Mathematics Department Curriculum Statement

Intent

The aims of the Mathematics Department are to:

- develop, maintain and stimulate students' curiosity, interest and enjoyment in mathematics
- develop students familiarity with appropriate mathematical concepts, principles, methods and vocabulary
- develop students' understanding of mathematics in its widest context and to see how it relates to themselves outside school
- communicate mathematics clearly, concisely and confidently in a variety of contexts
- develop logical and creative thinking in problem solving to instil confidence in using mathematics
- encourage students to develop personal qualities such as politeness, perseverance, resilience, initiative, self confidence and independence
- independently and collaboratively extend their understanding of mathematics
- develop the ability to reflect critically upon their own work and the work of others
- enable all students to have equal access to mathematics and to experience success in their work
- allow students to develop transferable skills and informed opinions about their mathematics and to be able to support them by reasoned argument.

All students will have the opportunity to study mathematics in the sixth form at various levels:

- Applications and Interpretation SL for those students who enjoy seeing mathematics used in real-world contexts and to solve real-world problems
- Analysis and Approaches SL for those students who have good algebraic skills and are likely to need a degree of mathematics for post sixth form study
- Analysis and Approaches HL for those students who have very strong algebraic skills and who enjoy spending time with problems and get pleasure and satisfaction from solving challenging problems. Many of these students are likely to go on to post sixth form study in a mathematically related subject.

Implementation

a) Content & Skills

The mathematics department considers the teaching of mathematics in Year 7-11 to be one continuous progression of learning new knowledge and skills with the opportunity for consolidation built in. We therefore have a programme of study in which each year builds upon the skills learned in previous years and there is no reference to “starting the GCSE course in year 9 or 10”. Indeed all the mathematics taught at BGS is relevant to GCSE mathematics

The department’s schemes of work show the planned sequence and progression of topics and mathematical skills and processes through years 7-11, links to relevant resources and

approximate time allocation for each topic:
Key Stage 3 SoW
Key Stage 4 SoW
IB A&A HL
IB A&I SL
Although the SoW are titled KS3 and KS4 for ease of reference, they can be, and should be, considered as one continuous 5 year programme of study.

b) Learning environment

Years 7 to 11 have 2 hrs 55 minutes maths learning per week, (except Year 10 who have 3hrs 20. IB HL students have 4hrs 10 minutes a week and SL students 2hrs 5 minutes

Year 7 and 8 students are taught in form groups of 32. Differentiation takes place in lessons mainly by task. In Years 9 to 11 there are two bands, and there are four or five maths sets in each band. The top set typically will have approximately 28/29 students with the lowest set only having about 15 students.

No setting takes place in the sixth form as groups are defined by the students' option choices.

Homework is an important part of learning and is used to reinforce and practice concepts, skills and knowledge learned in class. It is also used on occasions for students to research in preparation for the next lesson. Year 7 have one 30 minute homework per week, Years 8-11 two homeworks per week and sixth form HL most lessons. Sixth from SL one 30 minute per week. All homework is set via google classrooms and from time will also include activities from the Dr Frost website.

c) Assessment & Feedback

Here is a link to the department's Assessment Policy

d) Monitoring

Student progress is monitored in a variety of ways:

- Results of assessments/ end of unit assessments are recorded in a central spreadsheet
- Report grades are analysed termly to identify student progress
- Learning walks and lesson observations are carried out by the head of department and KS Leaders to monitor quality of teaching and learning
- Work scrutiny is carried out at some department meetings
- Results of individual teaching groups are compared to identify any under or over performing groups

Impact

The mathematics department has consistently been one of the highest performing departments in terms of GCSE results. Last year over half of the cohort achieved a grade 8 or 9. The last external exam results were Summer 2024.

BGS Maths GCSE results 2024 (Edexcel Higher Tier)
24% grade 9
56% grades 8+
78% grades 7+
93% grades 6+
99% grades 5+

Approximately a quarter of the Year 11 cohort were also entered for GCSE Further Maths
AQA GCSE Level 2 Further Maths
26% grade 9
58% grades 8+
84% grades 7+
98% grades 6+

BGS IB results 2024
Standard Level (Applications and Interpretations)
49% grades 6+
96% grades 4+

BGS IB results 2024
Higher Level (Analysis and Approaches)
24% grades 6+
82% grades 4+