

KS3 ASSESSMENT CRITERIA – YEARS 7-9 MATHEMATICS

Mathematics - Year 7

Focus	Beginning (B)	Working Towards (WT)	Expected Standard (ES)	Working Above Standards (WA)	Well Above/ Outstanding (O)
Number	<ul style="list-style-type: none"> • add and subtract integers • read values off a scale • state the place value of a number • round a number to the nearest 10, 100 or 1000. • multiply and divide integers and decimals by 10, 100, or 1000 • add and subtract decimals • simplify a fraction 	<ul style="list-style-type: none"> • identify equivalent fractions • find a fraction of an amount • perform multiplication and division with integers • identify equivalent fractions 	<ul style="list-style-type: none"> • perform arithmetic with decimals • identify square and cube numbers • calculate square roots • list multiples, factors and primes • calculate with negative numbers • apply the order of operations correctly • round to any number of decimal places • write a number as a product of its prime factors and use this to find HCF and LCM • round to any number of significant figures • perform arithmetic with proper fractions • perform arithmetic with decimals • calculate with negative numbers • apply the order of operations correctly • round to any number of decimal places 	<ul style="list-style-type: none"> • use estimation within calculations 	<ul style="list-style-type: none"> • Perform bidmas on fractions and decimals

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Algebra	<ul style="list-style-type: none"> • recognise the rule of a sequence • I plot co-ordinates in the first quadrant 	<ul style="list-style-type: none"> • collect like terms • generate a sequence given the rule • plot and read co-ordinates in all four quadrants • Identify parallel lines from their equations 	<ul style="list-style-type: none"> • simplify multiplied expressions • Multiply and divide algebraic expressions. • expand a single bracket • create and use a formula • substitute a positive number into an expression or formula • continue a Fibonacci or geometric sequence 	<ul style="list-style-type: none"> • find the nth term of a linear sequence • substitute a negative number into an expression or formula 	<ul style="list-style-type: none"> • expand any pair of double brackets
Ratio and Proportion	<ul style="list-style-type: none"> • write a ratio from words or pictures • find equivalent ratios • simplify a ratio 	<ul style="list-style-type: none"> • find a percentage of an amount • use a scale on a map 	<ul style="list-style-type: none"> • convert between fractions, decimals, and percentages • Order fractions, decimal and percentages by converting. <ul style="list-style-type: none"> • write one number as a percentage of the other • calculate the simple interest of money • share into a given ratio • solve direct proportion problems using the unitary method 	<ul style="list-style-type: none"> • work confidently with percentage greater than 100% • Use different strategies to calculate with percentages 	<ul style="list-style-type: none"> • calculate percentage profit and loss
Geometry	<ul style="list-style-type: none"> • count the number of faces, vertices and edges in 3D shapes • state the different types of angle • identify congruent shapes 	<ul style="list-style-type: none"> • draw the lines of symmetry in a 2D shape • measure an angle • find the area and perimeter of a rectangle • label key features of a circle 	<ul style="list-style-type: none"> • find missing angles on straight lines, at points and vertically opposite • state the different properties of quadrilaterals • find the area of triangles, parallelograms and trapeziums • translate any shape • find the missing angle in any 	<ul style="list-style-type: none"> • draw the net, plan and side elevation of a 3D shape • Solve angle problems involving quadrilaterals 	

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		<ul style="list-style-type: none"> •convert between different measures such as cm and m 	triangle <ul style="list-style-type: none"> • reflect a shape in a line and rotate a shape around a point • Find the area of a circle 		
Data and Probability	<ul style="list-style-type: none"> • find the mode from a list of data • draw and interpret a pictogram • use the language of probability 	<ul style="list-style-type: none"> • Find the median from a list of data. • Calculate the range from a list of data. • place events on a probability scale • draw an interpret a bar chart 	<ul style="list-style-type: none"> • Calculate the probability of an equally likely event, knowing that probability outcomes sum to 1. • draw a pie chart from a set of data • find the mean from a list of data • complete a two-way table •Use probability notation 	<ul style="list-style-type: none"> •use a stem and leaf diagram to order numbers and find averages using it •Use probability to estimate the expected number of times an outcome will occur 	<ul style="list-style-type: none"> •draw a scatter diagram and interpret the correlation

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Mathematics - Year 8

Focus	Beginning (B)	Working Towards (WT)	Expected Standard (ES)	Working Above Standards (WA)	Well Above/ Outstanding (O)
Number	<ul style="list-style-type: none"> •add and subtract integers • read values off a scale 	<ul style="list-style-type: none"> •list multiples, factors and primes •Know and use divisibility rules. •Use a written method to multiply and divide decimal numbers by integers. • identify square and cube numbers 	<ul style="list-style-type: none"> •perform arithmetic with decimals • calculate square roots •calculate with negative numbers • apply the order of operations correctly • round to any number of decimal places •round to any number of decimal places • use estimation within calculations •Calculate using squares, square roots, cubes and cube roots. •Give integers that a square root lies between. •Calculate combinations of squares, square roots, cubes, cube roots and brackets. •Use a calculator to check answers. •Use index notation. •Write a number as a product of its prime factors. •Use prime factor decomposition to find the HCF and LCM. •Using a calculator find powers and roots 	<ul style="list-style-type: none"> •perform arithmetic with mixed numbers and improper fractions 	<ul style="list-style-type: none"> •estimate powers and roots of any positive integer •apply the laws of indices to simplify expressions with negative powers

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			<ul style="list-style-type: none"> perform arithmetic with proper fractions 		
Algebra	<ul style="list-style-type: none"> recognise the rule of a sequence plot co-ordinates in the first quadrant 	<ul style="list-style-type: none"> collect like terms solve a linear one-step equation plot and read coordinates draw a straight line graph of the form $y=k$ and $x=k$ substitute a positive number into an expression or formula 	<ul style="list-style-type: none"> form and solve a linear two-step eq simplify multiplied expressions expand a single bracket create and use a formula draw and interpret a conversion graph plot a straight line graph of the form $y=ax + b$ state the gradient and yintercept of any straight line graph factorise a linear expression 	<ul style="list-style-type: none"> solve an equation including single brackets, negatives and fractions solve a linear equation with positive unknowns on both sides expand a combination of linear brackets state the equation of a parallel line 	<ul style="list-style-type: none"> solve a linear equation with one or two negative unknowns expand any pair of double brackets
Ratio and Proportion	<ul style="list-style-type: none"> write a ratio from words or pictures find equivalent ratios simplify a ratio 	<ul style="list-style-type: none"> find a percentage of an amount use a scale on a map 	<ul style="list-style-type: none"> convert between fractions, decimals, and percentages Order fractions, decimal and percentages by converting. <ul style="list-style-type: none"> write one number as a percentage of the other calculate the simple interest of money share into a given ratio Solve direct proportion problems using the unitary method Use ratios involving decimals. Use unit ratios. Use a multiplier to calculate amounts increased or decreased by a percentage. 	<ul style="list-style-type: none"> work confidently with percentage greater than 100% Use different strategies to calculate with percentages Solve ratio and proportion problems involving decimals. 	<ul style="list-style-type: none"> calculate percentage profit and loss solve indirect proportion problems using the unitary method

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Geometry	<ul style="list-style-type: none"> • count the number of faces, vertices and edges in 3D shapes • state the different types of angle • identify congruent shapes 	<ul style="list-style-type: none"> • draw the lines of symmetry in a 2D shape • measure an angle • find the area and perimeter of a rectangle • label key features of a circle • Convert between different measures such as cm and m • state the different properties of quadrilaterals • Calculate the volume of 3D solids made from cuboids. • Calculate the surface area of cubes and cuboids. 	<ul style="list-style-type: none"> • find missing angles on straight lines, at points and vertically opposite • state the different properties of quadrilaterals • find the area of triangles, parallelograms and trapeziums • translate any shape • find the missing angle in any triangle • reflect a shape in a line and rotate a shape around a point • Find the area of a circle • construct a triangle • find the area and circumference of a circle • enlarge a shape given a positive scale factor • find missing angles in parallel lines <ul style="list-style-type: none"> • find the interior and exterior angles of a polygon • find the area and perimeter of any compound shape • Calculate the volume of 3D solids made from cuboids. • Calculate the surface area of cubes and cuboids. 	<ul style="list-style-type: none"> • draw the net, plan and side elevation of a 3D shape • Solve angle problems involving quadrilaterals • use Pythagoras' Theorem to find the missing side of a triangle • find the area and volume of a prism • enlarge a shape using a fractional scale factor • Solve volume problems. 	<ul style="list-style-type: none"> • enlarge a shape using a negative scale factor • Estimate calculations involving pi • Solve problems involving circles • Solve geometrical problems showing reasoning. • Solve problems involving angles by setting up equations. • Calculate the volume and surface area of cylinders
Data and Probability	<ul style="list-style-type: none"> • find the mode from a list of data • draw and 	<ul style="list-style-type: none"> • Find the median from a list of data. • Calculate the range 	<ul style="list-style-type: none"> • Calculate the mean from a frequency table. • draw a pie chart from a set of 	<ul style="list-style-type: none"> • use a stem and leaf diagram to order numbers and 	<ul style="list-style-type: none"> • Explain why a graph or chart could be

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	<p>interpret a pictogram</p> <ul style="list-style-type: none"> • use the language of probability • Identify mutually exclusive outcomes and events. 	<p>from a list of data.</p> <ul style="list-style-type: none"> • Draw and interpret stem and leaf diagrams with different stem values. • draw and interpret a bar chart • Work out the probabilities of mutually exclusive outcomes and events. 	<p>data</p> <ul style="list-style-type: none"> • Draw scatter graphs. • Describe types of correlation. • Draw a line of best fit on a scatter graph. • Interpret graphs and charts. • Calculate estimates of probability from experiments. • Decide whether a dice or spinner is unbiased. • List all the possible outcomes of one or two events in a sample space diagram. • construct and complete a two-way table 	<p>find averages using it</p> <ul style="list-style-type: none"> • create a sample space diagram based on two events • interpret probability outcomes in a Venn diagram 	<p>misleading.</p> <ul style="list-style-type: none"> • Draw Venn diagrams. • Calculate probabilities from Venn diagrams.
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Mathematics - Year 9

Focus	Beginning (B)	Working Towards (WT)	Expected Standard (ES)	Working Above Standards (WA)	Well Above/ Outstanding (O)
Number	<ul style="list-style-type: none"> •Apply the four operations to small integers •Read values off a scale •State the place value of a number •Round a number to the nearest 10/100/1000 •Simplify fractions •Multiply and divide decimals and integers by 10/100/1000 	<ul style="list-style-type: none"> •Identify equivalent fractions •Find a fraction of an amount •Perform the four operations to larger integers •Perform arithmetic with decimals •Identify square and cube numbers •Calculate square roots •List multiples, factors and numbers 	<ul style="list-style-type: none"> •Calculate with negative numbers •Apply BIDMAS correctly •Round to any number of decimal places and significant figures •Use estimation with calculations •Write a number as a product of its prime factors and use this to find HCF and LCM •Perform arithmetic with proper fractions •Apply the laws of indices to simplify expressions for multiplied and divided terms •Write large and small numbers in standard form •Find a reciprocal of a number •Calculate the upper and lower bounds of a rounded number •Truncate numbers 	<ul style="list-style-type: none"> •Perform arithmetic with mixed numbers and improper fractions •Apply more complex laws of indices •Use inequality notation to describe error intervals 	<ul style="list-style-type: none"> •Express a recurring decimal as a fraction •Solve complex calculations involving bounds
Algebra	<ul style="list-style-type: none"> •Recognise a rule of a sequence •Generate a sequence given the rule •Plot coordinates 	<ul style="list-style-type: none"> •Substitute a positive number into an expression or formula •Draw horizontal/vertical/diagonal lines given the 	<ul style="list-style-type: none"> •Draw and interpret a conversion graph •Plot a straight-line graph in the form $y = mx + c$ •Find the nth term of a linear sequence 	<ul style="list-style-type: none"> •Solve a linear inequality •Solve a linear equation/inequality with one or two negative unknowns 	<ul style="list-style-type: none"> •Find the Nth term of a quadratic sequence •Plot a quadratic graph

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	<p>in all four quadrants</p> <ul style="list-style-type: none"> •Collect like terms •Solve a linear one step equation 	<p>equation</p> <ul style="list-style-type: none"> •Perform and solve linear two step equations •Simplify multiplied expressions •Expand a single bracket •Continue a Fibonacci or geometric sequence 	<ul style="list-style-type: none"> •Substitute a negative number into an expression or formula •State the gradient and y-intercept of any straight-line graph •Factorise a linear expression •Factorise quadratics where $a=1$ •State the equation of a parallel line •Expand a combination of linear brackets •Solve linear equations with positive unknowns on both sides •Solve simple linear inequalities •Simplify algebraic fractions 	<ul style="list-style-type: none"> •Change the subject of a formula where the unknown appears on one side •State the equation of a perpendicular line •Apply the four operations to algebraic fractions •Expanding the product of three binomials 	<ul style="list-style-type: none"> •Recognise cubic and reciprocal graphs •State the equation of a line given two points •Factorising and solving harder quadratic equations where $a>1$
Ratio and Proportion	<ul style="list-style-type: none"> •Find equivalent ratios •Simplify ratios •Find $1/5/10/50/25$ percentage of an amount •Use a scale on a map •Solve simple proportion problems involving money and time 	<ul style="list-style-type: none"> •Find any percentage of an amount with/without a calculator •Writing ratios in the form $1:n$ and $n:1$ •Use ratios to find unknown amounts •Understand and use direct proportion 	<ul style="list-style-type: none"> •Calculate percentage increase and decrease •Convert between FDP •Write one number as a percentage of another •Order FDP through conversion •Use ratios to find fractions and vice versa •Solving ratio problems involving difference •Sharing an amount into a ratio •Understand and use inverse proportion •Find the constant of proportionality, k, of direct and inverse proportion problems 	<ul style="list-style-type: none"> •Solve complex FDP problems •Write a ratio given a multiplicative relationship between two quantities •Find the constant of proportionality, k, of direct and inverse proportion problems with a calculator 	<ul style="list-style-type: none"> •Solve more complex ratio problems involving algebra •Solve more complex direct and inverse proportion problems

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			without a calculator		
Geometry	<ul style="list-style-type: none"> •Measure an angle •Draw lines of symmetry in a 2D shape •Find the area and perimeter of a rectangle •Label key features of a circle •Find missing angles around a point/one a line/vertically opposite 	<ul style="list-style-type: none"> •State the different properties of a quadrilateral •Reflect a shape in a line •Rotate a shape around a point •Convert between different measures e.g. cm to m •Translate any shape •Find a missing angle in any triangle •Enlarge a shape 	<ul style="list-style-type: none"> •Draw the net/plan/side elevation of a 3D shape •Find the area of triangles/parallelograms/trapeziums •Find the area and circumference of a circle •Enlarge a shape given a positive scale factor •Translate a shape using a vector •Reflect in the line $y=x$ and $y=-x$ •Find missing angles in parallel lines •Describe a single transformation •Find the interior and exterior angles of a polygon •Find the perimeter and area of rectilinear shapes 	<ul style="list-style-type: none"> •Combining transformations •Find the perimeter and area of any compound shape •Enlarge a shape using a fractional scale factor 	<ul style="list-style-type: none"> •Enlarge a shape using a negative scale factor •Calculate the length of an arc and area of a sector •Confidently use algebra with perimeter and area for any shape •Confidently describe any transformations including negative and fractional values
Data and Probability	<ul style="list-style-type: none"> •Draw and interpret a bar chart and pictogram •Calculate the range, mode and median from a list of data •Use the language of probability •Place events on a probability scale 	<ul style="list-style-type: none"> •Construct and complete two-way tables •Calculate the probability of a equally likely event knowing that the probability outcomes sum to 1 •Find the mean from a list of data 	<ul style="list-style-type: none"> •Draw a pie chart from a set of data •Display and interpret a stem and leaf diagram to order numbers and find averages <ul style="list-style-type: none"> •Create a sample space diagram based on two events •Draw a scatter diagram and interpret the correlation •Draw a tree diagram with replacement and calculate probabilities from it •Draw a time series graph 	<ul style="list-style-type: none"> •Draw a tree diagram without replacement and calculate probabilities from it •Finding the averages from a grouped frequency table •Construct a boxplot from a list of data •Find the quartiles 	<ul style="list-style-type: none"> •Correctly draw a histogram with unequal groups •Find the quartiles from a cumulative frequency diagram

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			<ul style="list-style-type: none">• Calculate the averages from an ungrouped frequency table	<p>from a list of data</p> <ul style="list-style-type: none">• Display and interpret data in frequency polygons and cumulative frequency diagrams	
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