

## Science – Aims/Intent

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, students are taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, students are encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. Students are encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

**Our intent is to provide opportunities for students to:**

1. Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
2. Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
3. Be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

## Implementation

### **Key stage 3:**

In Year 7, every student is introduced to a sequence of 'Super Safe Science' lessons for the first two weeks. Here they look at how to handle apparatus for various experiments, as well as the level of caution required. Some of the other topics that are taught in Year 7 include Cells (Biology), Mixing, Dissolving & Separating (Chemistry) and Forces & their Effects (Physics). At the end of each unit, there is a test or a graded assessment piece, so that students and parents know how much progress is being made. There is also an end of year test.

In Y8 students look at units such as Getting the Energy your Body Needs (Biology), Explaining Chemical Changes (Chemistry) and Magnetism & Electricity (Physics). As in Year 7, all topics covered will have an end of unit and an end of year test or a graded assessment piece.

### **AQA Specification**

### **Key stage 4:**

In Year 9 all students start their GCSE preparation again, covering units in Biology, Chemistry & Physics. A majority of our students will complete the AQA Combined Science course. Top science students will be given the option to have additional lessons in one of the Option blocks and complete the Triple Science AQA course of separate Biology, Chemistry & Physics GCSEs.

In Year 10 and Year 11, students continue their GCSE preparation; they will do all their linear examinations at the end of Year 11. There will therefore be a number of assessments and intervention programmes before they sit these exams.

### **Key stage 5:**

In Year 12 and Year 13 students may opt to study one or a combination of either Physics, Chemistry and or Biology A Level courses in preparation for their prospective university degree courses. These courses will be examined at the end of Year 13.

## Impact

We aim to help students to see the relevance of science in everyday life and build on their knowledge already acquired in the subject. Some students come to Chiltern Hills Academy already with a wealth of information and experiences in science. Here they will have the opportunity to watch and participate in many exciting experiments. We also want students to develop the skills to explain what they are seeing in experiments and its relevance in a wider context. Students know what it means to be a scientist and the career pathways that are available to them.

### **Enrichment opportunities-**

In Science we run many opportunities to enrich student experiences such as STEM events both within school as well as national events. We run trips to the Science conferences in London, BIG BANG fares locally and TEENTECH. This year we have worked with the Royal Institute for Science conducting student/parent engagement sessions.