Mathematics						
	Term 1 Aug-Oct	Term 2 Nov-Dec	Term 3 Jan-Feb	Term 4 Mar-Apr	Term 5 Apr-May	Term 6 Jun-Jul
Year 7:	Sequences Algebraic Notation Equality and Equivalence Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2	Place Value and Ordering Numbers FDP equivalence Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2	Solving Problems with Addition/Subtraction Solving Problems with Multiplication/Division Fractions and Percentages of Amounts Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3 Oak Academy link 4	Operations and Equations with Directed Numbers Addition and Subtraction of Fractions Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2	Constructing, Measuring and Using Geometric Notation Developing Geometric Reasoning Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2	Developing Number Sense Sets and Probability Prime Numbers and Proof Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2
Year 8:	Ratio and Scale Multiplicative Change Multiplying and dividing fractions Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Working in the Cartesian plane Representing data Tables and probability Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Brackets, equations and inequalities Sequences Indices Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Fractions and Percentages Standard Index Form Number Sense Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Angles in parallel lines and polygons Area of trapezia and circles Line symmetry and reflection Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	The Data Handling Cycle Measures of Location Home Learning | White Rose Maths Oak Academy Link 1

Year 9:	Straight line graphs Forming and solving equations Testing Conjectures Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Three-dimensional shapes Constructions and Congruency Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2	Numbers Using percentages Maths and Money Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Deduction Rotation and Translation Pythagoras Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Enlargement and Similarity Solving ratio and proportion problems Rates Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Probability Algebraic representation Revision Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2
Year 10 : GCSE HIGHER	Representing solutions of equations & inequalities Simultaneous Equation Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2	Congruence, similarity & enlargement Trigonometry Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3 Oak Academy link 4	Angles and Bearings Working with circles Vectors Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3 Oak Academy link 4	Ratios & Fractions Percentages & Interest Probability Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Delving into data Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2	Non-calculator methods Types of Number and sequences Indices & Roots Home Learning | White Rose Maths Oak Academy link 1 Oak Academy link 2 Oak Academy link 3
Year 10: GCSE FOUNDATION	Decimals and Fractions Expressions and Formulae Linear Equations Oak Academy link 1 Oak Academy link 2	Approximations Ratio, Speed and Proportion Angles Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Perimeter and Area Transformations Linear Graphs Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Volumes and Surface Areas of Prisms & Curved Shapes and Pyramids Charts, Tables and Averages Oak Academy link 1 Oak Academy link 2	Number and Sequences Linear Inequalities Probability and Events Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Pythagoras' Theorem Measures and Scale Drawings Oak Academy link 1 Oak Academy link 2

	CURIOSITY	COMPASSION	COURAGE			
		Oak Academy link 4				
Year 11: GCSE HIGHER	Graphs Oak Academy link 1 Oak Academy link 2 Oak Academy link 3 Oak Academy link 4 Oak Academy link 5	Algebra Oak Academy link 1 Oak Academy link 2 Oak Academy link 3 Oak Academy link 4	Reasoning Oak Academy link 1 Oak Academy link 2 Oak Academy link 3 Oak Academy link 4	Revision and Communication Oak Academy link 1 Oak Academy link 2 Oak Academy link 3 Oak Academy link 4	Revision	Exams
Year 11: GCSE FOUNDATION	Simultaneous Equations Percentages and Compound Measures Percentages and Variation Oak Academy link 1 Oak Academy link 2	Powers and Standard Form Quadratics Representation and Interpretation Oak Academy link 1 Oak Academy link 2 Oak Academy link 3	Non linear graphs Combined Events Constructions and Loci Congruence and Similarity Vectors Oak Academy link 1 Oak Academy link 2 Oak Academy link 3 Oak Academy link 4 Oak Academy link 5	Right angled triangles Revision Oak Academy link 1	Revision	Exams

Subject	Mathematics	Year group	11F

Vision statement:	At Landau Forte our curriculum exists to ensure all students regardless of background and ability have the opportunity to unlock their potential. We are committed to students being challenged from their previous key stage learning experiences. Our broad and balanced curriculum is ambitious, coherently planned and sequenced, and will provide the platform for preparing students with the foundations for examination success. Our Curriculum Intent has been informed by a wide variety of researchers and is steeped in evidence based research. Christine Counsell summarises the aspiration of our curriculum to empower all learners creating a pathway to success in university, their career and life: *'A curriculum exists to change the pupil, to give the pupil new power. One acid test for a curriculum is whether it enables even lower attaining or disadvantaged pupils to clamber into the discourse and practices of educated people, so that they gain powers of the powerful.'* As well as excellent academic success we aim to ensure our students leave us as polite and well-rounded young adults. Our new core values of Compassion, Courage and Curiosity are currently being embedded throughout our curriculum offer to ensure we continue to meet our social, emotional, spiritual and moral obligations.
Curriculum intent:	All students acquire the mathematical life skills necessary for the world of work, no matter what their starting point is, catering for all abilities and backgrounds. We have a strong belief that all students can achieve in Maths. Students will be taught to have a firm understanding of number bonds and be confident in using non-calculator strategies for solving problems. Students will be stretched and challenged through problem solving tasks to develop resilience. Students are encouraged to show courage through attempting questions in environment where other students show compassion through a culture of being non-judgmental when questions are answered incorrectly. Students are also encouraged to show curiosity through asking questions and taking a genuine interest in the real life applications of the Maths that they are learning. This will be achieved by staff working together in planning lessons that allow ALL students to achieve/ exceed their potential through: Common lesson planning formats; Expert knowledge of the subject; Differentiated material; Regular use of AfL to assess progress in a lesson; Regular use of formal marking and feedback; Regular summative assessments to ensure appropriate progress and intervention.
Threshold Concepts (TCs):	TC1 Algebraic manipulation - This concept involves recognising mathematical properties and relationships using symbolic representation TC2 Number sense - This concept involves understanding the number system and how they are used in a wide variety of mathematical ways TC3 Shape facts - This concept involves recognising the names and properties of geometry shapes and angles. TC4 Multiplicative reasoning - This concept involves using ratio and proportion and understanding of reciprocals in real world applications TC5 Representing and interpreting data - This concept involves interpreting, manipulating and presenting data in various ways. TC6 Calculator skills - This concept involves fluent application of mathematical operations on a scientific calculator TC7 Understanding and calculating risk - This concept involves knowing the rules of probability in the correct context

KS2 National Curriculum summary:	The curriculum ensures that all pupils around England get the essential knowledge they need to become educated citizens. So, it doesn't matter which school or area children are studying at - they will develop the same fundamental maths skills. Included in this frame of work are curriculum aims, which pupils need to meet at the end of each school year. Children who want to expand their knowledge even further will get the opportunity to do so. But essentially, they will all start from basics by learning about the key topic areas covered in the national curriculum for KS2 maths. The eight main maths areas, which are included in the national curriculum for maths throughout KS2 are: • Number - Number and Place Value • Number - Addition and Subtraction • Number - Multiplication and Division • Number - Fractions • Measurement • Geometry - Properties of Shape • Geometry - Position and Direction (not included in year 3) • Statistics As pupils get to year 6, they would have developed a deep understanding of these maths concepts. That's why two additional topic areas are introduced to the curriculum, which are: • Ratio and Proportion • Year 6 Algebra

	CURIOSITY		COMPASSION		COURAGE	

Learner skills:	Critical thinking	Organisation	Collaboration	Adaptability	Oracy	Self-quizzing
	CRITICAL THINKING	ORGANISATION	COLLABORATION	ADAPTABILITY	ORACY	SELF QUIZZING
	Term 1 Aug-Oct	Term 2 Nov-Dec	Term 3 Jan-Feb	Term 4 Mar-Apr	Term 5 Apr-May	Term 6 Jun-Jul
The Big Question						
Big picture questions:	How can the values of variables which satisfy multiple equations be determined? How can we use percentages to solve real world problems? How can we identify and apply the concept of proportion to real life problems?	How can expressing numbers in standard form make calculations more efficient? What is the relationship between a solution and a quadratic graph? How can we choose the most effective methods for representing and visualising data?	How can we analyse and interpret non-linear graphs to understand complex relationships between variables? How can we use probability to predict the likelihood of various outcomes? How can we use the concept of loci to determine the set of points that satisfy geometric conditions? How can congruence and similarity be applied to solve problems in real life? What methods can we employ to perform operations such as	How do Pythagoras' theorem and trigonometry empower us to understand geometric relationships?		

			addition, subtraction and scalar multiplication with vectors?			
Content (Linked to TCs):	TC1 Algebraic manipulation TC2 Number sense TC4 Multiplicative reasoning TC6 Calculator skills - Solving Equations - Solving simultaneous equations - FDP Equivalence - Percentage of a quantity - One quantity as a percentage of another - Speed, distance, time - Density, mass, volume - Simple and compound interest - Repeated percentage change - Reverse percentages - Direct Proportion - Inverse proportion	TC1 Algebraic manipulation TC2 Number sense TC5 Representing and interpreting data TC6 Calculator skills - Powers and indices - Index laws - Standard form conversions - Standard form calculations - Expanding brackets - Factorising - Solving by factorisation - Plotting quadratic graphs - Pie charts - Scatter diagrams - Grouped data averages	TC1 Algebraic manipulation TC2 Number sense TC3 Shape facts TC4 Multiplicative reasoning TC5 Representing and interpreting data TC6 Calculator skills TC7 Understanding and calculating risk - Distance time graphs - Reciprocal graphs - Probability - Two way tables - Venn diagrams - Tree diagrams - Constructing triangles - Bisectors - Loci - Congruence - Similar shapes - Similar triangles - Addition and subtraction of vectors - Multiplication of vectors	TC1 Algebraic manipulation TC3 Shape facts TC6 Calculator skills - Pythagoras - Trigonometry	Revision	Exams

Key vocabulary:	Equation, variable, constant, coefficient, solve, simultaneous equation, elimination, substitution, graph, intersection. Percentage, fraction, decimal, ratio, increase, decrease, speed, distance, time, density. Compound interest, principal, interest rate, compounding, percentage change, cumulative percentage change, original value, direct proportionality, constant of proportionality, inverse proportionality.	Base, exponent, power, index, standard form, conversion. Distibutive property, highest common factor, binomial, quadratic equation, factorisation, vertex, axis of symmetry, intercepts. Sampling, random sampling, stratified sampling, pie chart, scatter diagram, correlation, grouped data, frequency distribution, mean.	Distance, time, speed, slope, uniform motion, acceleration, reciprocal function, hyperbola, asymptote, interpretation. Probability, event, mutually exclusive, independent events, conditional probability, two-way table, venn diagram, union of sets, intersection of sets, tree diagram. Constructing triangles, bisectors, locus, loci, perpendicular bisector, angle bisector. Congruent triangles, similar triangles, corresponding parts, proportion, ratio, scale factor. Vector, scalar, magnitude, direction, column vector, component, resultant vector, scalar multiplication.	Pythagoras Theorem, hypotenuse, adjacent, opposite, trigonometric ratio, sine, cosine, tangent.		
Assessment:	KLT 1 (Past paper)	PPE (3 papers)		PPE (3 Papers) KLT 2 (Past paper)		

| Key/Historical misconceptions in this unit: | Isolating variables incorrectly, concept of solving 2 equations together.

Calculating compound interest as simple interest, thinking inverse proportion means quantities change in opposite directions. | Thinking any number written in scientific notation is automatically in standard form.

When a bracket is squared just squaring each individual term rather than the whole bracket.

Believing the mean is always the best average to choose. | Thinking graphs always start from the origin.

Not fully considering the overlap of a venn diagram and what that shows.

Thinking that any 3 lengths will form a triangle.

Thinking similar triangles are always congruent.

Seeing vectors as fractions. | Calculator being in the wrong mode (degrees vs radians).

Mixing up the sine, cosine and tangent ratios. | | |
|---|---|---|---|---|---|---|
| Sequencing: | We have chosen to sequence the year 11 curriculum like this as it follows on from the year 10 foundation pathway to ensure all parts of the curriculum are covered throughout KS4. | | | | | |
| Values | This scheme of work promotes the school values of Compassion, Curiosity and Courage by:

Compassion - Students show compassion through a culture of being non-judgmental when questions are answered incorrectly.

Curiosity - Students are encouraged to show curiosity through asking questions and taking a genuine interest in the real life applications of the Maths that they are learning.

Courage - Students are encouraged to show courage through attempting questions | | | | | |
| National Curriculum plus: | In addition to teaching the statutory elements of the national curriculum, we also include opportunities to extend their learning beyond the classroom. For example practical examples and going further than the curriculum in terms of what they are expected to know from a financial literacy perspective.

Preparation of students to take Level 2 further maths in support of achieving additional qualifications, higher grades in their normal GCSE maths and in preparation for A-level maths:
  • Rationalisation of surds using difference of 2 squares
  • Domains and ranges of functions | | | | | |

- Expanding triple brackets
- Binomial expansion
- Factor theorem
- Advanced algebraic fractions
- Sketching functions and interpreting graphs
- Transformations of functions
- Trig identities
- Algebraic proof
- Limiting values of sequences and expressions
- Equations of circles not centred on the origin
- Differentiation
- Matrices
- Matrix transformations
- Geometric proof