## Measurement

National Centre
for Excellence in the
Teaching of Mathematics

|  | COMPARING AND ESTIMATING |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| compare and describe: <br> * lengths and heights [e.g. long/short, longer/shorte r, tall/short] mass/weight [e.g. heavy/light, heavier than, lighter than] <br> * capacity and volume [e.g. full/empty, more than, less than, half, half full] | compare, describe and solve practical problems for: <br> * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] <br> * mass/weight [e.g. heavy/light, heavier than, lighter than] <br> * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] <br> * time [e.g. quicker, slower, earlier, later] | compare and order lengths, mass, volume/capacity and record the results using >, < and = |  | estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring) | calculate and compare the area of squares and rectangles including using standard units, square centimetres ( $\mathrm{cm}^{2}$ ) and square metres $\left(\mathrm{m}^{2}\right)$ and estimate the area of irregular shapes (also included in measuring) estimate volume (e.g. using $1 \mathrm{~cm}^{3}$ blocks to build cubes and cuboids) and capacity (e.g. using water) | calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed ( $\mathrm{cm}^{3}$ ) and cubic metres $\left(m^{3}\right)$, and extending to other units such as $\mathrm{mm}^{3}$ and $\mathrm{km}{ }^{3}$. |
|  | sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] | compare and sequence intervals of time | compare durations of events, for example to calculate the time taken by particular events or tasks |  |  |  |
|  |  |  | estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of |  |  |  |

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|  |  |  | 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) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MEASURING and CALCULATING |  |  |  |  |  |
| Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|  | measure and begin to record the following: <br> * lengths and heights <br> * mass/weight <br> * capacity and volume <br> * time (hours, minutes, seconds) | choose and use appropriate standard units to estimate and measure length/height in any direction ( $\mathrm{m} / \mathrm{cm}$ ); mass (kg/g); temperature ( ${ }^{\circ} \mathrm{C}$ ); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels | measure, compare, add and subtract: lengths ( $\mathrm{m} / \mathrm{cm} / \mathrm{mm}$ ); mass ( $\mathrm{kg} / \mathrm{g}$ ); volume/capacity (l/ml) | estimate, compare and calculate different measures, including money in pounds and pence (appears also in Comparing) | use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling. | 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) |
|  |  |  | measure the perimeter of simple 2-D shapes | measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres | measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres | recognise that shapes with the same areas can have different perimeters and vice versa |

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## MANORCROFT PRIMARY SCHOOL

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| MEASURING and CALCULATING |  |  |  |  |  |
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| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| recognise and know the value of different denominations of coins and notes | recognise and use symbols for pounds ( $\mathbf{f}$ ) and pence ( $\mathbf{p}$ ); combine amounts to make a particular value | add and <br> subtract amounts of money to give change, using both $£$ and $p$ in practical contexts |  |  |  |
|  | 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 |  |  |  |  |
|  |  |  | find the area of rectilinear shapes by counting squares | calculate and compare the area of squares and rectangles including using standard units, square centimetres ( $\mathrm{cm}^{2}$ ) and square metres $\left(\mathrm{m}^{2}\right)$ and estimate the area of irregular shapes <br> recognise and use square numbers and | calculate the area of parallelograms and triangles |
|  |  |  |  |  | calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres ( $\mathrm{cm}^{3}$ ) and cubic metres $\left(\mathrm{m}^{3}\right)$, and extending to other units [e.g. $\mathrm{mm}^{3}$ and $\mathrm{km}^{3}$ ]. |
|  |  |  |  | squared (') and cubed (') (copied from Multiplication and Division) | recognise when it is possible to use formulae for area and volume of shapes |
| TELLING THE TIME |  |  |  |  |  |
| Year 1 | Year 2 | Year 3 |  | Year 4 | Year 5 Year 6 |

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| tell the time to the hour <br> and half past the hour and <br> draw the hands on a clock <br> face to show these times. | tell and write the time to <br> five minutes, including <br> quarter past/to the hour <br> and draw the hands on a <br> clock face to show these <br> times. | tell and write the time from <br> an analogue clock, including <br> using Roman numerals <br> from I to XII, and 12-hour <br> and 24-hour clocks | read, write and convert <br> time between analogue <br> and digital 12 and 24-hour <br> clocks <br> (appears also in Converting) |  |
| :--- | :--- | :--- | :--- | :--- |
| recognise and use <br> language relating to <br> dates, including days of <br> the week, weeks, months <br> and years | know the number of <br> minutes in an hour and <br> the number of hours in a <br> day. <br> (appears also in Converting) | estimate and read <br> time with increasing <br> accuracy to the nearest <br> minute; record and <br> compare time in terms of <br> seconds, minutes, hours <br> and o'clock; use vocabulary <br> such as a.m./p.m., morning, <br> afternoon, noon and <br> midnight <br> (appears also in Comparing <br> and Estimating) |  |  |

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## Measurement

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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. <br> (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 | convert between different units of measure (e.g. kilometre to metre; hour to minute) | convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) | 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 |
|  |  |  | read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting) | solve problems involving converting between units of time | 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) |
|  |  |  | solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days <br> (appears also in Telling the Time) | understand and use equivalences between metric units and common imperial units such as inches, pounds and pints | convert between miles and kilometres |

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