

**A-Level Maths A level Guide**

**How Maths will be taught:**

You will have 5 lessons a week split between two teachers.

Initially both teachers will be focusing on the Pure units, once this is complete one teacher will teach the Statistics unit and the other the Mechanics unit.

Lessons will consist of explanations and examples of each topic. Lessons will have some time available for exercise completion from the course textbook; however, the majority of this will be done outside of lessons as homework. There will also be lesson time available to consolidate and go through the exercises completed outside of the classroom where needed.

At the end of each chapter an assessment will happen in class, you will be expected to revise for this and there will be time to go through any issues after if required.

**Working expectations:**

In class you will be expected to follow the examples and complete the course notes. You will then be set exercises of work to complete; these should be completed with full working solutions shown clearly. All work should be handed in neatly with a title and marking completed.

**What 100% effort in this subject looks like:**

Completing all exercises set on time - do not fall behind it can get out of hand in maths very quickly due to the amount of practice expected.

Marking work and correcting errors in green pen will happen prior to handing in.

Seeking help when you are struggling and not leaving questions in exercises incomplete. Maths is a series of building blocks; leaving gaps in your knowledge early on leads to difficulties later.

**Folder Policy:**

You will be provided with a pocket folder to keep your course notes and examples in. This should be with you every lesson as you may need to refer to previous topic notes as you progress through the course.

You may then keep your completed exercises in a separate folder that you provide yourself. This should be clearly labelled into the sections; it does not need to be with you every lesson.

**What marking looks like:**

You will be expected to mark the exercises yourself before handing them in. The class teacher will then look through your work, ensure all required working steps are seen and correct and then identify any class issues to go through.

Assessments: either chapter assessments or unit assessments, will be marked by the teacher and allocated a grade.

**What homework looks like:**

You will be set exercises of work to complete which consolidate the topics taught in class. These will range in length; however, they are designed to emphasis understanding and interpretation rather than mere routine calculations. The exercise questions are split into 3 sections. Band 1 questions are designed to reinforce basic understanding. These often start with one or two questions designed to bridge the gap between GCSE and A ‘Level covering common stumbling blocks. Band 2 questions are broadly typical of what might be expected in an examination. Some of them cover routine techniques, others are designed to provide some stretch and challenge. Band 3 questions explore the topic in more depth and some are more demanding.

**Specification at a glance:**

|  |  |  |
| --- | --- | --- |
| **Pure Maths** | **Statistics** | **Mechanics** |
| * Problem Solving and Proof
* Surds and Indices
* Functions
* Equations and Inequalities
* Coordinate Geometry
* Trigonometry
* Polynomials
* Graphs and Transformations
* The Binomial Expansion
* Differentiation
* Integration
* Vectors
* Exponentials and Logarithms
* Sequences and Series
* Sine and Cosine Rules
* Trigonometric Functions and Identities
* Partial Fractions
* Parametric Equations
* Differential Equations
* Numerical Methods
 | * Data Collection
* Data Processing, Presentation and Interpretation
* Probability
* The Binomial Distribution
* Statistical Hypothesis Testing using the Binomial Distribution
* Working with Data
* Statistical Distributions
 | * Kinematics
* Forces and Newton’s Laws of Motion
* Variable Acceleration
* Moments of Forces
* Projectiles
* A Model for Friction
 |

**Summer preparation**

The purpose of giving you a summer bridging task is:

1. To provide a bridge from level 2 to level 3 study, and lead into the early stages of the course.
2. To engage you in independent learning which is required at level 3.
3. To encourage you to develop your work ethic and commitment to study.
4. To measure your suitability for the course and assess your initial levels of achievement.

**Task 1**:
There are a number of key terms that crop up throughout the two-year course. It is important that you are aware what the meaning is of these terms.

Define the following key terms:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Pure Maths | Statistics | Mechanics | Surd | Indices | Equation |
| Inequality | Coordinate | Trigonometry  | Polynomial | Transformation | Binomial |
| Differentiation | Integration | Vector | Exponential  | Logarithm | Sequence |
| Series | Function | Parametric | Hypothesis | Kinematic | Force |
| Motion | Acceleration | Projectile | Friction |  |  |

**Task 2:**

It is essential your algebra is at a high standard. Please complete the following bridging unit provided by Oxford University Press, this covers all essential algebra skills for the A’Level course.

<http://fdslive.oup.com/www.oup.com/oxed/secondary/maths/HomeLearning-Pack_A-Level-Bridging_Algebra_Contents-page.pdf?region=uk>

 If you would like further work then you are able to download the CGP Head Start to Maths textbook for free at the moment from Amazon. This contains bridging work for the statistics and probability sections as well as the algebra.

[https://www.amazon.co.uk/Head-Start-Level-Maths-2017-2018-ebook/dp/B06XD29GX2/ref=sr\_1\_2?crid=32IWOYWJR724L&dchild=1&keywords=head+start+to+a+level+maths&qid=1587498591&sprefix=head+start+to+%2Caps%2C200&sr=8-2](https://www.amazon.co.uk/Head-Start-Level-Maths-2017-2018-ebook/dp/B06XD29GX2/ref%3Dsr_1_2?crid=32IWOYWJR724L&dchild=1&keywords=head+start+to+a+level+maths&qid=1587498591&sprefix=head+start+to+%2Caps%2C200&sr=8-2)

**Please bring your work with you to your first lesson.**

**Potentially useful websites:**

Tutorial videos of expected concepts you should know <https://www.youtube.com/watch?v=mY7tn3NT9MQ> this is the link to the first video in the series, the rest are linked from here.

An encyclopaedia of maths <https://mathworld.wolfram.com/> be careful as it goes much deeper then A’Level.

**Link to the Specification:**

<https://www.aqa.org.uk/subjects/mathematics/as-and-a-level/mathematics-7357/introduction>