Key Stage 3&4 Science Curriculum

Chelsea Community Hospital School

At Chelsea Community Hospital School (CCHS), the Science curriculum is taught following the 2014 National Curriculum (Key Stage 3) and the 2016 and 2017 National Curriculum (Key Stage 4).

For pupils at Key Stage 4 who are dual enrolled, we will follow the exam boards being followed by their home school. At our Community site, where pupils are sole registered, we follow the AQA GCSE Combined Science Trilogy pathway.

In addition, at CCHS we also recognise that learners in a hospital school setting have often missed significant periods of school and may join us with spiky learning profiles and gaps in their learning. They may also be experiencing symptoms of a condition and be in the process of undergoing treatments that can impact on their cognitive ability at that time. To respond to these dynamic needs CCHS staff tailor teaching and learning in the Science curriculum, across the Key Stages to the level and pace specific to each pupil. For all areas of the Science curriculum we use our own planning, set work from a student's enrolled school, exam syllabuses and the pupil's interests as an aid to motivation and engagement.

Personalising our curriculum in response to pupils' individual needs, interests and 'home school' curriculum requirements will ensure that they return to their home school feeling confident, resilient and motivated.

Intent

We are committed to ensuring that our students receive engaging and well-rounded Science lessons at the appropriate level. Through the study of science, we encourage our pupils to be inquisitive and to develop a curiosity and respect for the world around them. Pupils explore the key knowledge identified in the curriculum alongside the development of important scientific skills. Whether children are being taught in isolation or in groups, we ensure that they are given varied opportunities to learn through experiments, investigations, research and discussion. We are committed to providing engaging and exciting science experiences to all our pupils to encourage a lifelong curiosity and interest in the sciences.

In line with the 2014 National Curriculum for science, we aim to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- develop understanding of the nature, process and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- Are equipped with the scientific skills required to understand the uses and implications of science, today and for the future.

Implementation

At CCHS, teachers nurture positive attitudes to science learning and adapt their approach to suit the specific requirements of each pupil either individually or within a group setting. We believe that all pupils can thrive in science and have systems in place support this. Our approach to the teaching and learning of science involves the following:

- KS3: We have implemented the 2014 National Curriculum for Science. We have based our curriculum map around the AQA Key Stage 3 Syllabus but recognise that it might be more appropriate to teach topics in a different order based on the needs of individual students.
- KS4: Solely registered students can study GCSE Combined Science (AQA Trilogy)
- For longer term pupils at both Key Stage 3 and Key Stage 4, we will liaise with their home school and offer the specific science topics that they are missing.
- Students are taught in the classroom (1:1 or small group sessions), or by their bed, where applicable, allowing us to offer individual attention and real-time feedback during lessons.
- Teaching is always done with a view to revise, provide an overview of the subject and fill gaps, and the students are encouraged to ask questions and express preferences for the topics they feel they don't master very well and might need help with.
- Planning for specific lessons is adjusted to address specific individual needs and is in a continuous feedback with formal and informal assessment of progress and needs.
- Students can take exams in the hospital during their admission where necessary.
- We give children the resources, time and space to use problem solving skills, discussion, research and to ask questions that interest them.
- Curiosity is celebrated within our school and we promote a learning environment where students feel confident enough to make mistakes and embrace this as an important part of the scientific process.
- Teachers use assessment for learning techniques, such as precise questioning, to ascertain previous knowledge, identify potential gaps and assess understanding.
- Activities are effectively differentiated so that all children have an appropriate level of support and challenge.
- Teachers encourage pupils to use a range of methods to record their work in science including writing, tables, diagrams, videos, audio recordings, posters and photographs.
- Children are given a range of opportunities to use scientific equipment, collate and interpret results and discuss ideas.
- New vocabulary is introduced through direct teaching and modelled by the teacher. Children are given plenty of opportunities to revise and use new vocabulary.
- On the sites where it is possible, pupils are encouraged to use the outdoor environment to collect data and make observations. Where this is not possible, we use photos, videos and bring outside resources to the pupils (in keeping with specific infection control measures).
- Introduce and explore a range of diverse scientists and inventors relevant to specific topics.
- Science Week is promoted throughout the school to get children even more excited about science, to provide a wider range of experiences and contexts and to highlight its relevance to everyday life.
- Teachers can access a range of resources to ensure that all areas are covered and that science is taught to a high standard. These include science progression maps (for both the knowledge and enquiry skills) and a yearly curriculum map. In addition, plans from a pupil's home school can be adapted as can Switched on Science schemes of work. This ensures that teachers are equipped with secure scientific subject knowledge, enabling them to deliver high-quality teaching and learning opportunities while making them aware of possible misconceptions.
- Students on each of the school sites have access to a qualified science teacher specialist.

Impact

The approach at CCHS results in a fun, engaging, high-quality science education for our pupils. We encourage them to ask questions and develop the necessary skills to explore and answer them. Students who feel confident in their science knowledge and enquiry skills will be excited about science, show that they are actively curious to learn more and will see the importance of science in the real world. Students will also recognize that the skills learnt in science can be applied to other subject to help with their understanding. Students learn that science has changed our lives and is vital to our future. We want our students to understand the process of scientific activity as well as the ideas to which it leads, that is, to know how the ideas that explain things in the world around have been arrived at not just what these ideas are. We encourage all our pupils to feel that science is an area in which they can achieve and to learn about the possibilities for careers in science including in fields where students might not previously have seen the link to science such as technology. We endeavour to ignite and encourage a love of science in our pupils while learning with us, but also for the future.

EAL

EAL learners may face a range of challenges in terms of the language requirements of science. However, practical science sessions can also provide important opportunities for language development because they are often collaborative and provide a rich context for learners to communicate. At CCHS, we help EAL learners in science sessions by:

- Using visual diagrams alongside verbal or written instructions and information.
- Using online animations and videos.
- Pre-teaching new vocabulary and modelling how to use it in a range of contexts.
- Using science dictionaries, word mats and glossaries.
- Modelling effective use of language.

Providing opportunities for children to work in groups where possible so that language is also modelled by their peers.

SEN

CCHS is an inclusive school and we aim to give all our students equal access to our classrooms and resources regardless of their special educational needs or disabilities. In science, students with SEN will be supported to engage meaningfully in their learning through quality first teaching whereby they receive high quality teaching, differentiated for individual pupils using individualised strategies, support and curricula which are reviewed and improved on a regular basis.
Given the unique changing profile of our students there are specialised SEN teachers which can be consulted to offer targeted and specialised support through high quality interventions (see SEN Curriculum Statement for further information).

In science, children are given opportunities to feedback their ideas in a range of diverse ways whether that be writing, speaking, drawing, voice recordings or using their own specific means of communication. If children need to be seen at their bedside, they are still given an equal amount of opportunity for practical experiments and investigations. The exciting, hands-on elements of science are not only important for the learnin