

Wk Progression Focus

- 1 **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.

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.

Strands

NPV Number and place value; **MMD** Mental multiplication and division; **DPE** Decimals, percentages and their equivalence to fractions; **FRP** Fractions, ratio and proportion

Objectives

- **NPV.63** Understand place value in 6-digit numbers by creating 6-digit numbers, placing them on a number line and solving place value additions and subtractions
- **NPV.64** Order and compare 6-digit numbers and say a number between
- **NPV.62** Understand the effect of multiplying or dividing a given number by 10, 100 or 1000; answers < 100000 and with not more than 2 decimal places
- **MMD.71** Use mental strategies to multiply by 4, 8, 5, 25, 19, 29 and 99
- **DPE.75** Identify the value of each digit in numbers given to 3 decimal places
- **DPE.76** Multiply and divide by 10, 100 and 1000 giving answers up to 3 decimal places
- **DPE.70** Read, write and order 3-place decimals using a number line
- **DPE.77** Round decimals to nearest tenth and nearest whole number
- **DPE.78** Write the decimal equivalent of any fraction where 10, 100 or 1000 is the denominator
- **DPE.79** Convert decimals (up to 3 decimal places) to



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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.

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.

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

fractions and vice-versa using 1000ths and 100ths, e.g.
 $0.382 = 382/1000$

- **FRP.74** Write equivalents of 1-, 2-, and 3-place decimals as fractions over 10, 100 or 1000 as appropriate
- **MAS.59** Add and subtract larger numbers using place value and number facts
- **MAS.75** Solve additions using appropriate mental strategies
- **MAS.76** Add decimal numbers using mental strategies
- **MAS.80** Add mixed decimal numbers using appropriate mental strategies
- **NPV.61** Round 5-digit numbers up or down to the nearest 10, 100, 1000 or 10000
- **WAS.71** Add 5-digit numbers using column addition
- **WAS.73** Add decimal numbers using column addition
- **DPE.77** Round decimals to nearest tenth and nearest whole number
- **PRA.74** Solve problems involving numbers with up to 3 decimal places
- **PRA.78** Use mathematical reasoning to investigate and solve problems and puzzles, justify their reasoning
- **PRA.85** Express and solve missing number problems algebraically
- **PRA.76** Find pairs of numbers that satisfy an

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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.

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.

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

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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.

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.

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

- equation with two unknowns
- **PRA.89** Enumerate possibilities of combinations of two variables
- **PRA.79** Solve equations with two unknowns using trial and error methods
- **PRA.75** Solve problems involving addition, subtraction, multiplication and division
- **PRA.77** Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- **PRA.82** Use order of operations and brackets for calculations involving the four operations
- **MAS.84** Perform mental additions and subtractions with mixed operations and large numbers
- **MEA.75** Use, read, write and convert between standard units, converting measurements of length, mass and volume from a smaller to a larger unit of measure and vice versa, using up to 3 decimal places
- **MEA.76** Solve problems involving the calculation and conversion of units of measure, decimals up to 3 decimal places where appropriate
- **MEA.79** Convert between miles and kilometres
- **MEA.77** Read and tell the time using analogue, digital and 24-hour clocks, converting times between the

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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.

Use mental addition, column subtraction and Counting up to solve subtractions of amounts of money and word problems; use mathematical reasoning to investigate.

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

three

- **PRA.74** Solve problems involving numbers with up to 3 decimal places
- **PRA.77** Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- **PRA.78** Use mathematical reasoning to investigate and solve problems and puzzles, justify their reasoning
- **NPV.71** Read years using Roman numerals
- **MAS.59** Add and subtract larger numbers using place value and number facts
- **MAS.75** Solve additions using appropriate mental strategies
- **MAS.78** Solve subtractions using appropriate mental strategies
- **MAS.79** Subtract decimal numbers using appropriate mental strategies
- **MAS.82** Subtract mixed decimal numbers using appropriate mental strategies
- **WAS.69** Use column subtraction to subtract 5-digit from 5-digit numbers, where there are not more than three 0s in the larger number
- **WAS.76** Subtract 5- and 6-digit numbers using column subtraction
- **NPV.81** Round any whole number to a required degree of accuracy
- **PRA.74** Solve problems involving numbers with up to



6 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.

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.

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

3 decimal places

- **PRA.75** Solve problems involving addition, subtraction, multiplication and division
- **MMD.71** Use mental strategies to multiply by 4, 8, 5, 25, 19, 29 and 99
- **MMD.75** Use mental strategies to divide by 2, 4, 8, 5, 20 and 25
- **WMD.64** Use short multiplication to multiply 4-digit numbers by 1-digit numbers
- **WMD.76** Use short multiplication to multiply money, e.g. £46.29 by 1-digit numbers
- **WMD.77** Use long multiplication to multiply 3- and 4-digit numbers by teen numbers
- **MAS.84** Perform mental additions and subtractions with mixed operations and large numbers
- **PRA.75** Solve problems involving addition, subtraction, multiplication and division
- **NPV.88** Solve number and practical problems that involve square and cube numbers, numbers up to 10 000 000 and rounding any whole number to a required degree of accuracy