MEASUREMENT SEQUENTIAL LEARNING OSMOTHERLEY CP

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Year group	sequence	methods
FOUNDATION	*compare length,weight and capacity	Teachers model comparative language using *than* and encourage children to use this vocabulary. Pupils are asked to make and test predictions e.g "If we pour the jugful into the teapot, which holds more?"
ONE	compare, describe and solve practical problems for: *lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] * mass/weight [for example, heavy/light, heavier than, lighter than] * capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] * 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) * recognise and know the value of different denominations of coins and notes * sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] * recognise and use language relating to dates, including days of the week, weeks, months and years * tell the time to the hour and half past the hour and draw the hands on a clock face to show these time	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 discrete (for example, counting) and continuous (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. Pupils use the language of time, including telling the time throughout the day, first using o'clock and then half past.

TWO	* 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 * compare and order lengths, mass, volume/capacity and record the results using >, < and = * recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value * find different combinations of coins that equal the same amounts of money * solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change * compare and sequence intervals of time * 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 * know the number of minutes in an hour and the number of hours in a day	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. Comparing measures includes simple multiples such as 'half as high'; 'twice as wide'. They become fluent in telling the time on analogue clocks and recording it. 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.
THREE	measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) * measure the perimeter of simple 2-D shapes * add and subtract amounts of money to give change, using both £ and p in practical contexts	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 recognising the value of coins, by adding and subtracting amounts, including mixed units, and giving change using

	* tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks * 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 * compare durations of events [for example to calculate the time taken by particular events or tasks]	manageable amounts. They record £ and p separately. *The decimal recording of money is introduced formally in year 4.* Pupils use both analogue and digital 12-hour clocks and record their times. In this way they become fluent in and *prepared for using digital 24-hour clocks in year 4*
FOUR	*convert between different units of measure [for example, kilometre to metre; hour to minute] * measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres * find the area of rectilinear shapes by counting squares * estimate, compare and calculate different measures, including money in pounds and pence *read, write and convert time between analogue and digital 12- and 24-hour clocks * solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	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. Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit. They relate area to arrays and multiplication.

FIVE	convert between different units of metric measure (for example, 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 *measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres * calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes * estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water] * 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	Pupils use their knowledge of place value and multiplication and division to convert between standard units. Pupils calculate the perimeter of rectangles and related composite shapes, including using the relations of perimeter or area to find unknown lengths. Missing measures questions such as these can be expressed algebraically, for example 4 + 2b = 20 for a rectangle of sides 2 cm and b cm and perimeter of 20cm. Pupils calculate the area from scale drawings using given measurements. 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).
SIX	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate * use, read, write and convert between standard units, converting measurements of length, mass, volume and time	Pupils connect conversion (for example, from kilometres to miles) to a graphical representation 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

	from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places * convert between miles and kilometres *recognise that shapes with the same areas can have different perimeters and vice versa * recognise when it is possible to use formulae for area and volume of shapes * calculate the area of parallelograms and triangles * calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]	positive and negative integers for measures such as temperature. 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. 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.