

UTC Maths Department Learning Cycles 2019 – Year 11 Foundation

Cycle 2.6 QUADRATICS	Cycle 2.7 TRIGONOMETRY	Cycle 2.8 PROBABILITY AND VOLUME	Cycle 2.9 Revision of Topics 4 - 5	Cycle 2.10 Revision of Topics 4 - 5
<p align="center">Topics</p> <ul style="list-style-type: none"> Plotting quadratic graphs Reading values from quadratic graphs Sketching quadratic graphs Finding important points on quadratic graphs Factorising quadratic expressions Solving quadratic equations by factorising 	<p align="center">Topics</p> <ul style="list-style-type: none"> Finding missing lengths and angles using trigonometry Problem solving using properties of triangles and Pythagoras' theorem Drawing diagrams to solve problems Calculating angles of depression and elevation Recap angle rules Recap area and perimeter of 2D shapes Recap area and circumference of a circle Bearings 	<p align="center">Topics</p> <ul style="list-style-type: none"> Solve probability problems using Venn diagrams Frequency tree diagrams Probability tree diagrams Calculate length of an arc Calculate area and angle of a sector Calculate volume and surface area of a pyramid Calculate volume and surface area of a cone Calculate volume and surface area of a sphere 	<p align="center">Topics (Subject to change based on mock analysis)</p> <ul style="list-style-type: none"> Fractions, decimals and percentages Repeated percentage change and compound interest Ratios Proportion And/or rule for probability Factorising into one bracket and two brackets Problem solving – value for money Linear graphs Revision and exam techniques 	
<p align="center">Keywords</p> <p>Parabola Quadratic vs linear Intercept Roots Turning point</p>	<p align="center">Keywords</p> <p>Pi Hypoteneuse Sin, cos and tan</p>	<p align="center">Keywords</p> <p>Complement Element, Set Intersection, Union Universal set Venn diagram</p>	<p align="center">Keywords</p> <p>Subtend Apex Slant height Vertical height</p>	<p align="center">Keywords</p>
<p align="center">Topic Assessments Used</p> <p>Unit test</p>	<p align="center">Topic Assessments Used</p> <p>Unit test</p>	<p align="center">Topic Assessments Used</p> <p>Unit test</p>	<p align="center">Topic Assessments Used</p> <p>Mock and past papers</p>	<p align="center">Topic Assessments Used</p> <p>Mock and past papers</p>

UTC Maths Department Learning Cycles 2019 – Year 11 Higher

Cycle 2.6 ALGEBRA	Cycle 2.7 GEOMETRY	Cycle 2.8 ALGEBRA AND PRE-CALCULUS	Cycle 2.9 Revision of Topics 7 - 8	Cycle 2.10 Revision of Topics 7 - 8
<p align="center">Topics</p> <ul style="list-style-type: none"> • Simplify algebraic fractions • Solve equations with algebraic fractions • Change the subject of a formula • Inverse functions • Composite functions • Solve quadratic equations by factorising • Problem solving - form and solve equations • Recognise and use the equation of a circle • Find the equation of a tangent • Find approximate solutions using a graph • Sketch translations and reflections 	<p align="center">Topics</p> <ul style="list-style-type: none"> • Circle theorems (angles in centre, angles at same arc, angles on semi circle, cyclic quadrilaterals, tangents to a circle, alternate segment) • Know and apply the sine rule and cosine rule 	<p align="center">Topics</p> <ul style="list-style-type: none"> • Interpret the gradient at a point on a curve as the instantaneous rate of change • Apply the concepts of average and instantaneous rates of change • Sketch graphs of linear quadratic, cubic and reciprocal functions and identify key parts • Calculate or estimate gradients of graphs and areas under graphs • Interpret the results in cases such as distance-time graphs, velocity-time graphs and graphs in financial contexts 	<p align="center">Topics (Subject to change based on mock analysis)</p> <ul style="list-style-type: none"> • Direct and inverse proportion • Solving quadratic equations using the formula • Transformation • Properties of number • Solving quadratics by completing the square • Applying Pythagoras' theorem in 3D • Problem solving • Revision and exam techniques • Indices Laws, Fractional Indices & Standard Form • Surds – Rationalising the Denominator • Composite and inverse functions • Stem & Leaf Diagrams • Venn Diagrams • Angle Rules and Circle Theorems 	
<p align="center">Keywords Surd Identity</p>	<p align="center">Keywords Theorem Proof Chord</p>	<p align="center">Keywords Root, intercept and turning point</p>	<p align="center">Keywords</p>	<p align="center">Keywords</p>
<p align="center">Topic Assessments Used Unit test</p>	<p align="center">Topic Assessments Used Unit test</p>	<p align="center">Topic Assessments Used Unit test</p>	<p align="center">Topic Assessments Used Mock and pact papers</p>	<p align="center">Topic Assessments Used Mock and pact papers</p>