



# Science Faculty Curriculum Overview

*'Science knows no country, because knowledge belongs to humanity, and is the torch which illuminates the world'- Louis Pasteur*

## Intent of the Science Curriculum

The study of science at Biddick Academy aims to develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. Through enquiry, it will develop the students understanding of the nature, processes and methods of science to help them answer questions about the world around them. It will equip students with the essential skills required to understand the uses and implications of science, both today and for the future.

Our Science Curriculum aims to foster a healthy curiosity within students about our universe and promote respect for the living and non-living. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes which are essential in our world today. Students will acquire these enquiry skills by discovering the theory during lessons, they may pursue their own investigations into the facts, for example to observe 'Hooke's Law' for themselves or to make their own sample of large, dry salt crystals. They practise using equipment, conducting experiments, building arguments and explaining concepts confidently so they can make justified conclusions to explain their own experimental results.

We want our student to continue to be curious.

## The Implementation of the Science Curriculum

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all students can achieve high standards. We aim to develop curious and independent learners.

Science is taught in planned and arranged topic blocks, demonstrating pace and challenge, by the class teacher. Through ongoing faculty collaborative planning, we involve problem solving opportunities that allow students to learn by doing. Students are encouraged to ask their own questions and are given opportunities to use their scientific skills and research to discover the answers. Our intent is to promote and celebrate curiosity within the classroom by including real life references, from bungee jumping to the materials involved in making the 'Angel of the North'.

Highlights of our spiral curriculum include the addition of a 'Big Question' per unit to focus key ideas, the sharing of the learning location of the topic together with the use of differentiated extended writing tasks in KS3. These lay the foundations for our assessed '6 mark' KS4 questions to promote logical and well organised science thinking. Experimentation and modelling are used to develop and evaluate explanations to facilitate critical, organised thinking together with creative thought.

We build upon the learning and skill development of previous years through a spiral curriculum. For example; KS3 students are introduced to the fundamental principles of the particle model and states of matter; KS4 students are extended to consider how (and why) atoms bond together as well as the internal energy of particles, latent heat of fusion and vaporisation.

## The Impact of the Science Curriculum

A successful approach at Biddick Academy will result in a fun, engaging, high-quality science education, that provides students with the foundations and knowledge for understanding the world. Through various trips and interactions with experts, students have the understanding that science has changed our lives and that it is vital to the world's future prosperity and sustainability. Students learn the possibilities for careers in science, as a result of our connection with national agencies such as the STEM association, ensuring that student have access to positive role models within the field of science from the immediate or wider community. Students are taught to value past developments, but also understand the impact of human actions on the environment and the need to preserve it for future generations. They discover how scientific ideas contribute to technological change - affecting industry, business and medicine and improving quality of life.