Power Maths Year 5
Power Up progression

Textbook 5A (Term 1) overview

Strand	Unit		Lesson number	Lesson title	National curriculum objective	Power Up specifics
Number – number and place value	Unit 1	Place value within 100,000	1	Numbers to 10,000	Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000	Children choose a number (up to 6 digits) and whether to count forwards and backwards in steps of 10, 100 or 1,000.
Number – number and place value	Unit 1	Place value within 100,000	2	Rounding to the nearest 10, 100 and 1,000	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Children read, write and compare 4-digit numbers by playing a game in pairs. Children generate a 4-digit number using dice, deciding in which column to place their digit in order to make the largest/smallest number possible.
Number – number and place value	Unit 1	Place value within 100,000	3	10,000s, 1,000s, 100s, 10s and 1s (1)	Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000	Children choose a number (up to 6 digits) and whether to round to the nearest 10, 100, 1,000 or 10,000.
Number – number and place value	Unit 1	Place value within 100,000	4	10,000s, 1,000s, 100s, 10s and 1s (2)	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0	Children use a number line to count forwards and backwards in jumps of 100. Includes negative numbers.
Number – number and place value	Unit 1	Place value within 100,000	5	The number line to 100,000	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Children find many different ways to partition the number 524.
Number – number and place value	Unit 1	Place value within 100,000	6	Comparing and ordering numbers to 100,000	Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000	Children use number lines to count forwards and backwards in steps of 1,000 and 10,000.
Number – number and place value	Unit 1	Place value within 100,000	7	Rounding numbers within 100,000	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Children use part-whole models to partition 4-digit numbers.
Number – number and place value	Unit 1	Place value within 100,000	8	Roman numerals to 10,000	Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000	Children choose a 5-digit number then whether to round to the nearest 10, 100, 1,000 or 10,000.
Number – number and place value	Unit 2	Place value within 1,000,000	1	100,000s, 10,000s, 1,000s, 100s, 10s and 1s (1)	Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals	Children read and write Roman numerals less than 1,000. Children also write out given years in Roman numerals.
Number – number and place value	Unit 2	Place value within 1,000,000	2	100,000s, 10,000s, 1,000s, 100s, 10s and 1s (2)	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Children use place value grids to read and write 6-digit numbers.
Number – number and place value	Unit 2	Place value within 1,000,000	3	Number line to 1,000,000	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Children find multiple ways to partition the number 25,736.
Number – number and place value	Unit 2	Place value within 1,000,000	4	Comparing and ordering numbers to 1,000,000	Solve number problems and practical problems that involve addition and subtraction	Children use number lines to find half-way numbers.
Number – number and place value	Unit 2	Place value within 1,000,000	5	Rounding numbers to 1,000,000	Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000	Children count forwards and backwards in steps of 1,000, 10,000 and 100,000 from 452,900.
Number – number and place value	Unit 2	Place value within 1,000,000	6	Negative numbers	Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000	Children count backwards in steps of 1,000, 10,000 and 100,000, including negative numbers.
Number – number and place value	Unit 2	Place value within 1,000,000	7	Counting in 10s, 100s, 1,000s, 10,000s	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Children practise reading, writing and comparing 5-digit numbers by playing a game in pairs. Children generate a 5-digit number using dice, and decide in which column to place their digit in order to make the largest/smallest number possible.

Strand	Unit		Lesson number	Lesson title	National curriculum objective	Power Up specifics
Number – number and place value	Unit 2	Place value within 1,000,000	8	Number sequences	Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals	Children recap Roman numerals less than 1,000 and are asked to write a given year in Roman numerals.
Number – addition and subtraction	Unit 3	Addition and subtraction	1	Adding whole numbers with more than 4 digits (1)	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Children find eight ways to partition 573,282.
Number – addition and subtraction	Unit 3	Addition and subtraction	2	Adding whole numbers with more than 4 digits (2)	Solve number problems and practical problems that involve addition and subtraction	Children halve powers of tens (up to and including millions), write out and look for patterns.
Number – addition and subtraction	Unit 3	Addition and subtraction	3	Subtracting whole numbers with more than 4 digits (1)	Add and subtract numbers mentally with increasingly large numbers	Children use a place value grid to identify a 5-digit number. They then follow instructions to add 1, 10, 100 and 1,000.
Number – addition and subtraction	Unit 3	Addition and subtraction	4	Subtracting whole numbers with more than 4 digits (2)	Add and subtract numbers mentally with increasingly large numbers	Children use a place value grid to identify a 5-digit number. They then follow instructions to add 1, 10, 100 and 1,000. Involves exchange.
Number – addition and subtraction	Unit 3	Addition and subtraction	5	Using rounding to estimate and check answers	Add and subtract numbers mentally with increasingly large numbers	Children use a place value grid to identify a 5-digit number. They then follow instructions to subtract 1, 10, 100 and 1,000.
Number – addition and subtraction	Unit 3	Addition and subtraction	6	Mental addition and subtraction (1)	Add and subtract numbers mentally with increasingly large numbers	Children use a place value grid to identify a 5-digit number. They then follow instructions to subtract 1, 10, 100 and 1,000. Involves exchange.
Number – addition and subtraction	Unit 3	Addition and subtraction	7	Mental addition and subtraction (2)	Add and subtract numbers mentally with increasingly large numbers	Children create a 5-digit number, then add 9, 99, 999 and 9,999 to the number mentally by adding 10, 100, 1,000 and 10,000 and adjusting.
Number – addition and subtraction	Unit 3	Addition and subtraction	8	Using inverse operations	Add and subtract numbers mentally with increasingly large numbers	Children create a 5-digit number, then subtract 9, 99, 999 and 9,999 from the number mentally by subtracting 10, 100, 1,000 and 10,000 and adjusting.
Number – addition and subtraction	Unit 3	Addition and subtraction	9	Problem solving – addition and subtraction (1)	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	Children add and subtract 5-digit numbers with exchange using formal columnar method.
Number – addition and subtraction	Unit 3	Addition and subtraction	10	Problem solving – addition and subtraction (2)	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	Children add and subtract an uneven amount of digits (up to 5-digit numbers) with exchange using formal columnar method, being mindful of the need to line up the digits in the correct column.
Statistics	Unit 4	Graphs and tables	1	Interpreting tables	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	Children add and subtract 3- and 4-digit numbers and use rounding to the nearest 100 or 1,000 to estimate the answer first.
Statistics	Unit 4	Graphs and tables	2	Two-way tables	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	Children fill in missing digits in formal columnar additions and subtractions. No exchanges.
Statistics	Unit 4	Graphs and tables	3	Interpreting line graphs (1)	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	Children fill in missing digits in formal columnar additions and subtractions, up to and including 7-digit numbers, with no exchange.
Statistics	Unit 4	Graphs and tables	4	Interpreting line graphs (2)	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	Children fill in missing digits in formal columnar additions and subtractions, up to and including 7-digit numbers, with one exchange
Statistics	Unit 4	Graphs and tables	5	Drawing line graphs	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	Children fill in missing digits in formal columnar additions and subtractions, up to and including 5-digit numbers, with more than one exchange.

Strand	Unit		Lesson number	Lesson title	National curriculum objective	Power Up specifics
Number – multiplication and division	Unit 5	Multiplication and division (1)	1	Multiples	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	Children add and subtract 3- or 4-digit numbers, using rounding to the nearest 100 or 1,000 to estimate answer first.
Number – multiplication and division	Unit 5	Multiplication and division (1)	2	Factors	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	Children create a 6-digit number, then add or subtract a combination of 1, 10, 100, 1,000, 10,000 and 100,000. Children calculate mentally and write down the new number made.
Number – multiplication and division	Unit 5	Multiplication and division (1)	3	Prime numbers	Add and subtract numbers mentally with increasingly large numbers	Children use a bar model to solve a word problem with three numbers of at least 5 digits.
Number – multiplication and division	Unit 5	Multiplication and division (1)	4	Using factors	Multiply and divide numbers mentally, drawing upon known facts	Children complete calculations using the 6, 7 and 8 times-tables.
Number – multiplication and division	Unit 5	Multiplication and division (1)	5	Squares	Multiply and divide numbers mentally, drawing upon known facts	Children use multiplication to create number facts.
Number – multiplication and division	Unit 5	Multiplication and division (1)	6	Cubes	Multiply and divide numbers mentally, drawing upon known facts	Children complete number sentences using the 9, 11 and 12 times-tables.
Number – multiplication and division	Unit 5	Multiplication and division (1)	7	Inverse operations	Multiply and divide numbers mentally, drawing upon known facts	Children use known multiplication facts and related division facts to solve calculations.
Number – multiplication and division	Unit 5	Multiplication and division (1)	8	Multiplying whole numbers by 10, 100 and 1,000	Identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers	Children work in pairs and use digit cards to generate a 2-digit number. Children list all factors of the number.
Number – multiplication and division	Unit 5	Multiplication and division (1)	9	Dividing whole numbers by 10, 100 and 1,000	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Guess my number game. Teacher thinks of a 2-digit number. Children ask yes/no answer questions to find out the number. Children use properties of number language such as prime, composite, multiples and factors, bigger than, less than to deduce the number.
Number – multiplication and division	Unit 5	Multiplication and division (1)	10	Multiplying and dividing by multiples of 10, 100 and 1,000	Establish whether a number up to 100 is prime and recall prime numbers up to 19	Children throw a dice two times to generate a 2-digit number, and list all the factor pairs of their number. Then repeat with another number.
Measurement	Unit 6	Measure – area and perimeter	1	Measuring perimeter	Identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers	Children use digit cards to generate a 2-digit number and list all the factors of their number. They then compare with their partner's number and list common factors.
Measurement	Unit 6	Measure – area and perimeter	2	Calculating perimeter (1)	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	Children write out number sentences for numbers represented on place value grids with counters.
Measurement	Unit 6	Measure – area and perimeter	3	Calculating perimeter (2)	Multiply and divide numbers mentally, drawing upon known facts	Children use known multiplication and division facts to divide a multiple of 10 by a 2-digit number, e.g. 560 ÷ 80 = 7.
Measurement	Unit 6	Measure – area and perimeter	4	Calculating area (1)	Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes	Children find three different factor pairs of 120.
Measurement	Unit 6	Measure – area and perimeter	5	Calculating area (2)	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Guess my number game. Teacher thinks of a 2-digit number. Children ask yes/no answer questions to find out the number. Children use properties of number language such as prime, composite, multiples and factors, bigger than, less than to deduce the number.
Measurement	Unit 6	Measure – area and perimeter	6	Comparing area	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	Children use a Gattegno chart (hundredths to ten thousands) and find patterns and explain them.
Measurement	Unit 6	Measure – area and perimeter	7	Estimating area	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	Children use a Gattegno chart (hundredths to ten thousands) and find the possible path from 0·07 to 40,000.

Textbook 5B (Term 2) overview

Strand	Unit		Lesson number	Lesson title	National curriculum objective	Power Up specifics
Number – multiplication and division	Unit 7	Multiplication and division (2)	1	Multiplying numbers up to 4 digits by a 1-digit number	Recognise and use square numbers and cube numbers, and the notation for squared and cubed	Children choose a 1- or 2-digit number by throwing a dart and square the number. They can use multiplication facts to help.
Number – multiplication and division	Unit 7	Multiplication and division (2)	2	Multiplying 2-digit numbers (1)	Recognise and use square numbers and cube numbers, and the notation for squared and cubed	Children choose a 1- or 2-digit number by throwing a dart and cube the number. They can use multiplication facts to help.
Number – multiplication and division	Unit 7	Multiplication and division (2)	3	Multiplying 2-digit numbers (2)	Recognise and use square numbers and cube numbers, and the notation for squared and cubed	Children insert numbers into a function machine which cubes all numbers.
Number – multiplication and division	Unit 7	Multiplication and division (2)	4	Multiplying 2-digit numbers (3)	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Guess my number game. Teacher thinks of a 2-digit number. Children ask yes/no answer questions to find out the number. Children use properties of number language such as prime, composite, multiples and factors, bigger than, less than to deduce the number.
Number – multiplication and division	Unit 7	Multiplication and division (2)	5	Multiplying a 3-digit number by a 2-digit number	Multiply and divide numbers mentally, drawing upon known facts	Children use known multiplication and division facts to multiply and divide multiples of 10 or 100.
Number – multiplication and division	Unit 7	Multiplication and division (2)	6	Multiplying a 4-digit number by a 2-digit number	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	Children use known multiplication and division facts to multiply and divide multiples of 10, 100 or 1,000.
Number – multiplication and division	Unit 7	Multiplication and division (2)	7	Dividing up to a 4-digit number by a 1-digit number (1)	Add and subtract numbers mentally with increasingly large numbers	Children throw darts to choose a 2-digit number and 1-digit number to subtract mentally.
Number – multiplication and division	Unit 7	Multiplication and division (2)	8	Dividing up to a 4-digit number by a 1-digit number (2)	Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers	Children recap formal written multiplication of 3-digit numbers by 1-digit numbers and explore the answer of the same 3-digit number when multiplied by a multiple of 10, e.g. 245 × 2 = 490; and 245 × 20 = 4,900.
Number – multiplication and division	Unit 7	Multiplication and division (2)	9	Division with remainders (1)	Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers	Children recap formal written multiplication of 3-digit numbers by 1-digit numbers and explore the answer of the same 3-digit number when multiplied by a multiple of 10, e.g. 357 × 6 = 2,142; 357 × 60 = 21,420.
Number – multiplication and division	Unit 7	Multiplication and division (2)	10	Division with remainders (2)	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Guess my number game. Teacher thinks of a 2-digit number. Children ask yes/no answer questions to find out the number. Children use properties of number language such as prime, composite, multiples and factors, bigger than, less than to deduce the number.
Number – multiplication and division	Unit 7	Multiplication and division (2)	11	Problem solving – division with remainders	Multiply and divide numbers mentally, drawing upon known facts	Children use partitioning to help divide mentally 2-digit numbers by 1-digit numbers (with no remainders).
Number – fractions	Unit 8	Fractions (1)	1	Equivalent fractions	Multiply and divide numbers mentally, drawing upon known facts	Children use partitioning to divide mentally 3-digit numbers by 1-digit numbers (with no remainders).
Number – fractions	Unit 8	Fractions (1)	2	Converting improper fractions to mixed numbers	Multiply and divide numbers mentally, drawing upon known facts	Children use partitioning to divide mentally 3-digit numbers by 1-digit numbers (with no remainders).
Number – fractions	Unit 8	Fractions (1)	3	Converting mixed numbers to improper fractions	Multiply and divide numbers mentally, drawing upon known facts	Children use partitioning to divide mentally 3-digit numbers by 2-digit numbers (with no remainders).
Number – fractions	Unit 8	Fractions (1)	4	Number sequences	Multiply and divide numbers mentally, drawing upon known facts	Children use partitioning to divide mentally 4-digit numbers by 2-digit numbers (with no remainders).
Number – fractions	Unit 8	Fractions (1)	5	Comparing and ordering fractions (1)	Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	Children link the partitioning method to formal short method of division.

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Number – fractions	Unit 8	Fractions (1)	6	Comparing and ordering fractions (2)	Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	Children link the partitioning method to formal short method of division of 3-digit numbers by 2-digit numbers.
Number – fractions	Unit 8	Fractions (1)	7	Fractions as division (1)	Multiply and divide numbers mentally, drawing upon known facts	Children play game in pairs, similar to 'Rock, paper, scissors' but show a number of fingers instead. Children find the product of the fingers shown on one hand. First person to call out the correct answer wins a point.
Number – fractions	Unit 8	Fractions (1)	8	Fractions as division (2)	Multiply and divide numbers mentally, drawing upon known facts	Children play game in pairs, similar to 'Rock, paper, scissors' but show a number of fingers instead. Children use both hands and find the product of the fingers shown. First person to call out the correct answer wins a point.
Number – fractions	Unit 9	Fractions (2)	1	Adding and subtracting fractions with the same denominator	Multiply and divide numbers mentally, drawing upon known facts	Children play game in pairs, similar to 'Rock, paper, scissors' but show a number of fingers instead. Player 2's fingers are worth 10× their number. Children use both hands and find the product of the fingers shown. First person to call out the correct answer wins a point.
Number – fractions	Unit 9	Fractions (2)	2	Adding and subtracting fractions (1)	Multiply and divide numbers mentally, drawing upon known facts	Children play game in pairs, similar to 'Rock, paper, scissors' but show a number of fingers instead. Player 2's fingers are worth 10× their number. Children use both hands and find the product of the fingers shown. First person to call out the correct answer wins a point.
Number – fractions	Unit 9	Fractions (2)	3	Adding and subtracting fractions (2)	Multiply and divide numbers mentally, drawing upon known facts	Children play game in pairs, similar to 'Rock, paper, scissors' but show a number of fingers instead. Both player's fingers are worth 10× their number. Children use both hands and find the product of the fingers shown. First person to call out the correct answer wins a point.
Number – fractions	Unit 9	Fractions (2)	4	Adding fractions (1)	Multiply and divide numbers mentally, drawing upon known facts	Children work out rules for function machines.
Number – fractions	Unit 9	Fractions (2)	5	Adding fractions (2)	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	Children work out the fraction of shaded shapes, and simplify where possible.
Number – fractions	Unit 9	Fractions (2)	6	Adding fractions (3)	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	Children draw three rectangles on whiteboard and divide each rectangle into tenths. Children throw a dice and colour in this number of tenths in the first rectangle, repeat for the second rectangle, then colour in the total of these tenths in the third rectangle.
Number – fractions	Unit 9	Fractions (2)	7	Subtracting fractions (1)	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	Children draw a 100 square to show hundredths. In pairs, children take turns to roll the dice, colouring in the number of hundredths shown on the dice. Children write the addition fact and answer as they add on hundredths.
Number – fractions	Unit 9	Fractions (2)	8	Subtracting fractions (2)	Compare and order fractions whose denominators are all multiples of the same number	Children use >, < or = to compare fractions where the denominators are multiples of the same number.
Number – fractions	Unit 9	Fractions (2)	9	Subtracting fractions (3)	Compare and order fractions whose denominators are all multiples of the same number	Children order five proper fractions where the denominators are all multiples of the same number in ascending order.
Number – fractions	Unit 9	Fractions (2)	10	Subtracting fractions (4)	Compare and order fractions whose denominators are all multiples of the same number	Children place five proper fractions where the denominators are all multiples of the same number on a number line.

Strand	Unit		Lesson number	Lesson title	National curriculum objective	Power Up specifics
Number – fractions	Unit 9	Fractions (2)	11	Problem solving – mixed word problems (1)	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]	Children create an improper fraction then draw out the fraction using fraction strips.
Number – fractions	Unit 9	Fractions (2)	12	Problem solving – mixed word problems (2)	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]	Children create an improper fraction then find the mixed number equivalent.
Number – fractions	Unit 10	Fractions (3)	1	Multiplying fractions (1)	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]	Children identify the mixed number shown.
Number – fractions	Unit 10	Fractions (3)	2	Multiplying fractions (2)	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]	Children identify the improper fraction shown.
Number – fractions	Unit 10	Fractions (3)	3	Multiplying fractions (3)	Add and subtract fractions with the same denominator, and denominators that are multiples of the same number	Children draw three rectangles on whiteboard and divide each rectangle into ninths. Children throw a dice and colour in this number of ninths in the first rectangle, repeat for the second rectangle, then colour in the total of these ninths in the third rectangle.
Number – fractions	Unit 10	Fractions (3)	4	Multiplying fractions (4)	Add and subtract fractions with the same denominator, and denominators that are multiples of the same number	Children have nine counters representing nine ninths. They roll a dice and subtract that number of ninths. Children do this mentally first then write out the number sentence.
Number – fractions	Unit 10	Fractions (3)	5	Calculating fractions of amounts	Add and subtract fractions with the same denominator, and denominators that are multiples of the same number	Children have eight counters representing eight eighths. They roll a dice and subtract that number of eighths. Children do this mentally first then write out the number sentence.
Number – fractions	Unit 10	Fractions (3)	6	Using fractions as operators	Add and subtract fractions with the same denominator, and denominators that are multiples of the same number	Children find the sum of pairs of proper fractions where the denominators are multiples of the same number, then simplify the answers.
Number – fractions	Unit 10	Fractions (3)	7	Problem solving – mixed word problems	Add and subtract fractions with the same denominator, and denominators that are multiples of the same number	Children find the sum of pairs of proper fractions where the denominators are multiples of the same number but can be simplified to find a common denominator.
Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	1	Writing decimals (1)	Add and subtract fractions with the same denominator, and denominators that are multiples of the same number	Children find the difference between pairs of proper fractions where the denominators are multiples of the same number.
Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	2	Writing decimals (2)	Add and subtract fractions with the same denominator, and denominators that are multiples of the same number	Children simplify fractions with denominators that are multiples of the same number, and put them into a function machine with the function $-\frac{1}{6}$.
Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	3	Decimals as fractions (1)	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	Children insert proper fractions into multiplication function machines.
Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	4	Decimals as fractions (2)	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	Children multiply a proper fraction by a whole number and simplify where possible.
Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	5	Understanding thousandths	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	Children insert a mixed number into a function machine set up to multiply by 2.

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Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	6	Writing thousandths as decimals	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	Children multiply mixed numbers by 6 and show the steps of their working out.
Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	7	Ordering and comparing decimals (1)	Read and write decimal numbers as fractions [for example, 0·71 = $\frac{71}{100}$]	Children fill in missing numbers on a fraction and decimal number line and justify why a certain decimal or fraction needs to go there. Children identify equivalence.
Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	8	Ordering and comparing decimals (2)	Read and write decimal numbers as fractions [for example, 0·71 = $\frac{71}{100}$]	Children fill in missing numbers on a fraction and decimal number line, including mixed numbers.
Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	9	Rounding decimals	Read and write decimal numbers as fractions [for example, 0·71 = $\frac{71}{100}$]	Children fill in missing numbers on a fraction and decimal number line.
Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	10	Understanding percentages	Read and write decimal numbers as fractions [for example, 0·71 = $\frac{71}{100}$]	Children identify equivalence between fractions and decimals, including improper fractions, then order the first three decimals and fractions on a number line.
Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	11	Percentages as fractions and decimals	Read and write decimal numbers as fractions [for example, 0·71 = $\frac{71}{100}$]	Children match improper fractions to their decimals.
Number – fractions (including decimals and percentages)	Unit 11	Decimals and percentages	12	Equivalent fractions, decimals and percentages	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Children generate a number with three decimal places using a dice. Children then partition the number into tenths, hundredths and thousandths.

Textbook 5C (Term 3) overview

Strand	Unit		Lesson number	Lesson title	National curriculum objective	Power Up specifics
Number – fractions (including decimals)	Unit 12	Decimals	1	Adding and subtracting decimals (1)	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Children generate a number with three decimal places using a dice. Children then partition the number into tenths, hundredths and thousandths then identify the decimal and fraction for each part of the number.
Number – fractions (including decimals)	Unit 12	Decimals	2	Adding and subtracting decimals (2)	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Children insert decimals with three decimal places into function machines which add 0·01, 0·1, 0·001 and 10.
Number – fractions (including decimals)	Unit 12	Decimals	3	Adding and subtracting decimals (3)	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Children insert decimals with three decimal places into function machines which subtract 0·01, 0·1 and 0·001.
Number – fractions (including decimals)	Unit 12	Decimals	4	Adding and subtracting decimals (4)	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Children have the number 15·094 and follow instructions to add and subtract tenths, hundredths and thousandths.
Number – fractions (including decimals)	Unit 12	Decimals	5	Adding and subtracting decimals (5)	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Children represent the number 27·948 and follow instructions to add and subtract tenths, hundredths and thousandths.
Number – fractions (including decimals)	Unit 12	Decimals	6	Adding and subtracting decimals (6)	Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place	Children draw part of the number line to show the two whole numbers 3·48 lies between and to estimate where given numbers would be on the number line. Children then round the numbers to the nearest whole number.
Number – fractions (including decimals)	Unit 12	Decimals	7	Adding and subtracting decimals (7)	Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place	Children estimate where 2-digit numbers with two decimal places sit on a number line then justify what these numbers would round up to as the nearest whole number.

Strand	Unit		Lesson number	Lesson title	National curriculum objective	Power Up specifics
Number – fractions (including decimals)	Unit 12	Decimals	8	Adding and subtracting decimals (8)	Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place	Children put 2- and 3-digit numbers with two decimal places through function machines which round to the nearest one decimal place and the nearest whole number.
Number – fractions (including decimals)	Unit 12	Decimals	9	Decimal sequences	Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place	Children put 2- and 3-digit numbers with two decimal places through function machines which round to the nearest one decimal place and the nearest whole number and identify which numbers round up and which numbers round down.
Number – fractions (including decimals)	Unit 12	Decimals	10	Problem solving – decimals (1)	Read, write, order and compare numbers with up to 3 decimal places	Children write down a decimal number with three decimal places in words to show how many tenths, hundredths and thousandths.
Number – fractions (including decimals)	Unit 12	Decimals	11	Problem solving – decimals (2)	Read, write, order and compare numbers with up to 3 decimal places	Children compare numbers with three decimal places using <, > or = to create number statements.
Number – fractions (including decimals)	Unit 12	Decimals	12	Multiplying decimals by 10	Read, write, order and compare numbers with up to 3 decimal places	Children have four different numbers with three decimal places to place in ascending/descending order.
Number – fractions (including decimals)	Unit 12	Decimals	13	Multiplying decimals by 10, 100 and 1,000	Read, write, order and compare numbers with up to 3 decimal places	In pairs, children generate three digits using a dice, and make the largest thousandths number possible, writing it out as a fraction and as a decimal number. Children then partition the numbers into tenths, hundredths and thousandths.
Number – fractions (including decimals)	Unit 12	Decimals	14	Dividing decimals by 10	Read, write, order and compare numbers with up to 3 decimal places	In pairs, children generate three digits using a dice, and make the smallest thousandths number possible, writing it out as a fraction and as a decimal number. Children then partition the numbers into tenths, hundredths and thousandths.
Number – fractions (including decimals)	Unit 12	Decimals	15	Dividing decimals by 10, 100 and 1,000	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Children are given a 2-step word problem involving fractions and subtraction.
Geometry – properties of shapes	Unit 13	Geometry – properties of shapes (1)	1	Measuring angles in degrees	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Children find the missing number in formal column multiplication and short division.
Geometry – properties of shapes	Unit 13	Geometry – properties of shapes (1)	2	Measuring with a protractor (1)	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Children are given a 2-step word problem involving multiplication and subtraction.
Geometry – properties of shapes	Unit 13	Geometry – properties of shapes (1)	3	Measuring with a protractor (2)	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Children find errors in formal column multiplication and short division involving exchanges.
Geometry – properties of shapes	Unit 13	Geometry – properties of shapes (1)	4	Drawing lines and angles accurately	Solve problems involving number up to 3 decimal places	Children solve a 1-step word addition problem with numbers up to three decimal places, then are asked to round the answer to the nearest tenth, hundredth and whole.
Geometry – properties of shapes	Unit 13	Geometry – properties of shapes	5	Calculating angles on a straight line	Solve problems involving number up to 3 decimal places	Children are given a 1-step word subtraction problem with numbers up to three decimal places and are encouraged to check their answer with the inverse.
Geometry – properties of shapes	Unit 13	Geometry – properties of shapes	6	Calculating angles around a point	Solve problems involving number up to 3 decimal places	Children find missing numbers in column addition and subtraction using 5-digit numbers with three decimal places.

Strand	Unit		Lesson number	Lesson title	National curriculum objective	Power Up specifics
Geometry – properties of shapes	Unit 13	Geometry – properties of shapes	7	Calculating lengths and angles in shapes	Solve problems involving number up to 3 decimal places	Children find errors in two short divisions using numbers with three decimal places.
Geometry – properties of shapes	Unit 14	Geometry – properties of shapes (2)	1	Recognising and drawing parallel lines	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	Children solve a 2-step word problem concerning money, addition and subtraction.
Geometry – properties of shapes	Unit 14	Geometry – properties of shapes (2)	2	Recognising and drawing perpendicular lines	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	Children are given a 2-step word multiplication/division problem involving a simple fraction.
Geometry – properties of shapes	Unit 14	Geometry – properties of shapes (2)	3	Reasoning about parallel and perpendicular lines	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	Children are given a 2-step word multiplication/division problem involving a simple rate.
Geometry – properties of shapes	Unit 14	Geometry – properties of shapes (2)	4	Regular and irregular polygons	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	Children are given a 2-step word multiplication/division problem involving simple rates.
Geometry – properties of shapes	Unit 14	Geometry – properties of shapes (2)	5	Reasoning about 3D shapes	Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal fraction	Children complete a table showing percentage and fraction equivalents as well as a pictorial representation.
Geometry – position and direction	Unit 15	Geometry – position and direction	1	Reflection	Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal fraction	Children match proper fractions to their percentage equivalents.
Geometry – position and direction	Unit 15	Geometry – position and direction	2	Reflection with coordinates	Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25	Children write down fraction and percentage equivalents to numbers with two decimal places.
Geometry – position and direction	Unit 15	Geometry – position and direction	3	Translation	Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25	Children write down fraction and decimal equivalents to given percentages.
Geometry – position and direction	Unit 15	Geometry – position and direction	4	Translation with coordinates	Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25	Children have fractions which have denominators of a multiple of 10 and find percentage and decimal equivalents.
Measurement	Unit 16	Measure – converting units	1	Metric units (1)	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	Children recap multiplying and dividing by 10, 100 and 1,000.
Measurement	Unit 16	Measure – converting units	2	Metric units (2)	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	Children identify whether function machines multiply or divide by 10, 100 or 1,000.
Measurement	Unit 16	Measure – converting units	3	Metric units (3)	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Guess my number game. Children ask yes/no answer questions to find out their partner's number. Children use properties of number language such as prime, composite, multiples and factors, bigger than, less than to deduce the number.
Measurement	Unit 16	Measure – converting units	4	Metric units (4)	Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals	Children complete an addition pyramid using Roman numerals.
Measurement	Unit 16	Measure – converting units	5	Imperial units of length	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0	Starting at 45, children count forwards and backwards in steps of 10. They then count backwards in steps of 100 from 376.
Measurement	Unit 16	Measure – converting units	6	Imperial units of mass	Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000	Children round 56,329 to the nearest 100, 1,000, 10,000 and 100,000.

Strand	Unit		Lesson number	Lesson title	National curriculum objective	Power Up specifics
Measurement	Unit 16	Measure – converting units	7	Imperial units of capacity	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Guess my number game. Children ask yes/no answer questions to find out their partner's 2-digit number. Children use properties of number language such as prime, composite, multiples and factors, bigger than, less than to deduce the number.
Measurement	Unit 16	Measure – converting units	8	Converting units of time	Recognise and use square numbers and cube numbers, and the notation for squared and cubed	'Rock, paper, scissor' type game using fingers on one hand. Children play in pairs, and call out the square number made from the number of fingers shown.
Measurement	Unit 16	Measure – converting units	9	Timetables	Recognise and use square numbers and cube numbers, and the notation for squared and cubed	Children roll a dice then cube the number they get. Children write out number sentences with the numbers they have cubed.
Measurement	Unit 16	Measure – converting units	10	Problem solving – measure	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Starting at 5, children follow instructions to add, subtract, multiply and divide mentally.
Measurement	Unit 17	Measure – volume and capacity	1	What is volume?	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Starting at 7, children follow instructions to subtract, multiply, divide and square mentally.
Measurement	Unit 17	Measure – volume and capacity	2	Comparing volumes	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Guess my number game. Children ask yes/no answer questions to find out their partner's 2-digit number. Children use properties of number language such as prime, composite, multiples and factors, bigger than, less than to deduce the number.
Measurement	Unit 17	Measure – volume and capacity	3	Estimating volume	Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25	Children use the relationship between fractions, decimals and percentages to find answers to decimals multiplied by a whole number.
Measurement	Unit 17	Measure – volume and capacity	4	Estimating capacity	Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25	Children use the relationship between fractions, decimals and percentages to find answers to decimals times a whole number. Children can give fractions in their simplest forms.