ACE SCIENCE CURRICULUM INTENT

INTENT:

What is the curriculum aim / vision for this subject?

- To guide students to become scientifically knowledgeable, scientifically literate and methodical problem solvers, by fostering a spirit of independent inquiry, nurturing curiosity and bringing current, relevant, real world science into the classroom.
- We are committed to raising standards of achievement and promoting a lifelong culture of learning through an education in science.

We aim to do this by:

- Stimulating an interest in, and enjoyment of, science.
- Providing the opportunities and challenge for all to achieve their full potential.
- Providing a relevant science curriculum.
- Encouraging a culture of questioning and feeding the natural inquisitiveness of students.
- Developing an awareness of the social, economic and environmental implications of science that will enable pupils to contribute positively to society.
- Providing the best possible standard of teaching and opportunities for learning.

What do we expect students to get from this subject?

- Students become increasingly independent, building confidence in practical and data handling skills and greater depth of understanding in each topic.
- Students develop an understanding of the relevance of STEM in the wider world and the associated career opportunities regardless of background.
- Students develop and understanding of and their responsibility for their health and also risk factors associated with unhealthy choices, drink and drugs.
- Students make a positive contribution to the learning of others through the development of their team-working and practical skills when appropriate.
- Engaging and stimulating lessons lead to students enjoying lessons and making accelerated progress taking into account their medical condition and attendance.

How have we planned this?

- Guided by the national curriculum and focused on key knowledge and skills to allow for deeper learning on a part time timetable.
- We plan to deliver a 3 year KS3 and 2 year KS4 to ensure a wide variety of national curriculum content coverage.
- Cross curricular links are made when possible throughout all curriculum content. Maths skills are taught when possible to meet the demands of the science national curriculum and support the maths curriculum. Clear links with PSHE, Geography, English and History are threaded throughout the Science curriculum at ACE.

Cultural capital is an integral part of Science at ACE. We intend to increases the amount of educational visits to enhance pupils' cultural capital over time.

Sequencing- The science curriculum objectives are sequenced in order to build on prior knowledge from KS2 with clear progression to KS3 and KS4. This is supported by expert knowledge on objective sequencing from qualification providers. However, due to the nature of our service lesson objective sequencing can be flexible and adapted to meet the learning needs and support learning gaps.

We aim to build on KS2 prior knowledge and skills and provide building blocks to access the KS4 national curriculum, allowing students to achieve their potential and move on successfully to post-16 provision.

- Planning takes into account lack of attendance at school prior to referral. In addition, consideration is given to their individual medical conditions and ability to attend all lessons at ACE.
- Every attempt is made to provide a breadth of curriculum coverage whilst still providing opportunities for in-depth learning.

Integration and transition post 16

Before students arrive for their 1st lesson teachers will access any available school data to gauge the ability of the student. Teachers will spend time reading pupil passports, seeking pupils' interests and struggles from their previous setting. This helps to slowly integrate the student into their science lessons making them feel as welcome as possible. This may result in an extended settling in period where pupils will not be expected to engage in the classwork until they feel ready. High expectations will be discussed and pupils will receive regular constructive feedback verbally or written in which they are expected to act upon in line with our marking policy.

Throughout their time at ACE all opportunities are used to help pupils develop the relevant and necessary skills required to transition onto a range of post -16 opportunities. These real life skills are constantly being developed thought out the ACE science curriculum when relevant.

IMPLEMENTATION:

How does learning develop over the five years?

In Years 7/8/9 students follow the national science curriculum. Topics are chosen to cover a wide range of essential skills and knowledge required to support progress into KS4. This covers, Biology, Physics and Chemistry.

These are taught in a rotation to develop a deeper understanding of the key concepts and ideas required at KS4 level. This is really helpful as it supports pupils who have the aim to return to school and complete all 3 sciences at KS4 Level.

The structure of the curriculum ensures that knowledge, application, understanding and evaluation are developed and that these skills are transferable and that students develop their problem-solving, metacognition and critical thinking.

What principles have guided our decision making in developing this curriculum? What is distinctive about our curriculum?

Deep questioning, magenta principles, planned repetition, high challenge/low threat activities, innovative teaching and the use of different learning theories are used to make our curriculum distinctive for our pupils.

We set high expectations of all students regardless of their medical background (physical or mental health). Students are challenged to attain GCSE knowledge and skills from the moment they join ACE.

Key concepts, knowledge and skills are scaffolded to lead students towards greater depth of understanding. Also, as AQA is the most widely taken exam board, it facilitates opportunities for data analysis and collaboration that we would not have otherwise. In Years 7, 8 and 9 the National curriculum is delivered through a programme of study which empowers the teacher to adapt their teaching to the individual strengths and weaknesses of the students. In this way, bespoke delivery ensures that all Students are supported and stretched according to their needs.

In what ways does your curriculum help to develop…?

- Cultural diversity and identity: Ethical debates cover a range of issues
- Physically and mentally healthy lifestyles: Healthy eating, drugs, diet and sexual health all feature in the curriculum.
- Technology and the media: 'science in the news' starter activities used as part of literacy drive highlight current issues.
- Creativity and critical thinking: The use of the Magenta Principles are used to develop a deeper understanding of key concepts when possible through a range of activities.
- Critical thinking is developed through questioning and the scientific method. The key skills of analysis, communication, enquiry and problem solving are embedded in the ACE Science curriculum.

IMPACT:

What forms do assessments take? What is the purpose of assessment?

Assessment is used as a diagnostic tool to inform future planning an intervention. Assessment takes many forms to cover the assessment objectives of the followed syllabi. Peer and self-assessment is embedded and is a feature when its suits the medical needs of the students.

Years 7 to 9- Pupils are assessed three times throughout the year when the teacher deems appropriate. This will be a summative assessment based on prior learning, and recent learning. Each assessment will have a variety of question styles to meet pupil needs and address the key concepts taught throughout the curriculum. Each assessment will have a

minimum percentage score (80%) which pupils are expected to achieve to demonstrate progress within Science.

Years 10 to 11: End of topic or half term tests which will not only test recent learning but will check on prior learning from a previous topics. The amount of prior learning assessed will increase as the course progresses. Past paper questions are used extensively to address all specification AOs.

AQA Biology – Required Practical's

Throughout year 10 and 11 pupils are expected to complete 10 required practical's alongside practical based questions. These practical's will be assessed in their end of year 11 GCSE exam.

Where possible all practical's are carried out during class time. However, some will be theoretical due to a lack of laboratory space.

These are a legal requirement of the course and are internally moderated by SLT.

How do we know if we have a successful curriculum?

Success is measured by improvement in student outcomes in science. Scrutiny of pupils' work, teacher observations, learning walks, pupil voice and regular review meetings to access individual pupil progress.

Increased participation in, enrichment opportunities outside of the classroom and also increasing post-16 engagement with other service providers.

Reading:

At ACE we are passionate and dedicated to promoting the importance of literacy. We aim to facilitate student's success to expand and enrich subject knowledge and opportunities in life.

In order to introduce, embed and master vocabulary we at ACE will:

- Collaborate to share common vocabulary amongst subjects

- use literacy learning mats

- widen student's vocabulary and deepen learning to apply the language in different contexts.

- provide opportunities through cross-curricular vocabulary through a common theme to support and develop exposure to new language and exam terminology to increase confidence.