



## Year 5 Autumn 2

### Starter suggestions for Number

- Read and write any integer and use decimal notation for tenth and hundredths and know what each digit represents.
- Count forwards and backwards in steps of 0.01, 0.1, 1, 10, 100, 1000 from any positive integer or decimal.
- Count forwards and backwards in equal steps and describe any patterns in the sequence.
- Order and compare whole numbers up to 1 000 000, negative numbers and decimals with up to two decimal places.
- Know by heart facts for all multiplication tables up to 12 x 12.
- Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers).
- Find pairs of numbers with a sum of 100.
- Derive related facts from those already known (e.g.  $4 \times 0.8$  linked to  $4 \times 8$  or  $3 + 7 = 10$  linked to  $0.3 + 0.7 = 1$ )
- Find doubles and halves of decimals each with units and tenths.
- Multiply and divide whole numbers and decimals with up to two decimal places mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg etc.
- Round whole numbers to the nearest 10, 100, 1000 or a number with up to two decimal places to the nearest integer or number of decimal places.

### Starter suggestions for Measurement, Geometry and Statistics

- Convert between metric units of measure by multiplying and dividing by powers of 10.
- Read, write and convert between units of time.
- Identify and describe properties of 2D and 3D shapes, including regular and irregular.
- Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of shapes).
- Identify angles which are acute, obtuse and reflex.
- Compare and classify geometric shapes based on their properties.
- Read scales to an appropriate degree of accuracy.

	Main learning	Rationale
<b>Week 1</b> <b>Mental multiplication and division</b>	<ul style="list-style-type: none"> <li>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</li> <li>Know and use the vocabulary of prime numbers.</li> <li>Establish whether a number up to 100 is prime.</li> <li>Recognise and use square numbers and the notation for squared (<math>^2</math>).</li> <li><i>Use partitioning to double or halve any number, including decimals to two decimal places.</i></li> <li>Multiply and divide numbers mentally drawing upon known facts.</li> <li><i>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</i></li> <li><i>Select a mental strategy appropriate for the numbers involved in the calculation.</i></li> <li>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.</li> </ul>	<p>Children should link their knowledge of tables to enable them to identify multiples and factors. They should be able to identify factor pairs, and this can be supported through the use of practical equipment. There should be a discussion about numbers where there is only one factor pair (prime) and those numbers that have a factor pair made up of the same number (square numbers).</p> <p>They use their knowledge of partitioning numbers in different ways to support their mental calculations (e.g. <math>24 \times 3</math> as <math>(20 \times 3)</math> and <math>(4 \times 3)</math> or <math>98 \div 7</math> as <math>(70 \div 7)</math> and <math>(28 \div 7)</math>).</p>
<b>Week 2</b> <b>Division</b>	<ul style="list-style-type: none"> <li>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.</li> <li><i>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</i></li> <li>Solve problems involving division.</li> </ul>	<p>Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.</p> <p>When solving problems, these include those involving remainders and children should identify whether the answer is rounded up or down, depending on the context.</p>
<b>Week 3</b> <b>Fractions (comparison, order and equivalence)</b>	<ul style="list-style-type: none"> <li>Count on and back in mixed number steps such as <math>1\frac{1}{2}</math>.</li> <li>Read and write decimal numbers as fractions.</li> <li>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.</li> <li>Compare and order fractions whose denominators are all multiples of the same number (<i>including on a number line</i>).</li> <li><i>Solve problems involving fractions.</i></li> </ul>	<p>The learning of fractions is an extension in understanding of the number system. Children should relate the fractions tenths and hundredths to our Base 10 number system and link their knowledge of decimal numbers to fractions where a denominator of tenths, hundredths or thousandths is required. The understanding of equivalent fractions should be learned and developed through practical experiences and pictorial representations. Children should use their knowledge of factors and multiples to recognise equivalent fractions and simplify where appropriate.</p>
<b>Week 4</b> <b>Multiplication and measures (area)</b>	<ul style="list-style-type: none"> <li>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.</li> <li><i>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method).</i></li> <li>Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (<math>\text{cm}^2</math>) and square metres (<math>\text{m}^2</math>) and estimate the area of irregular shapes.</li> </ul>	<p>Children should consolidate their understanding of linking area to arrays and multiplication.</p> <p>Children make links with their knowledge of rounding numbers to the nearest 10, 100 and 1000 to estimate the answers to calculations. Calculations should also be in contexts including, money, measures, real life problems and number enquiries.</p> <p>Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.</p>



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<b>Week 5</b> Statistics and measures (time)	<ul style="list-style-type: none"><li>▪ Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks.</li><li>▪ Complete, read and interpret information in tables, including timetables.</li><li>▪ Solve problems involving converting between units of time.</li></ul>	Children's understanding of reading time to the nearest minute and converting between different time systems (analogue and digital) and different units of time is consolidated from Year 4. Children should be able to solve problems which require them to convert between units of time, for example, between seconds and minutes or weeks and days.
<b>Week 6</b> Assess and review	Assess and review week	It is useful at regular intervals for teachers to consider the learning that has taken place over a term (or half term), assess and review children's understanding of the learning and use this to inform where the children need to go next.