

## MEASUREMENT SEQUENTIAL LEARNING OSMOTHERLEY CP

Year group	sequence	methods
FOUNDATION	<p>*develop an understanding of time</p> <p>*explore measurements firstly length, height,distance then weight moving to capacity</p>	<p>*use everyday language of time including <b>before later soon</b> and explore pupils' daily routines</p> <p>measure short periods of time in simple ways</p> <p>Ordering of two or three items by length or height</p> <p>Ordering two items by weight or capacity</p>
ONE	<p>compare, describe and solve practical problems for: *lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]</p> <p>* mass/weight [for example, heavy/light, heavier than, lighter than]</p> <p>* capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]</p> <p>* time [for example, quicker, slower, earlier, later] *measure and begin to record the following: lengths and heights , mass/weight , capacity and volume , time (hours, minutes, seconds)</p> <p>* recognise and know the value of different denominations of coins and notes</p> <p>* sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p> <p>* recognise and use language relating to dates, including days of the week, weeks, months and years</p> <p>* tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p>	<p>The pairs of terms: mass and weight, volume and capacity, are used interchangeably at this stage. Pupils move from using and comparing different types of quantities and measures using non-standard units, including <b>discrete</b> (for example, counting) and <b>continuous</b> (for example, liquid) measurement, to using manageable common standard units. In order to become familiar with standard measures, pupils begin to use measuring tools such as a ruler, weighing scales and containers.</p> <p>Pupils use the <b>language of time</b>, including telling the time throughout the day, <b>first using o'clock</b> and <b>then half past.</b></p>

TWO	<ul style="list-style-type: none"> <li>* choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</li> <li>* compare and order lengths, mass, volume/capacity and record the results using &gt;, &lt; and =</li> <li>* recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</li> <li>* find different combinations of coins that equal the same amounts of money</li> <li>* solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</li> <li>* compare and sequence intervals of time</li> <li>* tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times</li> <li>* know the number of minutes in an hour and the number of hours in a day.</li> </ul>	<p>Pupils use standard units of measurement with increasing accuracy, using their knowledge of the number system. They use the appropriate language and record using standard abbreviations.</p> <p>Comparing measures includes simple multiples such as 'half as high'; 'twice as wide'.</p> <p>They become fluent in telling the time on analogue clocks and recording it.</p> <p>Pupils become fluent in counting and recognising coins. They read and say amounts of money confidently and use the symbols £ and p accurately, recording pounds and pence separately.</p>
THREE	<p>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p> <ul style="list-style-type: none"> <li>* measure the perimeter of simple 2-D shapes</li> <li>* add and subtract amounts of money to give change, using both £ and p in practical contexts</li> </ul>	<p>Pupils continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed units (for example, 1 kg and 200g) and simple equivalents of mixed units (for example, 5m = 500cm). The comparison of measures includes simple scaling by integers (for example, a given quantity or measure is twice as long or five times as high) and this connects to multiplication. Pupils continue to become fluent in</p>

	<p>* tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</p> <p>* estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight * know the number of seconds in a minute and the number of days in each month, year and leap year</p> <p>* compare durations of events [for example to calculate the time taken by particular events or tasks].</p>	<p>recognising the value of coins, by adding and subtracting amounts, including mixed units, and giving change using manageable amounts. They record £ and p separately. <i>The decimal recording of money is introduced formally in year 4.</i> Pupils use both <b>analogue and digital 12-hour clocks</b> and record their times. In this way they become fluent in and <i>prepared for using digital 24-hour clocks in year 4</i></p>
FOUR	<p>*convert between different units of measure [for example, kilometre to metre; hour to minute]</p> <p>* measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</p> <p>* find the area of rectilinear shapes by counting squares</p> <p>* estimate, compare and calculate different measures, including money in pounds and pence</p> <p>*read, write and convert time between analogue and digital 12- and 24-hour clocks</p> <p>* solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.</p>	<p>Pupils build on their understanding of place value and decimal notation to record metric measures, including money. They use multiplication to convert from larger to smaller units.</p> <p><b>Perimeter can be expressed algebraically</b> as <math>2(a + b)</math> where a and b are the dimensions in the same unit. They relate area to arrays and multiplication.</p>

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<p><b>FIVE</b></p>	<p>convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <ul style="list-style-type: none"> <li>* understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</li> <li>* measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</li> <li>* calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</li> <li>* estimate volume [for example, using 1 cm<sup>3</sup> blocks to build cuboids (including cubes)] and capacity [for example, using water]</li> <li>* solve problems involving converting between units of time</li> <li>* use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.</li> </ul>	<p>Pupils use their knowledge of place value and multiplication and division to <b>convert</b> between standard units.</p> <p>Pupils <b>calculate the perimeter of rectangles</b> and related <b>composite shapes</b>, including using the relations of perimeter or area to <b>find unknown lengths</b>. Missing measures questions such as these can be expressed <b>algebraically</b>, for example <math>4 + 2b = 20</math> for a rectangle of sides 2 cm and b cm and perimeter of 20cm.</p> <p>Pupils <b>calculate</b> the area from scale drawings using given measurements.</p> <p>Pupils use all four operations in problems involving time and money, including conversions (for example, days to weeks, expressing the answer as weeks and days).</p>
<p><b>SIX</b></p>	<p>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</p> <ul style="list-style-type: none"> <li>* use, read, write and convert between standard units, converting measurements of length, mass, volume and time</li> </ul>	<p>Pupils <b>connect conversion</b> (for example, from kilometres to miles) <b>to a graphical representation</b> as preparation for understanding linear/proportional graphs. They know approximate conversions and are able to tell if an answer is sensible. Using the number line, pupils use, add and subtract</p>

	<p>from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places</p> <ul style="list-style-type: none"> <li>* convert between miles and kilometres</li> <li>* recognise that shapes with the same areas can have different perimeters and vice versa</li> <li>* recognise when it is possible to use formulae for area and volume of shapes</li> <li>* calculate the area of parallelograms and triangles</li> <li>* calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units [for example, mm<sup>3</sup> and km<sup>3</sup>].</li> </ul>	<p>positive and negative integers for measures such as temperature.</p> <p>They relate the area of rectangles to parallelograms and triangles, for example, by dissection, and calculate their areas, understanding and using the formulae (in words or symbols) to do this.</p> <p>Pupils could be introduced to compound units for speed, such as miles per hour, and apply their knowledge in science or other subjects as appropriate.</p>
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