

Year 5 – Small step objective coverage

AUTUMN TERM – YEAR 5			
<p><u>Place value – numbers to 1,000,000</u> To recognise numbers to 10,000 using a place value grid. To round numbers to the nearest 10, 100 and 1000 using a number line. To recognise the value of each digit in numbers to 10,000. To work with the number line to 100,000 and identify numbers that are between two points. To compare and order number to 100,000 using number lines and place value grids. To apply the rules for rounding to the nearest 10, 100 and 1,000 to round 5-digit numbers. To revisit Roman numerals to 100 and learn the numerals M (1,000) and D (500).</p>	<p><u>Number - Addition & Subtraction</u> To use the written column method to add whole numbers with more than 4 digits. To identify large numbers in the context of distance and use the written column method to add two or more whole numbers with more than 4 digits. To use the column method to subtract whole numbers with more than 4 digits, in the context of taking away and of finding a difference. To use the column method to subtract whole numbers with more than 4 digits, including where exchanges are needed in some or all columns. To use rounding to estimate and check answers. To learn how to mentally add whole numbers by choosing the most efficient method from a variety of strategies. To use the inverse operation in order to check the answers to addition and subtraction calculations. To learn what strategies to use to solve problems that involve adding and subtracting whole numbers with more than 4 digits. To learn how to solve more complex addition and subtraction multi-step problems that involve interpreting and identifying the information in order to solve the problem.</p>	<p><u>Number – Multiplication & Division</u> To spot patterns in multiples of numbers and use these to make generalisations and predictions. To learn the meaning of the mathematical term ‘factor’ and use multiplication and division to find factors. To learn about prime numbers and how they are different to other numbers. To use learning about prime numbers to help solve mathematical problems and puzzles involving breaking down numbers into factors. To learn about square numbers and how to recognise and represent square numbers pictorially before linking this to using notation, including squared (2). To learn how to recognise and represent cube numbers pictorially before linking this to using notation, including cubed (3) To recognise how knowing and using the inverse operation can help to check and solve problems. To use understanding of place value to develop the ability to fluently multiply whole numbers by 10, 100 and 1,000. To use understanding of place value to develop the ability to fluently divide whole numbers by 10, 100 and 1,000.</p>	<p><u>Number – Multiplication & Division</u> To understand how to multiply numbers up to 4 digits by a 1-digit number using column multiplication and partitioning numbers. To multiply pairs of 2-digit numbers by partitioning the numbers and using an area model. To multiply 2-digit numbers by partitioning the numbers in different ways. To multiply pairs of 2-digit numbers using short multiplication. To extend learning to understand how to multiply a 3-digit number by a 2-digit number using grid and column method. To multiply a 4-digit number by a 2-digit number using grid and column method. To divide numbers with up to 4 digits by a 1-digit number using short division. To divide numbers with up to 4 digits by a 1-digit number using short division (with remainders). To interpret what the remainder will be when dividing by a 1-digit number, using knowledge of multiples.</p>

SPRING TERM – YEAR 5

Measure – Area & Perimeter

To find the perimeter of rectilinear shapes through measurement in cm.
 To calculate the perimeter of rectilinear shapes in centimetres and metres.
 To apply knowledge of perimeter to solve problems, including calculating unknown lengths of composite rectilinear shapes.
 To consolidate knowledge of the area of rectangles by calculating area using square centimetres and square metres from scale drawings.
 To explore the relationship between a rectangle's length and width, and its area using arrays.
 To compare the area of rectangles (including squares).
 To apply knowledge of area to estimate the area of irregular shapes.

Fractions, decimals and percentages - fractions

To find and represent equivalent fractions using manipulatives, pictures and abstract representations.
 To use understanding of fractions to recognise mixed number fractions.
 To convert mixed numbers to improper fractions using bar models.
 To count and complete ascending and descending fraction number sequences.
 To compare fractions and order them based on their size pictorial using representations.
 To compare mixed number fractions and order them based on their size.
 To develop understanding of fractions as a representation of division.
 To use fractions to represent remainders in division calculations.
 To add and subtract proper fractions with the same denominator.
 To add and subtract proper fractions with related denominators
 To add fractions with a sum greater than 1.
 To add mixed numbers and fractions where one

Fractions, decimals and percentages

To multiply a whole number and a unit fraction together by converting between improper fractions and mixed numbers to achieve answers in their simplest form.
 To multiply a whole number and a mixed number together using a method of multiplying the whole and parts separately.
 To multiply a whole number and a mixed number together using a method of converting the mixed number to an improper fraction before multiplying.
 To find a non-unit fraction of an amount and find an amount given the value of a fraction of an amount.
 To use fractions as operators and look at comparing different methods while deciding which is most efficient.
 To use knowledge of fractions to solve problems that require more than one step.
 To read and write decimal numbers (up to two decimal places) using concrete equipment.
 To read and write simple decimal numbers as fractions, such as tenths, quarters and halves.
 To read and write more complex decimal numbers as fractions, including numbers greater than 1.
 To write any number up to three decimal places as a fraction.
 To understand the link between tenths, hundredths and thousandths, and write any thousandth as a decimal.
 To compare decimals by using knowledge of place value or converting them into fractions.
 To order and compare decimal numbers up to three decimal places using inequalities.
 To round decimals to the nearest whole number and to one decimal place.

Decimals

To add decimals, recognising the importance of place value.
 To add and subtract decimals less than one using a column method.
 To work out how much needs to be added to another decimal to make the whole.
 To add numbers less than 1 where the total is greater than 1 using column addition.
 To add two numbers that have the same number of decimal places,
 To use the column method to subtract decimals in the context of taking away or finding the difference.
 To add and subtract decimals with a different number of decimal places.
 To add and subtract decimal numbers with up to 4 digits from whole numbers
 To use understanding of decimal numbers to count and complete decimal sequences.
 To use strategies for solving problems involving adding and subtracting numbers with up to three decimal places.
 To use understanding of place value to develop fluency in multiplying decimals by 10.
 To use their understanding of place value to develop fluency in multiplying decimals by 10, 100 and 1,000.
 To use understanding of place value to develop fluency in dividing decimal numbers by 10.
 To use understanding of place value and division of decimals by 10, to develop fluency in dividing decimal numbers by 10, 100 and 1,000.

	<p>denominator is a multiple of the other.</p> <p>To add mixed numbers where one denominator is a multiple of the other, by converting mixed numbers to improper fractions.</p> <p>To subtract a fraction from a mixed number where one denominator is a multiple of the other.</p> <p>To subtract fractions from mixed numbers where the subtraction crosses the whole.</p> <p>To subtract mixed numbers by subtracting the wholes and parts separately.</p> <p>To subtract mixed numbers by converting them to improper fractions and finding a common denominator.</p> <p>To add and subtract mixed numbers in the context of word problems.</p>	<p>To understand percentages represented in a range of different diagrams and understand that per cent means 'number of parts per 100'.</p> <p>To write percentages as a fraction with denominator 100, and as a decimal.</p> <p>To convert between fractions, decimals and percentages</p>	
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SUMMER TERM – YEAR 5

Geometry – Properties of shape

To use degrees as a unit for measure of turn
To be introduced to the protractor and how to use it to measure acute angles.
To measure obtuse angles accurately.
To measure angles accurately and draw lines accurately to the nearest millimetre.
To understand that missing angles can be calculate on a straight line.
To calculate missing angles around a point, by reasoning about the 360° in a whole turn.
To use reasoning about shapes to calculate missing angles and lengths.
To recognise and draw parallel lines.
To recognise, label and draw lines that are perpendicular to one another.
To develop reasoning about parallel and perpendicular lines in relation to one another in shapes and patterns.
To distinguish between regular and irregular polygons in terms of their knowledge of angles and lengths.
To recognise the different views of 3D shapes or collections when viewed from different positions

Measurement

To apply their knowledge of place value to convert between kilograms and grams and vice versa.
To apply knowledge of place value to convert between millimetres and metres or centimetres, and between millilitres and litres.
To work with measurements that have different numbers of decimal places and fractions of units.
To convert between all combinations of mm, cm, m and km, including splitting conversions into more than one step.
To understand the terms inches, feet and yards, convert between these and use approximations to convert from imperial to metric units.
To understand the terms ounces, pounds and stones, convert between them and use approximations to convert from imperial to metric units.
To understand the terms pints and gallons, convert between them and use approximations to convert from imperial to metric units.
To solve problems where conversions between units of time, including those where there is a remainder, need to be made.
To use timetables, applying their knowledge of 24-hour times to read arrival and departure times and calculate durations.
To apply knowledge of converting units to solving problems.
To measure by the volume of 3D shapes by counting the unit cubes used to make each shape. To compare shapes according to their volumes.
To apply knowledge of volume to estimate the volume of 3D shapes and consider how accurate their estimates are.
To estimate and order capacity and explaining the differences between volume and capacity.

Statistics – Graphs & Tables

To extract information from tables to solve a range of problems involving four operations.
To create and extract information from two-way tables.
To read line graphs with a range of scales and interpret the information to solve simple sum and difference problems.
To read and interpret line graphs with more complex scales, including dual line graphs, to solve simple sum and difference problems.
To draw simple line graphs from data that is given in a table.

Geometry – Position & Direction

To reflect simple 2D shapes in vertical and horizontal lines.
To find the coordinates of a reflected point on a grid.
To translate simple 2D shapes on grid paper by moving one vertex at a time.
To use coordinates to find translations.

