Year 5

Mastery Overview
Term by Term

Overview

As a school we have adopted the Mastery overview and calculation policy from the White Rose Maths hub.

There is a termly plan for each year group from Year 1 to Year 6; each term is split into twelve weeks. You will see from the overviews that a significant amount of time is devoted to developing key number concepts each year. This is to build pupils' fluency as number sense will affect their success in other areas of mathematics. Pupils who are successful with number are much more confident mathematicians.

Assessment

Within our school assessment is an ongoing process to enable teachers to identify what content and skills pupils have grasped and to set next steps for learning.

Teaching for Mastery

The overviews we have adopted support a mastery approach to teaching and learning and have been designed to support the aims and objectives of the National Curriculum.

The overviews;

-have number at their heart. A large proportion of time is spent reinforcing number to build competency

-ensure teachers stay in the required key stage and support the ideal of depth before breadth.

-ensure students have the opportunity to stay together as they work through the schemes as a whole group provide plenty of time to build reasoning and problem solving elements into the curriculum.

Concrete – Pictorial – Abstract

We believe that all pupils, when introduced to a key new concept, should have the opportunity to build competency in this topic by taking this approach.

Concrete – pupils will have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.

Pictorial – pupils will then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.

Abstract – with the foundations firmly laid, pupils will be able to move to an abstract approach using numbers and key concepts with confidence.

Year 5 Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number – Place value			Number – Addition and subtraction		Statistics		Number – Multiplication and division		Perimeter and area		Consolidation
Spring	Number – Multiplication and division			Fractions						Number – Decimals and percentages		Consolidation
Summer	Number - Decimals			Geometry – Properties of shapes			Geometry- Position and direction	Measurement- Converting units		Measurement - Volume		Consolidation

Term by term objectives – Autumn

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Number – Place Value Read, write, order and compare numbers to at least 1000000 and determine the value of each digit. Count forwards or backwards in steps of powers of 10 for any given number up to 1000000. Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000 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.			Number- Addition and Subtraction Add and subtract numbers mentally with large increasing numbers Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and 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.		Statistics Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables including timetables.		Number – multiplication and Division Multiply and divide numbers mentally drawing upon know facts. Multiply and divide whole numbers 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}) Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. 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		Perimeter and Area Measure and calculate the perimeter of composite rectilinear shapes in cm and m. Calculate and compare the area of rectangles (including squares), and including using standard units, cm^2, m^2 estimate the area of irregular shapes.		Consolidation

Term by term objectives – Spring

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
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 for 2 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. Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign.			Number: Fractions Compare and order fractions whose denominators are 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 $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$] 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. Read and write decimal numbers as fractions [for example $0.71 = \frac{71}{100}$] Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.						Number: Decimals and Percentages - Read, write, order and compare numbers with 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 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 $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.		Consolidation

Term by term objectives – Summer

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Number: Decimals Solve problems involving number up to three decimal places. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. .				Geometry- Properties of Shapes and Angles Identify 3D shapes, including cubes and other cuboids, from 2D representations. Use the properties of rectangles 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, and measure them in degrees ($^\circ$) 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 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.	Measurement- converting Units Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and 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.		Measures Volume Estimate volume [for example using 1cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] Use all four operations to solve problems involving measure.	Consolidation