

SPJS CURRICULUM LADDER - MATHS - MEASUREMENT

COMPARING AND ESTIMATING

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later] <p> LINK IT (Algebra): sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p>	<p>compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$</p> <p> LINK IT (Algebra): compare and sequence intervals of time</p> <p> LINK IT (Place value): compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs</p>	<p>compare durations of events, for example to calculate the time taken by particular events or tasks</p> <p>estimate and read time with increasing accuracy to the nearest minute (appears also in Telling the Time)</p> <p>record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time)</p> <p> LINK IT (Place value): Compare and order numbers up to 1000</p>	<p>estimate, compare and calculate different measures, including money in pounds and pence (appears also in Measuring)</p> <p> LINK IT (Place value): Compare and order numbers beyond 1000</p> <p> LINK IT (Fractions): Compare and order numbers with the same number of decimal places up to two decimal places</p>	<p> LINK IT (Multiplication and Division): calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes (also included in Measuring)</p> <p>estimate volume (e.g. using 1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water)</p> <p> LINK IT (Place Value, Ratio and Proportion): use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling (appears also in Measuring)</p> <p> LINK IT (Place value): Read, write, order and compare numbers to at least 1 000 000</p> <p> LINK IT (Fractions): Read, write, order and compare numbers with up to three decimal places</p>	<p> LINK IT (Multiplication and Division): calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3 (also included in Measuring)</p> <p> LINK IT (Fractions): solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Measuring)</p> <p>LINK IT (Place value): identify the value of each digit in numbers given to three decimal places</p>

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MEASURING and CALCULATING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

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<p>measure and begin to record the following:</p> <ul style="list-style-type: none"> * lengths and heights * mass/weight * capacity and volume * time (hours, minutes, seconds) 	<p>choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}C$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</p>	<p>measure, compare, add and subtract:</p> <p>lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p> <p>measure the perimeter of simple 2-D shapes</p>	<p> LINK IT (Fractions): estimate, compare and calculate different measures, including money in pounds and pence (appears also in Comparing)</p> <p>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</p> <p> LINK IT (Algebra): NON-STATUTORY: perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit.</p> <p> LINK IT (Fractions): solve simple measure and money problems involving fractions and decimals to two decimal places.</p> <p>G-2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons.</p>	<p> LINK IT (Ratio and Proportion, Multiplication and Division): use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling (appears also in Converting)</p> <p>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p>	<p>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Converting)</p> <p>recognise that shapes with the same areas can have different perimeters and vice versa</p>
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MEASURING and CALCULATING

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Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>recognise and know the value of different denominations of coins and notes</p>	<p>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</p> <p>find different combinations of coins that equal the same amounts of money</p> <p> LINK IT (Addition and Subtraction): solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</p>	<p>add and subtract amounts of money to give change, using both £ and p in practical contexts</p>	<p>find the area of rectilinear shapes by counting squares</p>	<p> LINK IT (Multiplication and division): calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes (also included in Comparing)</p> <p> LINK IT (Multiplication and Division): recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)</p>	<p>calculate the area of parallelograms and triangles</p> <p> LINK IT (Multiplication and Division): 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 [e.g. mm³ and km³] (also included in Comparing)</p> <p> LINK IT (Algebra): recognise when it is possible to use formulae for area and volume of shapes</p>

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TELLING THE TIME					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<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>recognise and use language relating to dates, including days of the week, weeks, months and years</p> <p> LINK IT (Geometry: Position and Movement): describe position, direction and movement, including half, quarter and three-quarter turns</p>	<p>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</p> <p>know the number of minutes in an hour and the number of hours in a day (appears also in Converting)</p> <p> LINK IT (Geometry: Position and Movement): use mathematical vocabulary to describe... rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)</p>	<p> LINK IT (Place Value): 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 (appears also in Comparing and Estimating)</p> <p>record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Comparing and Estimating)</p>	<p>read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)</p> <p>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Converting)</p>	<p> LINK IT (Statistics): complete, read and interpret information in tables, including timetables</p> <p>solve problems involving converting between units of time (appears also in Converting)</p>	

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CONVERTING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	know the number of minutes in an hour and the number of hours in a day (appears also in Telling the Time)	know the number of seconds in a minute and the number of days in each month, year and leap year	<p>convert between different units of measure (e.g. kilometre to metre; hour to minute)</p> <p>read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)</p> <p>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time)</p> <p> LINK IT (Fractions): multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places</p>	<p>convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>solve problems involving converting between units of time (appears also in Telling the Time)</p> <p>understand and use equivalences between metric units and common imperial units such as inches, pounds and pints</p> <p> LINK IT (Fractions): multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</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 three decimal places</p> <p>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Measuring and Calculating)</p> <p>convert between miles and kilometres</p> <p> LINK IT (Fractions): multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places</p>

Main objectives are taken from the National Curriculum.

Highlighted objectives are non-statutory and are taken from the Ready to Progress documents.

 LINK IT: Indicates a link with another unit of work

Objectives written with a **red heading** and black writing **MUST** be taught within the unit

Objectives written in **green** are optional links - Discuss when possible and use for mental starters, extension tasks etc.

