Westfields JUNIOR SCHOOL

Maths Long Term Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	**Place Value** Representing and exploring the value of digits up to 1000; including comparing and ordering numbers. Developing mental addition and subtraction by finding 1, 10 and 100 more or less than a given number. **Addition and subtraction** Understanding how to add and subtract 3-digit numbers using expanded written methods.	**Addition and subtraction** Understanding how to add and subtract 3-digit numbers using expanded written methods. **Multiplication and division** Developing understanding of multiplication and division, while recalling and solving problems associated with the 3, 4 and 8 times tables.	**Multiplication and division** Using number lines and expanded methods to multiply and divide a 2-digit number by a 1-digit number. **Length and perimeter** Measuring, comparing, adding and subtracting lengths using m, cm and mm. Calculating the equivalents between m, cm and mm. Recognising, calculating and measuring the perimeter of basic shapes.	**Fractions** Using concrete and pictorial variation, recognising unit and non-unit fractions and completing fractions to make a whole. Recognising and counting in tenths, placing fractions on a number line. Finding a fraction from a set of objects or amount. **Mass and capacity** Developing an understanding of 'mass' and the units 'mass' are measured in, comparing, ordering, adding and subtracting units of 'mass'. Developing an understanding of 'capacity' and the units 'capacity' are measured in, comparing, ordering, adding and subtracting units of 'capacity'.	**Fractions** Further developing an understanding of fractions by finding simple equivalent fractions, comparing and ordering fractions and adding and subtracting fractions. **Time** Telling the time to the nearest minute and solving problems using knowledge of the 12- and 24-hour clock. Knowing other time related facts, i.e. the months of the year; days in each month; days in a year; hours in a day etc. **Money** Developing understanding of money and the value of individual coins. Adding and subtracting different amounts of money, giving change and solving problems with all of the above.	**Time** Telling the time to the nearest minute and solving problems using knowledge of the 12- and 24-hour clock. Knowing other time related facts, i.e. the months of the year; days in each month; days in a year; hours in a day etc. **Properties of shape** Identifying turns and angles, comparing angles together. Drawing shapes and lines accurately and understanding the terms 'horizontal', 'vertical', 'parallel and 'perpendicular'. Identifying and creating 2D and 3D shapes. **Statistics** Recognising, understanding, creating and solving problems using pictograms, bar charts and tables.

Year 4	**Place value** Exploring the value of digits up to 10,000; including reading writing and comparing, rounding and counting through negative numbers. Recapping Roman Numerals up to 100. **Addition and subtraction** Understanding how to add and subtract 4-digit numbers with exchanging using formal written methods, including using rounding to estimate answers.	**Length and perimeter** Understanding the term 'perimeter', calculating the 'perimeter' of rectangles and rectilinear shapes. Converting units of measure including mm, cm, mm and km. **Multiplication and division** Understanding how to multiply and divide numbers by 10 and 100 and to learn and apply the 6, 9 and 7 times tables and their related division facts.	**Multiplication and division** Using the grid method to multiply 3-digit and 1-digit numbers together. Using chunking to divide 3-digit numbers by a 1-digit number. Recognising and finding factor pairs and multiply 3 numbers together. Solving problems using multiplication and division. **Area** Understanding the term 'area' and calculating area by counting squares. Solving problems involving area and comparing the area of 2 or more shapes. **Fractions** Recognising and understanding fractions including: finding and recognising equivalent fractions; counting in fractions; adding and subtracting 2 fractions; taking fractions away from a whole and calculating fractions of a quantity.	**Fractions** Recognising and understanding fractions including: finding and recognising equivalent fractions; counting in fractions; adding and subtracting 2 fractions; taking fractions away from a whole and calculating fractions of a quantity. **Decimals** Understanding decimal numbers and how they relate to other positive integers including: recognising tenths and hundredths, placing tenths and hundredths on a place value grid and number line; dividing 1- and 2-digit numbers by 10.	**Decimals** Identifying and making a whole using the correct corresponding decimal; comparing and ordering decimal numbers and rounding decimal numbers to the nearest whole number. Recalling the corresponding decimal number with fractions e.g. ½ = 0.5 etc. **Money** Developing understanding of pounds and pence; ordering and comparing the value of different amounts of money; solving problems using the four operations and estimation. **Time** Using knowledge of hours, seconds, years, months and days to convert between different units of time and convert between analogue and digital time using the 12- and 24-hour clock. **Statistics** Interpreting and constructing bar charts, using these to solve comparison, sum and difference problems. Introducing the concept of line graphs in the context of time, using their knowledge of scales to read a time graph accurately and solve problems.	**Properties of shape** Identifying, comparing and ordering types of angles. Identifying the features of the three different types of triangles and the properties of quadrilaterals. Finding and identifying lines of symmetry with 2-D shapes, completing symmetrical 2-D shapes and patterns. **Position and direction** Describing and drawing shapes on a quadrant, moving shapes on a quadrant following specific directions and using the language of left/right and up/down.

Year 5	**Number and place value** Reading, writing, ordering and comparing numbers to at least 1,000,000 and determining the value; counting forwards or backwards in steps of powers of 10, with positive and negative whole numbers, including through 0. Rounding any number up to 1,000,000. Reading Roman numerals to 1,000 (M) and recognising years written in Roman numerals. **Addition and subtraction** Adding and subtracting whole numbers with more than 4 digits, using formal columnar written methods or mentally with increasingly large numbers. Using rounding to check answers to calculations. Solving multi-step problems in contexts, choosing operations and methods to use.	**Multiplication and division** Identifying multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Knowing and using the vocabulary of prime numbers, prime factors and composite (nonprime) numbers and establishing whether a number up to 100 is prime and recall prime numbers up to 19. **Fractions** Further developing and enhancing understanding of fractions by: finding equivalent fractions; converting improper fractions into mixed number fractions and vice versa; comparing and ordering fractions greater than and less than 1 and adding and subtracting fractions and mixed number fractions.	**Multiplication and division** Multiplying numbers up to 4 digits by a one- or two-digit numbers using a formal written method, including long multiplication for two-digit numbers. Multiplying and dividing numbers mentally drawing upon known facts. Dividing numbers up to 4 digits by a one-digit number using the formal written method of short division, interpreting remainders appropriately for the context. Multiplying and dividing whole numbers and those involving decimals by 10, 100 and 1000. **Fractions** Further developing and enhancing understanding of fractions by: multiplying fractions and finding fractions of a quantity.	**Decimals & percentages** Identifying and demonstrating an understanding of decimal up to 2 d.p. Comparing, ordering and rounding decimal numbers. Identifying and demonstrating an understanding of percentages as fractions and decimals. **Perimeter and area** Measuring and calculating the perimeter of composite rectilinear shapes in centimetres and metres. Calculating and comparing the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2), estimating the area of irregular shapes. **Statistics** Solving comparison, sum and difference problems using information presented in a line graph. Completing, reading and interpreting information in tables, including timetables.	**Properties of shape** Measuring and drawing angles accurately using the correct equipment, calculating angles on a straight line and around a point. Identifying regular and irregular polygons and reasoning about 3-D shapes. **Position and direction** Reading and identifying points in the first quadrant. Understanding reflection (including reflection with coordinates) and translation, solving problems with these concepts. **Decimals** Adding and subtracting decimals, finding the decimal complements to 1. Solving problems involving decimal sequences. Multiplying and dividing decimals by 10, 100 and 1000.	**Decimals** Adding and subtracting decimals, finding the decimal complements to 1. Solving problems involving decimal sequences. Multiplying and dividing decimals by 10, 100 and 1000. **Number – negative numbers** Developing their understanding of negative numbers by counting through zero in ones and multiples and ordering negative numbers. **Converting units** Comparing and ordering units of measure including kilograms, kilometres, milligrams and millimetres. Understanding the difference between metric and imperial units of measure. Converting units of time and reading a timetable accurately. **Volume** Understanding the concept of volume, comparing and estimating volume and capacity.

Year 6	**Place value** Exploring the value of digits in numbers up to 10,000,000, including reading, writing, comparing, rounding and negative numbers. **Calculation** Developing knowledge of mental and written methods for addition, subtraction, multiplication and division. Applying these to problem solving and reasoning.	**Fractions** Understanding how to calculate with fractions, including addition, subtraction, multiplication and division, converting between mixed and improper and finding equivalents. **Position and direction** Describing positions on a 4-quadrant grid and drawing, translating and reflecting shapes on a coordinate plane.	**Decimals** Recognising thousandths, hundredths and tenths, converting between fractions and decimals. Calculating with decimals: reading, writing, ordering, comparing and rounding. **Percentages** Recognising the percent symbol is 'out of 100' and converting between fractions, percentages and decimals. **Algebra** Investigating use of simple formulae, generating linear number sequences and expressing missing number problems algebraically.	**Algebra** Investigating use of simple formulae, generating linear number sequences and expressing missing number problems algebraically. **Measurement** Calculating and converting between units of measure including metric and imperial as well as investigating the area, perimeter and volume of shapes. **Ratio and proportion** Solving problems involving relative sizes including: finding missing values, calculation of percentages and scale factors. **Statistics** Interpreting and constructing pie charts and line graphs, using these to solve problems as well as calculating the average of sets of data.	**Properties of shapes** Drawing, recognising and describing shapes, comparing and classifying them based upon their properties including angles. . **Problem solving** Revising and applying knowledge of key concepts taught to solve problems and reason.	**Transition maths and investigations** Applying knowledge of key concepts taught to investigations to deepen and broaden understanding.

**Although problem-solving, reasoning and application of mathematics is not explicitly mentioned in areas of the overview, these elements are a core element of mathematics teaching at Westfields Junior School.