equations.

Revise adding and subtracting whole numbers and decimal numbers using mental and written methods; revise finding percentages of numbers, converting fractions, decimals and percentages and making comparisons using percentages; revise how brackets can be used in calculation problems, revise the order of operations for calculations involving the four operations; revise solving missing number problems using inverse operations; revise using trial and improvement to solve

25	<b>MAS</b> Mental addition and subtraction; <b>FRP</b> Fractions, ratio and proportion; <b>WMD</b> Written multiplication and division; <b>MMD</b> Mental multiplication and division; <b>PRA</b> Problem solving, reasoning and algebra; <b>NPV</b> Number and place value	<b>Revision: multiplication and division</b> Weeks 25 and 26 focus on revision of: written algorithms for multiplication and division and mental strategies including the use of factors; finding fractions of amounts; and calculating mean average.	equations involving one or two unknowns, and find missing lengths and angles  Revise scaling, using mental strategies for multiplying and dividing; revise solving problems involving rate; revise multiplying pairs of 2-digit numbers and finding factors of 2-digit numbers; multiply 3-digit and 4-digit numbers including decimals by whole 1-digit numbers and solve word problems involving multiplication of money and measures; use a systematic approach to solve problems involving multiplication and division, including long multiplication of 3-digit and 4-digit numbers and decimals
26	<b>WMD</b> Written multiplication and division; <b>PRA</b> Problem solving, reasoning and algebra; <b>NPV</b> Number and place value; <b>STA</b> Statistics; <b>GPD</b> Geometry: position and direction	<b>Revision: multiplication and division</b> Weeks 25 and 26 focus on revision of: written algorithms for multiplication and division and mental strategies including the use of factors; finding fractions of amounts; and calculating mean average.	Revise using short division to find unit fractions of amounts, including decimals, and round answers to money problems according to the context; revise using long division to divide 4-digit by 2-digit numbers, giving remainders as a fraction, simplifying where possible; revise using long division to divide 3-digit and 4-digit numbers by numbers between 10 and 30, writing the fractional part of the answer as a decimal where equivalents are known; revise calculating the mean average; revise reading and marking coordinates in all four quadrants, draw simple polygons and find missing coordinates on a polygon or line

## Year 6, Summer Term 2

Wk	Strands	Progression Focus	Weekly Summary
27	<b>NPV</b> Number and place value; <b>FRP</b> Fractions, ratio and proportion; <b>MEA</b> Measurement	<b>Revision: fractions; ratio</b> Week 27 focuses on revision of: equivalence in fractions; and using this to add, subtract, multiply and divide fractions; and solving ratio problems.	Revise equivalence simplifying fractions and changing improper fractions into mixed numbers and vice versa; revise adding and subtracting fractions with different denominators, including those which give answers greater than 1; revise multiplying pairs of fractions and multiplying and dividing fractions by whole numbers; solving problems involving ratios; read intermediate points off scales
28	<b>GPS</b> Geometry: properties of shapes; <b>MEA</b> Measurement; <b>STA</b> Statistics	<b>Revision</b> Week 28 focuses on revision of: properties of 2D shapes; angle types and theorems; perimeter, area and volume; 24-hour clock time intervals; and tables, graphs and charts.	Revise properties and classification of 2D shapes, drawing 2D shapes using ruler, protractor and compasses, parts of a circle and angles in polygons; revise calculating missing angles by knowing angle facts; use a protractor to measure and draw angles in degrees; identify and name acute, right, obtuse and reflex angles; understand perimeter, area and volume; find the perimeter of rectangles, find the area of rectangles, parallelograms and triangles, and find the volumes of cubes and cuboids; revise reading and interpreting different types of data display
29	<b>NPV</b> Number and place value; <b>PRA</b> Problem solving, reasoning and algebra; <b>GPD</b> Geometry: position and direction; <b>WMD</b> Written multiplication	<b>Further mathematical ideas</b> Weeks 29 and 30 focus on exploration of a variety of interesting mathematical concepts and processes, including binary numbers and Napier's	Use mathematical reasoning to investigate and solve problems, and to estimate and predict; solve problems using doubling, solve calculations with enormous numbers; find out about famous mathematicians including Brahmagupta and John Napier and use their different methods to multiply;



and division

30 **NPV** Number and place value; **PRA** Problem solving, reasoning and algebra; **GPS** Geometry: properties of shapes

bones; playing with numbers, discovering patterns and solving mathematical puzzles.

**Further mathematical ideas**

Weeks 29 and 30 focus on exploration of a variety of interesting mathematical concepts and processes, including binary numbers and Napier's bones; playing with numbers, discovering patterns and solving mathematical puzzles.

use lattice multiplication to solve multiplications of 2-, 3- and 4-digit numbers; begin to compare historical multiplication methods

Explore binary numbers; solve mathematical puzzles; including using multiplication facts, find digital roots and look for patterns; explore Fibonacci sequences and Pythagoras' theorem

