Science at Ormiston Latimer Academy

Intent:

The study of Science at Ormiston Latimer is relevant and delivered contextually whilst developing investigative, numerical and analytical skills. All students study the three disciplines; Biology the study of organisms & their interdependence, Chemistry the study of matter, and Physics the study of fundamental interactions. From within these three disciplines, the 'big ideas' in science are distilled.
Key concepts and topics are revisited to allow for gaps in knowledge to be identified and progress to be made. Our Science scheme aims to educate learners in a way that will support not only their short term but longer term outcomes. This is done through practical and theory work. Discussion of current affairs and every day phenomena create interest in science and impart knowledge that will enable learners to make and maintain both a positive outlook and achieve in Science.

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Progress

- New learners are assessed informally on entry to identify prior knowledge and gaps in the KS3/KS4 curriculum.
- Learners will be assessed by the subject teachers, using assessments specifically designed to meet the needs of our learners, within the parameters of the National Curriculum for KS3 and AQA Trilogy GCSE for KS4.
- Science units of work will be assessed by both internal teachers, to ensure quality of marking and appropriate grading levels.
- Learners will involved in how well content has been understood and how learners can improve both skills and knowledge is done throughout the term, when covering units of work.
- Learner's books will be marked with clear next steps being made. Learners will have the opportunity to amend pieces of work on a regular basis.
- Formative assessment will take place throughout units of work delivery, and summative assessments at key points in the year.

Support

- Learners will have an accessible and inclusive Science curriculum where opportunities for interventions will be identified via medium term planning.
- External professionals will be brought in to deliver specialist activities to support the curriculum, and learners needs as and when needed.
- Students will benefit from experience and trained teaching staff in Required Practicals (KS4) and other activities.
- Differentiated work will be created for individuals where needed, ensuring that all learners are been stretched or supported. Ensuring that progress is being made throughout the curriculum.
- Particular learners have different support mechanisms which are in their EHCP's.

Links with SMSC, English and Maths

- Calculations in various experiments and real world data analysis
- Speaking about British Values and making links to scientific situations
- Post 16 applications and opportunities
- Listening, comprehension and feedback skills
- Reading out aloud
- Learning new vocabulary and tier three words
- Personal, Social health and Wellbeing in key units of work to include Health and Disease and Drug interactions.

Implementation and Content

KS3

- Learners will follow the curriculum (biology, chemistry and physics) as well as additional activities delivered by external agencies (nature school). Units include: Cells, Tissue and Organ Systems; Ecology; States of Matter; Elements and Compounds; Forces; Light and Sound; Electricity and Magnetism and Gravity & Space.
- There will be a heavy emphasis on learning, understanding and demonstrating the outcomes of each activity including the investigations being carried out.
- Learners will continue to develop the fundamental skills specific to each area of science, as well as covering areas of theoretical content and experiment design.
- The curriculum is designed to encourage a healthy, active and curious lifestyle, as well as being enjoyable, achievable- but still challenging.

KS4

- Learners will understand the structure and function of the cell to help build an appreciation of all varieties of life form..
- They will look at genetics and the interplay of life forms in ecological terms.
- Learners will get a grounding in atomic theory and how that builds into practical applications of chemistry. This develops into an appreciation of the earth's (finite) resources.
- An appreciation of the many forms, uses and transformations of energy will follow. This leads onto how particles do work in phenomena such as waves and electromagnetism.
- Ultimately how our world is underpinned by scientific awareness is the overarching basis for responsible citizenship.

CIAG

- Learners will be supported with science-related courses for their post 16 placements.
- Learners will be made aware of the various career opportunities available in the science-related industries.
- Learners will have the opportunity to experience working safely independently and collaboratively with others.
- Learners will learn about the world they live in, the many vocations, jobs and roles related to their studies and how to make and take opportunities.

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ORMISTON LATIMER ACADEMY

What are the objectives for your curriculum?
To ensure that a broad and balanced Science curriculum is offered to all learners whilst developing investigative and numerical skills.

Impact: What do you want pupils to be able to know and do by the time they leave?
As well as achieving GCSEs in Combined Science, we want pupils to leave with an appreciation of Science and how it underpins all aspects of our every day lives. From space travel to weather and climate to the food and medicines we consume, the understanding of Science is important to make informed opinions and choices that affect on many different levels. Learners should be able to analyse and evaluate data and evidence and utilise the skills they gained in Science in a variety of different contexts.

What values have guided your decisions about the curriculum you have in place?
We want all learners to appreciate the importance and excitement of studying Science regardless of their prior attainment or experience. All learners are entered for Combined Science GCSE and the course is tailored to allow access to those with SEND. We target the most able learners with additional support as well to ensure they make aspirational progress even in the context of difficult personal circumstances.

How does your curriculum reflect your school's context?
Most of our learners have had mixed experiences with the subject in the past and may not have the firm foundation needed to be studying at an age appropriate level. By simplifying the curriculum and making it more accessible learners will rediscover the joy of studying Science whilst making progress in the knowledge and skills required for the course. We offer the Entry level Certificate alongside the GCSE qualification if appropriate for some learners.

How does your curriculum reflect national policy (for example, British values and PSHE)?
Personal, social health and wellbeing are identified in key units of work to include Health and Disease and Drug interactions. Science related current affairs extended discussions include Climate Change and Covid-19 Pandemic (and other diseases).

How does it cater for disadvantaged and minority groups?
Science is made relevant and certain topics prioritised. The most disadvantaged learners have had a disrupted education and the focus on supporting literacy and numeracy in the curriculum as well a breaking down key concepts is embedded in the all areas of practice.