

DFE guidance April 2019 states that local authorities may specify requirements as to effectiveness ... in deciding whether education is suitable, whilst accepting that this must be applied in relation to the individual child's age, ability and aptitude. Children will be at different levels, some may be in advance, some at a lower level and some children may be working towards the minimum standard. Our Home Education Advisor will discuss where you think your child is and what your plans are in relation to providing a suitable education.

Students from Year 7 through Year 11 should develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. They should develop an understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them. They should be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Students should be able to:

- describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely;
- demonstrate an extended specialist vocabulary;
- apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data;
- explain the social and environmental implications of science, where applicable.

Students should understand:

- the connections between these subject areas and become aware of some of the big ideas underpinning scientific knowledge and understanding. Examples of these big ideas are the links between structure and function in living organisms (biology), the particulate model (chemistry) as the key to understanding the properties and interactions of matter (chemistry) in all its forms, and the resources and means of transfer of energy (physics) as key determinants of all of these interactions. They should be encouraged to relate scientific explanations to phenomena in the world around them and start to use modelling and abstract ideas to develop and evaluate explanations.
- that science is about working objectively, modifying explanations to take account of new evidence and ideas and subjecting results to peer review. Students should decide on the appropriate type of scientific enquiry to undertake to answer their own questions and develop a deeper

understanding of factors to be taken into account when collecting, recording and processing data. They should evaluate their results and identify further questions arising from them.

- develop their use of scientific vocabulary, including the use of scientific nomenclature and units and mathematical representations.

Through the content across all three disciplines, students should be taught to:

- pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
- understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review and evaluate risks
- ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
- make predictions using scientific knowledge and understanding
- select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate
- use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
- make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
- apply sampling techniques
- apply mathematical concepts and calculate results
- present observations and data using appropriate methods, including tables and graphs
- interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
- present reasoned explanations, including explaining data in relation to predictions and hypotheses
- evaluate data, showing awareness of potential sources of random and systematic error
- identify further questions arising from their results
- understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
- use and derive simple equations and carry out appropriate calculations
- undertake basic data analysis including simple statistical techniques

For details on the subject content, please see the National Curriculum for Key Stages 3 and 4

Example minimum expectations

Camden in line with [DFE guidance](#) has set some example minimum expectations for education in Maths and English for each Key stage – See Section 2.10 in parents guidance and 9.4 to 9.6 in LA guidance. **There is no requirement for you to follow these examples**

These are indications for parents and our advisor to get a better understanding of the education your child is receiving. We recognise that children will be on journey in their education some child will be at expected level, some will be in advance of their key stage indicator, some may be working towards the indicator or some children due to their education needs maybe below the indicator. You may find that children can do some elements of the different indicators as well.

Knowing where your child is can be helpful for you in setting work for them, ensuring it is appropriate for them but can also help you know where they could be “stretched” or work needs to be reviewed. It will also enable our home education advisor to offer a tailored set of advice for each child and make suggestions for parents so they can help support their child reach the minimum expectations where appropriate.

March 2021