

Key Stage Three ICT and Computing Curriculum Outline

Year 7 Curriculum

In Year 7 we focus on introducing students to our computer network, the Google Suite of software and the necessary digital skills of saving, editing, locating work and uploading work to Google Classroom. This is an essential skill they will need in life. We then balance topics which are useful across the curriculum (e.g. presentations, websites) with topics that will support their programming & computational thinking skills (e.g. Scratch programming, Micro:bits).

The vital topic of online safety is underpinned throughout and prior knowledge is drawn upon throughout the curriculum, as well as in a dedicated topic. Students are encouraged to develop problem solving and reasoning skills throughout each topic covered. Topics are generally delivered across a term with either an online assessment to gauge progress or a final creative piece marked with feedback

Assessment: There is a summer exam which covers work from the entire year which takes the form of an online assessment. In Year 7 this is mostly multiple choice.

Grades will be awarded by the class teacher following marked work at least once a term

Timeline	Content and assessments	Skills/ Keywords
Term 1	Digital Literacy Learning how to use a computer safely and navigate successfully through an online world. Assessed through an online safety poster and multiple choice quiz.	<ul style="list-style-type: none">● Touchtyping● eSafety● Computer viruses● Passwords● Digital footprints● Cyberbullying

<p>Term 2</p>	<p>Programming with Micro:bits A good introduction to programming using blocks and these small programmable computers.</p> <p>Assessed through a coding challenge that covers different programming skills.</p> <p>BEBRAS Computational Thinking Challenge A fun online problem solving challenge which helps highlight students with potential in computational thinking.</p>	<ul style="list-style-type: none"> ● Inputs and strings ● Loops, logic and variables ● Functions <ul style="list-style-type: none"> ● Computational thinking
<p>Term 3</p>	<p>Interactive Presentations Using presentation software to tell a story in a creative way, that allows the audience to make choices about how the story develops.</p> <p>The final product is assessed based on success criteria.</p>	<ul style="list-style-type: none"> ● Planning ● Themes and links ● Transitions ● Animations & animated GIFs ● Sound and video ● Easter Eggs ● Testing and evaluation

Term 4	<p>Using HTML and CSS to build web pages Designing and producing a functional website based on a hobby or interest gives a good insight into how websites work on the Internet.</p> <p>The final website is assessed based on the HTML and CSS skills that have been used.</p>	<ul style="list-style-type: none"> ● Writing basic HTML code. ● Inserting images ● Hyperlinks ● Using CSS to format a basic webpage ● Linking CSS to a HTML page
Term 5 & 6	<p>Programming with Scratch A creative way of programming using blocks - with a focus on debugging and problem solving. This builds on the programming carried out with the Micro:bits from term 2.</p> <p>Students complete a partially-built program using the programming skills that they have learnt throughout the topic.</p>	<ul style="list-style-type: none"> ● Sequencing ● Variables ● Selection ● Count-controlled iteration ● Problem solving
Term 6	<p>Computational Thinking Gives students an understanding of how to think like a computer through team building and problem solving activities.</p>	<ul style="list-style-type: none"> ● Decomposition ● Pattern recognition ● Abstraction ● Algorithms ● Testing ● Debugging
<p>How to support your son: Ensure that your son checks his school emails and Google Classroom on a daily basis Encourage your son to watch the news (we recommend News Round) and to be interested in stories around technology Encourage your son to do his own research about how computers work Practice problem solving puzzles with your son to help them develop their computational thinking skills</p>		

Year 8 Curriculum

Year 8 builds and expands on skills and prior knowledge acquired in year 7.

Students are encouraged to plan, design, develop & evaluate for each topic to develop problem solving and reasoning skills.

Topics are generally delivered across a term with either an online assessment to gauge progress or a final creative piece marked with feedback. There is a summer exam which covers work from the entire year which takes the form of an online assessment, in years 8 and 9 we have increased the number of longer answer questions to ensure the students are prepared for these types of questions if they choose to continue with either computer science or interactive media in KS4.

Grades will be awarded by the class teacher following marked work at least once a term.

Timeline	Content and assessments	Skills/ Keywords
Term 1	Representing Data: Images, Sound and Text Builds on the concepts learnt in year 7 interactive presentation topic, but looks in more detail at how images, sound and text are stored and used in a computer system.	<ul style="list-style-type: none">● Bitmap Images● File formats● Compression● Vector Graphics● Representing Sound● Representing Text

<p>Term 2</p>	<p>Control Systems - Flowol Using flowcharts to build programs that control real-world systems e.g. traffic lights, house security and ferris wheels etc.</p> <p>This topic is assessed by students completing a control system for a trainline.</p> <p>BEBRAS Computational Thinking Challenge A fun online problem solving challenge which helps highlight students with potential in computational thinking. The questions posed in year 8 and year 9 have an increased difficulty level from those answered in the year 7 challenge.</p>	<ul style="list-style-type: none"> ● What are control systems? ● Sensors ● Subroutines ● Motors <ul style="list-style-type: none"> ● Computational thinking
<p>Term 3</p>	<p>Python programming Students use the text based programming language Python to create a chatbot. This builds on the programming skills learnt using Scratch and the Micro:bits from year 7.</p> <p>Programming skills are assessed through the completed chatbot program produced at the end of the topic.</p>	<ul style="list-style-type: none"> ● Variables ● Input and output functions ● Selection ● Loops
<p>Term 4</p>	<p>Using HTML and CSS to build web pages Designing and producing a functional website based on a hobby or interest gives a good insight into how websites work on the Internet.</p> <p>The final website is assessed based on the HTML and CSS skills that have been used.</p>	<ul style="list-style-type: none"> ● Writing basic HTML code. ● Inserting images ● Hyperlinks ● Using CSS to format a basic webpage ● Linking CSS to a HTML page
<p>Term 5</p>	<p>Hardware and Computer systems Students learn the basics of how a computer works through looking at input, processing, storage and output devices.</p>	<ul style="list-style-type: none"> ● Computer Hardware ● Introduction to CPU ● Memory

	The assessment for this topic is based on students being able to choose a suitable computer system and justify their choices.	<ul style="list-style-type: none"> ● Storage ● Choosing a Computer System
Term 6	<p>Video Editing Students plan, shoot and create their own videos, building on the work that they have completed in the interactive presentations (year 7) and representing data topics (term 1).</p> <p>This is assessed throughout the topic using the portfolio work produced during each lesson.</p>	<ul style="list-style-type: none"> ● Video editing basics ● Continuity errors ● Video planning ● Storyboard creation ● Shooting footage ● Uploading videos
<p>How to support your son: Ensure that your son checks his school emails and Google Classroom on a daily basis Encourage your son to watch the news (we recommend News Round) and to be interested in stories around technology Encourage your son to do his own research about how computers work Practice problem solving puzzles with your son to help them develop their computational thinking skills</p>		

Year 9 Curriculum

Year 9 builds and expands on skills and prior knowledge acquired during previous years.

Students are encouraged to plan, design, develop & evaluate for each topic to develop problem solving and reasoning skills.

Topics are generally delivered across a term with either an online assessment to gauge progress or a final creative piece marked with feedback. There is a summer exam which covers work from the entire year which takes the form of an online assessment, in years 8 and 9 we have increased the number of longer answer questions to ensure the students are prepared for these types of questions if they choose to continue with either computer science or interactive media in KS4.

Grades will be awarded by the class teacher following marked work at least once a term

Timeline	Content and assessments	Skills/ Keywords
Term 1	<p>Graphics – Photoshop Learning image editing skills and techniques building on the work completed in the interactive presentations topic (year 7).</p> <p>At the end of the topic students create a movie poster using Adobe Photoshop, which is assessed based on the skills and techniques used.</p>	<ul style="list-style-type: none"> ● What is image editing? ● Watermarks ● Editing Features ● Filters ● Layers
Term 2	<p>Mobile App Development Building on the programming skills learnt in year 7 (Micro:bits and Scratch) and year 8 (Python and HTML and CSS) students use event-driven JavaScript to create their own mobile application.</p> <p>Students are assessed through the final app that they create.</p> <p>BEBRAS Computational Thinking Challenge A fun online problem solving challenge which helps highlight students with potential in computational thinking. The questions</p>	<ul style="list-style-type: none"> ● Decomposition ● GUI elements ● Event-driven programming ● Identifying and fixing errors ● User Input ● App Development ● Problem solving and debugging

	posed in year 8 and year 9 have an increased difficulty level from those answered in the year 7 challenge.	<ul style="list-style-type: none"> ● Computational thinking
Term 3	<p>Computer Networking Students learn about the purpose of networks, the advantages and disadvantages of networks and the hardware needed to create a network. This builds on from the hardware and computer systems topic (year 8) and video editing topic (year 8).</p> <p>This topic is assessed by a video created by students to demonstrate their understanding about networks.</p>	<ul style="list-style-type: none"> ● Purpose of networks ● Networking hardware ● LANs and WANs ● Data packets and routing ● Physical connections from the home to the internet
Term 4	<p>Representing Data: Images, Sound and Text Builds on the concepts learnt in year 7 interactive presentation topic, year 8 video editing topic and the image editing topic (term 1) but looks in more detail at how images, sound and text are stored and used in a computer system.</p>	<ul style="list-style-type: none"> ● Bitmap Images ● File formats ● Compression ● Vector Graphics ● Representing Sound ● Representing Text
Term 5	<p>eSafety - Grooming through Games Students learn about the dangers of interacting with strangers online and what they can do to keep themselves safe.</p> <p>Binary numbers Building on concepts introduced in the representing data topic (term 4) students learn the number system that computers use and how we convert between the systems.</p> <p>Boolean logic, truth tables & logic gates Learning how computers manipulate data through the use of logic gates. This builds on what students have learnt in the binary numbers topic.</p>	<ul style="list-style-type: none"> ● eSafety ● Grooming ● Binary and Denary Conversions ● Binary Addition ● AND ● NOT ● OR

	<p>The binary and Boolean logic topics are assessed based on the work completed in the online portfolio in each lesson throughout the topic.</p>	
<p>Term 6</p>	<p>Following the end of year exams, Year 9 students work on their own projects of interest, building on previous knowledge gained that academic year.</p> <p>Computer Science Route: Programming with Python</p> <p>Interactive Media Route: Create a Website for a Brief</p> <p>Other Route: Presentation project on a GCSE option chosen.</p>	
<p>How to support your son: Ensure that your son checks his school emails and Google Classroom on a daily basis Encourage your son to watch the news (we recommend News Round) and to be interested in stories around technology Encourage your son to do his own research about how computers work Practice problem solving puzzles with your son to help them develop their computational thinking skills</p>		