

Creating a
Standard
Together

Indicators	Exemplars
<p>Estimation and Rounding Routinely uses rounding techniques to estimate an answer deciding if it is reasonable, eg in number calculations and in real life contexts such as in weighing and measuring, using money - rounding to five digit whole numbers.</p>	<p>Estimation and Rounding $29 \times 39 = 30 \times 40$; $433 \div 19 = 400 \div 20$ etc. Real-life examples: eg in estimation of shopping bills by rounding to nearest £, football crowds etc.</p>
<p>Number and Number Processes Is able to describe sets of numbers according to their features, eg through patterns, factors and multiples. Understands and uses decimal notation and place value in decimal fractions to three decimal places. Has quick and accurate recall of multiplication and related division facts, including multiplying and dividing by common multiples of 10 and powers of 10. Is developing efficient mental and written strategies for addition, subtraction, multiplication and division calculations and can apply to real life contexts. Can mentally calculate problems - multiplication by whole and decimal numbers, and division by whole numbers using at least three digit numbers. Understanding of number system extends to include numbers which have values less than zero, is able to locate them on the number line and work with them in everyday contexts and familiar applications, eg measuring temperature. Is able to use inverse relationships of adding, subtracting, multiplying and dividing when simplifying calculations and solving problems and can explain methods and solutions to others.</p>	<p>Number and Number Processes Knows, recalls and can use 2 to 10 'times' tables (without an aid such as a multiplication table) including the inverse for division. Add and subtract up 4 or 5 digits including decimals. Multiply and divide by a single digit including decimals - extending into being able to multiply and divide by 50, 400 etc including decimals. Developing efficient techniques: ie 17×7 could be $17 + 17 + 17 + 17 + 17 + 17 + 17$ or $10 \times 7 + 7 \times 7$ etc. Can explain strategies used and discuss if solutions are reasonable. Mental methods, ie $230 + 190 = 230 + 100 + 90$ or $230 + 200 - 10$ etc. In problems such as Temperature (above and below zero), Money (credit/debit), Sea Level (below/above), Time (AD/BC) (NB: discussion re no year 0): eg A bus left Perth with a number of passengers. In Dundee 10 got off the bus. At the next stop 6 passengers got on the bus. There are now 23 passengers on the bus. How many were on the bus when it left Perth?</p>
<p>Fractions and Decimals Can find simple equivalent fractions, decimal fractions and percentages using the preferred form in solving problems including real life scenarios, eg $\frac{3}{4} = 0.75 = 75\%$. Is able to compare and order fractions, decimal fractions and percentages.</p>	<p>Fractions and Decimals Knows fraction and decimal equivalences for 50%, $33\frac{1}{3}\%$, $66\frac{2}{3}\%$, 25%, 75%, 20%, 40%, 60%, 80%, 10%, 30%, 70%, 90%. Which is greater $\frac{1}{3}$ or $\frac{1}{5}$? Which is greater 0.35 or $\frac{3}{10}$? Which is better value 20% off or price reduced by $\frac{1}{4}$?</p>

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<p>Money</p> <p>Confidently uses money in a wide range of increasingly complex mathematical calculations drawing on ability to use number processes as described above.</p> <p>Has engaged successfully with simple contextualised foreign exchange calculations.</p> <p>Has had opportunities to develop some understanding of financial enterprise and shows understanding by using terminology/demonstrating practice associated with profit, loss, budgets, hidden charges, bank account, bank statement, special offers etc.</p>	<p>Money</p> <p>Can add, subtract, multiply and divide in context in problems, ie Best Buy - Which is the better buy? 6 cans of juice which costs £1.44 or 8 cans which costs £1.96?</p> <p>Convert to foreign currency, ie If £1 = \$1.20, how many dollars would I get for £30? etc.</p> <p>Ideal 'Partner Activity', ie help from local banks, CAB (Citizens Advice Bureau) etc - pupil should know about Hidden Charges, Banks & Banking, Rewards and how to calculate Profit/Loss and Simple Budgets.</p>
<p>Time</p> <p>Is developing a more sophisticated understanding of and ability to use conventions associated with notating time, eg timetables, distance/speed/time, time intervals, calendar.</p>	<p>Time</p> <p>Can convert from 12 hour clock to 24 hour and vice versa, work with calendars and dates, work with timetables, calculate time intervals, work with timelines (contextualised in history or HE cooking preparation and cooking times etc).</p> <p>Can calculate distance in simple proportional questions, ie If I travel 40km in one hour, how far will I travel in 4 hours at the same speed?</p> <p><i>(Use of T, D and S formulae is covered in Level 3)</i></p>
<p>Measure</p> <p>Measures accurately using common tools found in real life contexts, eg measuring wheels, stop watch, spring balance, cooking measuring scales etc.</p> <p>Is able to make sensible estimates of length, weight, area and capacity and after measuring decide if answers are reasonable, eg cm/m, g/kg, ml/l.</p> <p>Is able to apply knowledge of perimeter, area and volume to solve problems in real life contexts.</p> <p>Unprompted, will choose to estimate rather than measure (when appropriate) when solving problems and can explain why.</p>	<p>Measure</p> <p>Can work with a variety of scales – calculating the meaning of different divisions, ie 100g split into 4 divisions, 100g split into 5 divisions, 100 ml split into 10 divisions etc.</p> <p>Can use a ruler correctly by starting at zero. Practical use of a variety of scales, ie weighing, volumes etc.</p> <p>Can find the area of rectangle using $A = lb$, area of triangle using $A = \frac{1}{2}bh$, and volume using $V=lbh$. Example: A Fish tank measures 20 cm by 30 cm by 30 cm. How many litres of water would it hold?</p> <p>Estimation via practical resources, ie volume comparisons by comparing small bottle to can etc.</p>
<p>Data and Analysis</p> <p>Is able to compare and contrast different displays of the same data, discuss suitability and draw conclusions.</p> <p>Has worked with others to accurately construct more complex graphs, tables and charts, eg a database with more fields.</p>	<p>Data and Analysis</p> <p>Can work with or draw frequency tables, tally marks, bar graphs, line graphs and simple pie charts $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{10}$ etc or 10% or 5% - possibly drawing via computer and simple spreadsheets.</p> <p>Simple Venn diagrams – to help in problem solving.</p> <p>Can interpret misleading graph.</p>
<p>Ideas of Chance and Uncertainty</p> <p>Has investigated real life situations which involve making decisions based on the likelihood of events occurring and is able to use extended vocabulary of probability.</p> <p>Is able to assign a numerical value to the probability of a simple event using formula (number of favourable outcomes divided by the total number of outcomes).</p>	<p>Ideas of Chance and Uncertainty</p> <p>Can use and understand Chance, Certain, Impossible, Odds, Evens. Contextualised in real-life - ie chance of rain, gambling odds etc.</p> <p>Work out the probability of simple events:</p> $Pr(event) = \frac{\text{no of favourable events}}{\text{no of events}}$ <p>Probability of a head when tossing a coin, probability of a six when rolling a die, probability of choosing a blue marble etc.</p>

