LADY MARGARET PRIMARY SCHOOL
Meaningful Learning opportunities and strong Motivation leads to rapid Progress and high levels of Success.

LMPS Maths Termly Overview 2020 - 2021

YEAR 6

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

Autumn Term	Spring Term	Summer Term
The units highlighted below are from the Y5 curriculum and follow Power Maths. These Units must be taught following the Power Maths structure and use the resources provided (5B practice book).	The units in the Y6 curriculum do not follow Power Maths; however, a master copy of the Y6 practice books should enable you to select resources to use.	

Year 5 conceptual prerequisites (see teaching guide for strands and teaching guidance)
Children must be confident in the following:

- Understand the relationship between powers of 10 from 1 hundredth to 1,000 in terms of grouping and exchange (for example, 1 is equal to 10 tenths) and in terms of scaling (for example, 1 is ten times the size of 1 tenth)
- Recognise the place value of each digit in numbers with units from thousands to hundredths and compose and decompose these numbers using standard and nonstandard partitioning.
- Reason about the location of numbers between 0.01 and 9,999 in the linear number system.
- Round whole numbers to the nearest multiple of 1,000, 100 or 10, as appropriate.
- Round decimal fractions to the nearest whole number or nearest multiple of 0.01
- Divide 1000, 100 and 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines with 2, 4, 5 and 10 equal parts.
- Be fluent in all key stage 2 additive and multiplicative number facts (see Appendix: number facts fluency overview) and calculation.
- Manipulate additive equations, including applying understanding of the inverse relationship between addition and subtraction, and the commutative property of addition.
- Manipulate multiplicative equations, including applying understanding of the inverse relationship between multiplication and division, and the commutative property of multiplication.
- Make a given number (up to 9,999, including decimal fractions) 10, 100, 1 tenth or 1 hundredth times the size (multiply and divide by 10 and 100).

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- Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10, 100, 1 tenth or 1 hundredth).
- Recall multiplication and division facts up to 12x12
- Find a fraction of a quantity.
- Find factors and multiples of positive whole numbers, including common factors and common multiples.
- Find equivalent fractions and understand that they have the same value and the same position in the linear number system.
- Reason about the location of fractions and mixed numbers in the linear number system.
- Find the perimeter of regular and irregular polygons.
- Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.
- Compare areas and calculate the area of rectangles (including squares) using standard units.

Y6 curriculum

Unit 1: Number, Place Value, Addition & Subtraction

- read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
- identify the value of each digit in numbers given to three decimal places
- round any whole number to a required degree of accuracy
- identify common factors, common multiples and prime numbers
- use negative numbers in context, and calculate intervals across zero
- solve number and practical problems that involve all of the above

Arithmetic question types taught alongside Unit 1:

- add and subtract numbers with up to and more than 4 digits using the formal written methods of columnar addition and subtraction
- solve missing number problem, using the inverse operation

Unit 10. Fractions (3) (7 Lessons)
Number - fractions (including decimals and percentages)

- multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

Unit 11. Decimals and percentages (12 Lessons)
Number - fractions (including decimals and percentages)

- identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- read and write decimal numbers as fractions [for example, 0.71 = 71/100]
- 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

Unit 5: Geometry – Position and Direction

- describe positions on the full coordinate grid (all four quadrants)

draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

Unit 6: Measurement

- use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
- solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
- convert between miles and kilometres
- calculate the area of parallelograms and triangles
- recognise that shapes with the same areas can have different perimeters and vice versa
- calculate, estimate and compare volume of cubes and cuboids using standard units,

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- add and subtract decimal number using columnar addition and subtraction
- multiplying by 0 and 1; dividing by 1; multiplying together three numbers
- multiply and divide numbers mentally drawing upon known facts
- solve squared (^{2})and cubed (^{3}) numbers
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Unit 2: Multiplication and Division

- multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
- divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context solve problems involving addition, subtraction, multiplication and division
- use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Arithmetic question types taught alongside Unit 2:

- Multiply and divide whole numbers and decimals by 10, 100 and 1000

- 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
- solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25

Unit 3: Fractions (including decimals and percentages)

- use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- compare and order fractions, including fractions > 1
- add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- associate a fraction with division and calculate decimal fraction equivalents (for example, 0.375 for a simple fraction, 3/8) rounded to specified degrees of accuracy
- recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Arithmetic question types taught alongside Unit 5:

- add and subtract fractions with different denominators
- multiply simple pairs of proper fractions, writing the answer in its simplest form (for example, 1/4 × 1/2 = 1/8).

including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].
- recognise when it is possible to use formulae for area and volume of shapes

Unit 7: Ratio and Proportion

- solve problems involving the relative sizes of two quantities where missing values can be found by using integer 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.

Unit 8: 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.

Unit 9: Statistics

- interpret and construct pie charts and line graphs and use these to solve problems
- calculate and interpret the mean as an average.

- Long multiplication, long division and bus-stop division
- multiply one-digit numbers with up to two decimal places by whole numbers
- use their knowledge of the order of operations to carry out calculations involving the four operations (BIDMAS)

Y5 curriculum

Unit 8. Fractions (1) (8 Lessons)
Number - fractions (including decimals and percentages)

- compare and order fractions whose denominators are all multiples of the same number
- identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- 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, 2/5 + 4/5 =6/5 = 1 1/5]
- read, write, order and compare numbers with up to three decimal places

Unit 9. Fractions (2) (12 Lessons)
Number - fractions (including decimals and percentages)

- recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1
- divide proper fractions by whole numbers (for example, 1/3 ÷ 2 = 1/6)
- find the % of a given amount.
- write a fraction < 1 as a % (for example 6/20 = 30%)

Unit 4: Geometry – Properties of Shapes

- compare and classify geometric shapes based on their properties and sizes
- recognise, describe and build simple 3-D shapes, including making nets
- 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.
- draw 2-D shapes using given dimensions and angles (including traiangles)
- illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

as a mixed number [for example, 2/5 + 4/5 =6/5 = 1 1/5] - add and subtract fractions with the same denominator and denominators that are multiples of the same number		