Year 8 Mathematics Assessment Grid

YEAR 8	1 Number	2 Algebra	3 Ratio, proportion and rates of change	4 Geometry and measures	5 Probability	6 Statistics
Y8.9	I understand what the numbers to the power of -1 and 0 are. I understand what an identity is and can mathematically prove them.	I can solve simple quadratic equations graphically. I can simplify algebraic expressions involving powers. I know the relationship between the gradients of perpendicular lines.	I can understand and deduce the units of measure from complex density and speed calculations.	I can solve complex problems involving Pythagoras' Theorem. I can enlarge a shape by a fractional scale factor. I can enlarge a shape by a negative scale factor.	I can use set notation to draw Venn Diagrams.	I can compare distributions using averages and range.
Y8.8	I can express number in standard form. I can perform repeated percentage change including compound interest.	I can solve equations including fractions and negatives or with fractions or negatives as solutions.	I can solve speed, distance, time problems and density, mass, volume problems.	I can use Pythagoras' Theorem to prove a triangle is right angled.	I understand the language of sets.	I understand the danger of extrapolation.
Y8.7	I can multiply fractions together. I understand percentage increase and decrease with multipliers. I can express numbers as products of prime factors. I can divide fractions and mixed numbers.	I can use algebra to set up and solve equations. I can expand brackets and factorise simple expressions. I understand the different properties of straight lines graphs.	I can use ratio to share quantities.	I can work out area of trapeziums. I can construct and interpret stem and leaf diagrams. I can construct and interpret two way tables. I can calculate the volume and surface area of prisms. I can use Pythagoras' Theorem to find sides of right angled triangles.	I understand differences between theoretical and experimental data.	I recognise correlation, can identify outliers and use lines of best fit to make predictions.

Y8.6	I can multiply a fraction by an integer and convert between mixed numbers and improper fractions. I can add and subtract fractions and mixed numbers. I can convert between fractions, decimals and percentages. I understand percentage increase and decrease. I can multiply and divide negative numbers. I can divide decimal numbers.	I can substitute into algebraic expressions and formulae. I can solve two step equations. I can identify formulae, expressions, equations and identities. I can change the subject of simple formulae. I can solve equations with x on both sides.	I can use ratio to compare quantities. I can use the unitary method to solve proportion problems.	I can work out area of triangles and parallelograms. I can calculate area and perimeter of compound shapes. I can calculate the volume and surface area of cubes and cuboids. I can reflect shapes given reflection lines and rotate shapes given centre of enlargement, direction and angle. I can construct and interpret pie charts. I can interpret plans and elevations and draw nets of 3D shapes. I can use a variety of angle rules including those contained within parallel lines. I can describe and perform translations and positive enlargements. I can calculate area and circumference of circles. I can calculate interior and exterior angles of polygons.	I can use sample space diagrams to list outcomes and find associated probabilities.	I can plot scatter graphs.
Y8.5	I can multiply decimals by powers of 10. I can order decimals with different decimal places. I can add and subtract	I can understand square, cube and triangular numbers as sequences. I can use conventions of BIDMAS.	I can see the connection between ratio and fractions.	I can use and convert common metric units. I can use a protractor to measure and draw angles.	I can use the probability scale and can find the probability of events happening or not.	I can calculate and use the mean of a set of data I can compare distributions using average and range.

	decimals. I can multiply two decimal numbers. I can find a fraction of an amount. I can convert fractions into decimals. I can find highest common factors and lowest common multiples.	I can write simple algebraic expressions. I can recognise and draw horizontal, vertical and other basic graphs. I can understand and draw distance time graphs. I can simplify expressions as well as multiply numbers, letters and expressions.		I can construct triangles given limited information. I can calculate angles in triangles, on lines and at points as well as in quadrilaterals and use vertically opposite angles.		
Y8.4	I can find equivalent fractions and simplify fractions. I can identify factors, multiples and primes.	I can use function machines to generate and describe sequences. I can use coordinates to plot in four quadrants. I can solve one step equations.	I can understand ratio notation.	I can work out perimeter and area of rectangles using simple formulae. I recognise rotational and reflective symmetry.	I can use the probability scale	I can interpret and compare data shown in bar charts and line graphs.