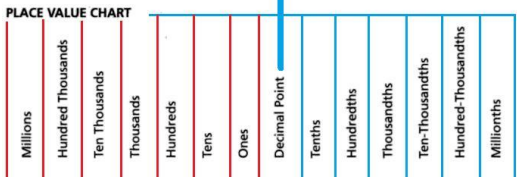


Topic: Accuracy

Topic/Skill	Definition/Tips	Example
1. Place Value	The value of where a digit is within a number.	In 726, the value of the 2 is 20, as it is in the 'tens' column.
2. Place Value Columns	<p>The names of the columns that determine the value of each digit.</p> <p>The 'ones' column is also known as the 'units' column.</p>	<p>PLACE VALUE CHART</p> 
3. Rounding	<p>To make a number simpler but keep its value close to what it was.</p> <p>If the digit to the right of the rounding digit is less than 5, round down.</p> <p>If the digit to the right of the rounding digit is 5 or more, round up.</p>	<p>74 rounded to the nearest ten is 70, because 74 is closer to 70 than 80.</p> <p>152,879 rounded to the nearest thousand is 153,000.</p>
4. Decimal Place	The position of a digit to the right of a decimal point .	<p>In the number 0.372, the 7 is in the second decimal place.</p> <p>0.372 rounded to two decimal places is 0.37, because the 2 tells us to round down.</p> <p>Careful with money - don't write £27.4, instead write £27.40</p>
5. Significant Figure	<p>The significant figures of a number are the digits which carry meaning (ie. are significant) to the size of the number.</p> <p>The first significant figure of a number cannot be zero.</p> <p>In a number with a decimal, trailing zeros are not significant.</p>	<p>In the number 0.00821, the first significant figure is the 8.</p> <p>In the number 2.740, the 0 is not a significant figure.</p> <p>0.00821 rounded to 2 significant figures is 0.0082.</p> <p>19357 rounded to 3 significant figures is 19400. We need to include the two zeros at the end to keep the digits in the same place value columns.</p>
6. Truncation	A method of approximating a decimal number by dropping all decimal places past a certain point without rounding .	3.14159265... can be truncated to 3.1415 (note that if it had been rounded, it would become 3.1416)
7. Error Interval	<p>A range of values that a number could have taken before being rounded or truncated.</p> <p>An error interval is written using inequalities, with a lower bound and an upper bound.</p>	<p>0.6 has been rounded to 1 decimal place.</p> <p>The error interval is:</p> $0.55 \leq x < 0.65$ <p>The lower bound is 0.55 The upper bound is 0.65</p>

	Note that the lower bound inequality can be 'equal to', but the upper bound cannot be 'equal to'.	
8. Estimate	To find something close to the correct answer .	An estimate for the height of a man is 1.8 metres.
9. Approximation	When using approximations to estimate the solution to a calculation, round each number in the calculation to 1 significant figure . \approx means 'approximately equal to'	$\frac{348 + 692}{0.526} \approx \frac{300 + 700}{0.5} = 2000$ 'Note that dividing by 0.5 is the same as multiplying by 2'
10. Rational Number	A number of the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$. A number that cannot be written in this form is called an 'irrational' number	$\frac{4}{9}, 6, -\frac{1}{3}, \sqrt{25}$ are examples of rational numbers. $\pi, \sqrt{2}$ are examples of an irrational numbers.
11. Surd	The irrational number that is a root of a positive integer , whose value cannot be determined exactly. Surds have infinite non-recurring decimals .	$\sqrt{2}$ is a surd because it is a root which cannot be determined exactly. $\sqrt{2} = 1.41421356 \dots$ which never repeats.
12. Rules of Surds	$\sqrt{ab} = \sqrt{a} \times \sqrt{b}$ $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$ $a\sqrt{c} \pm b\sqrt{c} = (a \pm b)\sqrt{c}$ $\sqrt{a} \times \sqrt{a} = a$	$\sqrt{48} = \sqrt{16} \times \sqrt{3} = 4\sqrt{3}$ $\sqrt{\frac{25}{36}} = \frac{\sqrt{25}}{\sqrt{36}} = \frac{5}{6}$ $2\sqrt{5} + 7\sqrt{5} = 9\sqrt{5}$ $\sqrt{7} \times \sqrt{7} = 7$
13. Rationalise a Denominator	The process of rewriting a fraction so that the denominator contains only rational numbers .	$\frac{\sqrt{3}}{\sqrt{2}} = \frac{\sqrt{3} \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}} = \frac{\sqrt{6}}{2}$ $\frac{6}{3 + \sqrt{7}} = \frac{6(3 - \sqrt{7})}{(3 + \sqrt{7})(3 - \sqrt{7})}$ $= \frac{18 - 6\sqrt{7}}{9 - 7}$ $= \frac{18 - 6\sqrt{7}}{2} = 9 - 3\sqrt{7}$