

Strategic Overview of Curriculum

Mathematics

Our Vision

At Aylesford School, we are committed to outstanding maths teaching that empowers every student to be confident, independent and resilient. Our learners leave with a genuine appreciation of mathematics and the ability to apply it thoughtfully and effectively in any context.

Curriculum Intent

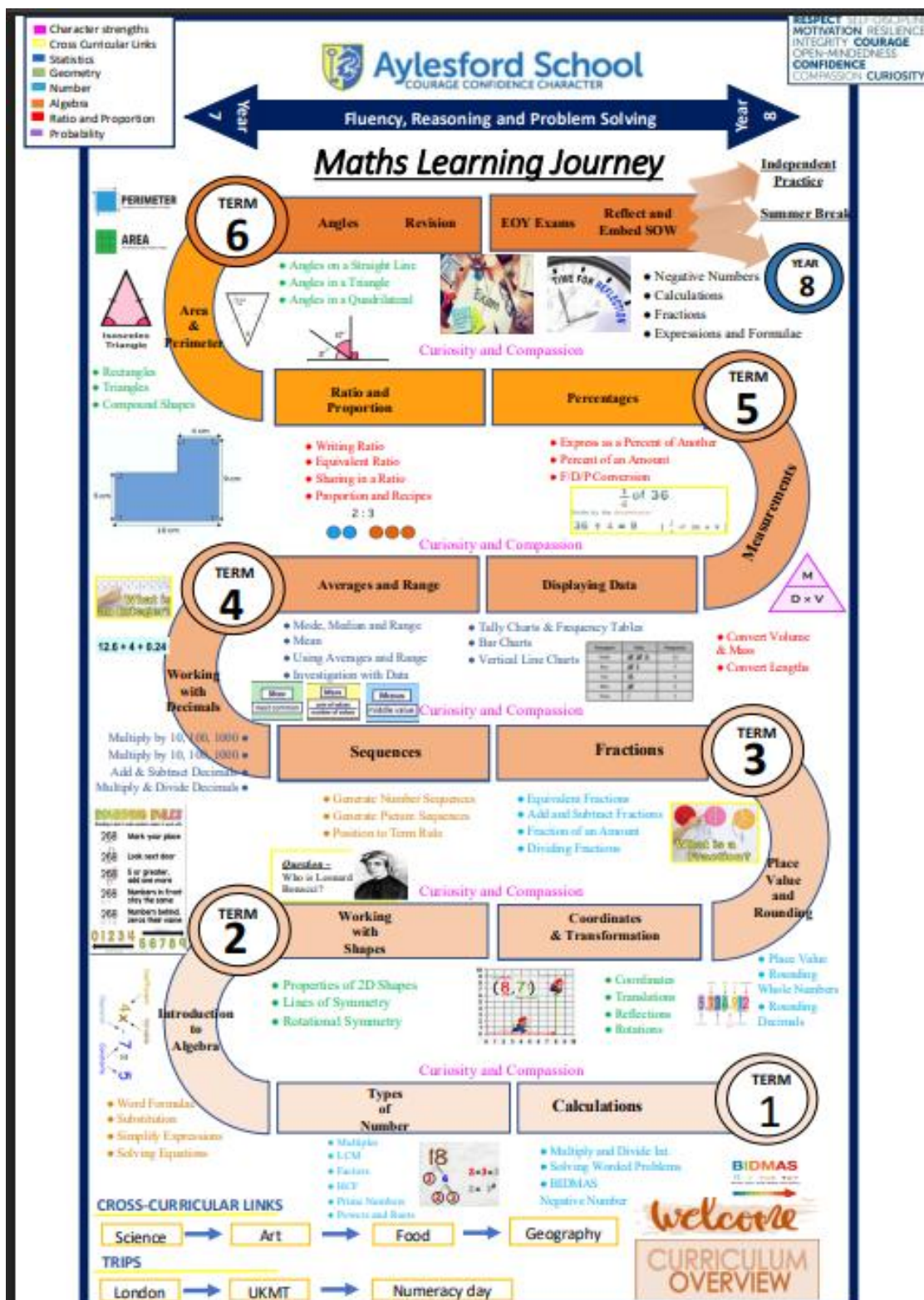
The intent of the mathematics curriculum is to secure deep conceptual understanding and procedural fluency for all learners. Rooted in a mastery approach, it emphasises careful sequencing, purposeful variation and the strategic use of representation to develop secure and connected knowledge. Students engage with algebra, geometry, statistics and probability through structured opportunities to reason, generalise and solve increasingly complex problems. High expectations, inclusive practice and assessment ensure that all pupils are supported to make sustained progress. Enrichment opportunities further promote intellectual curiosity and ambition, preparing students for examination success and future study.

Curriculum Impact

Students develop coherent and transferable mathematical knowledge, alongside the capacity to reason logically and communicate with clarity. Outcomes reflect strong progress and growing resilience, with learners able to apply numeracy confidently across the curriculum and in practical contexts, including financial decision-making. Students are well prepared for further education, training and employment, with increasing participation in post-16 mathematics indicative of sustained confidence and academic aspiration.

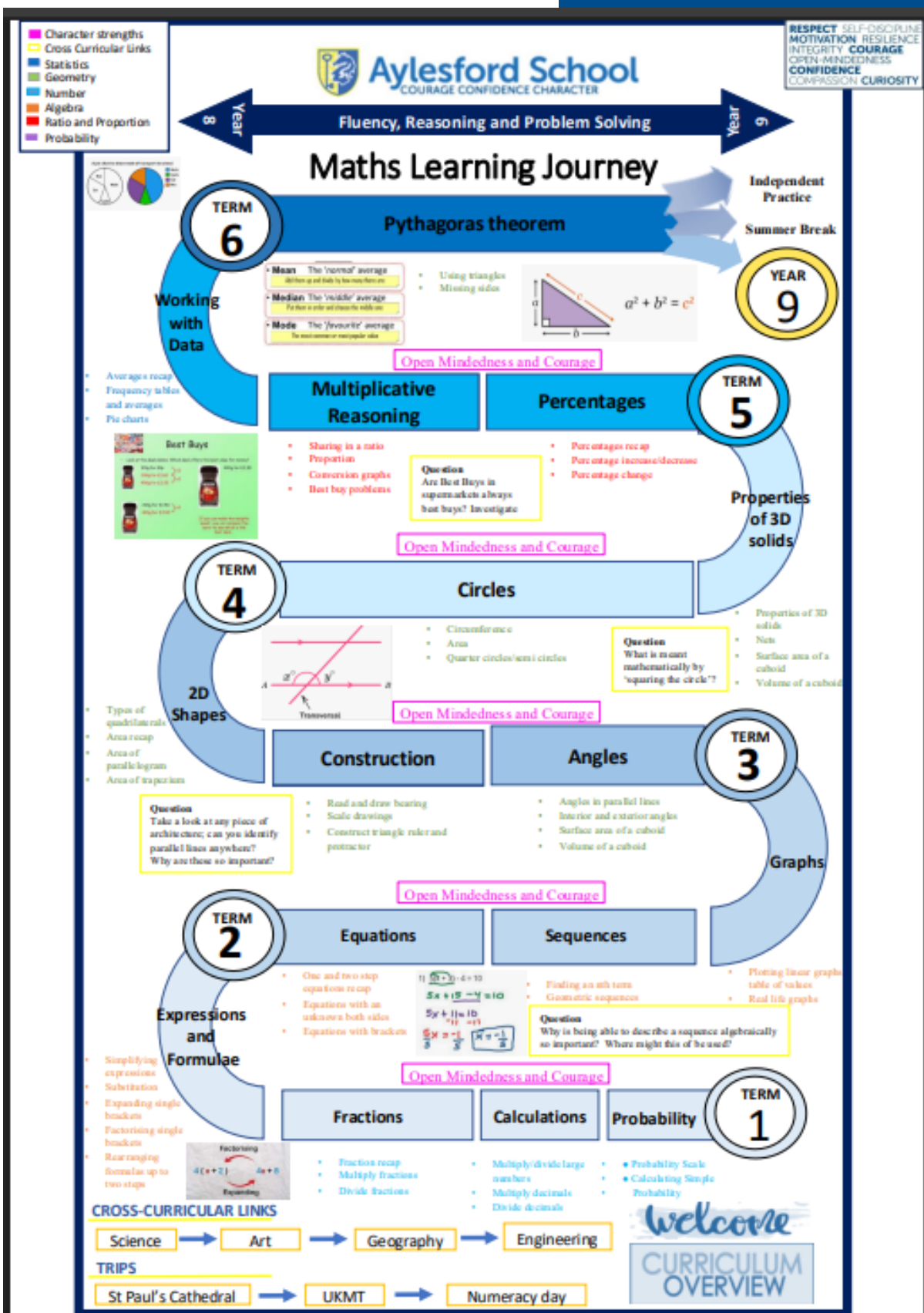
Year 7

Year 7 Mathematics Curriculum					
Subject Intent	The Year 7 mathematics curriculum is designed to support pupils’ transition from Key Stage 2 to Key Stage 3 by consolidating core numerical fluency whilst introducing the mathematical language, notation and conventions required for success in secondary mathematics. Particular emphasis is placed on developing pupils’ understanding of algebra as the foundation of future mathematical study, enabling them to generalise, represent relationships and communicate mathematically with precision. Through carefully sequenced learning, pupils build secure knowledge across number, algebra, geometry, ratio and statistics, developing the confidence, reasoning and problem-solving skills necessary to access and succeed within our ambitious five-year mathematics curriculum.				
Rationale	We recognise that pupils enter Year 7 with diverse mathematical experiences and varying levels of prior attainment. As such, the curriculum prioritises the development of a common mathematical foundation, ensuring all pupils acquire the vocabulary, notation and conceptual understanding needed to engage with increasingly abstract mathematical ideas. The early introduction of algebra reflects its central role in the secondary curriculum, providing a bridge between arithmetic and higher-level mathematical thinking. Through a carefully structured sequence that revisits and extends key concepts, pupils develop fluency, make connections across mathematical domains and establish the knowledge and habits required for long-term success at Key Stages 3 and 4.				
Topics					
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Calculations Types of Numbers Introduction to Algebra	Introduction to Geometry Coordinates and Transformations Place value and Rounding	Fractions Sequences Working with Decimals	Averages and Range Display of Data Measurement	Percentages Ratio and Proportion Perimeter and Area	Angles
Assessment					
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	End of Topic Test - Peer Marked End of Year Exams
Homework					
Homework is set weekly for all Year 7 pupils through Sparx Maths and is carefully aligned to the taught curriculum, providing opportunities to consolidate and extend learning beyond the classroom. Pupils are expected to complete a minimum of one hour of mathematics homework each week. Progress is monitored regularly, and pupils who are not making expected progress towards age-related expectations will be identified and supported through targeted intervention programmes designed to address gaps in knowledge, strengthen mathematical fluency and ensure full access to the curriculum. In addition, pupils demonstrating exceptional mathematical aptitude may be invited to participate in Axiom Maths, a targeted after-school programme that provides opportunities to explore rich and challenging mathematical concepts beyond the classroom curriculum, fostering deeper thinking, problem-solving and a sustained enthusiasm for mathematics.					



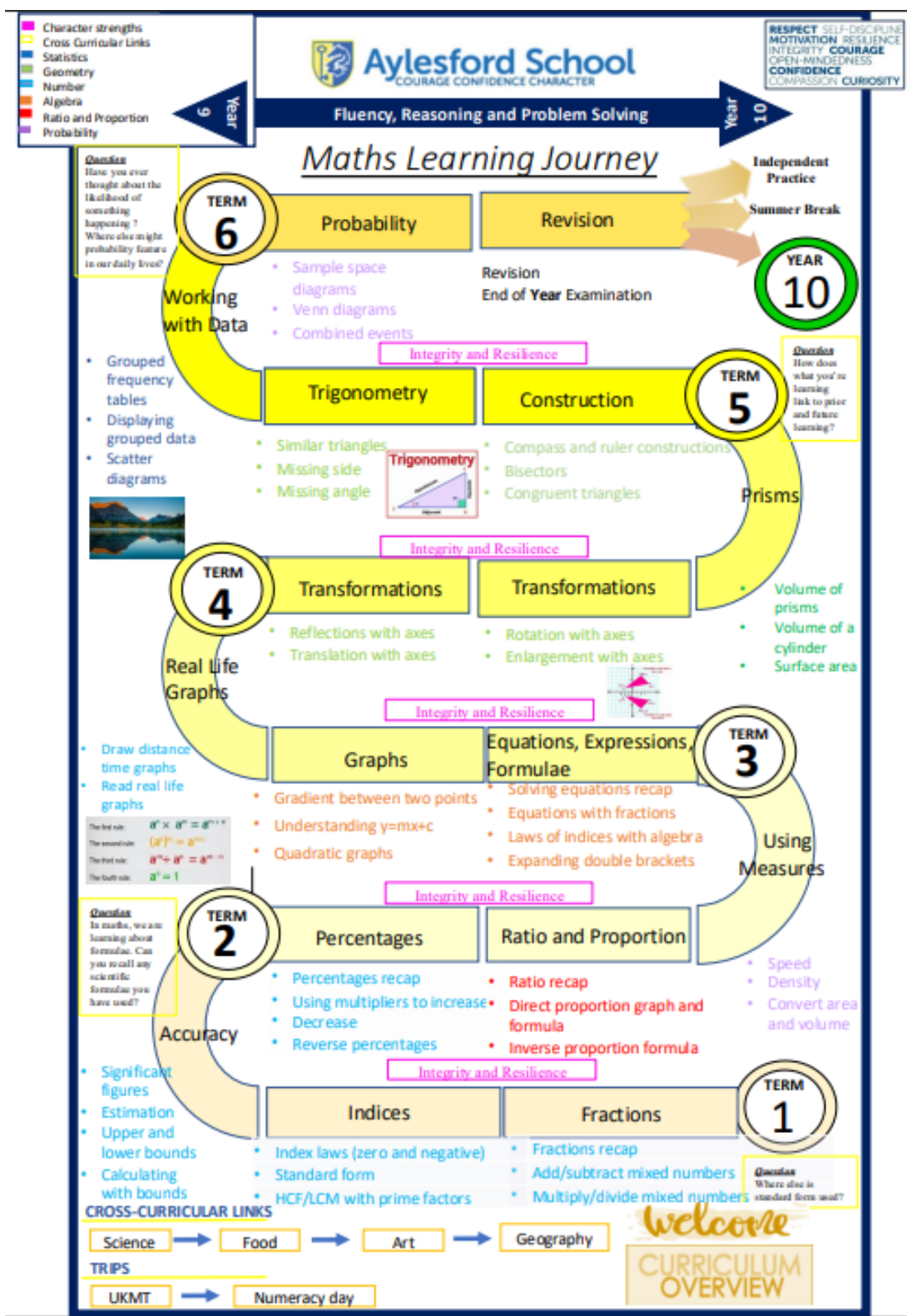
Year 8

Year 8 Mathematics Curriculum					
Subject Intent	The Year 8 mathematics curriculum builds on the secure foundations established in Year 7 by extending pupils’ fluency, reasoning and problem-solving across number, algebra, ratio, geometry and statistics. Pupils develop greater confidence in manipulating algebraic expressions, applying proportional reasoning and interpreting mathematical information, while continuing to use precise mathematical language, notation and conventions with increasing accuracy. In geometry, pupils are introduced to Pythagoras’ theorem and begin to explore more complex geometric problems involving reasoning, measurement and spatial thinking. The curriculum encourages pupils to make connections between mathematical topics, justify their reasoning and apply their knowledge to increasingly complex and unfamiliar contexts. Through this carefully sequenced progression, Year 8 prepares pupils for the greater abstraction and challenge of upper Key Stage 3 and ensures they remain on track to access the full breadth and ambition of our five-year mathematics curriculum.				
Rationale	To develop confident, resilient problem-solvers who can approach unfamiliar tasks with logical thinking and perseverance. Pupils are encouraged to move beyond procedural methods to develop deeper conceptual understanding, make connections across topics, and communicate their reasoning with increasing precision. The introduction of more complex ideas, including Pythagoras’ theorem and extended geometric reasoning, supports this progression. Ultimately, the curriculum aims to ensure strong academic progress while fostering curiosity, confidence and enjoyment, helping pupils to see themselves as capable mathematicians with a growing appreciation of the subject.				
Topics					
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
The probability scale Calculations Fractions Expressions and formulae	Equations Sequences Graphs	Angles Construction Working with 2D shapes	Circles Properties of 3D shapes	Percentages Multiplicative Reasonings Working with Data	Investigating triangles Using Pythagoras' theorem
Assessment					
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
4 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	2 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	End of Topic Test - Peer Marked End of Year Exams
Homework					
Homework is set weekly for all Year 8 pupils through Sparx Maths and is carefully aligned to the taught curriculum, providing opportunities to consolidate and extend learning beyond the classroom. Pupils are expected to complete a minimum of one hour of mathematics homework each week. Progress is monitored regularly, and pupils who are not making expected progress towards age-related expectations will be identified and supported through targeted intervention programmes designed to address gaps in knowledge, strengthen mathematical fluency and ensure full access to the curriculum.					



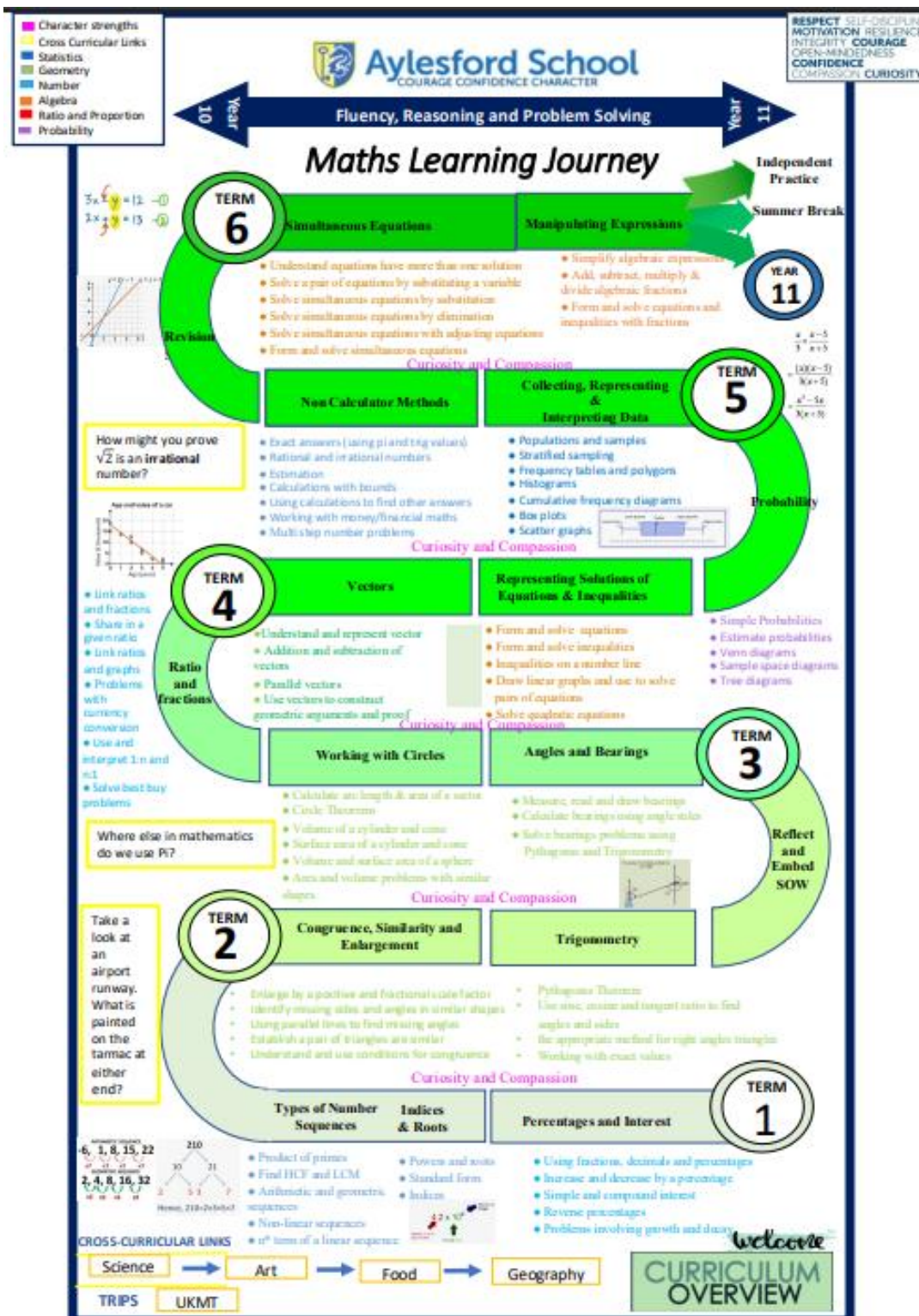
Year 9

Year 9 Mathematics Curriculum					
Subject Intent	The Year 9 mathematics curriculum builds on the knowledge and skills developed in Key Stage 3 by securing fluency while significantly increasing the level of challenge, abstraction and independence expected of learners. Pupils are introduced to GCSE-style problem solving, where multi-step questions require sustained reasoning, strategic thinking and the application of knowledge across different areas of mathematics. A strong emphasis is placed on developing more abstract algebraic understanding, including the manipulation of expressions, solving increasingly complex equations and working with relationships in a more formal mathematical context. Alongside this, pupils tackle more sophisticated and multi-step problems across number, geometry, ratio and statistics, developing resilience and accuracy in unfamiliar contexts. The curriculum is designed to bridge Key Stage 3 and Key Stage 4 by embedding higher-order thinking, precise mathematical communication and independent problem-solving, ensuring pupils are well prepared for the demands of GCSE mathematics while continuing to develop confidence and enjoyment in the subject.				
Rationale	The Year 9 curriculum is designed to act as a deliberate bridge between Key Stage 3 and GCSE mathematics, ensuring pupils move from procedural fluency towards more abstract, analytical and independent mathematical thinking. As pupils are introduced to GCSE-style problem solving, they are required to apply prior knowledge in unfamiliar, multi-step contexts, developing resilience, perseverance and strategic thinking. A key focus is strengthening algebraic reasoning and abstraction, enabling pupils to manipulate expressions, solve equations and interpret mathematical structure with increasing sophistication. The curriculum also places emphasis on reasoning and communication, ensuring pupils can justify methods clearly and accurately. Alongside academic development, the curriculum seeks to foster a genuine love of mathematics by engaging pupils with rich, challenging and purposeful problems that build curiosity and confidence. Ultimately, Year 9 is designed to maximise opportunities for success at Key Stage 4 by developing confident, independent problem-solvers who are well prepared for the demands of GCSE mathematics while maintaining enjoyment, ambition and a positive attitude towards the subject.				
Topics					
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Fractions Indices Accuracy and Bounds	Percentages Ratio and Proportion Using Measures	Equations, Expressions, and Formulas Algebraic Graphs Speed Distance Time Graphs	Transformations Prisms and Cylinders	Constructions Pythagoras' theorem & Trigonometry Working with Data	Probability
Assessment					
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	End of Topic Test - Peer Marked End of Year Exams
Homework					
Homework is set weekly for all Year 9 pupils through Sparx Maths and is carefully aligned to the taught curriculum, providing opportunities to consolidate and extend learning beyond the classroom. Pupils are expected to complete a minimum of one hour of mathematics homework each week. Progress is monitored regularly, and pupils who are not making expected progress towards age-related expectations will be identified and supported through targeted intervention programmes designed to address gaps in knowledge, strengthen mathematical fluency and ensure full access to the curriculum.					



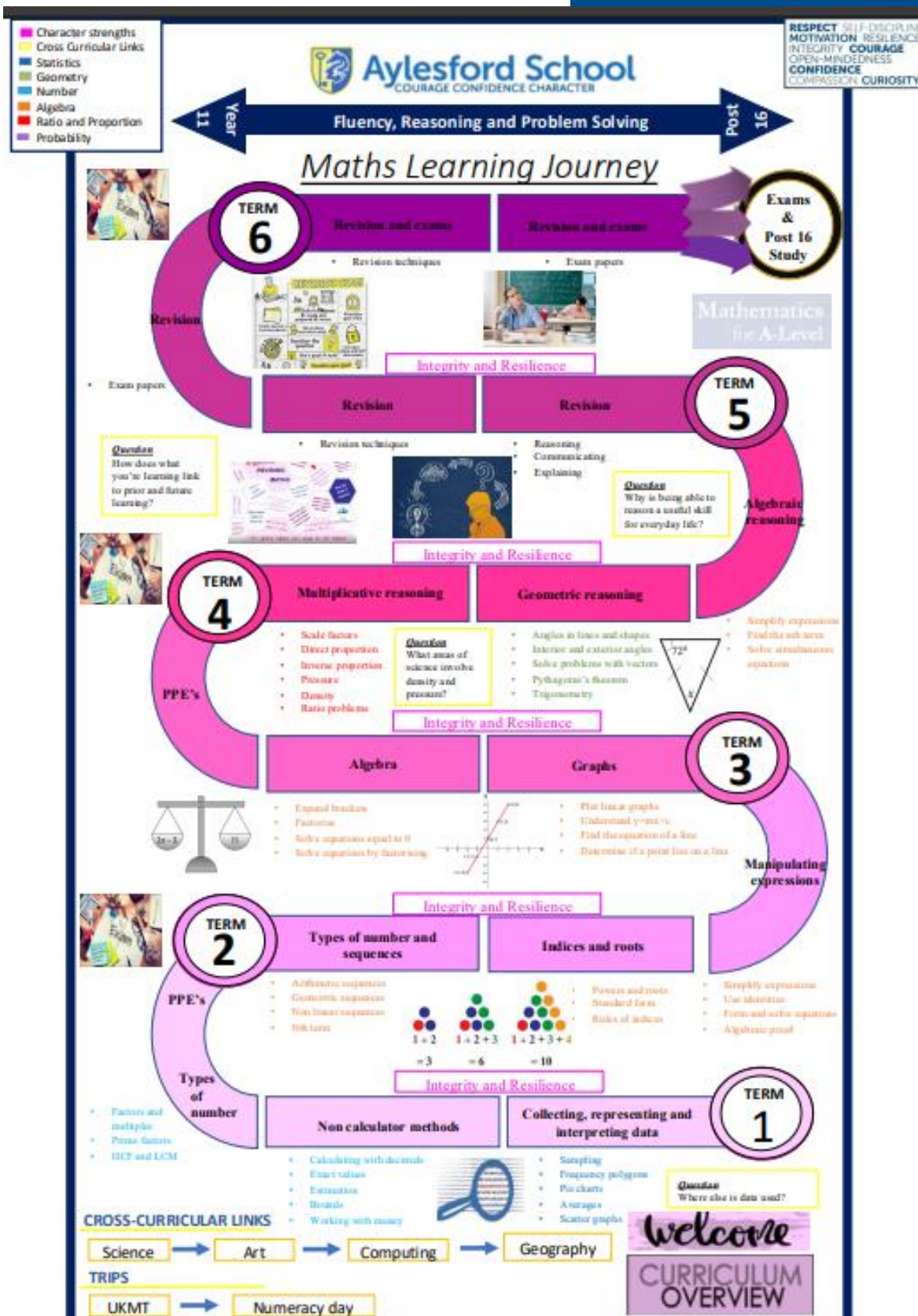
Year 10

Year 10 Mathematics Curriculum					
Subject Intent	The Year 10 mathematics curriculum builds directly on the foundations of Key Stage 3 by developing secure mastery of GCSE content across number, algebra, ratio, geometry, probability and statistics. Pupils are expected to demonstrate increasing fluency, accuracy and independence when applying mathematical knowledge to a wide range of structured and unfamiliar problems. A strong emphasis is placed on developing advanced algebraic techniques, including rearranging formulae, solving equations in context and working with graphical representations of functions. Pupils are also required to apply mathematical reasoning to multi-step GCSE-style problems, developing resilience, precision and logical thinking. The curriculum is carefully sequenced to ensure full coverage of GCSE content while embedding opportunities for problem-solving and reasoning. Alongside this, pupils are encouraged to develop a genuine love of mathematics through engaging, challenging and purposeful learning experiences that build confidence and highlight success. Year 10 ensures pupils are fully prepared for the increased rigour of Year 11 and the demands of final GCSE assessment.				
Rationale	The Year 10 curriculum is designed to secure and deepen pupils' understanding of GCSE mathematics, ensuring strong progression from Key Stage 3 into more formal and demanding study. Pupils are increasingly required to apply mathematical knowledge in unfamiliar, multi-step contexts, developing resilience, independence and precise reasoning. A key focus is strengthening algebraic fluency and conceptual understanding, alongside the ability to interpret and communicate mathematical ideas clearly. The curriculum also prioritises opportunities for success by providing carefully structured learning sequences that allow all pupils to access and achieve, while also offering challenge for those aiming for the highest grades. Alongside academic outcomes, Year 10 seeks to maintain enjoyment and curiosity in mathematics, fostering a positive attitude towards problem-solving and helping pupils develop confidence in their ability to succeed. Ultimately, the curriculum prepares pupils both academically and personally for the demands of Year 11 and final GCSE examinations.				
Topics					
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Percentages and interest Indices and roots	Congruence, similarity and enlargement Pythagoras' theorem & Trigonometry	Angles and bearings Working with circles Ratio and fractions	Vectors Representing solutions of equations and inequalities Probability	Collecting, representing and interpreting data Non calculator methods	Simultaneous equations Algebraic Fractions
Assessment					
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked
Homework					
Homework is set weekly for all Year 10 pupils through Sparx Maths and is carefully aligned to the taught curriculum, providing opportunities to consolidate and extend learning beyond the classroom. Pupils are expected to complete a minimum of 1.5 hours of mathematics homework each week. Progress is monitored regularly, and pupils who are not making expected progress towards age-related expectations will be identified and supported through targeted intervention programmes designed to address gaps in knowledge, strengthen mathematical fluency and ensure full access to the curriculum.					



Year 11

Year 11 Mathematics Curriculum					
Subject Intent	The Year 11 mathematics curriculum is designed to consolidate, refine and extend pupils’ knowledge in preparation for GCSE examinations, ensuring they can apply mathematical understanding accurately, efficiently and independently under assessment conditions. Pupils revisit and strengthen key concepts across all areas of the specification, with a strong emphasis on exam-style problem solving, interpretation and reasoning in increasingly complex and unfamiliar contexts. The curriculum focuses on securing fluency in algebra, geometry, ratio and statistics, while developing exam technique, resilience and precision in mathematical communication. Targeted intervention and revision are embedded throughout the year to ensure all pupils have the opportunity to achieve their full potential. Alongside this, pupils are supported to maintain confidence, motivation and a continued appreciation of mathematics as a coherent and valuable discipline. Year 11 ensures pupils are fully prepared for success in their GCSE examinations and beyond.				
Rationale	The Year 11 curriculum is designed to maximise pupil outcomes at GCSE by consolidating prior learning and refining the skills required for examination success. Pupils are expected to demonstrate fluency, accuracy and resilience when tackling complex, multi-step problems under timed conditions. A strong focus is placed on exam technique, problem-solving strategies and the ability to apply mathematical knowledge flexibly across different contexts. The curriculum ensures that gaps in understanding are identified and addressed through targeted intervention, enabling all pupils to access opportunities for success. Alongside academic preparation, the curriculum also aims to maintain confidence and a positive attitude towards mathematics, reinforcing the idea that success is achievable through hard work and effective practice. Ultimately, Year 11 provides pupils with the knowledge, skills and mindset required to achieve their best possible outcomes in GCSE mathematics and to progress confidently to post-16 study or future pathways.				
Topics					
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Non calculator methods Types of numbers	Sequences Indices and roots	Algebraic Graphs Proportion	Revision	Revision	Exams
Assessment					
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
3 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked	3 x End of Topic Test - Peer Marked PPE 1	2 x End of Topic Test - Peer Marked End of Term Assessment - Teacher Marked PPE 2	Exam Preparation	Exam Preparation	External Exams
Homework					
Homework is set weekly for all Year 11 pupils through a combination of Sparx Maths and past papers and is carefully aligned to the taught curriculum, providing opportunities to consolidate and extend learning beyond the classroom. Pupils are expected to complete a minimum of one hour of mathematics homework each week. Progress is monitored regularly, and pupils who are not making expected progress towards age-related expectations will be identified and supported through targeted intervention programmes designed to address gaps in knowledge, strengthen mathematical fluency and ensure full access to the curriculum.					



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