Maths Curriculum - Year 5 - Key Skills Areas

Number and Place Value:

	Counting	Writing Numbers	Representing Numbers	Place Value	Comparing and Ordering	Rounding	Problems
Year 5	• read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	• read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	• interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	• read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	• read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	• 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

Addition and Subtraction:

	Number Statements	Mental Recall	Addition	Subtraction	Relationships	Problems
Year 5		• Add and subtract numbers mentally with increasingly large numbers	• Add whole numbers with more than 4 digits, including using formal written methods (columnar addition)	• Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction)	• 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.

Examples:

Written Methods:

```
4 5 6 . 1 6  +  8 6 8 . 9  =  1 3 2 5 . 0 6
```

```
      4 5 6 . 1 6
  +   8 6 8 . 9 0
    1 3 2 5 . 0 6
      1 1 1 1
```

Children should continue to use the **Formal Column** method, with numbers with **more than 4 digits, including measures, money and decimals**. They should also add **more than 2 numbers**.

Written Methods:

Children move into using **Compact Column Subtraction** with numbers with **more than 4 digits** and decimal numbers with different decimal places.

```
7 4 3 9 7  -  5 6 4 9  =  6 8 7 4 8
```

```
    6 13    8
    7 4 3 9 7
  -   5 6 4 9
    6 8 7 4 8
```

Key layout points:
• One number per square
• Numbers lined up accurately in columns
• Ruler used to draw lines

Multiplication and Division:

	Number Statements	Mental Recall	Written Calculations	Relationships	Numbers	Problems
Year 5	• Establish whether a number up to 100 is prime and recall prime numbers up to 19	• 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 for two-digit numbers • Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	• Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	• Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. • Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	• Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

Examples:

Written Methods:

Children should be introduced to **Long Multiplication**. Like with the introduction of short multiplication, children can use the **Expanded Long Multiplication** as an interim step but should be encouraged to move into the Compact Method as soon as possible.

Interim Step (if required)

Children move away from the 'partitioning' used with the Expanded short method. This allows a more straightforward move from the Expanded to the Compact method.

The calculations in the Expanded Method, should be completed in the same order as in Compact Long Multiplication.

Written Methods:

Children should continue to use **Formal Short Division** with 4-digit numbers.

Children should start **interpreting remainders** in different ways, as appropriate to the context of the question.

Fractions:

	Recognising Fractions	Decimals	Finding FDP	Links to Place Value	Comparing and Ordering FDP	Operations	Problems
Year 5	Recognise mixed numbers and improper fractions and convert from one to the other and write mathematical statements >1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 1/5)	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 Solve problems involving numbers up to three decimal places	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents 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		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 Read and write decimal numbers as fractions (e.g. 0.71 = 71/100) 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	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, supported by materials and diagrams.	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 Solve problems involving numbers up to three decimal places

Dene House Primary School - Year 5

Non Key Skills Areas:

Geometry:

	2D Shapes	3D Shapes	Symmetry	Angles	Coordinates	Translations	Problems
Year 5		Identify 3-D shapes, including cubes and cuboids, from 2-D representations Use the properties of a rectangle to deduce related facts and find missing lengths and angles distinguish between regular and irregular polygons based on reasoning about equal sides and angles		Know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles draw given angles, measuring 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°		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.	

Measures:

	Measuring	Units	Money	Area	Perimeter	Capacity	Time	Problems
Year 5	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	Convert between different units of measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints		Calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	Estimate volume (e.g. using 1 cm^3 blocks to build cuboids (including cubes)) and capacity (e.g. using water)	Solve problems involving converting between units of time	Solve problems involving converting between units of time Use all four operations to solve problems involving measure (for example, length, mass, volume, money)using decimal notation, including scaling

Statistics:

	Constructing Graphs	Interpreting Graphs	Tables	Averages	Problems
Year 5		Solve comparison, sum and difference problems using information presented in a **line graph**	Complete, read and interpret information in tables, including **timetables**		Solve comparison, sum and difference problems using information presented in a **line graph**