Year 6, Autumn Term 1

Wk	Strands	Weekly Summary
1	**NPV** Number and place value; **MMD** Mental multiplication and division; **DPE** Decimals, percentages and their equivalence to fractions; **FRP** Fractions, ratio and proportion	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. **Mastery Checkpoint** There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map: • Read, write, order and compare numbers up to 1 000 000 and determine the value of each digit Please see Mastery Checkpoint 6.1.1 (Teacher Guide 6.1.1) • Identify the value of each digit in numbers with up to 3 decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places; use this knowledge to compare and order numbers, and round numbers, with up to 3 decimal places • Convert decimals (up to 3 places) to fractions and vice versa using thousandths, hundreths and tenths Please see Mastery Checkpoint 6.1.2 (Teacher Guide 6.1.2)
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	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. **Mastery Checkpoint** There are two Mastery Checkpoint in this week. They test the following outcomes from the Progression Map: • Choose and use an appropriate method to add whole numbers with up to 5 digits Please see Mastery Checkpoint 6.2.3 (Teacher Guide 6.2.3) • Choose and use an appropriate mental or written method, including column addition and subtraction, to add and subtract decimal numbers with 1, 2 or 3 decimal places, including in the context of measures and money Please see Mastery Checkpoint 6.2.4 (Teacher Guide 6.2.4)
3	**PRA** Problem solving, reasoning and algebra; **MAS** Mental addition and subtraction	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. **Mastery Checkpoint** There are two Mastery Checkpoint in this week. They test the following outcomes from the Progression Map: • Use letters to represent missing numbers in number sentences • Find pairs of numbers that satisfy an equation with two unknowns

- Enumerate possibilities of combinations of two variables

Please see Mastery Checkpoint 6.3.5 (Teacher Guide 6.3.5)

- Use knowledge of the order of operations and brackets to carry out multi-step calculations involving addition, subtraction, multiplication and division

Please see Mastery Checkpoint 6.3.6 (Teacher Guide 6.3.6)

4	**MEA** Measurement; **PRA** Problem solving, reasoning and algebra; **NPV** Number and place value	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.

Mastery Checkpoint There is one Mastery Checkpoint in this week. It tests the following outcomes from the Progression Map:

- Solve problems involving the calculation and conversion of units of measure, using decimal notation, up to 3 decimal places where appropriate
- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation up to 3 decimal places

Please see Mastery Checkpoint 6.4.7 (Teacher Guide 6.4.7)

5	**MAS** Mental addition and subtraction; **WAS** Written addition and subtraction; **NPV** Number and place value; **PRA** Problem solving, reasoning and algebra	Use mental addition, column subtraction and Counting up to solve subtractions of amounts of money and word problems; use mathematical reasoning to investigate.

Mastery Checkpoint There is one Mastery Checkpoint in this week. It tests the following outcomes from the Progression Map:

- Choose and use an appropriate method to subtract whole numbers with up to 5 digits

Please see Mastery Checkpoint 6.5.8 (Teacher Guide 6.5.8)

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	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.

Mastery Checkpoint There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:

- Use short multiplication to multiply numbers with up to 4 digits, including amounts of money, by 1-digit numbers and solve word problems involving multiplication including two-step problems and finding change

Please see Mastery Checkpoint 6.6.9 (Teacher Guide 6.6.9)

- Multiply multi-digit numbers up to 4 digits by numbers between 10 and 40 using the formal written method of multiplication

Please see Mastery Checkpoint 6.6.10 (Teacher Guide 6.6.10)

Year 6, Autumn Term 2

Wk	Strands	Weekly Summary

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

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

Mastery Checkpoint There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:

• Use negative numbers in context, and calculate intervals across zero

Please see Mastery Checkpoint 6.7.11 (Teacher Guide 6.7.11)

• Compare and order fractions, including fractions > 1

• Use common factors to simplify fractions; use common multiples to express fractions in the same denomination

• Convert improper fractions to mixed numbers; convert mixed numbers to improper fractions

Please see Mastery Checkpoint 6.7.12 (Teacher Guide 6.7.12)

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

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 $A = 1/2\ b \times h$; 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.

Mastery Checkpoint There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:

• Recognise, describe and build simple 3D shapes, including making nets

• Recognise when it is possible to use formulae for area and volume shapes

• Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres and cubic metres, and extending to other units (for e.g. cubic millimetres and kilometres)

Please see Mastery Checkpoint 6.8.13 (Teacher Guide 6.8.13)

• Recognise that shapes with the same areas can have different perimeters and vice versa; begin to measure area and perimeter

• Recognise when it is possible to use formulae for area and volume and shapes

• Calculate the area of parallelograms and triangles

Please see Mastery Checkpoint 6.8.14 (Teacher Guide 6.8.14)

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

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.

Mastery Checkpoint

There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:

		• Find non-unit fractions of amounts
		Please see Mastery Checkpoint 6.9.15 (Teacher Guide 6.9.15)
		• Divide numbers up to 4 digits by numbers up to 12 using the formal written method of short division, where appropriate interpret remainders according to the context and use reasoning to find a solution
		• Express a remainder after division as a fraction, simplifying where possible
		Please see Mastery Checkpoint 6.9.16 (Teacher Guide 6.9.16)
10	**FRP** Fractions, ratio and proportion; **PRA** Problem solving, reasoning and algebra; **DPE** Decimals, percentages and their equivalence to fractions	Add and subtract unit fractions with different denominators including mixed numbers; use mental strategies to find simple percentages of amounts, including money
		Mastery Checkpoint There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:
		• Use equivalence to add and subtract proper fractions and mixed numbers with related or unrelated denominators, and spot and test a rule
		Please see Mastery Checkpoint 6.10.17 (Teacher Guide 6.10.17)
		• Solve problems involving the calculation of percentages and the use of percentages for comparison
		• Use knowledge of equivalence between fractions and percentages and mental strategies to solve problems involving the calculation of percentages, including amounts of money and other measures
		Please see Mastery Checkpoint 6.10.18 (Teacher Guide 6.10.18)
11	**FRP** Fractions, ratio and proportion	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.
		Mastery Checkpoint There is one Mastery Checkpoint in this week. It tests the following outcomes from the Progression Map:
		• Multiply fractions less than 1 by whole numbers
		• Divide proper fractions by whole numbers
		Please see Mastery Checkpoint 6.11.19 (Teacher Guide 6.11.19)

Year 6, Spring Term 1

Wk	Strands	Weekly Summary
12	**NPV** Number and place value; **WAS** Written addition and subtraction	Read and write numbers with up to 7-digits, understanding what each digit represents; work systematically to find out how many numbers round to 5000000; solve subtraction of 5- and 6-digit numbers using written column method (decomposition).
		Mastery Checkpoint
		There is one Mastery Checkpoint in this week. It tests the following outcomes from the Progression Map:
		• Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
		• Round any whole number to a required degree of accuracy

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		• Solve number and practical problems involving place value, comparison and rounding of integers

Please see Mastery Checkpoint 6.12.20 (Teacher Guide 6.12.20)

13	**DPE** Decimals, percentages and their equivalence to fractions; **FRP** Fractions, ratio and proportion	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

Mastery Checkpoint

There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:

• Compare and order numbers with 1, 2 or 3 decimal places

• Use appropriate strategies to multiply and divide mentally, including by multiples of 10, 100 and 1000

Please see Mastery Checkpoint 6.13.21 (Teacher Guide 6.13.21)

• Multiply pairs of unit fractions by reading the × sign as 'of'

• Multiply unit fractions by non-unit fractions, writing the answer in its simplest form

Please see Mastery Checkpoint 6.13.22 (Teacher Guide 6.13.22)

14	**MMD** Mental multiplication and division; **WMD** Written multiplication and division; **PRA** Problem solving, reasoning and algebra; **NPV** Number and place value	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.

Mastery Checkpoint

There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:

• Use mental strategies to multiply 2-digit numbers with one decimal place by 1-digit whole numbers

• Multiply 1- and 2-digit numbers with up to 2 decimal places by whole numbers

Please see Mastery Checkpoint 6.14.23 (Teacher Guide 6.14.23)

• Use short multiplication to multiply 4-digit amounts of money by 1-digit numbers, and use estimation to check answers

Please see Mastery Checkpoint 6.14.24 (Teacher Guide 6.14.24)

15	**GPS** Geometry: properties of shapes; **PRA** Problem solving, reasoning and algebra	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

Mastery Checkpoint

There is one Mastery Checkpoint in this week. It tests the following outcomes from the Progression Map:

• Draw 2D shapes using given dimensions and angles

• Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

Please see Mastery Checkpoint 6.15.25 (Teacher Guide 6.15.25)

| 16 | **MAS** Mental addition and subtraction; **NPV** Number and place value; **WAS** Written addition and subtraction; **PRA** Problem solving, reasoning and algebra | 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 |

Mastery Checkpoint

There is one Mastery Checkpoint in this week. It tests the following outcomes from the Progression Map:

- Choose and use an appropriate method, including column addition, to add whole numbers with up to 7 digits, and identify patterns in the number of steps required to generate palindromic numbers.

- Choose and use an appropriate method to subtract whole numbers with up to 7 digits

- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Please see Mastery Checkpoint 6.16.26 (Teacher Guide 6.16.26)

| 17 | **WMD** Written multiplication and division; **NPV** Number and place value; **PRA** Problem solving, reasoning and algebra | Identity 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 |

Mastery Checkpoint

There is one Mastery Checkpoint in this week. It tests the following outcomes from the Progression Map:

- Identify common factors, common multiples and prime numbers

Please see Mastery Checkpoint 6.17.27 (Teacher Guide 6.17.27)

Year 6, Spring Term 2

Wk   Strands

Weekly Summary

| 18 | **MAS** Mental addition and subtraction; **WAS** Written addition and subtraction; **PRA** Problem solving, reasoning and algebra | 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 | **STA** Statistics; **DPE** Decimals, percentages and their equivalence to fractions | 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 |

Mastery Checkpoint

There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:

- Calculate and interpret the mean as an average

Please see Mastery Checkpoint 6.19.28 (Teacher Guide 6.19.28)

- Read and interpret a range of tables, graphs, pictograms and bar charts and answer questions relating to data displayed in these

- Interpret and construct pie charts and use these to solve problems

- Interpret and construct line graphs and use these to solve problems
- Convert between miles and kilometres

Please see Mastery Checkpoint 6.19.29 (Teacher Guide 6.19.29) (Additional Resource 6.19.29)

| 20 | **GPD** Geometry: position and direction; **NPV** Number and place value; **PRA** Problem solving, reasoning and algebra; **GPS** Geometry: properties of shapes | 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 |

Mastery Checkpoint

There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:

- Describe positions on the full coordinate grid (all four quadrants)
- Draw and translate simple shapes on the coordinate plane, and reflect them in the axes

Please see Mastery Checkpoint 6.20.30 (Teacher Guide 6.20.30) (Additional Resource 6.20.30)

- Compare and classify geometric shapes based on their properties and sizes and use mathematical reasoning to find unknown angles in any triangles, quadrilaterals, and regular polygons
- Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Please see Mastery Checkpoint 6.20.31 (Teacher Guide 6.20.31)

| 21 | **WMD** Written multiplication and division; **PRA** Problem solving, reasoning and algebra | 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 |

Mastery Checkpoint

There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:

- Multiply multi-digit numbers up to 4 digits by a 1- or 2-digit whole number using the formal written method of long multiplication
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Please see Mastery Checkpoint 6.21.32 (Teacher Guide 6.21.32)

- Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division, making an estimate using multiples of 10 or 100 of the divisor, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
- Solve problems which require answers to be rounded to specified degrees of accuracy
- Use written division methods in cases where the answer has up to 2 decimal places

Please see Mastery Checkpoint 6.21.33 (Teacher Guide 6.21.33)

| 22 | **PRA** Problem solving, reasoning and algebra; **FRP** Fractions, ratio and proportion | 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

Mastery Checkpoint

There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:

- Use simple formulae

- Continue, generate and describe linear number sequences

Please see Mastery Checkpoint 6.22.34 (Teacher Guide 6.22.34)

- Solve problems involving simple ratios, i.e. unequal sharing and grouping using knowledge of fractions and multiples

Please see Mastery Checkpoint 6.22.35 (Teacher Guide 6.22.35)

Year 6, Summer Term 1

Wk	Strands	Weekly Summary
23	**NPV** Number and place value; **DPE** Decimals, percentages and their equivalence to fractions	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	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 equations involving one or two unknowns, and find missing lengths and angles

Mastery Checkpoint

There are two Mastery Checkpoints in this week. They test the following outcomes from the Progression Map:

- Solve problems involving addition, subtraction, multiplication and division

Please see Mastery Checkpoint 6.24.36 (Teacher Guide 6.24.36)

- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts, and use mental strategies to solve problems involving simple percentages of amounts

Please see Mastery Checkpoint 6.24.37 (Teacher Guide 6.24.37)

| 25 | **MAS** Mental addition and subtraction; **FRP** Fractions, ratio and proportion; **WMD** Written multiplication and division; **MMD** Mental | 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 |

	multiplication and division; **PRA** Problem solving, reasoning and algebra; **NPV** Number and place value	problems involving multiplication and division, including long multiplication of 3-digit and 4-digit numbers and decimals
26	**WMD** Written multiplication and division; **PRA** Problem solving, reasoning and algebra; **NPV** Number and place value; **STA** Statistics; **GPD** Geometry: position and direction	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	Weekly Summary
27	**NPV** Number and place value; **FRP** Fractions, ratio and proportion; **MEA** Measurement	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	**GPS** Geometry: properties of shapes; **MEA** Measurement; **STA** Statistics	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	**NPV** Number and place value; **PRA** Problem solving, reasoning and algebra; **GPD** Geometry: position and direction; **WMD** Written multiplication and division	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; use lattice multiplication to solve multiplications of 2-, 3- and 4-digit numbers; begin to compare historical multiplication methods
30	**NPV** Number and place value; **PRA** Problem solving, reasoning and algebra; **GPS** Geometry: properties of shapes	Explore binary numbers; solve mathematical puzzles; including using multiplication facts, find digital roots and look for patterns; explore Fibonacci sequences and Pythagoras' theorem