



SUBJECT: Chemistry

YEAR: 10 & 11

HEAD OF DEPARTMENT: Mr Griffiths

GROUPING POLICY: GCSE target grade 6+

EXAM BOARD: AQA

ASSESSMENT: 100% External Examination

COURSE CONTENT

Link to Specification:

Students follow the AQA GCSE Chemistry course. This is examined at the end of Year 11.

<https://www.aqa.org.uk/subjects/science/gcse/chemistry-8462>

Curriculum Intent

Students follow the AQA Biology, Chemistry and Physics courses. These courses have been chosen for a number of reasons:

- The courses lead on well from our Key Stage Three course, which although 'in house' is based on the AQA Key Stage Three scheme of work.
- AQA makes considerable efforts to make examination papers accessible to students by considering reading age and layout, and this is important for our cohort.
- There is good support from AQA in terms of online resources and regular 'Hub' meetings.
- The majority of schools in Gloucestershire follow the AQA syllabi, which means that there is good support locally through Heads of Science meetings.
- We study the same examination board for Combined Science, Entry Level and Triple Science. This means that there is some consistency of expectation for staff, which enables students to switch between courses, and allows us to introduce all three courses in Year 9.

We teach Triple Science within Core Curriculum time and in the timetabled time for one option block. We believe that this gives more of our students a better chance to access the Triple Science content. It also allows us enough time to cover all of the content properly so that students have a firm base on which to build if they progress to level three study. We begin the course in term 5 of Year 9. The reason for this is that we can comfortably deliver all of the Key Stage Three knowledge needed to provide a firm base for GCSE study before the end of year 9. Beginning the course earlier means that we can spend more time developing ideas and allows us to finish slightly earlier for revision.

What will my child learn?

Over the two years of the GCSE course, students will study the following topics:

1. **Atomic Structure and the Periodic Table:** what is the structure of an atom and how was this discovered?
2. **Bonding, Structure and the Properties of Matter:** how are atoms arranged into the molecules that make up the world around?
3. **Quantitative Chemistry:** how can chemists predict how much of a substance they will make?
4. **Chemical Changes:** students will learn about different types of chemical reactions.
5. **Energy Changes:** students will learn about how and why chemical reactions happen; why does burning a fuel create heat, for example?
6. **The Rate and Extent of Chemical Change:** what determines how fast a chemical reaction happens? How can chemists speed up reactions?
7. **Organic Chemistry:** all living things are based on long chains of the element carbon. This branch of chemistry looks at the different kinds of molecules that carbon can form and their properties.
8. **Chemical Analysis:** once a chemical reaction has occurred, how can you be sure of what the products are?
9. **Chemistry of the Atmosphere:** how was the atmosphere that surrounds the Earth formed and how are humans affecting its composition?



10. **Using Resources:** students will learn the chemistry behind creating and using key materials such as metal alloys and fertilisers.

What will homework look like?

Students will be set one homework per week. This may be a written task to consolidate material learnt in class, revision for a test or the learning of key terminology. Triple science students also use flipped learning extensively.

What enrichment opportunities are available?

Enrichment opportunities will be arranged and communicated to students as the course progresses. These will include speakers and activities in school.

ASSESSMENT

How will my child's work be assessed?

Students will be assessed formally by each teacher in every reporting cycle; the test will be common to the whole cohort. Students will be given 1-9 grades for these tests. We will also use mathematical techniques to track students' progress against prior attainment. All of those who we judge not to be progressing as we expect, will be invited to attend a retest in the first instance, and then considered for additional support. In addition, students' progress will be assessed continuously through their classwork, homework and smaller in-class tests.

Practical skills will be developed through 'required practicals' set by the exam board. These are examined formally in written examinations at the end of Year 11. However, students will need to have experienced the class practicals in order to answer the questions. Students who miss the practicals will be asked to catch up, and invited for additional support after school if they do not or cannot do this themselves.

There are two written examination papers which students will sit at the end of Year 11. Each paper will assess a set of topic areas and consist of a mixture of multiple choice, structured, closed short answer and open response questions.

- **Paper 1:** Assesses the topics on Atomic Structure and the Periodic Table; Bonding, Structure and the Properties of Matter; Quantitative Chemistry; Chemical Changes; and Energy Changes (50% of GCSE), 1 hour 45 minutes.
- **Paper 2:** Assesses the topics on The Rate and Extent of Chemical Change; Organic Chemistry; Chemical Analysis; Chemistry of the Atmosphere; and Using Resources (50% of GCSE), 1 hour 45 minutes.

ADDITIONAL INFORMATION

How can I support my child in this subject?

- Be positive about learning Science when speaking to your child, whatever your personal experience of Science was.
- Discuss what your child is learning in Science with them; get them to explain everyday phenomena to you. Draw their attention to and discuss scientific advances that are reported in the news.
- Your child should receive homework weekly – please insist that this is completed to a good standard. If you are able to, help your child to complete their homework. If they get stuck, encourage them to contact their teacher, who will be happy to help.
- Look through your child's Science book with them. Ask them to show you work that they are interested in or proud of.
- Encourage them to access the resources available to them on the school website.