



## **Science Curriculum Information - GCSE**

As students embark on their Biology, Chemistry and Physics GCSEs, we thought it would be useful to share an overview of the course.

### **In Key Stage 4 Science:-**

The students will study AQA - Triple Sciences also known as Separate Sciences: GCSE Biology (8461), GCSE Chemistry (8462), GCSE Physics (8463). Separate Sciences involves students studying Biology, Chemistry, and Physics separately and they receive separate GCSEs for each of them, giving them a total of 3 GCSEs in the three Science subjects. All students will study Separate Sciences and most will be examined in the three separate sciences.

The AQA separate science course provides students with a firm foundation from which to progress on to their A Level studies and gives students an insight into the A Level course which builds on the knowledge and skills acquired at KS4. Investigative and practical skills acquired in KS3 are built on with students using the Required Practicals as an important tool for linking practical and theoretical work.

Our curriculum at AHS goes far beyond what is taught in lessons, for whilst we want students to achieve the very best examination results possible, we believe our curriculum goes beyond what is examinable. As a department we provide a lunchtime Science Club for younger students and Biology, Chemistry and Physics Clinics for those in Year 10 and above. We have large numbers of students opting for A Levels so the Triple Science course provides a more rigorous approach than any alternatives and provides an excellent foundation for the A Level course.

Based on a student's progress through the courses, we may offer them the opportunity to adjust their Biology, Chemistry and Physics entries to do Trilogy (two GCSEs in Science) or Foundation routes. We anticipate that almost all AHS students will take three separate Sciences at Higher Tier as planned.

### **GCSE Biology:**

Year 10 begins with the basics of Biology; Cell structure, Organisation and Methods of Transport. This journey started in Year 7 where these ideas were introduced at their most basic level. We then apply these concepts and ideas to more complex whole organism examples. As we move into Year 11, we move on to consider Disease, Bioenergetics and Genetics. Using a range of teaching activities and techniques, we bring an exciting, academic dimension to the world around us. [AQA Biology Specification](#)

### **GCSE Chemistry:**

We aim to explain and contextualise the learning objectives of the [AQA GCSE Chemistry specification](#). This covers a diverse range of Organic, Inorganic and Physical concepts, as well as giving extensive opportunities for practical investigation, including the completion of 8 Required Practicals. We revisit the core concepts of Atomic Theory throughout Year 10 and 11 ensuring that students have a strong foundation on which to build trickier topics such as Structure and Bonding.

### **GCSE Physics:**

We will cover the content of the [AQA Physics specification](#) while ensuring that we make the lessons and concepts covered relevant to everyday life. We revisit the core concepts of Energy and Forces throughout

Year 10 and 11 ensuring that students have a strong foundation on which to build trickier topics such as Waves or Electromagnetism. Mathematical and analytical skills are strengthened through plenty of practice and repetition and we often model how to approach the more complex multistage questions or explanations. Bringing a scientific calculator to Physics lessons becomes more and more essential over the course, as standard form and the use of more complex operations increases.

### **Homework and Assessment:**

Homework is 40 minutes duration and set once a week for each subject. This enables the students time to consolidate their understanding of work covered at school. Homework may take the form of a written or online work, revision and reading and is often marked in class where feedback is given, allowing students to access for clarification quickly.

We will continuously monitor student progress throughout the years by conducting end of topic tests on current topics to check that homework and classwork is understood. Topic tests follow each booklet of work, assessing skills and knowledge from the specification but may also include concepts from previous modules. Final assessment for each of the Sciences is via 2 papers of 1 hour 45 mins in length. In each case, the first half of the specification is assessed in Paper 1 and the remainder in Paper 2.

### **Textbooks and Resources:**

The students have booklets for every topic. All the content of their GCSE is found in the booklets. They also have access to the GCSE Chemistry, Biology and Physics online textbooks on Kerboodle. Kerboodle also provides resources such as worksheets and progress tests which can be set for homework or completed in class.

We also have our own bespoke Google Site for GCSE for each subject that has all of the resources for lessons, making it easy for students to access at home should they need to catch up or revise. Please ask them to show you the site! They sit internal assessments at the end of Year 10. The Mock Exams are in the Spring Term of Year 11.

### **Revision:**

There are many online revision resources and links and these can be found on the dedicated revision advice page on the AHS Science Google Site. We recommend the CGP revision guides. They are excellent and you can buy these through the school at a reduced cost at the beginning of Year 10. As well as providing revision guides they have work books, exam style questions and flash cards. They also provide exam style questions aimed at the higher grade 8/9 level. In addition, sites such as <https://www.physicsandmathstutor.com/> are an excellent source of past paper questions for all the sciences and more.

### **Co-curricular Science:**

Students will be given the opportunity to partake in the British Olympiads or Cambridge Challenge events in all three subjects and also have the opportunity to get support at lunchtime clinics. Links to careers are often built into lessons. We regularly invite STEM speakers to school and host online events. This programme provides students with an understanding of the wide range of opportunities available in Science.

More information can be found on the school's [website](#).

If you have any queries, please contact:-

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