

Level 8 Check List

Numbers	
Write numbers in <u>standard form</u> .	
Understand <u>upper and lower bounds</u>	
Use <u>index notation</u> and the <u>index laws</u> with negative and fractional powers (e.g. 4^{-2} or $16^{1/2}$)	
Use algebraic methods to convert a <u>recurring decimal</u> to a fraction.	
Calculations	
Recognise and use <u>reciprocals</u> .	
Use a calculator efficiently (see 'Know Your Calculator').	
Algebra	
Remember and use the <u>index laws</u> in algebra (e.g. $x^4 \div x^2 = x^2$ or $x^{-1/2} = 1/x$).	
<u>Square</u> a <u>linear expression</u> such as $(2x + 3)^2$,	
<u>Expand</u> and <u>simplify</u> expressions such as $(x - 1)(x + 4)$.	
Establish identities such as $a^2 - b^2 = (a + b)(a - b)$.	
Solve <u>inequalities</u> in two <u>variables</u> .	
Change the <u>subject</u> of a formula.	
Find the next term and the n th term of <u>quadratic sequences</u> (e.g. for 3, 9, 19, 33, ... the n th term is $2n^2 + 1$).	
Plot the graph of the <u>inverse</u> of a <u>linear function</u> .	
Remember simple properties of <u>quadratic functions</u> .	
Plot graphs of simple quadratic and <u>cubic functions</u> , (e.g. $y = x^2$, $y = 3x^2 + 4$, $y = x^3$).	
Shape, Space and measures	
Show that two or more triangles are <u>congruent</u> .	
Explain why the <u>perpendicular</u> from the centre of a circle to the <u>chord bisects</u> the chord.	
Understand the effects of enlargement on the area and volume of shapes.	
Find points that divide a line in a given <u>ratio</u> .	
Calculate the length of the line AB, given the coordinates of points A and B.	
Remember that measurements given to the nearest whole unit may be inaccurate by up to one half of the unit in either direction.	
Understand and use measures of speed (and other <u>compound measures</u> such as density or pressure).	
Know and use the formulae for length of <u>arcs</u> and area of <u>sectors</u> of circles.	
Begin to use <u>sine</u> , <u>cosine</u> and <u>tangent</u> in right-angled triangles to solve problems (trigonometry).	
Discuss the difference between practical demonstration and <u>proof</u> .	
Handling data	
Identify possible sources of <u>bias</u> in surveys and plan how to minimise it.	
Produce <u>cumulative frequency tables</u> and draw <u>cumulative frequency graphs</u> .	
Estimate the <u>median</u> , <u>quartiles</u> and <u>interquartile range</u> from a cumulative frequency graph.	