Curriculum Intent

The overall intent of the science curriculum at The Albion Academy is to develop learners that understand the nature, processes, and methods of science. This is developed by eliciting, valuing, and linking students' prior experiences from home, family, and social contexts to school science. Also, highlighting the relevance and transferability of science for students daily and future lives, whilst more importantly building young people's sense that 'science can be for me'.

A broad and ambitious science curriculum which is rich in skills and knowledge is encouraged through collaborative learning to challenge misconceptions and change thinking. In science lessons, students consider the social impact (both positive and negative) of science and technology. Students are encouraged to form reasoned opinions around 'big' scientific questions that are based in fact, not prejudice. Students are urged to be both open-minded and critical and to use their understanding of the world around them. Students are taught to develop an understanding of the relevance of science in the wider world and encouraged to take responsibility for their own health and wellbeing through their scientific studies. The science curriculum enables students to explore and celebrate research and development that have taken place in many different cultures, both past and present. We explore how scientific discoveries have shaped the beliefs, cultures, and politics of the modern world. Our vision for the science curriculum at The Albion is to encourage curiosity about science and the natural world by making science relevant.

To achieve a true understanding of science, topics have been intelligently sequenced to enable students to have a strong knowledge and understanding of scientific phenomena. This allows students to apply their knowledge to a range of scenarios so they can communicate their understanding of science effectively. Knowledge of science, and the scientific method, enables them to be scientifically informed citizens, but it also serves as the foundation for a career in science, or for careers that require some scientific understanding. In addition, we learn science because knowledge is an intrinsic good, and it is only by knowing more science that we can fully appreciate, and make sense of our place, in the universe. Practical work is at the heart of science and throughout the curriculum in both KS3 and KS4, students at The Albion Academy are taught not only the required practical element of the curriculum, but also additional practical lessons to enhance learning. There is a clear focus on the use of challenging vocabulary to boost the scientific literacy of our students. This enables our learners to articulate complex scientific concepts clearly. Glossaries are also provided in lessons and students are expected to use scientific language in both verbal and written responses. There are opportunities for students to use extended writing within each discipline of Biology, Chemistry and Physics.

Our five year science curriculum has been designed with the focus to create independent, curious, and critical thinkers of science. We want to bring the science knowledge alive with stories of resilience and triumph from the great historical thinkers that have developed our understanding of our planet and beyond. By continually revisiting the big ideas in Science and consolidating their learning, our students will be able to both appreciate the wonders of scientific discoveries made thus far and debate the issues that new scientific advances bring to us all.

All students will study the content outlined in the scheme of learning which has been constructed based on the following principles:

Challenge: Students are regularly given opportunities to challenge concepts and ideas and discuss and articulate views of science with passionate practitioners in real life contexts. Students will develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry, and physics. Whilst ensuring that students are well prepared for their terminal examinations, we also teach beyond the specification by offering a STEM club to students which has led to success in competitions. We have also challenged our students with cross-curricular collaborations where external providers have been invited in to encourage cross-curricular STEM links for students.

Coherence: We sequence our units to introduce knowledge and new ideas in a way that begins with the simplest and builds to the more complex, including a range of vertical concepts developed over time in a variety of contexts. Students are equipped to have the scientific knowledge required to understand the uses and implications of science, today and for the future. Science lessons at The Albion Academy provide students with a map to understand how what they are learning now relates to what has come before and what will lie ahead. At The Albion Academy, students are taught how changes in the Earth's atmosphere from millions of years ago can link with current high-profile topics such as climate change and how scientific discoveries from years ago are still relevant today.

Mastery: There are a range of strategies used to deepen knowledge so that it is committed to the long-term memory. This includes revisiting concepts and skills, building upon them and developing them in new contexts. Errors are also normalised so that expert teachers can pre-empt errors as part of their planning to address gaps swiftly, and students see error as a learning opportunity. Students that follow the triple science program of study are regularly encouraged to go beyond the specification to ensure they are A-Level ready.

Adaptability: Expectations in science are the same for each student, no matter their ability. However, lessons are adapted according to the specific needs of the student. There is a relentless focus on teaching to the top and providing scaffold, where necessary, to allow students to succeed. At The Albion Academy, we support students to obtain knowledge, understanding and skills to solve problems and make informed decisions in scientific contexts. We also encourage students to advance in scientific inquiry, to plan and carry out practical tasks using a variety of different scientific apparatus and draw relevant conclusions.

Representation: Students are equipped with the scientific knowledge required to understand the uses and implications of science today and for the future. A diverse range of names, images and scientists are used in resources throughout the curriculum so that students from all backgrounds recognise the relevance of science. Students are regularly taught how science can lead to different career options and develop scientific analytical skills which are transferrable.

Education with character: Students are urged to respect different opinions and values and how they impact on the scientific world and how society can impact on science. Ethical, culturally significant, and sensitive questions arise that go beyond the curriculum. Students are taught to have informed opinions whilst discussing these questions. Regular debate within lessons means that students have developed an understanding of nature, processes and methods of science through different types of science enquiries that help them to answer specific questions about the world around them. We equip students with the ability to discuss high profile topics with confidence and opinions backed by knowledge.