



ST. CATHERINE'S COLLEGE

A CHURCH OF ENGLAND ACADEMY

Unit 1: Probability

Term 1

Topic	Success Criteria	Maths Watch
Combined events	<ul style="list-style-type: none">Use the product rule for finding the number of outcomes for two or more eventsList all the possible outcomes of two events in a sample space diagram	Clip 59
Mutually exclusive events	<ul style="list-style-type: none">Identify mutually exclusive outcomes and events.Find the probabilities of mutually exclusive outcomes and events.Find the probability of an event not happening.	
Experimental probability	<ul style="list-style-type: none">Work out the expected results for experimental and theoretical probabilitiesCompare real values with theoretical expected values to decide if a game is fair	Clip 125
Independent events and tree diagrams	<ul style="list-style-type: none">Draw and use frequency treesCalculate probabilities of repeated eventsDraw and use probability tree diagrams	Clip 57 Clip 151 Clip 175
Conditional probability	<ul style="list-style-type: none">Decide if two events are independentDraw and use tree diagrams to calculate without replacementUse two-way tables to calculate conditional probability	
Combinations	<ul style="list-style-type: none">Work out the total number of ways of performing tasks	
Venn diagrams and set notation	<ul style="list-style-type: none">Use Venn diagrams to calculate conditional probabilityUse set notation	Clip 127a Clip 127b Clip 185
Unit Assessment	End of topic assessment. Each pupil will be assessed on this unit of work. Pupils will then know their areas of strengths and improvements. Their homework will be to complete interactive questions on MathsWatch based on their areas of improvements	





ST. CATHERINE'S COLLEGE

A CHURCH OF ENGLAND ACADEMY

Unit 2: Multiplicative Reasoning

Term 1

Topic	Success Criteria	Maths Watch
Growth and decay	<ul style="list-style-type: none">Find an amount after repeated percentage changes	Clip 164
Compound measures	<ul style="list-style-type: none">Calculate ratesConvert between metric speed measuresUse a formula to calculate speed and accelerationSolve problems involving compound measures	Clip 142
Ratio and proportion	<ul style="list-style-type: none">Use relationships involving ratioUse direct and inverse proportion	Clip 106 Clip 199
Unit Assessment	<p>End of topic assessment. Each pupil will be assessed on this unit of work. Pupils will then know their areas of strengths and improvements. Their homework will be to complete interactive questions on MathsWatch based on their areas of improvements</p>	





ST. CATHERINE'S COLLEGE

A CHURCH OF ENGLAND ACADEMY

Unit 3: Similarity and Congruence

Term 2

Topic	Success Criteria	Maths Watch
Congruence	<ul style="list-style-type: none">Show that two triangles are congruentKnow the conditions of congruence	Clip 166
Geometric proof and congruence	<ul style="list-style-type: none">Prove shapes are congruentSolve problems involving congruence	Clip 144
Similarity	<ul style="list-style-type: none">Use the ratio of corresponding sides to work out scale factorFind missing lengths on similar shapes	Clip 200
Similarity 2	<ul style="list-style-type: none">Use similar triangles to work out lengths in real lifeUse the link between linear scale factor and area scale factor to solve problemsUse the links between scale factors for length, area and volume to solve problems	Clip 200
Unit Assessment	<p>End of topic assessment. Each pupil will be assessed on this unit of work. Pupils will then know their areas of strengths and improvements. Their homework will be to complete interactive questions on MathsWatch based on their areas of improvements</p>	





Unit 4: Further Trigonometry

Term 2

Topic	Success Criteria	Maths Watch
Accuracy	<ul style="list-style-type: none">Understand upper and lower bounds in calculations involving trigonometry	
Graph of the sine function	<ul style="list-style-type: none">Understand how to find the sine of any angleKnow the graph of the sine function and use it to solve equations	Clip 195a
Graph of the cosine function	<ul style="list-style-type: none">Understand how to find the cosine of any angleKnow the graph of the cosine function and use it to solve equations	Clip 195a
The tangent function	<ul style="list-style-type: none">Understand how to find the tangent of any angleKnow the graph of the tangent function and use it to solve equations	Clip 195b
Area of triangles using the sine rule	<ul style="list-style-type: none">Find the area of a triangle and a segment of a circleUse the sine rule to solve 2-D problems	Clip 201
The cosine rule	<ul style="list-style-type: none">Use the cosine rule to solve 2D problemsSolve bearings problems using trigonometry	Clip 202
Solving problems in 3D	<ul style="list-style-type: none">Use Pythagoras' theorem in 3DUse trigonometry in 3D	Clip 150b Clip 217
Transforming trigonometric graphs	<ul style="list-style-type: none">Recognise how changes in a function affect trigonometric graphs	Clip 196b
Unit Assessment	End of topic assessment. Each pupil will be assessed on this unit of work. Pupils will then know their areas of strengths and improvements. Their homework will be to complete interactive questions on MathsWatch based on their areas of improvements	



Unit 5: Further Statistics

Term 3

Topic	Success Criteria	Maths Watch
Cumulative Frequency	<ul style="list-style-type: none">• Draw and interpret cumulative frequency tables and diagrams• Work out the median, quartiles and interquartile range from a cumulative frequency diagram	Clip 186
Box plots	<ul style="list-style-type: none">• Find the quartiles and the interquartile range from stem-and-leaf diagrams• Draw and interpret box plots	Clip 187
Stem-and -leaf	<ul style="list-style-type: none">• Find the quartiles and the interquartile range from stem-and-leaf diagrams	Clip 128b
Drawing histograms	<ul style="list-style-type: none">• Understand frequency density• Draw histograms	Clip 205
Interpreting histograms	<ul style="list-style-type: none">• Interpret histograms	Clip 205
Comparing and describing populations	<ul style="list-style-type: none">• Compare two sets of data	Clip 152
Unit Assessment	<p>End of topic assessment. Each pupil will be assessed on this unit of work. Pupils will then know their areas of strengths and improvements. Their homework will be to complete interactive questions on MathsWatch based on their areas of improvements</p>	



Unit 6: Equations and Graphs

Term 3

Topic	Success Criteria	Maths Watch
Solving Equations Graphically	<ul style="list-style-type: none">Solve simultaneous equations graphically	Clip 140
Representing inequalities graphically	<ul style="list-style-type: none">Represent inequalities on graphsInterpret graphs of inequalities	Clip 138 Clip 198
Graphs of quadratic functions	<ul style="list-style-type: none">Recognise and draw quadratic functions	Clip 98
Solving quadratic equations graphically	<ul style="list-style-type: none">Find approximate solutions to quadratic equations graphicallySolve quadratic equations using an iterative process	Clip 211 Clip 160
Graphs of cubic functions	<ul style="list-style-type: none">Find the roots of cubic equationsSketch graphs of cubic functionsSolve cubic equations using an iterative process	Clip 161
Unit Assessment	End of topic assessment. Each pupil will be assessed on this unit of work. Pupils will then know their areas of strengths and improvements. Their homework will be to complete interactive questions on MathsWatch based on their areas of improvements	



Unit 7: Circle Theorems

Term 4

Topic	Success Criteria	Maths Watch
Radii and chords	<ul style="list-style-type: none">Solve problems involving angles, triangles and circlesUnderstand and use facts about chords and their distance from the centre of a circleSolve problems involving chords and radii	Clip 183
Tangents	<ul style="list-style-type: none">Understand and use facts about tangents at a point and from a pointGive reasons for angles and length calculations involving tangents	Clip 183
Angles in circles 1	<ul style="list-style-type: none">Understand, prove and use facts about angles subtended at the centre and the circumference of circlesUnderstand, prove and use facts about the angle in a semicircle being a right angleFind missing angles using these theorems and give reasons for answers	Clip 183
Angles in circles 2	<ul style="list-style-type: none">Understand, prove and use facts about angles subtended at the circumference of a circleUnderstand, prove and use facts about cyclic quadrilateralsProve the alternate segment theorem	Clip 183
Applying the circle theorems	<ul style="list-style-type: none">Solve angle problems using circle theoremsGive reasons for angle sizes using mathematical languageFind the equations of the tangent to a circle at a given point	Clip 183
Unit Assessment	End of topic assessment. Each pupil will be assessed on this unit of work. Pupils will then know their areas of strengths and improvements. Their homework will be to complete interactive questions on MathsWatch based on their areas of improvements	



ST. CATHERINE'S COLLEGE

A CHURCH OF ENGLAND ACADEMY

Unit 8: Further Algebra

Term 4

Topic	Success Criteria	Maths Watch
Rearranging	<ul style="list-style-type: none">Change the subject of a formula where the power of the subject appears	Clip 136 Clip 190
Algebraic fractions	<ul style="list-style-type: none">Add and subtract algebraic fractionsMultiply and divide algebraic fractionsChange the subject of a formula involving fractions where all the variables are in denominators	Clip 210a
Simplifying algebraic fractions	<ul style="list-style-type: none">Simplify algebraic fractions	Clip 210a
More algebraic fractions	<ul style="list-style-type: none">Add and subtract more complex algebraic fractionsMultiply and divide more complex algebraic fractions	Clip 210a
Surds	<ul style="list-style-type: none">Simplify expressions involving surdsExpand expressions involving surdsRationalise the denominator of a fraction	Clip 207a Clip 207b Clip 207c
Solving algebraic fraction equations	<ul style="list-style-type: none">Solve equations that involve algebraic fractions	Clip 210b
Functions	<ul style="list-style-type: none">Use function notationFind composite functionsFind inverse functions	Clip 215 Clip 214a Clip 214b
Proof	<ul style="list-style-type: none">Prove a result using algebra	Clip 193
Unit Assessment	<p>End of topic assessment. Each pupil will be assessed on this unit of work. Pupils will then know their areas of strengths and improvements. Their homework will be to complete interactive questions on MathsWatch based on their areas of improvements</p>	





Unit 9: Vectors and Geometric Proof

Term 5

Topic	Success Criteria	Maths Watch
Vectors and vector notation	<ul style="list-style-type: none">• Understand and use vector notation• Work out the magnitude of a vector	Clip 174
Vector arithmetic	<ul style="list-style-type: none">• Calculate using vectors and represent the solutions graphically• Calculate the resultant of two vectors• Solve problems using vectors• Use the resultant of two vectors to solve vector problems	Clip 219
Parallel vectors and collinear points	<ul style="list-style-type: none">• Express points as position vectors• Prove lines are parallel• Prove points are collinear	
Solving geometric problems	<ul style="list-style-type: none">• Solve geometric problems in two dimensions using vector methods• Apply vector methods for simple geometric proofs	
Unit Assessment	<p>End of topic assessment. Each pupil will be assessed on this unit of work. Pupils will then know their areas of strengths and improvements. Their homework will be to complete interactive questions on MathsWatch based on their areas of improvements</p>	



Unit 10: Proportion and graphs

Term 5

Topic	Success Criteria	Maths Watch
Direct proportion	<ul style="list-style-type: none">• Write and use equations to solve problems involving direct proportion• Write and use equations to solve problems involving direct proportion• Solve problems involving square and cubic proportionality	Clip 199
Inverse proportion	<ul style="list-style-type: none">• Write and use equations to solve problems involving inverse proportion• Use and recognise graphs showing inverse proportion	Clip 199
Exponential functions	<ul style="list-style-type: none">• Recognise graphs of exponential functions• Sketch graphs of exponential functions	Clip 194
Non-linear graphs	<ul style="list-style-type: none">• Calculate the gradient of a tangent at a point• Estimate the area under a non-linear graph	Clip 216a Clip 159b
Translating graphs of functions	<ul style="list-style-type: none">• Understand the relationship between translating a graph and the change in its function notation	Clip 196b
Reflecting and stretching graphs of functions	<ul style="list-style-type: none">• Understand the effect stretching a curve parallel to one of the axes has on its function form	Clip 196b
Unit Assessment	End of topic assessment. Each pupil will be assessed on this unit of work. Pupils will then know their areas of strengths and improvements. Their homework will be to complete interactive questions on MathsWatch based on their areas of improvements	