LYTHAM ST ANNES HIGH SCHOOL

VISION AND PURPOSE

SCIENCE

It is our intention to have a science curriculum which is taught in an engaging, stimulating and intellectually challenging environment. We aim to encourage and enable students to:

- Develop inquiring minds and curiosity about science and the natural world.
- Develop skills of scientific inquiry to design and carry out scientific investigations and evaluate scientific evidence to draw conclusions.
- Increase scientific literacy and engagement with science in the news, developing the knowledge, wisdom and skills required to make informed decisions based on evidence and fact.
- Stimulate thought and awareness of the applications and real-world importance of scientific study.
- Promote a broad understanding of the multiple science-based careers available, especially STEM based careers.

We study science because we believe it is key to understanding and engaging with the world around us. The science curriculum has depth and breadth and covers a broad range of ideas that have many cross-curricular links. We aim to explore and develop these ideas to give our pupils strong contextual knowledge so they can understand the relevance of science in the real world, engage with science in the news and to encourage those with aspirations to work in STEM based careers. To enhance this we aim to improve our links with STEM industry leaders by inviting in speakers and attending educational visits where appropriate.

VISION AND PURPOSE

There are many examples in the curriculum of how science has improved the quality of our lives but it also addresses when scientific ideas have been less constructive. We want our students to have the skills, behaviours and knowledge to relate to the world around them with confidence, make informed decisions and envisage solutions. We want our students to have powerful knowledge that enables our students to understand and think beyond the limits of their own experience. We also aim to highlight to students the many opportunities embedded in our science curriculum for them to develop their employability skills such as problem solving and organisational skills.

Science allows us to develop cultural capacity in students and we are developing our schemes of learning to implicitly include opportunities for students to develop this. We are developing our schemes of learning to include opportunities to explore the impact of science on the wider world and to give credit to the women and people from ethnic minorities who have contributed to the science canon.

To ensure students have a firm grasp of scientific concepts, the curriculum is sequenced in an appropriate order, carefully building on previously learned knowledge. The big ideas in science, have been mapped through the curriculum so that links between topics can be made and therefore schema can be built upon. As well as substantive knowledge, students at LSA develop an understanding of the declarative knowledge in science learning about how theories eventually become facts and how evidence can be gathered to support this.

We believe that it is important for all students to engage with practical work and spend time learning in a lab. Practical activities at LSA are purposeful and related to a specific part of the curriculum. Some practical activities are designed to give students the opportunity to develop their investigation skills, other practical activities are undertaken to demonstrate phenomena that is key to their understanding of some scientific concepts.

Good literacy skills are critical for the successful study of science at LSA and so we have built the development of scientific literacy into our curriculum. We focus on various strategies for the teaching of tier 3 subject specific vocabulary. As well as developing the skills needed to ‘read like a scientist’, our texts are chosen to engage and challenge students allowing opportunity for students to further develop their cultural capital.

VISION AND PURPOSE

KS3 (Years 7 – 9)

Our KS3 curriculum gives students the opportunity to work safely and competently in a laboratory and develop practical skills with an increased range of apparatus to make more complex and accurate measurements. At KS3 we teach through the big ideas of forces, electromagnets, energy, waves, matter, reactions, Earth, organisms, ecosystems, and genes.

KS4 (Year 10 and 11)

Teaching in the sciences in key stage 4 continues with the process of building upon and deepening scientific knowledge and the understanding of ideas developed in earlier key stages in the subject disciplines of biology, chemistry, and physics.
At KS4 students have the opportunity to opt for either combined science GCSE or triple science GCSE (AQA exam board).

In combined science, students study all three sciences (Biology, Chemistry and Physics) and are awarded two GCSE grades based on their overall performance across all three science subjects. In triple science, students study all three sciences and are awarded with three GCSEs.