TOLL BAR SIXTH FORM

# A-Level Mathematics Curriculum Overview Map Year 13

**Final Exam**

**Paper 1 – Pure – 120 minutes – 04/06/24**

**Paper 2 – Pure – 120 minutes – 11/06/24**

**Paper 3 – Applied – 120 minutes – 20/06/24**


## Past Paper Revsion

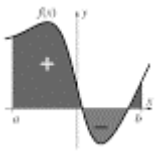
Students will be supported in developing exam technique and familiarity with style and content of Edexcel exam questions making use of all past papers.

## Topic Specific Revision

REVISION

Students will consolidate topic specific knowledge as a result of information gained from QLA of Mock Exam data.

## Summer Term



## Integration

Students will expand the range of functions they can integrate. They will learn how to use the reverse of standard derivatives, integration by substitution, integration by parts and integration of rational functions. Students will also use integration to find the area under a curve defined by parametric equations.

## Further Kinematics

Students will work with vectors for displacement, velocity and acceleration using the vector equations of motion. Students will use calculus for more complex functions involving variable acceleration including prjectiles.

## Mock Exam

## The Normal Distribution

Students are introduced to the normal distribution for continuous random variables. They will explore a range of concepts in this area and will learn to use the associated calculator functions. Students will extend their knowledge of hypothesis testing to include testing sample means.

## Application of Forces

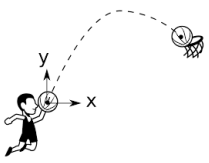
Students will work with static partlcles, including systems involving tension and pulleys. Solving problems involving systems in equilibrium and limiting equilibrium. Students will develop their knowledge of systems involving motion by applying this to those involving inclined planes and connected particles.

## Projectiles

Students will extend their knowledge of constant acceleration to look at projectiles moving in a twodimensional plane. This will allow modelling of real-life siituations.

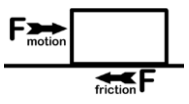
## Numerical Methods

Students will learn methods for solving equations numerically to obtain approximate solutions to equations and to find approximate areas between the curve and the x-axis using the trapezium rule.




## Spring Term

## Forces and Friction




Students will resolve forces into their vertical and horizontal or parallel and perpendicular components in order to solve problems involving inclined plaes. Students will also develop an undertaiding of friction and the coefficient of frictions and its effect on the movement of a particle.

## Differentiation

Students will extend their skills in differentiation and will be introduced to the standard derivatives of exponential and trigonometric functions. They will also learn to use the chain, product and quotient rules for differentiation as well as differentiating implicitly.

## Conditional Probability

Students will visualise conditional probabilities in various ways and use them to solve problems. They will also deduce and use the conditional probability formulae.

## Binomial Expansion

Students will extend and deepen their knowledge binomial expansions to include functions with any rational power. They will again use their expansion to approximate.

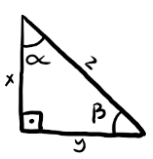
## Parametric Equations

Students will convert equations into Cartesian form by substitution, making use of the trigonometric identities where needed. Students will use this knowledge to solving coordinate geometry problems involving parametric equatiuons in a variety of contexts.

## Trigonometry and Modelling

Students will prove and use the addition formulae, understanding how this is transfers to the double angle formulae, solving equatioons using identities. Students will also simplify expressions using trig identities. In addition modelling using these identities.

## Autumn Term




## Sequences and Series

Students will learn about the different type of sequences, particularly arithmetic and geometric progressions. This will include solving problems involving terms and sums of series and using the associated formulae.

## Trigonometric Functions

Students will understand and use the definitions of secant, cosecant and cotangent identifying their graphs and the relationships between these and sine, cosine and tangent. Students will also form proofs for secant, cosecant and cotangent, building on identities already familiar to them. Using this knowledge to solve problems involving secant, cosecant and cotangent

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