LADY MARGARET PRIMARY SCHOOL
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LMPS Maths Termly Overview 2020 - 2021

YEAR 5

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
In order to prioritise number, units 4 (Graphs and tables) and 6 (Measure: area and perimeter) will not be taught. Unit 7, which will be in the 5B practice book, has moved from the spring term to the autumn term.	This term predominantly focuses on fractions and decimals. Three units from Y4 will need to be taught first, before the Y5 units are taught.	Units 10 & 11, found in the 5B practice book, have been moved to the summer term. Units 15 – 17 have been removed (Geometry: position and direction, Measurement: converting units and Measurement: volume and capacity).

Year 4 conceptual prerequisites (see teaching guide for strands and teaching guidance)
Children must be confident in the following:

- Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.
- Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning.
- Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.
- Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.
- Divide 100 and 1,000 into 2, 4, 5 and 10 equal parts.
- Find unit fractions of quantities using known division facts (multiplication tables fluency).
- Recall multiplication and division facts up to 12x12.
- Solve division problems, with two-digit dividends and one digit divisors, that involve remainders, for example: 74 ÷ 9 = 8 r 2.
- Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10 or 100), for example: 8 + 6 = 14, 80 + 60 = 140, 800 + 600 = 1,400; 3 x 4 = 12, 30 x 40 = 120, 300 x 4 = 1,200.
- Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to scaling a number by 10 or 100.

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- Recall multiplication and division facts up to , and recognise products in multiplication tables as multiples of the corresponding number.
- Recognise multiples of 10, 100 and 1,000.
- Apply place-value knowledge to known additive and multiplicative number facts.
- Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients).
- Manipulate multiplication and division equations.
- Unitise using unit fractions (for example, understand that there are 3 one-fifths in three fifths).
- Reason about the location of fractions in the linear number system.
- Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations. Identify whether the interior angles of a polygon are equal or not.
- Compose polygons from smaller shapes.

Y5 Unit 1. Place value within 100,000 (8 Lessons)
Prerequisite strands to focus on:

Number - number and place value

- read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
- count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
- round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- solve number problems and practical problems that involve all of the above
- read Roman numerals to 1000 (M) and recognise years written in Roman numerals

Y5 Unit 2. Place value within 1,000,000 (8 Lessons)
Number - number and place value

- read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit

First, teach all of the lessons from Y4 Unit 8, 9 and 10.

- *Ensure that you go through the Unit Starter – go through vocabulary, structures and representations*
- *Teach all lessons in the units.*
- *Complete End of Unit Check.*
- *Then move on to Y5 units.*

Y4 Unit 8. Fractions (1) (7 Lessons)
Prerequisite strands to focus on:
5NPV–1 Tenths and hundredths
5NPV–2 Place value in decimal fractions
5F–2 Find equivalent fractions
Number - fractions (including decimals)

- recognise and show, using diagrams, families of common equivalent fractions
- count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten
- solve problems involving increasingly harder fractions to calculate quantities, and fractions to

Y5 Unit 10. Fractions (3) (7 Lessons)
Prerequisite strands to focus on:
5F–1 Find non-unit fractions of quantities
5F–3 Recall decimal equivalents for common fractions
Number - fractions (including decimals and percentages)

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

Y5 Unit 11. Decimals and percentages (12 Lessons)
Prerequisite strands to focus on:
5NPV–3 Decimal fractions in the linear number system
5NPV–4 Reading scales with 2, 4, 5 or 10 intervals
5NF–2 Scaling number facts by 0.1 or 0.01
5F–3 Recall decimal equivalents for common fractions
Number - fractions (including decimals and percentages)

- count forwards or backwards in steps of powers of 10 for any given 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 up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- solve number problems and practical problems that involve all of the above

Y5 Unit 3. Addition and subtraction (10 Lessons)
Number - addition and subtraction

- estimate and use inverse operations to check answers to a calculation
- add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- add and subtract numbers mentally with increasingly large numbers
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Y5 Unit 5. Multiplication and division (1) (10 Lessons)
Prerequisite strands to focus on:
5NF–1 Secure fluency in multiplication and division facts
5MD–1 Multiplying and dividing by 10 and 100

divide quantities, including non-unit fractions where the answer is a whole number

Y4 Unit 9. Fractions (2) (8 Lessons)
Prerequisite strands to focus on:
5NPV–1 Tenths and hundredths
5NPV–2 Place value in decimal fractions
5F–1 Find non-unit fractions of quantities
Number - fractions (including decimals)

- solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
- add and subtract fractions with the same denominator

Y4 Unit 10. Decimals (1) (10 Lessons)
Prerequisite strands to focus on:
5NPV–1 Tenths and hundredths
5NPV–2 Place value in decimal fractions
Number - fractions (including decimals)

- count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten
- 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 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
- solve simple measure and money problems involving fractions and decimals to two decimal places

- 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
- 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

Y5 Unit 12. Decimals (15 Lessons)
Prerequisite strands to focus on:
5NPV–3 Decimal fractions in the linear number system
5NPV–4 Reading scales with 2, 4, 5 or 10 intervals
Number - fractions (including decimals and percentages)

- recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents

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5MD–2 Find factors and multiples
5MD–3 Multiply using a formal written method
5MD–4 Divide using a formal written method
Number - multiplication and division

- identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- establish whether a number up to 100 is prime and recall prime numbers up to 19
- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)

Y5 Unit 7. Multiplication and division (2) (11 Lessons)
Prerequisite strands to focus on:
5NF–1 Secure fluency in multiplication and division facts
5MD–3 Multiply using a formal written method
5MD–4 Divide using a formal written method
Number - multiplication and division

- multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
- multiply and divide numbers mentally drawing upon known facts
- divide numbers up to 4 digits by a one-digit number using the formal written method of

Y5 Unit 8. Fractions (1)
Prerequisite strands to focus on:
5NPV–3 Decimal fractions in the linear number system
5NPV–4 Reading scales with 2, 4, 5 or 10 intervals
5F–2 Find equivalent fractions
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

Y5 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 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

- read, write, order and compare numbers with up to three decimal places
- solve problems involving number up to three decimal places

Y5 Unit 13. Geometry - properties of shapes (1) (7 Lessons)
Prerequisite strands to focus on:
5G–1 Compare, estimate, measure and draw angles
Geometry - properties of shapes

- know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- draw given angles, and measure them in degrees (°)
- use the properties of rectangles to deduce related facts and find missing lengths and angles
- angles at a point and one whole turn (total 360°)
- angles at a point on a straight line and 1/2 a turn (total 180°)

Y5 Unit 14. Geometry - properties of shapes (2) (5 Lessons)
Geometry - properties of shapes

- identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- draw given angles, and measure them in degrees (°)
- use the properties of rectangles to deduce related facts and find missing lengths and angles

short division and interpret remainders appropriately for the context - solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes - solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates		- distinguish between regular and irregular polygons based on reasoning about equal sides and angles