

Our curriculum is carefully sequenced to ensure cumulative knowledge and progression. Each unit builds on the last, with clear concepts that students must grasp to progress. We define end points to illustrate what mastery looks like by year-end.

Location of resources:	JOHN Maths Staff - Documents John Port Spencer Academy Sharepoint – Maths Staff – General – Schemes of Work – Year 8 <i>Every student to be the best mathematician they can be.</i>
Curriculum intent and rationale:	Our aim is that every student has the opportunity to reach their potential mathematically and to be equipped to apply their mathematical knowledge to other subject areas, future courses, careers and everyday life. We aim for students to acquire substantive knowledge and procedural fluency along with conceptual understanding and the ability to apply reasoning and problem-solving skills. Curriculum organisation: Students are banded into upper and lower attainment groups. Students receive 4 lessons each week.
National Curriculum Links:	National curriculum in England: mathematics programmes of study - GOV.UK Students will develop fluency, mathematical reasoning and problem solving through: • Number • Algebra • Ratio, Proportion and Rates of Change • Geometry and Measures • Probability • Statistics

What content needs to be covered?					
Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Students will learn key knowledge and skills about: • Fractions, decimals & percentages • Ratio Students will recap, retrieve and build on key knowledge from year 7. Challenge: Students are challenged to develop reasoning and problem-solving skills.	Students will learn key knowledge and skills about: • Reverse Percentage • Expanding a single bracket • Forming & solving equations • Factorising into a single bracket • Area & perimeter of trapezia & compound shapes • Properties of 2D shapes Students will recap, retrieve and build on key knowledge from year 7 and half term 1. Challenge: Students are challenged to develop reasoning and problem-solving skills.	Students will learn key knowledge and skills about: • Properties of 3D shapes • Circumference & area of a circle • Volume Students will recap, retrieve and build on key knowledge from year 7 and half terms 1 & 2. Challenge: Students are challenged to develop reasoning and problem-solving skills.	Students will learn key knowledge and skills about: • Probability • Pythagoras' Theorem in 2D • Surface area Students will recap, retrieve and build on key knowledge from year 7 and half terms 1,2 & 3. Challenge: Students are challenged to develop reasoning and problem-solving skills.	Students will learn key knowledge and skills about: • Recognising & sketching graphs • Reflection symmetry • Rotation symmetry • Translation • Enlargement Students will recap, retrieve and build on key knowledge from year 7 and half terms 1, 2, 3 & 4. Challenge: Students are challenged to develop reasoning and problem-solving skills.	Students will learn key knowledge and skills about: • Transformations • Statistical diagrams • Scatter graphs • Averages & range • A Data Handling Project Students will recap, retrieve and build on key knowledge from year 7 and half terms 1, 2, 3, 4 & 5. Challenge: Students are challenged to develop reasoning and problem-solving skills.

Our curriculum is carefully sequenced to ensure cumulative knowledge and progression. Each unit builds on the last, with clear concepts that students must grasp to progress. We define end points to illustrate what mastery looks like by year-end.

Misconceptions: - Understanding of proportion and different means of representation - The use of inverse operations	Misconceptions: - Calculations with negative numbers - Multiplying all terms in a bracket - The meaning of = in an equations - Use of inverse operations - Knowing the difference between area and perimeter - Using the correct notation for parallel or equal sides.	Misconceptions: - No experience of handling 3D mathematical shapes. - Remembering key words for parts of circles - Not clearly remembering formulae for area & circumference of a circle - Use of inverse operations - Remembering formulae for volume	Misconceptions: - Understanding the concept of probability - Correct notation for probability - Remembering Pythagoras’ Theorem accurately - Remembering formulas for areas - Visualising a 3D shape	Misconceptions: - Knowing the words vertical and horizontal - Plotting co-ordinates correctly - Visualising transformations	Misconceptions: - Remembering different types of transformation - Knowing terminology associated with statistical collection and display of data - Knowing different types of average
Previous learning that is particularly relevant:					
Recall knowledge from year 7: Fractions, dividing by powers of 10, forming and solving equations, algebraic conventions for notation, area of rectangles & triangles, factors, perimeter.		Recall knowledge from year 7: Using a calculator for squaring and square rooting, areas of squares		Recall knowledge from year 7: Plotting co-ordinates in 4 quadrants, percentages,	
Future Learning - How content prepares students for future units, Key Stage 4, or Key Stage 5?					
The work in this term links to future learning by consolidating and developing understanding of proportion, working with equations and expressions and geometrical reasoning. This knowledge is required throughout the Key Stages.		The work in this term links to future learning by consolidating and developing understanding of geometrical properties and reasoning, probability and Pythagoras’ Theorem. This knowledge is required throughout the Key Stages.		The work in this term links to future learning by consolidating and developing understanding of transformations and statistical techniques. This knowledge is required throughout the Key Stages.	
Outcomes: By the end of the year pupils will be able to:					
Recall knowledge of calculating with fractions, decimals and percentages. Recall the techniques for forming and solving equations. Recall properties of 2D and 3D shapes. Recall formulas for finding areas, circumference and volume. Find a probability from equally likely outcomes or an experiment Apply Pythagoras’ Theorem to finding a side of a right angled triangle. Draw and describe transformations. Draw a linear graph Draw and interpret statistical diagrams Calculate averages and range.					
Apply all knowledge to reasoning and problem solving.					
Assessment Strategy How we know our students are knowing and remembering more – Data from hunting not fishing, formative and summative assessment/s is used to adapt teaching and provide targeted challenge and intervention, supporting SEND and disadvantaged pupils.					
Formative: Retrieval starters Use of mini whiteboards in lesson: immediate assessment to enable adaptions to lessons and intervention		Summative (& cumulative) Tests at three points in the year. Each student to complete two sections from: Base, Core and Depth according to ability		Opportunities to revisit past learning: Sparx HW questions Retrieval starters Interleaving built into SoW	



Our curriculum is carefully sequenced to ensure cumulative knowledge and progression. Each unit builds on the last, with clear concepts that students must grasp to progress. We define end points to illustrate what mastery looks like by year-end.

Highlighter plenaries followed by Highlighter Starters Questioning: methods of participation Termly tests used in a formative manner; followed by developmental work Analysis from Sparx Homework		Opportunities for homework (including apps): Sparx Knowledge Organiser Revision for tests								
How is the curriculum adapted to meet the needs of SEND and disadvantaged pupils, while maintaining high expectations?										
Expected prior knowledge is revisited. Lessons are adapted to the needs of each class. Use of manipulatives and different representations are encouraged.										
Wider Curriculum and Enrichment – cultural capital and real world application -										
Enriching experiences: High ability students are entered for the UKMT Maths Challenge Bletchley Park trip Our curriculum supports the school value of: <table><tr><td>Joy</td><td><i>Foster enthusiasm and engagement by Using manipulatives and a variety of representations to develop understanding. By creating challenge at a level where students can achieve success.</i></td></tr><tr><td>Progress</td><td><i>We monitor and support progress through The use of assessment strategies during lessons that support adaptive teaching strategies. Analysis of Sparx homework. Analysis of termly test data with feedback and development work.</i></td></tr><tr><td>Success</td><td><i>We celebrate success by Giving verbal praise, achievement points, certificates, Sparx leader board, articles in the JPSA Newsletter.</i></td></tr><tr><td>Act with care, kindness, respect, and integrity</td><td><i>We build meaningful connections with our students by Ensuring a safe and supportive classroom environment with clear expectations of work and behaviour where there is mutual respect for all people in the room and all people feel valued.</i></td></tr></table>	Joy	<i>Foster enthusiasm and engagement by Using manipulatives and a variety of representations to develop understanding. By creating challenge at a level where students can achieve success.</i>	Progress	<i>We monitor and support progress through The use of assessment strategies during lessons that support adaptive teaching strategies. Analysis of Sparx homework. Analysis of termly test data with feedback and development work.</i>	Success	<i>We celebrate success by Giving verbal praise, achievement points, certificates, Sparx leader board, articles in the JPSA Newsletter.</i>	Act with care, kindness, respect, and integrity	<i>We build meaningful connections with our students by Ensuring a safe and supportive classroom environment with clear expectations of work and behaviour where there is mutual respect for all people in the room and all people feel valued.</i>	Literacy, Oracy and disciplinary language: The correct use and understanding of notation, key words and terms is essential for students to be able to understand explanations and questions and to be able to participate effectively, with confidence in discussion and written work. Key words and terms are explicit in the Scheme of Work Key words are emphasised in lessons and used in discussion. Lessons include opportunities to discuss in pairs before feeding back to the whole class.	Cross-Curricular opportunities: Art: use of transformations Geography: use of statistics and percentages Technology: properties of 2D and 3D shapes, perimeter, area & volume Our curriculum supports personal development by: Students need to develop resilience as they are challenged with harder problems. Students need to deal with being incorrect and thinking further or discussing to ensure that his leads to learning. Careers / Employability skills How does the curriculum link to the following employability skills: Listening – Students need to listen carefully to explanations from their teacher and listen to their peers in class or group discussion Speaking – Students need to speak their ideas on the solutions to problems using correct terminology. Problem solving – All mathematical knowledge is applied to problem solving Aiming high – Learning become incrementally more challenging as a unit progresses. Teachers aim to ensure students progress as far as they are able. Critical thinking – Considering the information available to work with and deciding how best to use it and what calculations should be done. Staying positive – – Questions can be challenging and students need to remain positive, find out how to deal with the challenges and understand that being ‘stuck’ ultimately leads to learning if dealt with positively. Leadership – Leading in a group activity or discussion. Feeding back to the whole class on behalf of a group.
Joy	<i>Foster enthusiasm and engagement by Using manipulatives and a variety of representations to develop understanding. By creating challenge at a level where students can achieve success.</i>									
Progress	<i>We monitor and support progress through The use of assessment strategies during lessons that support adaptive teaching strategies. Analysis of Sparx homework. Analysis of termly test data with feedback and development work.</i>									
Success	<i>We celebrate success by Giving verbal praise, achievement points, certificates, Sparx leader board, articles in the JPSA Newsletter.</i>									
Act with care, kindness, respect, and integrity	<i>We build meaningful connections with our students by Ensuring a safe and supportive classroom environment with clear expectations of work and behaviour where there is mutual respect for all people in the room and all people feel valued.</i>									



Our curriculum is carefully sequenced to ensure cumulative knowledge and progression. Each unit builds on the last, with clear concepts that students must grasp to progress. We define end points to illustrate what mastery looks like by year-end.

Teamwork – Working collaboratively when in a group or when working together as a pair. Being able to share resources fairly and sensible.

Creativity – finding novel solutions, writing a clear solution.

Employment Sectors discussed include:

Percentages: hotel managers, mechanics, financial advisers, plasterers, athletes, teachers, doctors, nurses, landlords

Ratio: stock analyst, nurses, plasterers, bankers, chefs, pilots, hairdressers, nursery manager

Equations: nurses, accountants, electrical engineers, human resources managers, carpenters, pharmacy technicians, computer programmers, dieticians

2D Shapes: fashion designers, gardeners, artists, beauticians, military, architects, tattoo artists, sports professionals

3D Shapes: animators, fashion designers, games developers, construction workers, landscape gardeners, CAD operators, dentists, jewellery designers

Pythagoras: engineers, astronomers, architects, athletes, construction workers, interior designers, firefighters, landscape gardeners, sailors, pilots, surveyors

Transformations: artists, air traffic controller, architect, graphic designer, web designer, mechanical engineer, reprographics technician, engineers, sailors

Statistics: lawyers, sport, bankers, retail, healthcare, mechanics, military
All via the 'Maths – Why Bother?' Series of You Tube clips

In addition, video clips about:

Mechanical Engineer

Animation

Actuary

Curriculum impact is evaluated through pupil study, work scrutiny, and progress data. Findings inform regular curriculum review to ensure continuous improvement.

When was this curriculum last reviewed? Include date	What changes were made and why?	How is ongoing improvement ensured?
June 2025		QA climate walks
		Review in Faculty Time
		Follow up from CPD