Year 9 Big Picture – Mathematics

Autumn 1 8 weeks	Autumn 2 7 weeks	Spring 1 6 weeks
Content 9.01 Decimal manipulation 9.02 Estimation and Limits of accuracy 9.03 Related calculations 9.04 HCF & LCM of large numbers 9.05 Fraction calculations	**Content** 9.06 Algebraic manipulation 9.07 Index Laws 9.08 Standard form 9.09 Expanding & factorising 2	**Content** 9.10 Forming expressions & Substitution 9.11 Direct and Inverse Proportion 9.12 Probability 1
Assessment Objectives This is the knowledge, application and skills assessed by the Big Test: • Apply all four operations using non calculator methods when working with decimals, including both dividing a decimal by an integer and dividing a number by a decimal • Use rounding in order to complete estimations (rounding to both one significant figure and applying sensible rounding) • Use inequality notation to write error intervals from both rounding and truncation • Recognise and use relationships between operations in order to write down the answer to a related calculation from a given calculation • Use prime factor decomposition and Venn diagrams in order to find the HCF and LCM of large values. • Apply all four operations using non calculator methods when working with fractions and mixed numbers involving different denominators, finding the fraction of an amount, writing one number as a fraction of another and to find the reciprocal of an integer, decimal or fraction. **Unit Test (marked by teacher)** Unit test 9.01 **Unit tests (Self-assessment)** Unit tests 9.02, 9.03, 9.04, 9.05	**Assessment Objectives** This is the knowledge, application and skills assessed by the Big Test: • Collecting like terms and simplifying expressions involving all four operations, using the identity symbol, adding fractions with algebraic numerators, multiplying and dividing simple algebraic fractions • Working with the laws of indices, this includes negative and fractional indices, using index notation for integer powers of 10, including negative powers • Converting between ordinary numbers and standard form. Calculating with standard form including multiplication, division, addition and subtraction • Expanding double brackets, factorising quadratics (where the coefficient of x^2 is 1), difference of two squares **Unit Test (marked by teacher)** Unit test 9.06 **Unit tests (Self-assessment)** Unit tests 9.07, 9.08, 9.09	**Assessment Objectives** This is the knowledge, application and skills assessed by the Big Test: • Substitution into algebraic formulae, basic functions - inputs and outputs, use algebra to show expressions are equivalence, know the difference between an equation and an identity • Use proportion to answer problems involving exchange rates and best buys. Introduction to inverse proportion, interpret conversion graphs • Describe probability using the probability scale, calculate expected outcomes, mutually exclusive outcomes, experimental probabilities, probability from two-way tables, sample spaces, samples, set notation and Venn diagrams. Product rule for counting. **Big test (marked by teacher)** Big Test 1 **Unit tests (Self-assessment)** Unit tests 9.10, 9.11, 9.12

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Intervention Students to complete the questions where they made errors (in purple pen)	**Intervention** Students to complete the questions where they made errors (in purple pen)	**Intervention** Students to complete the questions where they made errors (in purple pen)
ATL Data capture	**ATL Data capture**	**Big Test 1** **Data capture – Big test % and ATL**
Spring 2 **6 weeks**	**Summer 1** **5 weeks**	**Summer 2** **7 weeks**
Content 9.13 Solving Equations 2 9.14 Inequalities 1 9.15 Sequences 9.16 Pythagoras	**Content** 9.17 Interior and Exterior angles 9.18 Vectors 1 9.19 Transformations 1	**Content** 9.20 Plans and Elevations 9.21 Arcs and Sectors 9.22 Surface Area EOY Revision
Assessment Objectives This is the knowledge, application and skills assessed by the Big Test: • Solve linear equations which contain brackets, fractional coefficients, negative signs, negative solutions. Solving linear equations in one unknown with unknowns on both sides, solving equations that require fraction manipulation • Solve linear inequalities in one variable, represent and interpret solutions sets on a number line, solve two inequalities in one variable and compare to see which value(s) satisfy both • Recognise and use the sequence of triangular, square and cube numbers. Generate terms of a term-to-term sequence. Find the nth term of a linear sequence, use the nth term of a linear sequence to determine whether a given number is in that sequence • Use Pythagoras' Theorem to find missing sides in a right-	**Assessment Objectives** This is the knowledge, application and skills assessed by the Big Test: • To calculate interior and exterior angles of (regular) polygons, find the total angle sum of a given polygon • To use column vectors, addition and subtraction of column vectors and interpretation of diagrammatic vectors. To identify whether a pair of column vectors are equal or not • Reflection and rotational symmetry, understand all 4 Transformations - rotation, reflection, translation, enlargement (with a positive scale factor), identify the equation of a line of symmetry	**Assessment Objectives** This is the knowledge, application and skills assessed by the Big Test: • Construct plans and elevations of 3D shapes, draw sketches of 3D solids from plans and elevations • Define all parts of a circle and know key definitions including, tangent, arc, sector and segment. Use the formula for area and circumference of a circle to find the area of circle and sectors and calculate the circumference and arc lengths of circles • Sketch the nets of cuboids and prisms. Find the surface areas of cuboids, pyramids, spheres, cones and composite solids • EOY Revision programme- Revision of key topics • Preparation for UL tests

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angled triangle and to find the distance between two points. Justify whether a triangle with three given sides in right-angled or not **Unit Test (marked by teacher)** Unit test 9.13 **Unit tests (Self-assessment)** Unit tests 9.14, 9.15, 9.16 **Intervention** Students to complete the questions where they made errors (in purple pen)	**Unit Test (marked by teacher)** Unit test 9.17 **Unit tests (Self-assessment)** Unit tests 9.18, 9.19 **Intervention** Students to complete the questions where they made errors (in purple pen)	**EOY test (marked by teacher)** EOY Paper 1 and Paper 2 **Unit tests (Self-assessment)** Unit tests 9.20, 9.22 **Intervention** Students to complete the questions where they made errors (in purple pen)
ATL Data capture	**ATL Data capture**	**Year 9 UL EOY test (Big Test 2)** **Data capture – Big test and ATL**