



love the journey

Curriculum Implementation 2023-24

Secondary

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| LCA Strand | Technology, Enterprise & Sport |
| Subject | BTEC Computing |
| Key Stage | Key Stage 5 (Chapter 12-13) |

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| What are the key concepts taught? | <ul style="list-style-type: none"> • Unit 1 is an examined unit that covers the principles that underpin all areas of computer science. It will develop students computational-thinking skills and you will apply those skills to solve problems. • Unit 2 is another examined unit where students will study the fundamental principles of how computer systems work, including the role of hardware and software, the way components of a system work together and how data in a system is used. • Unit 14: Computer games development is a coursework unit. Students will investigate the computer games industry and its impact on technological and social trends. They will design and develop a computer game to meet requirements. • Unit 7: IT systems security and encryption is another coursework unit. Students will study IT system security threats and the methods used to protect against them. Students undertake activities to protect IT systems from security threats, including data encryption. |
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| What is the sequencing of units? | <ul style="list-style-type: none"> • Year one: Unit 1 (6 lessons per fortnight) • Year one: Unit 14 (3 lessons per fortnight) • Year two: Unit 2 (5 lessons per fortnight) • Year two: Unit 7 (4 lessons per fortnight) |
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| How do we encourage pupils to see the links between different units and concepts? | <p>By showing links between the different concepts taught helps to develop the pupils critical thinking and problem-solving skills. Some methods used are:</p> <ul style="list-style-type: none"> • Real-world examples to show pupils the connection and to see how they are applied in the real world. • Visual aids: diagrams/mind maps/flowchart |
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| | <ul style="list-style-type: none"> • Class discussions to allow pupils to hear different opinions from their peers |
| <p>What are the planned opportunities for adaptive teaching, including for SEND, the more and able and disadvantaged pupils?</p> | <ul style="list-style-type: none"> • Real-time feedback – providing feedback to pupils as they're working through the lesson activities. • Varying the lesson pace allowing pupils to work at their own speed through scaffolded resources or video tutorials. • Variety of teaching strategies to support different learners, i.e. hands-on activities to help pupils learn best through practical tasks. • Gamification of lesson activities to engage learning particularly with disadvantaged or SEND pupils |
| <p>What are the planned opportunities for retrieval and reflection by pupils?</p> | <ul style="list-style-type: none"> • Do it now / retrieval tasks at the start of the lesson to check previous understanding • Use of revision software like know it all ninja gives pupils opportunities to test their knowledge of long answer questions, quiz questions and key terminology. • Past exam questions to prepare for the exam but to also improve their recall • Provide personalised feedback for each student on their class notebooks. This is done at each phase of their coursework submission. Audio feedback is given to allow pupils to improve their work. • Review quizzes: Like knowitallninja, Kahoot or Quizlet can be used to recall information from previous lessons. • Peer feedback: pupils give their peers valuable feedback on tasks completed • Encourage self-reflection: Encourage students to reflect on their learning and identify areas where they need further support. |
| <p>What are the opportunities for feed forward by the teacher post assessment outcomes?</p> | <ul style="list-style-type: none"> • In coding lessons pupils are given specific recommendations for improving the syntax of the code, structure or logic. • Teachers regularly review the levels of attainment of each pupil to set them targets for the next progress phase. Students are also encouraged to set their own targets on the LC assessment record forms. • Departmental data allows teaching staff to analyse and identify student's levels, which helps to inform future planning. |
| <p>What are the planned opportunities for developing Reading?</p> | <ul style="list-style-type: none"> • Giving students the opportunity to read out loud, i.e. reading the instructions for an activity or reading a context statement. • Key technical terminology displayed for all pupils to see • Using case studies to provide pupils with real world examples of how technology is used in industry. |

- Using online digital resources (e.g. online tutorials to provide pupils with interactive reading opportunities)

What are the planned opportunities for developing literacy, numeracy, oracy and SMSC?

Literacy:

- Students are given the opportunity to write in a range of styles, like technical reports, instructions and code documentation, using appropriate grammar and spelling. Their coursework requires them to demonstrate their understanding of computing concepts and communicate their ideas effectively.
- Peer reviews: During their coursework tasks students peer review each other's work, providing constructive feedback on content, and style.

Numeracy:

- Students will learn numeracy through algorithm design as it will develop their logical reasoning skills to solve problems.
- Using binary and hexadecimal allows pupils to learn new number systems and be able to convert between them.
- Teaching pupils to program helps to develop their ability to use mathematical concepts like: variables and functions to solve problems.
- Students can learn about numerical concepts related to cybersecurity, such as encryption and decryption algorithms, checksums, and hashing algorithms.
- Encouraging students to solve real world problems using mathematical skills.

Oracy:

- By modelling clear and effective speaking in the teacher's own communication.
- Students have the opportunity to deliver presentations to the rest of the class
- Provision of regular feedback on student's oracy skills
- Students also get the opportunity to have paired/group discussions to help develop their speaking and listening skills.

SMSC:

- Students get the opportunity to work on joint tasks/projects to help develop their social skills and to help them work effectively in teams. The main area they get to work together is through paired programming challenges, which occur each week.
- Students will explore algorithm bias in artificial intelligence and machine learning systems and discuss the implications of this.
- Pupils also look at the responsible and safe use of digital technologies, such as cyberbullying and digital citizenship.
- Students also look into open source software and intellectual property, exploring issues like software patents, copyright infringements etc