# Curriculum Intent Statement

Inspiration and excellence are at the heart of everything we do. Our main aim is to inspire confidence in our students and stimulate their interest in Mathematics, both within the curriculum and the wider world. We hope that this in turn will spark a love of learning and an improved ability to model and solve problems, applying the Mathematical knowledge gained in lessons to a variety of different circumstances. We believe that this will enable our students, irrespective of background, to flourish and leave BVGS well-equipped for whatever they choose to do in life.

**Structure of the Course**

Pure mathematics, statistics and mechanics are taught throughout the two years.

# Pure Mathematics content

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| Topic 1: Proof  | Topic 6: Exponentials & Logarithms  |
| Topic 2: Algebra & Functions  | Topic 7: Differentiation  |
| Topic 3: Coordinate Geometry in the x,y plane  | Topic 8: Integration  |
| Topic 4: Sequences & Series  | Topic 9: Numerical Methods  |
| Topic 5: Trigonometry  **Statistics & Mechanics**   | Topic 10: Vectors  |
| Statistics  | Mechanics  |
| Topic 1: Statistical Sampling  | Topic 6: Quantities & Units in  |
| Topic 2: Data Presentation & Interpretation  |  Mechanics  |
| Topic 3: Probability  | Topic 7: Kinematics  |
| Topic 4: Statistical Distributions  | Topic 8: Forces & Newton’s Laws  |
| Topic 5: Statistical Hypothesis Testing  | Topic 9: Moments  |

# Structure of the Examination

 There are three papers each is 2 hours in length. Papers 1 and 2 cover the pure mathematics content. Paper 3 is split into two equal sections; section A covers statistics, section B is on mechanics. Calculators are allowed in all of the papers. Each papers counts as one third of the overall qualification. There are three assessment objectives, which are AO1 – using and applying standard techniques (50%); AO2 – reason, interpret and communicate mathematically (25%); AO3 – solve problems within mathematics and in other contexts (25%).

# Teaching and Learning

In Mathematics, pupils are encouraged to ask questions and attempt various mathematical approaches to a variety of different problems in a safe and inspirational environment where there is no fear of failure. During lessons, pupils have the opportunity to work both independently and together in pairs or groups. Outside of lessons, pupils are encouraged to develop as independent learners by regularly revising and practising extra questions in addition to completing the set homework tasks.