

Year 6

Small Steps Guidance and Examples

Block 1: Place Value

White Rose Maths

Teaching for Mastery

These overviews are designed to support a mastery approach to teaching and learning and have been designed to support the aims and objectives of the new 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 opportunities to build reasoning and problem solving elements into the curriculum.

For more guidance on teaching for mastery, visit the NCETM website

<https://www.ncetm.org.uk/resources/47230>

Concrete – Pictorial – Abstract

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

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

Pictorial – alongside this children should use pictorial representations. These representations can then be used to help reason and solve problems.

Abstract – both concrete and pictorial representations should support children's understanding of abstract methods.

We have produced a CPD unit for teachers in schools;

<https://www.tes.com/teaching-resource/the-importance-of-concrete-professional-development-11476476>

Year 6 – Yearly 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, Subtraction, Multiplication and Division				Fractions				Geometry- Position and Direction	Consolidation
Spring	Number- Decimals		Number- Percentages		Number- Algebra		Measurement Converting units	Measurement Perimeter, Area and Volume		Number- Ratio		Consolidation
Summer	Geometry- Properties of Shapes		Problem solving			Statistics		Investigations				Consolidation

Year 6 – Autumn Term

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<p><u>Number: Place Value</u> Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.</p> <p>Round any whole number to a required degree of accuracy.</p> <p>Use negative numbers in context, and calculate intervals across zero.</p> <p>Solve number and practical problems that involve all of the above.</p>		<p><u>Number- addition subtraction, multiplication + division</u> Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why.</p> <p>Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication.</p> <p>Divide numbers up to 4 digits by a 2-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.</p> <p>Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context.</p> <p>Perform mental calculations, including with mixed operations and large numbers.</p> <p>Identify common factors, common multiples and prime numbers.</p> <p>Use their knowledge of the order of operations to carry out calculations involving the four operations.</p> <p>Solve problems involving addition, subtraction, multiplication and division.</p> <p>Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.</p>				<p><u>Fractions</u> Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</p> <p>Compare and order fractions, including fractions > 1</p> <p>Generate and describe linear number sequences (with fractions)</p> <p>Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions. Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]</p> <p>Divide proper fractions by whole numbers [for example $\frac{1}{3} \div 2 = \frac{1}{6}$]</p> <p>Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example $\frac{3}{8}$]</p> <p>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p>				<p><u>Geometry- Position and Direction</u> Describe positions on the full coordinate grid (all four quadrants).</p> <p>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</p>	<p>Consolidation</p>

Year 6 – Spring Term

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	
<p><u>Number: Decimals</u> Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places.</p> <p>Multiply one-digit numbers with up to 2 decimal places by whole numbers.</p> <p>Use written division methods in cases where the answer has up to 2 decimal places.</p> <p>Solve problems which require answers to be rounded to specified degrees of accuracy.</p>		<p><u>Number: Percentages</u> Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.</p> <p>Recall and use equivalences between simple fractions, decimals and percentages including in different contexts.</p>		<p><u>Number: Algebra</u> Use simple formulae</p> <p>Generate and describe linear number sequences.</p> <p>Express missing number problems algebraically.</p> <p>Find pairs of numbers that satisfy an equation with two unknowns.</p> <p>Enumerate possibilities of combinations of two variables.</p>		<p><u>Measurement</u> <u>Converting Units</u> Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</p> <p>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 3dp.</p> <p>Convert between miles and kilometres.</p>		<p><u>Measurement: Perimeter, Area and Volume</u> Recognise that shapes with the same areas can have different perimeters and vice versa.</p> <p>Recognise when it is possible to use formulae for area and volume of shapes.</p> <p>Calculate the area of parallelograms and triangles.</p> <p>Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm^3, m^3 and extending to other units (mm^3, km^3)</p>		<p><u>Number: Ratio</u> Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</p> <p>Solve problems involving similar shapes where the scale factor is known or can be found.</p> <p>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p>		<p>Consolidation</p>

Year 6 – Summer Term

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<p><u>Geometry: Properties of Shapes</u> Draw 2-D shapes using given dimensions and angles.</p> <p>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons.</p> <p>Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p>		<p><u>Problem Solving</u></p>			<p><u>Statistics</u> Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.</p> <p>Interpret and construct pie charts and line graphs and use these to solve problems.</p> <p>Calculate the mean as an average.</p>		<p><u>Investigations</u></p>			<p style="text-align: center; font-size: 2em;">Consolidation</p>	