Aston Tower Community Primary School

Maths Medium Term Planning: Year 5

Year 5: Autumn 1

Week	Retrieval • Multiply and divide numbers mentally drawing upon known facts. • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	Main Maths Objectives • Solve problems involving addition, subtraction, multiplication and division. • Solve problems involving numbers up to three decimal places. • Solve problems which require knowing percentage and decimal equivalents of fractions with a denominator of a multiple of 10 or 25
1	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. Read, write, order and compare numbers to at least 1 000 000. Determine the value of each digit in numbers up to 1 000 000	Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers.
2	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.	Establish whether a number up to 100 is prime and recall prime numbers up to 19. Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers. Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed(^{3}). Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.
3	Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed(^{3}) – include adding and subtracting of these numbers. Add and subtract numbers mentally with increasingly large numbers.	Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction). Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
4	Add and subtract whole numbers with more than four digits, including using formal written methods. Round numbers up to 1,000,000.	Multiply numbers up to four digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.
5	Identify factors and multiples. Multiply numbers up to four digits by a one- or two-digit number	Divide numbers up to four digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.
6	Divide numbers up to four digits by a one-digit number. Multiply numbers up to four digits by a one- or two-digit number. Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	Recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number. Identify name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. Compare and order fractions whose denominators are all multiples of the same number.
7	Recognise mixed numbers and improper fractions and convert from one form to the other. Write equivalent fractions of a given fraction. Compare and order fractions.	Add and subtract fractions with the same denominator and denominators that are multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. Read and write decimal numbers as fractions Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.
8	Read and write decimal numbers as fractions. Add and subtract fractions. Multiply proper fractions and mixed numbers by whole numbers.	Round decimals with two decimal places to the nearest whole number and to one decimal place. Read, write, order and compare numbers with up to three decimal places. Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred'; write percentages as a fraction with denominator of a hundred, and as a decimal.

Year 5: Autumn 2

Week	Retrieval	Main Maths Objectives
1	Round decimals with two places to the nearest whole number and to one decimal place. Order decimals to 3 places. Write percentages as fractions and decimals.	Convert between different units of metric measure [e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]. Use all four operations to solve problems involving measure (length, mass and volume) using decimal notation, including scaling.
2	Convert between different units of metric measure [e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre].	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Solve problems involving converting between units of time and money.
3	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Solve problems involving converting between units of time and money.	Estimate volume [e.g. using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [e.g. using water]. Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.
4	Calculate the perimeter and area of rectangles and irregular shapes. Estimate volume.	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Identify: • angles at a point and one whole turn (360°) • angles at a point on a straight line and ½ turn (180°) • other multiples of 90° Draw given angles and measure them in degrees.
5	Identify: • angles at a point and one whole turn (360°) • angles at a point on a straight line and ½ turn (180°) • other multiples of 90°	Identify 3-D shapes including cubes and other cuboids, from 2-D representations. Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
6	Identify 3-D shapes including cubes and other cuboids, from 2-D representations. Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. Complete, read and interpret information in tables, including timetables. Solve comparison, sum and difference problems using information presented in a line graph.
7	Assess and review	

Year 5: Spring 1

Week	Retrieval • Multiply and divide numbers mentally drawing upon known facts. • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	Main Maths Objectives • Solve problems involving addition, subtraction, multiplication and division. • Solve problems involving numbers up to three decimal places. • Solve problems which require knowing percentage and decimal equivalents of fractions with a denominator of a multiple of 10 or 25
1	Read, write, order and compare numbers to at least 1 000 000 Determine the value of each digit in numbers up to 1 000 000 Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction). Solve addition multi-step problems in contexts, deciding which operations and methods to use and why.
2	Add and subtract numbers mentally with increasingly large numbers. Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers.	Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction). Solve addition multi-step problems in contexts, deciding which operations and methods to use and why.
3	Establish whether a number up to 100 is prime and recall prime numbers up to 19. Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers. Recognise and use square numbers and cube numbers, and the notation for squared(^{2}) and cubed(^{3}).	Multiply numbers up to four digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.
4	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. Divide numbers up to four digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.
5	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. Compare and order fractions whose denominators are all multiples of the same number. Recognise mixed numbers and improper fractions and convert from one form to the other.	Identify name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. Add and subtract fractions with the same denominator and denominators that are multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
6	Read and write decimal numbers as fractions Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred'; write percentages as a fraction with denominator of a hundred, and as a decimal.	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Round decimals with two decimal places to the nearest whole number and to one decimal place. Read, write, order and compare numbers with up to three decimal places.
7	Assess and review	

Year 5: Spring 2

Week	Retrieval	Main Maths Objectives • Recall multiplication and division facts for multiplication tables up to 12 × 12
1	Convert between different units of metric measure [e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre].	Use all four operations to solve problems involving measure (length, mass and volume) using decimal notation, including scaling. Estimate volume [e.g. using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [e.g. using water].
2	Add and subtract numbers mentally with increasingly large numbers. Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers.	Solve problems involving converting between units of time and money.
3	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.
4	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.	Identify: • angles at a point and one whole turn (360°) • angles at a point on a straight line and ½ turn (180°) • other multiples of 90° Draw given angles and measure them in degrees.
5	Identify 3-D shapes including cubes and other cuboids, from 2-D representations.	Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.
6	Recognise and use square numbers and cube numbers, and the notation for squared(^{2}) and cubed(^{3}). Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.	Complete, read and interpret information in tables, including timetables. Solve comparison, sum and difference problems using information presented in a line graph.
7	Assess and review	

Year 5: Summer 1

Week	Retrieval • Multiply and divide numbers mentally drawing upon known facts. • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	Main Maths Objectives • Solve problems involving addition, subtraction, multiplication and division. • Solve problems involving numbers up to three decimal places. • Solve problems which require knowing percentage and decimal equivalents of fractions with a denominator of a multiple of 10 or 25
1	Read, write, order and compare numbers to at least 1 000 000 Determine the value of each digit in numbers up to 1 000 000 Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	Add whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction). Solve addition multi-step problems in contexts, deciding which operations and methods to use and why.
2	Add and subtract numbers mentally with increasingly large numbers. Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers.	Subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction). Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
3	Establish whether a number up to 100 is prime and recall prime numbers up to 19 Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers. Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed(^{3}).	Multiply numbers up to four digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.
4	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	Divide numbers up to four digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.
5	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. Compare and order fractions whose denominators are all multiples of the same number. Recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number.	Identify name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. Add and subtract fractions with the same denominator and denominators that are multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
6	Read and write decimal numbers as fractions Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred'; write percentages as a fraction with denominator of a hundred, and as a decimal.	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Round decimals with two decimal places to the nearest whole number and to one decimal place. Read, write, order and compare numbers with up to three decimal places.
7	Assess and review	

Year 5: Summer 2

Week	Retrieval	Main Maths Objectives • Recall multiplication and division facts for multiplication tables up to 12 × 12
1	Convert between different units of metric measure [e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre].	Use all four operations to solve problems involving measure (length, mass and volume) using decimal notation, including scaling. Estimate volume [e.g. using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [e.g. using water].
2	Add and subtract numbers mentally with increasingly large numbers. Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers.	Solve problems involving converting between units of time and money.
3	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.
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6	Recognise and use square numbers and cube numbers, and the notation for squared(^{2}) and cubed(^{3}). Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.	Complete, read and interpret information in tables, including timetables. Solve comparison, sum and difference problems using information presented in a line graph.
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