West Bridgford Junior School - Maths Curriculum Map

We aim for our children to become fluent mathematicians, competent in a range of mental and written strategies. We give children a wide range of opportunities to solve problems, develop arithmetic and reasoning skills and be apply these skills to real life situations. Our year group teams work together to create a scheme of work, which provides a useful framework in which to plan innovative learning opportunities that meet the needs of all our learners. As part of the school's calculation policy, we focus on a progression from concrete resources, to pictorial, symbolic representations and finally into the numerical abstract to aid our children's conceptual understanding. Children are taught in mixed ability class groups and learning is planned in year group teams. When planning, year group's look for cross-curricular opportunities in maths, particularly in relation to STEM subjects. The scheme of work we follow is from the 'White Rose Maths Hub' with teachers using a range of resources to supplement the children's learning. Below is an overview of the curriculum coverage for each term in each year group following the White Rose schemes of learning.

Progression in Calculation Methods

We have an additional policy that is used to demonstrate the progression of calculation methods used by staff at West Bridgford Junior School to help children in their understanding and equip them to solve problems. It is important that children use methods that are appropriate to their level of understanding rather than their age. Therefore, it is likely that a number of methods would be used in a class of children at any one time and that children may progress to using other methods during the school year.

Wherever possible, children are introduced to new calculation strategies using a variety of manipulatives and representations before moving to the symbolic stage of learning. This ensures a deeper level understanding of concepts and allows children to apply their knowledge in a range of contexts.

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Year 3

Autumn Term	Spring Term	Summer Term
Number: Place Value Hundreds, Tens and Ones Represent numbers to 1000 Find 1, 10, 100 more or less Compare to 1000 Order numbers Count in 50s **Number: Addition and Subtraction** Add/Subtract numbers mentally Add/subtract numbers up to 3 digits using column methods without exchanging and with exchanging. Estimations and using inverse operation. Solve problems in addition and subtraction. **Number: Multiplication and Division** Count in multiples of 4 and 8 Count in multiples of 50 and 100 Make equal groups through sharing and grouping. Recall multiplication facts for 3,4 8 times tables. Divide by 2, 5, 10 Divide by 3, 4 and 8 Carry out multiplication and division calculations using know multiplication facts. Solve multiplication and division problems	**Number: Multiplication and Division** Count in multiples of 4 and 8 Count in multiples of 50 and 100 Recall multiplication/division facts for 3,4 8 times tables Carry out multiplication and division calculations using know multiplication facts. Solve multiplication and division problems Multiply and divide 2 digits by 1 digit using mental calculations and progressing towards formal written methods. Division with remainders. Scaling. **Measures: Money** Add and subtract amounts of money to give change, using both £ and p in practical contexts. Converting pounds and pence. **Statistics** Interpret and present data using bar charts, pictograms and tables. Draw bar charts. Solve one-step and two-step questions. **Measures: Length and Perimeter** Measure, compare, add and subtract lengths (m/cm/mm); Identify equivalent lengths (mm/cm, cm/m) Measure and calculate perimeter.	**Number: Fractions** Recognise and show equivalent fractions with small denominators. Comparing and ordering unit fractions with same denominators. Add and subtract fractions with same denominator within one whole. Solve problems with fractions. **Measurement: Time** Tell and write the time using an analogue clock (5 minute and 1 minute intervals). Use 12 hour and 24 hour clocks. Read Roman numerals on a clock. Record and compare time in seconds, minutes and hours. Use vocabulary: o'clock, a.m., p.m., morning, afternoon, noon, midnight. Know number of seconds in a minute, hours in a day. Number of days in each month, year/leap year. Compare durations of events (start/end times, measuring time in seconds).

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Number: Fractions*
Make equal parts
Recognise and find: a half, quarter and a third
Unit and non-unit fractions.
Equivalence of a half and a quarter
Counting in fractions

*The year 3 fractions content has been moved to the summer term so that more time can be spent revisiting the fractions content from Year 2. Some children may have missed this content or not fully grasped it in 2020. Having a firm foundation with fractions is important for confidence and future success in mathematics, hence the reason for extra time dedicated to the topic

Geometry: Properties of Shape
Recognise angles as a property of a shape, description of a turn.
Identify right angles.
Recognise one right angle makes a quarter turn two right angles make half a turn, three make three-quarters of a turn and four make a full turn.
Identify angles greater than/less than a right angle.
Identify horizontal/vertical lines.
Identify perpendicular and parallel lines.
Draw 2-D shapes and make 3-D shapes.
Recognise 3-D shapes in different orientations.
Measures: Mass and Capacity
Measure and compare mass and capacity.
Add and subtract mass and capacity.

Year 3 Key Vocab:

Place value, ones, tens, hundreds, compare, order, greater then, less than, equal. Add, subtract, total, sum, difference, partition, exchange/exchanging.Multiply, divide, groups of, times, share, grouping, multiples.

Year 3 Key Vocab:

Multiply, divide, groups of, times, share, grouping, multiples, remainders.
Pounds, pence, decimal point, convert, change.
Bar charts, pictograms, tables, compare, difference, total.
Centimetres, metres, millimetres, perimeter.

Year 3 Key Vocab:

Equal parts, half, quarter, third, unit fractions, non-unit fractions, numerator, denominator, equivalent.
o'clock, a.m., p.m., morning, afternoon, noon, midnight, seconds. minutes, hour, 12 hour, 24 hour

West Bridgford Junior School - Maths Curriculum Map

Year 4

Autumn Term	Spring Term	Summer Term
Number: Place Value Count in multiples of 25, 1000 1000 more or less than a number Place Value: Thousands, hundreds, tens and ones. Partition 4 digit numnbers. Order and compare numbers beyond 1000 Identify and estimate numbers. Round numbers to the nearest 10,100,1000 Solve problems with increasingly large numbers. Count backwards through zero to negative numbers. Read and write Romnan numerals to 100 **Number: Addition and Subtraction** Add and subtract numbers up to 4 digits (using column method where appropriate) without and with exchanges. Estimate and use inverse operation to check answers Solve addition/subtraction two step problems.	**Number: Multiplication and Division** Recall and use multiplication and division facts for multiplication tables up to 12 × 12. Multiply three 1 digit numbers. Recognise and use factor pairs. Multiply two-digit and three-digit numbers by a 1-digit number using formal written layout. Divide two and three digit numbers by 1-digit numbers. Division with remainders. Correspondence problems. **Measures: Area** What is area? Find the area of rectilinear shapes by counting squares. Make rectilinear shapes using squares. Comparing areas. **Number: Fractions** What is a fraction? Unit and non-unit fractions (recap) Count in tenths and other fractions Equivalent fractions Fractions greater than 1 Add/subtract fractions with the same denominator.	**Number: Decimals** Make a whole number using 2 decimal numbers with the same number of decimal places. Compare decimal numbers with the same number of decimal places (up to 2 dp) Round numbers with one decimal place to the nearest whole number. Recognise and write decimal equivalents for ¼, ½ and ¾. Understand the effect of dividing one/two digit numbers by 10 or 100. Identify the place value of each digit as ones, tenths, hundredths. **Measures: Money** Estimate, compare and calculate money in pounds and pence. Use all four operations to solve money problems. **Measures: Time** Read, write and convert time between analogue and digital times. Read, write and convert time between 12 and 24 hour clocks. Solving problems converting time: hours to minutes, minutes to seconds, years to months, weeks to days. **Statistics**

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Measures: Length and Permiter
Convert between different units of measure.
(m/cm, mm/cm)
Addition and subtraction of lengths.
Measure and calculate perimeter of rectangles (cm/m)
Measure and calculate perimter of rectilinear shapes (cm/m)

Number: Multiplication and Division
Multiply and divide by 10, 100
Multiply by 1 and 0
Divide by 1 and itself

Recall and use multiplication/division facts for multiplication tables 3 (recap), 6, 7, 9
Count in multiples of 6,7,9
Multiply by 3 (recap), 6., 7 and 9.

Subtract fractions from a whole amount
Fractions of a set of objects
Calculate fractions of a quantity in order to solve problems.

Number: Decimals
Recognise and write decimal equivalents of tenths and hundredths.
Identify the place value of digits in ones, tenths and hundredths.
Order tenths on a number line.
Divide 2 digit numbers by 10 or 100.
Solve simple problems involving fractions and decimals to 2 decimal places (in the context of money/measures).
Use decimals to convert between different units of measure.

Interpret and present continious data in bar charts and line graphs.
Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

Gemoetry: Properties of Shape
Identify acute and obtuse angles.
Order angles up to 180˚
Compare and classify shapes including quadrilaterals and triangles based on their properties and size.
Identify lines of symmetry in 2-D shapes in different orientations.
Complete a simple symmetrical figure with a specific line of symmetry.

Geometry: Position and Direction
Describes positions on a 2-D grid as co-ordinates (in the first quadrant).
Plot co-ordinate points and draw sides to complete a given polygon.
Translation: Describe movements between positions of a given unit to the left/right and up/down.

Year 4 Key Vocab:

Thousands, greater than, less than, partition, value, estimate, round, negative, Roman numerals.
Addition, subtraction, total, difference, sum, column method, exchange, estimate, inverse operation.
Measure, centimetres, metres, millimetres, convert, length, perimeter.
Multiply, divide, multiples, lots of, place value.

Year 4 Key Vocab:

Multiply, multiples, divide, division, remainder, factors, factor pairs
Area, square centimetres/metres cm² m², length, width.
Unit and non-unit fractions, tenths, equivalent fractions, greater than, numerator, denominator.
Decimal places, tenths, hundredths, compare, order, convert.

Year 4 Key Vocab:

Decimal places, compare and order, round, whole number, place value, divide, equivalent.
Estimate, compare calculate, pounds, pence, total, change. more than, less than.
Analogue, digital, convert 12 hours, 24 hours, minutes, seconds, hours, days, weeks, months, years.
Pictograms, bar charts, line graphs, compare, sum, difference.
Acute, obtuse, right angles, quadrilaterals, triangles, equal, pairs, symmetry, 2D shapes, line of syymetry.
Co-ordinates, position, points, x axis, y axis, horizontal, vertical, polygon, translation.

West Bridgford Junior School - Maths Curriculum Map

Year 5

Autumn Term	Spring Term	SummerTerm
Number: Place Value Read, write order and compare numbers to at least 1,000,000 Count forwards/backwards in 10,100,1000, 10,0000 for any number up to 1,000,000 Interpret negative numbers in context Count forwards and backwards with positive and negative whole numbers including through zero. Round any number to nearest 10,100,1000, 10,000 and 100,000 (up to 1 million). Read Roman Numerals up to 1,000. Solve problems with numbers up to 1,000,000. **Number: Addition and Subtraction** Add/subtract numbers greater than 4 digits using column method Use rounding to estimate/approximate Use inverse operation to check answers Solve addition/subtraction multi-step problems **Statistics** Solve comparison, sum and difference problems by interpreting line graphs. Complete,read and interpret information in tables including two-way tables and time tables.	**Number: Multiplication and Division** Multiply and divide numbers mentally drawing upon known facts. Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication. Divide numbers up to 4 digits by a 1- digit number using the formal written method of short division and interpret remainders appropriately in context. Solve problems involving multiplication and division and a combination of these, including understanding the use of the equals sign. **Number: Fractions** What is a fraction? (recap) Compare and order fractions whose denominators are multiples of the same number. Identify, name and write equivalent fractions of a given fraction. Recognise mixed numbers and improper fractions. Convert from one form to the other 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. Calculate fractions of a quantity (recap).	**Number: Decimals** Recognise and write decimal equivalents of any number of tenths or hundredths. Find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths. Solve simple measure and money problems involving decimals to two decimal places. Convert between different units of measure [for example, kilometre to metre] **Geometry: Properties of Shape** 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 using reasoning about equal sides and angles. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and measure them in degrees. Identify: angles at a point and one whole turn (total 360°), angles at a point on a straight line and ½ a turn (total 180°) other multiples of 90° **Geometry: Position and Direction**

West Bridgford Junior School - Maths Curriculum Map

Number: Multilication and Division
Multipliy and divide numbers mentally
Multiply and divide whole numbers by 10,100, 1000
Identify multiples and factors of numbers
Identify common factors of 2 numbers
Recognise and use square and cube numbers including the correct notation.
Solve problems involving multiplication/division/factors/squares and cubes numbers
Know and use vocabulary of prime numbers, prime factors and non-prime numbers (composite numbers)
Recall prime numbers up to 19
Establish whether a number up to 100 is a prime number
Measures: Perimeter and Area
Measure and calculate perimeter
Find the perimeter of rectangles and rectilinear shapes (recap)
Calculate the area of rectangles, compound shapes.
Calculate area using standard units cm² and m²
Estimate the area of irregular shpes.

Find fractions of an amount.
Using fractions as operators.

Number: Decimals and Percentages
Read, write, order and compare numbers up to three decimal places.
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. Solve problems involving number up to three decimal places.
Recognise the percent symbol (%) and understand that per cent relates to 'number of parts per hundred'.
Write percentages as a fraction with denominator 100, and as a decimal.
Solve problems which require knowing percentage and decimal equivalents of ½ , ¼ , 1/5 2/5 , 4/5 and those fractions with a denominator of a multiple of 10 or 25

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.
Position in the first quadrant.
 Reflection including with coordinates. Translation including with coordinates.
Measurement: Converting Units
Convert between different units of metric measure [e.g. km/m; cm/m; cm/mm; g/ kg; L/ml]
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.
Interpret Timetables in the context of time.
Measurement: Volume
Estimate Volume using cubes
Estimate Capacity using water.
Use all 4 operations to solve problems involving volume or capacity.

Year 5 Key Vocab:

Ones, tens, hundreds, thousands, hundred thousands, million, place value, partition, order compare, round, negative, numerals.
Add, subtract, total, sum, difference, rounding, estimate, approximate, inverse.
Compare, sum, difference, line graphs.
Multiply, divide, multiples, factors, common factors, common multiples, square numbers, cube numbers, x², x³, squared, cubed, prime numbers, composite numbers.
Perimeter, area, measure, calculate, estimate, compound shapes.

Year 5 Key Vocab:

Multiply, divide, multiples, remainders
Numerator, denominator, unit and non-unit fractions, compare, order, multiples, equivalent, improper fractions, mixed numbers, operators.
Decimals, decimal places, value, compare, order, tenths, hundredths, thousandths, round, whole number, percent, percentage, equivalents.

Year 5 Key Vocab:

Decimals, decimal places, value, compare, order, tenths, hundredths, thousandths, round, whole number, percent, percentage, equivalents.
£D shapes, cubes, cuboids, lengths, angles, regular, irregular polygons, degrees, estimate, compare acute, obtuse, reflex angles, turn, straight line, 90°, 180°, 270°, 360°
Position, reflection, translation, co-ordinates.
Convert, units, metric measure, km/m, cm, mm grams, kilograms, litres, millilitres, equivalent,
metric units, imperial units, inches, pounds, pints.
Volume, capacity, cm³, m³ millilitres, litres.

West Bridgford Junior School - Maths Curriculum Map

Year 6

Autumn Term	Spring Term	SummerTerm
Number: Place Value Read, write, order and compare numbers up to 10 million. Know the value of each digit in numbers up to 10 million. Round any whole number to the required degree of accuracy. Use negative numbers in context. Calculate intervals across zero. **Number: Addition, Subtraction, Multiplication and Division** Add/subtract whole numbers with more than 4 digits. Solve addition and subtraction multi-step problems in context. Use long multiplication to multiply numbers up to 4 digits by 2 digits. Divide 4 digit numbers by 1 digit numbers including with remainders. Divide numbers up to 4 digits by 2 digits using long division. Interpret remainders as whole numbers or fractions. Round remainders up or down in context. Divide numbers up to 4 digits by 2 digits using short division. Perform mental calculations with different operations and large numbers. Identify common factors, common multiples and prime numbers. Use knowledge of the order of operations to carry out calculations.	**Number: Decimals** Identify the value of each digit in numbers given to 2 decimal places (recap) and 3 decimal places. Multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places. Multiply and divide decimals by integers Write decimals as fractions and fractions as decimals. Use written division methods in cases where the answer has up to 2 decimal places. Solve problems which require answers to be rounded to specified degrees of accuracy. **Number: Percentages** Understanding percentage (recap) Fractions to percentage Finding percentages of an amount Solve problems involving the calculation of percentages and the use of percentages for comparison. Recall and use equivalences between simple fractions, decimals and percentages including in different contexts. **Number: Algebra** Use simple formulae. Generate and describe linear number sequences. Express missing number problems algebraically. Find pairs of numbers that satisfy an equation with two unknowns. Enumerate possibilities of combinations of two variables. **Number: Converting Units**	**Statistics:** Read and interpret line graphs and pie charts Use line graphs to solve problems. Pie Charts with percentages. Draw pie charts. Calcualte the mean as the average. **Geometry: Properties of Shapes** Draw 2-D shapes using given dimensions and angles. Compare and classify geometric shapes based on their properties and sizes. 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. **Consolidation and themed activities including reasoning and problem solving.**

Solve problems involving addition, subtraction, multiplication and division.
Use estimation to check answers to calculations.
Number: Fractions
Equivalent fractions (recap)
Use common factors to simplify fractions.
Use common multiples to express fractions in the same denomination.
Compare and order fractions inclusing those greater than 1. Generate and describe linear number sequences with fractions.
Add and subtract fractions with different denominations including mixed numbers.
Multiply simple pairs of proper fractions.
(e.g. ¼ x ½ = 1/8) Divide proper fractions by whole numbers. (e.g. 1/3 ÷ 2 = 1/6)
Associate fractions with division: calculate decimal fraction equivalents for a simple fraction.
Recall and use equivalences in simple fractions/decimals/percentages in different contexts.
Geometry: Position and Direction
Describe positions on all 4 quadrants.
Draw and translate simple shapes.
Reflect the translations in the axes.

Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.
Use, read, write and convert between standard units, converting measurements of length from a smaller unit of measure to a larger unit, (and vice versa).
Convert between miles and kilometres.
Measurement: Perimeter, Area and Volume
Recognise that shapes with the same areas can have different perimeters and vice versa. Recognise when it is possible to use formulae for area and volume of shapes.
Calculate the area of parallelograms and triangles.
Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm^3, m^3, extending to other units (mm^3, km^3).
Number: Ratio
Ratio vocabulary. Ratio and fractions. Calculate ration Ratio and proportion problems. Solve problems involving the relative sizes of two quantities where missing values can be found by using multiplication and division facts.
Solve problems involving similar shapes where the scale factor is known or can be found.
Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Year 6 Key Vocab:
Ones, tens, hundreds, thousands, hundred thousands, million, place value, partition, order compare, round, negative, zero.
Addition, Subtraction, Multiplication, Division, long multiplication, long division, remainder, common factors, common multiples, prime numbers, approximate, inverse, estimate.
Fractions, common multiples, common factors, equivalent fractions, simplify, compare, order, sequence, common denominator, lowest common denominator, multiply, divide, decimal numbers, percentages.

Year 6 Key Vocab:

Place value, decimal places, tenths, hundredths, thousandths, multiply, divide, integer.
Percentages, equivalent, fractions, decimals.
Algebra, formula, equation.
Convert, units, decimal places, miles, kilometres, calculate, estimate, volume, cube, cuboid, cm^3, m^3, mm^3, km^3, centimetre, metre, millimetre, kilometre, cubed.
Ratio, proportion, fractions.

Year 6 Key Vocab:

Line graphs, pie charts, mean, average, percentage.
Angles, degrees, 2D shapes, properties, quadrilaterals, regular, irregular, polygons, horizontal, vertical, calculate.