Sexey's School Mathematics Curriculum Map for Year 7

	Autumn Term						
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**	**Unit 7**
Topics and links	**Sequences** – Explore numerical and pictorial sequences, identify rules and use patterns to predict and generate further terms.	**Algebraic notation** – Introduce algebra through variables, expressions, function machines and substitution.	**Place value and ordering** – Develop understanding of integers and decimals and use place value to compare, order and position numbers accurately.	**Rounding and estimation** – Round numbers appropriately and use estimation to check calculations and solve problems.	**Calculations** – Develop fluency with the four operations, applying efficient written and mental methods to integers and decimals.	**Statistics** – Represent, interpret and compare data using appropriate statistical measures, including averages and spread.	**Number skills** – Consolidate key numerical skills and apply them to increasingly complex calculations and problems.
Co-curricular opportunities and Gatsby (careers) links	Software developer, Engineer, Data analyst. Pattern recognition and prediction are important in coding, engineering and data analysis.	Engineer, Programmer, Scientist. Algebra is used to model relationships, create formulas and solve technical problems.	Accountant, Banker, Retail manager. Comparing and interpreting numerical values is essential when working with money and financial information.	Quantity surveyor, Engineer, Construction manager. Estimation is used to predict costs, quantities, measurements and times.	Accountant, Engineer, Pharmacist. Accurate calculations are essential when working with finances, measurements and quantities.	Data analyst, Sports analyst, Market researcher. Statistics are used to identify trends, compare performance and make evidence-based decisions.	Finance officer, Engineer, Business analyst. Numerical fluency is essential for solving practical problems and making accurate decisions.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.						

Topics and links	Spring Term				
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**
	Representing data – Construct and interpret graphs and other representations to communicate and compare data effectively.	**Fractions, decimals and percentages** – Make connections between fractions, decimals and percentages and convert confidently between them.	**Directed number** – Develop confidence working with positive and negative numbers, including ordering and the four operations.	**Fractions and percentages of amounts** – Find fractions and percentages of quantities and solve related problems in a range of contexts.	**Geometry and measures** – Develop understanding of angles, shapes and measurement, including metric units and conversions.
Co-curricular opportunities and Gatsby (careers) links	Data scientist, Journalist, Business analyst. Graphs and charts are used to communicate information and support decision-making.	Accountant, Retail manager, Healthcare professional. Fractions, decimals and percentages are used with money, measurements and quantities.	Meteorologist, Engineer, Financial analyst. Negative numbers are used with temperatures, elevations, gains, losses and changes in measurements.	Banker, Retail manager, Business owner. Percentages are used to calculate discounts, interest, taxation, profit and financial changes.	Architect, Surveyor, Product designer. Measurement and geometric reasoning are fundamental to designing buildings, products and spaces.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.				

Topics and links	Summer Term		
	Unit 1	**Unit 2**	**Unit 3**
	Speed, distance and time – Explore relationships between speed, distance and time, including unit conversions and interpreting graphs.	**Fractions** – Extend understanding of fractions, including multiplication and division, and apply these skills to problem solving.	**Symmetry and reflection** – Identify lines of symmetry and reflect shapes accurately, developing spatial reasoning and understanding of transformations.
Co-curricular opportunities and Gatsby (careers) links	Pilot, Logistics planner, Transport engineer. Speed, distance and time are used to plan journeys, routes and transport systems.	Chef, Engineer, Construction worker. Fractions are used to scale recipes, interpret measurements and divide quantities accurately.	Architect, Graphic designer, Games designer. Symmetry and transformations are used in buildings, graphics, animation and digital environments.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.		

Sexey's School Mathematics Curriculum Map

Year: 8

Topics and links	Autumn Term					
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
	Ratio Develop understanding of ratios, simplifying and sharing in a given ratio and solving problems involving proportional relationships.	**Proportion and scale** Explore direct proportion, scale factors and proportional reasoning in a range of mathematical and real-life contexts.	**Algebraic manipulation** Simplify and manipulate algebraic expressions, developing fluency with algebraic notation and mathematical reasoning.	**Coordinates and graphs** Plot and interpret coordinates and graphs, exploring relationships between variables in the Cartesian plane.	**Multiplying and dividing fractions** Develop fluency in multiplying and dividing fractions and apply these skills to increasingly complex problems.	**Standard index form** Represent very large and very small numbers efficiently using powers of ten and standard index form.
Co-curricular opportunities and Gatsby (careers) links	Chef, Architect, Engineer. Ratios are used to scale recipes, designs and mixtures accurately.	Architect, Map maker, Engineer. Scale and proportion are essential when creating plans, models and technical drawings.	Engineer, Programmer, Scientist. Algebra is used to represent relationships, create formulas and solve technical problems.	Data analyst, Engineer, Scientist. Coordinates and graphs are used to model, analyse and communicate relationships between variables.	Chef, Engineer, Construction worker. Fractions are used when scaling quantities and working accurately with measurements.	Scientist, Astronomer, Engineer. Standard index form allows extremely large and small measurements to be recorded and compared efficiently.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.					

Topics and links	Spring Term					
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
	Area, volume and density Calculate areas and volumes and explore density, developing connections between measures and real-world applications.	**Equations and inequalities** Form and solve equations and inequalities, using algebra to represent and solve mathematical problems.	**Percentages** Develop fluency with percentages, including percentage change and the use of multipliers in practical contexts.	**Indices** Explore powers and indices and apply the laws of indices to simplify and calculate numerical and algebraic expressions.	**Standard form** Use standard form to represent, compare and calculate with very large and very small numbers.	**Interpret and represent data** Interpret, represent and compare data using appropriate tables, charts and statistical representations.
Co-curricular opportunities and Gatsby (careers) links	Architect, Engineer, Scientist. Area, volume and density are used when designing structures, calculating quantities and investigating materials.	Engineer, Programmer, Economist. Equations and inequalities are used to model constraints and solve real-world problems.	Accountant, Banker, Retail manager. Percentages are essential when calculating interest, discounts, profit and financial change.	Scientist, Engineer, Programmer. Indices are used to represent repeated multiplication and work efficiently with scientific and technical calculations.	Scientist, Astronomer, Engineer. Standard form is widely used to communicate extremely large and small scientific measurements.	Data analyst, Journalist, Market researcher. Data representations help identify trends, compare information and communicate findings clearly.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.					

Topics and links	Summer Term				
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**
	Angles in parallel lines and polygons Use angle facts involving parallel lines and polygons to calculate unknown angles and develop geometric reasoning.	**Tables and probability** Explore probability through tables and systematic representations, calculating and comparing the likelihood of different outcomes.	**Circles** Develop understanding of the properties of circles and use appropriate measures and formulae to solve problems.	**Graphs and charts** Construct, interpret and compare graphs and charts, selecting suitable representations for different types of data.	**Sequences** Recognise and generate sequences, describe mathematical patterns and develop algebraic rules for sequences.
Co-curricular opportunities and Gatsby (careers) links	Architect, Surveyor, Engineer. Angle properties are essential when designing, constructing and measuring structures accurately.	Statistician, Insurance analyst, Risk analyst. Probability is used to assess uncertainty, predict outcomes and make informed decisions.	Architect, Engineer, Product designer. Circle geometry is used when designing structures, components and products.	Data scientist, Journalist, Business analyst. Graphs and charts are used to communicate information and support evidence-based decisions.	Software developer, Engineer, Data analyst. Recognising patterns and sequences is important in coding, modelling and predicting future outcomes.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.				

Sexey's School Mathematics Curriculum Map

Year: 9

Topics and links	Autumn Term				
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**
	Straight line graphs Develop understanding of linear graphs, including gradients, intercepts and equations, and use graphs to represent mathematical relationships.	**Forming and solving equations** Form and solve equations from mathematical and real-life situations, developing algebraic reasoning and problem-solving skills.	**Testing conjectures** Explore mathematical conjectures using examples, algebra and logical reasoning to determine whether statements are always true.	**Three-dimensional shapes** Explore properties and representations of 3D shapes, including plans, elevations, surface area and volume.	**Constructions and congruency** Use accurate mathematical constructions and explore conditions for congruent shapes and triangles.
Co-curricular opportunities and Gatsby (careers) links	Engineer, Data analyst, Economist. Linear graphs are used to model relationships, identify trends and make predictions from data.	Engineer, Scientist, Programmer. Equations are used to model situations and solve technical and scientific problems.	Mathematician, Software developer, Research scientist. Testing ideas logically and using evidence are important skills in research, programming and problem solving.	Architect, Engineer, Product designer. Understanding 3D shapes is essential when designing buildings, components and manufactured products.	Architect, Surveyor, Engineer. Accurate constructions and congruence are used in technical drawings, surveying, manufacturing and design.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.				

Topics and links	Spring Term				
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**
	Numbers Develop fluency with different types of number and numerical calculations, applying efficient methods to increasingly complex problems.	**Using percentages** Apply percentages to a range of problems, including percentage change, reverse percentages and financial contexts.	**Maths and money** Apply mathematical skills to wages, budgeting, interest, borrowing and other financial situations	**Deduction** Use logical and mathematical reasoning to draw conclusions from known information and construct convincing mathematical arguments.	**Rotation and translation** Describe and perform rotations and translations accurately using coordinates and appropriate mathematical language.
Co-curricular opportunities and Gatsby (careers) links	Accountant, Engineer, Scientist. Strong numerical skills are essential when working accurately with financial, scientific and technical information.	Accountant, Banker, Retail manager. Percentages are used to calculate interest, discounts, taxation, profit and changes in financial values.	Accountant, Financial adviser, Business owner. Mathematics is used to manage budgets, calculate earnings, understand borrowing and make informed financial decisions.	Lawyer, Programmer, Research scientist. Logical deduction and reasoning are used to analyse evidence, develop algorithms and reach justified conclusions.	Graphic designer, Architect, Games developer. Transformations are used in computer graphics, animation, design and digital modelling.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.				

Topics and links	Summer Term				
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**
	Pythagoras' theorem Use Pythagoras' theorem to calculate missing lengths in right-angled triangles and apply it to geometric and real-life problems.	**Enlargement and similarity** Explore enlargement using scale factors and develop understanding of similar shapes and proportional relationships.	**Ratio and proportion** Apply ratio and proportional reasoning to solve increasingly complex mathematical and real-life problems.	**Rates** Explore rates of change and compound measures, connecting quantities such as speed, distance, time and other real-world measures.	**Probability** Calculate and interpret probabilities, use appropriate representations and explore combined events and experimental probability.
Co-curricular opportunities and Gatsby (careers) links	Architect, Engineer, Surveyor. Pythagoras' theorem is used to calculate distances and dimensions accurately in construction, design and surveying.	Architect, Graphic designer, Engineer. Enlargement and similarity are used when creating scale drawings, models, maps and designs.	Chef, Engineer, Pharmacist. Ratio and proportion are used when scaling quantities, mixing substances and calculating accurate measurements.	Transport planner, Engineer, Scientist. Rates are used to analyse speed, flow, productivity and how quantities change over time.	Statistician, Insurance analyst, Data scientist. Probability is used to assess risk, predict outcomes and support evidence-based decisions.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.				

SEXEY'S
SCHOOL

Sexey's School Mathematics Curriculum Map

Year: 10

Topics and links	Autumn Term					
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
	Algebraic manipulation Develop fluency in simplifying and manipulating algebraic expressions, including collecting like terms, expanding brackets, factorising and working confidently with algebraic structure. Higher-tier students extend these ideas into more demanding expressions.	**Equations, inequalities and formulae** Solve increasingly complex linear equations and inequalities, rearrange formulae and represent solution sets accurately. Students connect algebraic procedures with graphical and contextual interpretations	**Quadratic expressions and equations** Expand and factorise quadratic expressions and solve quadratic equations using appropriate methods. Higher-tier work develops deeper algebraic reasoning and links between equations and graphs.	**Percentages and financial mathematics** Apply percentages to repeated change, growth and decay and solve financial problems involving interest, depreciation and other real-life contexts.	**Ratio and scale** Develop multiplicative reasoning through ratio, proportion, scale factors and related problem-solving contexts.	**Fractions** Consolidate and extend calculations with fractions, connecting fractional reasoning to ratio, percentages and algebra where appropriate.
Co-curricular opportunities and Gatsby (careers) links	Engineering, software development, data analysis and scientific modelling all rely on manipulating formulae and symbolic relationships.	Engineering, physics, economics and computer programming use equations and inequalities to model constraints and solve practical problems.	Architecture, engineering, physics and game design use quadratic models for trajectories, optimisation and curved structures.	Banking, accountancy, retail, business management and financial planning require confident use of percentages and compound change.	Architecture, construction, map-making, design, catering and engineering use ratio and scale to produce accurate plans and models.	Medicine, engineering, construction, science and catering require accurate calculations involving fractional quantities.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.					

Topics and links	Spring Term						
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**	**Unit 7**
	Non-calculator methods Strengthen written and mental calculation, exact arithmetic and efficient numerical strategies without reliance on a calculator.	**Straight-line graphs** Explore linear relationships, gradients and intercepts, and connect equations of lines with graphical representations and real-world rates of change.	**Probability** Use probability language, representations and calculations to analyse chance, including combined events where appropriate.	**Rounding and estimation** Use rounding, bounds and estimation to judge the accuracy and reasonableness of calculations and measurements.	**Perimeter, area and volume** Apply formulae to two- and three-dimensional shapes, including compound shapes and increasingly complex geometrical contexts.	**Statistics** Interpret, compare and represent data using appropriate statistical diagrams and measures, with emphasis on drawing meaningful conclusions.	**Non Linear Graphs** Consolidate algebraic skills and extend manipulation and problem solving, making connections across expressions, equations, formulae and graphs.
Co-curricular opportunities and Gatsby (careers) links	Trades, finance, retail, engineering and many technical occupations require estimation and confident mental calculation.	Economics, engineering, transport planning, science and data analysis use linear graphs to describe and predict relationships.	Insurance, medicine, meteorology, finance, risk analysis and data science use probability to make decisions under uncertainty.	Engineering, construction, surveying, science and finance depend on appropriate levels of accuracy and reliable estimates.	Architecture, construction, surveying, product design and manufacturing rely on accurate measurement of length, area and volume.	Healthcare, market research, sport, government, journalism and data science all depend on statistical interpretation.	STEM careers, economics and computing use algebra to generalise patterns and construct mathematical models.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.						

Topics and links	Summer Term					
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
	Angles Use angle facts and geometrical reasoning in increasingly complex diagrams, including polygons and parallel lines.	**Data representation** Select, construct and interpret appropriate representations of data and compare distributions critically.	**Vectors** Represent translations and geometric relationships using vectors and develop algebraic reasoning with vector notation.	**Surds and exact values** Higher-tier students simplify and manipulate surds and use exact values rather than premature decimal approximations.	**Pythagoras and trigonometry** Use Pythagoras' theorem and trigonometric ratios to calculate unknown lengths and angles in two- and three-dimensional contexts.	**Simultaneous equations** Solve simultaneous equations algebraically and graphically; Higher-tier students extend this to equations involving quadratics.
Co-curricular opportunities and Gatsby (careers) links	Architecture, surveying, navigation, engineering and computer-aided design require precise angular reasoning.	Data science, journalism, business intelligence, healthcare and research require clear and ethical communication of data.	Physics, engineering, robotics, navigation, animation and computer graphics use vectors to describe movement and direction.	Engineering, physics and advanced mathematics use exact forms to preserve accuracy in calculations and models.	Surveying, architecture, engineering, aviation, navigation and construction use trigonometry to determine inaccessible distances and angles.	Economics, engineering, logistics and computer science use simultaneous models when several conditions must be satisfied together.
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Sexey's School Mathematics Curriculum Map

Year: 11 Foundation

	Autumn Term			
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**
Topics and links	**Transformations** Reflect, rotate, translate and enlarge shapes, describe each transformation accurately and use these skills in combined geometric problems.	**Probability representations** List outcomes systematically and use sample spaces, Venn diagrams, set notation and frequency trees to organise and interpret possible events.	**Probability rules** Use the multiplication law for combined events and the addition law for mutually exclusive events to calculate probabilities.	**Conditional probability and tree diagrams** Calculate simple conditional probabilities and use tree diagrams to represent successive events and solve combined probability problems.
Co-curricular opportunities and Gatsby (careers) links	Graphic design, architecture, engineering and game development use transformations to position, resize and model objects accurately.	Data science, medicine, meteorology and insurance use diagrams and organised data to communicate uncertainty clearly.	Insurance, finance, quality control and risk analysis use probability rules to estimate the likelihood of events and guide decisions.	Medical testing, genetics, business forecasting and risk management use conditional probability to update decisions when new information is available.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.			

	Spring Term					
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
Topics and links	**Algebraic expressions** Simplify expressions, substitute into formulae, expand linear and quadratic brackets and factorise expressions.	**Functions** Use function machines, identify inputs and outputs, and work with reverse and composite functions.	**Linear equations** Solve one-step and two-step equations, equations with unknowns on both sides and equations involving brackets; form equations from words and diagrams.	**Straight-line graphs** Identify roots, gradients and y-intercepts, use y = mx + c and connect algebraic equations with their graphical representations.	**Quadratics** Solve simple quadratic equations by factorising and interpret roots as solutions on quadratic graphs.	**Simultaneous equations** Solve simultaneous equations algebraically and interpret the intersection of two graphs as a shared solution.
Co-curricular opportunities and Gatsby (careers) links	Engineering, software development and science use algebraic expressions to represent and manipulate relationships efficiently.	Programming, data analysis and engineering use functions to describe processes and connect inputs with outputs.	Engineering, accountancy and scientific work use equations to model unknown quantities and solve practical problems.	Economics, transport planning, engineering and data analysis use straight-line graphs to describe rates and predict trends.	Architecture, physics, engineering and game design use quadratic models for curves, trajectories and optimisation.	Finance, logistics, engineering and computer science use simultaneous models when several conditions must be satisfied together.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.					

	Summer Term					
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
Topics and links	**Ratio** Find and simplify ratios, use 1:n and n:1 forms, express ratios as fractions or percentages and divide quantities in a given ratio.	**Proportion** Express proportions as fractions, decimals and percentages and solve direct and inverse proportion problems using multiplicative reasoning.	**Growth and decay** Use multipliers to model compound growth and decay, including interest and depreciation.	**Compound measures** Convert units and calculate speed, rate of flow, density and pressure in practical contexts.	**Pythagoras and trigonometry** Use Pythagoras' theorem and right-angled trigonometry to calculate unknown lengths and angles.	**Bearings and mixed problems** Interpret and calculate three-figure bearings and combine number, measure and geometric skills in multi-step problems.
Co-curricular opportunities and Gatsby (careers) links	Catering, construction, design and healthcare use ratio to scale ingredients, mixtures, plans and doses accurately.	Pharmacy, engineering, finance and science use proportional reasoning to scale quantities and compare changing variables.	Banking, accountancy, business and environmental science use growth and decay models to forecast changing values.	Transport, engineering, construction and laboratory science depend on accurate compound-measure calculations.	Surveying, architecture, construction, navigation and engineering use these methods to determine inaccessible distances and angles.	Aviation, maritime navigation, surveying and emergency planning use bearings and spatial reasoning to plan accurate routes.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.					

Sexey's School Mathematics Curriculum Map

Year: 11 Higher

	Autumn Term			
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**
Topics and links	**Transformations** Reflect, rotate, translate and enlarge shapes and combine transformations, describing each operation precisely.	**Probability representations** List outcomes systematically and use sample spaces, Venn diagrams and set notation to organise and interpret possible events.	**Probability laws** Apply multiplication and addition laws to combined events, including mutually exclusive events, and solve increasingly complex probability problems.	**Conditional probability and tree diagrams** Calculate conditional probabilities, apply the product rule and use tree diagrams to model successive events.
Co-curricular opportunities and Gatsby (careers) links	Graphic design, architecture, engineering and game development use transformations to position, resize and model objects accurately.	Data science, medicine, meteorology and insurance use diagrams and organised data to communicate uncertainty clearly.	Insurance, finance, quality control and risk analysis use probability laws to estimate likelihood and guide decisions.	Medical testing, genetics, business forecasting and risk management use conditional probability to update decisions when new information is available.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.			

	Spring Term					
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
Topics and links	**Algebraic expressions** Simplify and substitute into expressions, expand linear, quadratic and cubic brackets, and factorise including difference of two squares.	**Functions** Use function notation and machines, find inverse functions and form composite functions.	**Linear equations** Solve linear equations, including equations with unknowns on both sides and brackets, and connect algebraic solutions with contexts.	**Straight-line graphs** Identify roots, gradients and y-intercepts and use y = mx + c to connect linear equations with graphs.	**Quadratics** Solve quadratic equations by factorising, completing the square and using the quadratic formula; interpret roots on quadratic graphs.	**Further equations, graphs and formulae** Solve simultaneous equations algebraically and graphically, recognise and sketch cubic, exponential and reciprocal graphs, and rearrange formulae.
Co-curricular opportunities and Gatsby (careers) links	Engineering, software development and science use algebraic expressions to represent and manipulate complex relationships efficiently.	Programming, data analysis and engineering use functions to describe processes and connect inputs with outputs.	Engineering, economics and scientific work use equations to model unknown quantities and solve practical constraints.	Economics, transport planning, engineering and data analysis use straight-line graphs to describe rates and predict trends.	Architecture, physics, engineering and game design use quadratic models for trajectories, curved structures and optimisation.	Finance, engineering, computing and research use multiple equations, non-linear graphs and formulae to model interacting conditions.
Links with Sexey's Values, our Christian ethos, and spiritual development opportunities	**Christianity and Mathematics** Christianity has played an important role in the development of mathematics and science. Mathematicians such as Copernicus, Kepler, Galileo and Newton were deeply religious and saw their work as connected to their faith. Pythagoras also linked mathematics with a wider understanding of the world, seeing beauty, order and meaning in numbers and shapes. Mathematics encourages us to explore patterns, truth, order and the world around us. **Our Values in Mathematics** **Courage:** Developing confidence, attempting new skills and being brave enough to ask and answer questions. **Forgiveness:** Accepting mistakes, learning from them and supporting others when things go wrong. **Honesty:** Admitting mistakes, being truthful about our work and working fairly with others. **Kindness:** Helping and encouraging others, particularly when they find mathematics difficult. **Respect:** Showing consideration for others and behaving positively in the mathematics classroom. **Empathy:** Understanding that everyone learns differently and recognising the difficulties others may experience. **Resilience:** Persevering with new or challenging tasks and recovering positively from setbacks.					

	Summer Term					
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
Topics and links	**Ratio** Find and simplify ratios, use 1:n and n:1 forms, connect ratio with fractions and percentages, and divide quantities in a given ratio.	**Proportion** Use the unitary method and solve direct and inverse proportion problems with multiplicative reasoning.	**Growth and decay** Use multipliers for simple and exponential growth and decay, including simple and compound interest and depreciation.	**Compound measures** Convert units and calculate speed, rate of flow, density, population density and pressure.	**Pythagoras and trigonometry** Use Pythagoras' theorem, right-angled trigonometry, the sine rule, cosine rule and the area formula for a scalene triangle.	**Bearings and mixed problems** Interpret and calculate bearings and combine geometric, algebraic and numerical methods in multi-step problems.
Co-curricular opportunities and Gatsby (careers) links	Catering, construction, design and healthcare use ratio to scale ingredients, mixtures, plans and doses accurately.	Pharmacy, engineering, finance and science use proportional reasoning to scale quantities and compare changing variables.	Banking, accountancy, business and environmental science use growth and decay models to forecast changing values.	Transport, engineering, construction and laboratory science depend on accurate compound-measure calculations.	Surveying, architecture, construction, navigation and engineering use trigonometry to determine inaccessible distances and angles.	Aviation, maritime navigation, surveying and emergency planning use bearings and spatial reasoning to plan accurate routes.
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