Programme of Study: 2020-21

Department: ICT and Computer Science

KS3 ICT Curriculum Intent
Our ICT KS3 curriculum is designed to develop confident, digital citizens who have an enthusiasm for computational thinking and problem solving. The curriculum is designed to familiarise students with the Google Environment and give them opportunities to use a variety of programs for different tasks, thereby increasing their digital literacy cultural capital. They will experience a range of programming languages in which to demonstrate their creativity in analysing and solving problems, in an environment of supportive inclusion. They will recognise that the software and self-management skills learned in their ICT lessons can be transferred to other subjects. This will empower them to use their computational skills across a wide ranging curriculum - to enhance their learning, their confidence and their resilience as digital citizens of the 21st century. On entering EPS in Year 7 students learn how to login to the school network, recognising the importance of secure passwords and how the Google environment works. They develop web pages using HTML programming language and progress to using web authoring software to create several linked pages about e-safety. Students advance through understanding computer hardware, identifying input and output devices and learning about binary. Students will develop skills in spreadsheet modelling and use this knowledge when completing flowcharts. They will finish the year using logo (turtle) programming to create shapes and use loops. This takes them through a core skills development of sequencing, selection and iteration - the 3 core concepts underpinning computer science. In year 8 students develop further digital literacy skills through using graphics and publishing software to communicate information. They are introduced to database software and learn how to query the database for key information using field names. Their programming experience will continue through the use of Small Basic and an introduction to Python. They will investigate computer networks and use of the World Wide Web. This gives them a good foundation for their future years in Discovery. Students will be able to confidently use the computer system that EP run and be aware of the functionality of a range of software that we use on the system. They will have a growing understanding of the 3 core programming concepts from Year 7 in relation to sequencing, iteration and selection. The overarching development and cohesion of their logical thinking will enable them to apply their knowledge and digital literacy across a range of curriculum subjects.

KS3 ICT Programme of Study:

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 7	**Intro & Computers**	**HTML**	**E-Safety**	**Spreadsheets**	**Logo**	**Scratch**
Students learn how to:	Login to network and google environment, intro to google classroom, sharing documents, emailing staff Input & output devices, Inside the computer - knowledge of hardware - motherboard, Secondary storage, binary-denary, binary-ASCII,	Use HTML to create a web page showing text, colour and images Linking multiple pages Adding content about viruses	Gather research on e-safety, create website (multipage) using Serif Webplus; adding text & images, colour schemes, use of MasterPage, navigation bars, image resizing, inserting URLs, video, gifs, animated marquee, buttons for navigation and hyperlinks - WYSIWYG software in contrast to HTML.	Identify parts of spreadsheet, use of formulas, formatting spreadsheets, using functions, presenting information appropriately, formatting data and inserting charts,	Complete flowchart, create shapes using simple logo commands, use of repeat commands, procedures, sequencing,	Understand basic block commands, Make a 'guess the number' game, use of sequencing, repetition (looping), selection - if commands, interface - clicking objects to broadcast commands,
Assessment		**Online test: HTML**				**EOY online test: Inside computers, Spreadsheets, E-safety, Logo, Scratch,**
Year 8	**Networks**	**Top Trumps - Database**	**Small basic**	**Python**	**Housekeeping & file management**	**Revision + Interactive Quiz**

					& e-safety	
Students learn how to:	Advantages & disadvantages of networks, Types of networks Understanding LAN & WAN Difference between internet and WWW, Use of packet switching	Create Top Trumps database Create Top Trumps cards in Publisher Create input form in Access, creating records, editing records, adding/deleting field names, assigning datatypes, queries - single/multiple field, reports,	Manipulating images and patterns using small basic command line interface, sequencing, iteration, command line prompts, selection,	Run a simple text-based python program Create simple image using python Use of iteration to complete image patterns, inputs and outputs through selection statements,	Organise Files Create e-safety bookmark in Publisher for peers or parents, Use of multiple tools in Publisher to create bookmark - MasterPage, guidelines, inserting images, text boxes, autoflow, shapes, colours,	PowerPoint interactive quiz based on year's learning EOY Test
Assessment		Term 1 Test:**Online test:** Networks				**EOY online test**: Small Basic, Python, DTP/Database assessment/e-safety

ICT/Computing Pathways in Year 9-11

OCR Cambridge Nationals in Creative iMedia Programme of Study

This course equips students with the wide range of knowledge and skills needed to work in the creative digital media sector. They start at pre-production and develop their skills through practical assignments as they create final multimedia products. Students will need to complete 4 units including units R081 Pre-production skills (externally assessed), R082 Creating digital Graphics, R085 Creating a Multipage Website and R087 Creating an Interactive Multimedia Product. These three units are moderated by OCR. Unit and qualification results are awarded on a 7 grade scale with: Pass, Merit and Distinction at both Levels 1 and 2, and with a new grading of Distinction* at Level 2 to inspire students to achieve more. Students' performance on the units will determine their grade and level.

By the end of KS4, students must be able to:

I-Media:

- Understand pre-production skills used in the creative and digital media sector.
- Develop their understanding of the client brief, time frames, deadlines and preparation techniques that form part of the planning and creation process.
- Acquire the underpinning knowledge and skills needed to create digital media products and gain an understanding of their application.
- Understand the purpose, content and uses of a range of pre-production techniques.
- Apply knowledge and understanding gained in the compulsory units to help develop their skills further during the completion of optional units

	Term 1	**Term 2**	**Term 3**	**Term 4**	**Term 5**	**Term 6**
Year 9						
Students learn how to:	Introduction to Pre-production documents and their uses R081 Moodboards, mindmaps, Audience, client requirements, file formats, scripts, storyboards, visualisations, target audience, legislation, planning,	Design and create a digital graphic using GIMP2 & File Types as applicable to graphics, image manipulation	Design and create a multipage website.	Design and create a multimedia product	Design and create a multimedia product	Revision of pre-production planning documents
		Assessment: R081 Past paper	**Assessment:** R081 Past paper	**Assessment:** R081 Past paper	**Assessment:** R081 Past paper	**Assessment:** R081 Past paper
Year 10 ***n/a this year as no cohort***						

Students learn how to:	**Create a Digital Graphic (R082 CA)** Builds on skills learned in R081: pre-production planning-moodboards, mindmaps, visualisations, gantt charts, asset sourcing, legislation related to media, creating & editing graphics from range of sources, image properties, file types, version control, Building on the skills and understanding that they have developed in the previous unit, students explore where and why digital graphics are used and the techniques that are involved in their creation. They apply their skills and knowledge in creating digital graphics against a specific brief.	**Create a Digital Graphic (R082 CA)** Builds on skills learned in R081: pre-production planning-moodboards, mindmaps, visualisations, gantt charts, asset sourcing, legislation related to media, creating & editing graphics from range of sources, image properties, file types, version control,	**Design and build a website (R085 CA)** Builds on skills learned in R081: pre-production planning-moodboards, storyboards, mindmaps, visualisations, gantt charts, asset sourcing, legislation related to websites, creating & editing graphics from range of sources, image properties, file types, version control, multi-page website skills from WYSIWYG software, Students explore the different properties, purposes and features of multipage websites. They demonstrate their creativity by combining components to create a functional, intuitive and visually pleasing website.	**Design and build a website (R085 CA)** Builds on skills learned in R081: pre-production planning-moodboards, storyboards, mindmaps, visualisations, gantt charts, asset sourcing, legislation related to websites, creating & editing graphics from range of sources, image properties, file types, version control, multi-page website skills from WYSIWYG software,	Re-visiting previous units for re-submission if necessary Research for R087 - Interactive Multimedia Product	Revision of pre-production planning documents

Assessment	**Assessment:** R081 Past paper	**Assessment:** R081 Past paper	**Assessment:** R081 Past paper	**Assessment:** R081 Past paper	**Assessment:** R081 Past paper	**EOY Test R081**
Year 11						
Students learn how to:	***COVID-19 Catch-up curriculum exam board advice TBC*** **R087:** Creating Interactive Multimedia Presentation coursework Students develop their knowledge and understanding of about where and why different interactive multimedia products are used and what features are needed for a given purpose. They learn how to interpret a client brief, and how to use time frames, deadlines and preparation techniques as part of the planning and creation process. **Champions**	**R087:** Creating Interactive Multimedia Presentation coursework Students develop their knowledge and understanding of about where and why different interactive multimedia products are used and what features are needed for a given purpose. They learn how to interpret a client brief, and how to use time frames, deadlines and preparation techniques as part of the planning and creation process. Revision for R081 exam	11th January 2021 R081 exam 1hr 15min Submission of R082 for those resubmitting. Submission of R087 **R085 TBC pending exam board/Ofqual** *Complete this unit which was postponed due to COVID-19 Students explore the different properties, purposes and features of multipage websites. They demonstrate their creativity by combining components to create a functional, intuitive and visually pleasing website.*	Submission of R085	Second take of R081 exam if needed.	

	Hour: R082 coursework re-submission work					

GCSE Computer Science

Our Year 9 Foundation Year provides an introduction to programming through Python. It introduces networks and how computer hardware works. Background information on databases spreadsheets and websites is explored which gives students the basic building blocks for starting their GCSE course in Year 10. Computer Science is engaging and practical, encouraging creativity and problem solving. It encourages students to develop their understanding and application of the core concepts in computer science. Students also analyse problems in computational terms and devise creative solutions by designing, writing, testing and evaluating programs. Students are assessed through 2 external examinations and an internal Non Examined Assessment in Year 11.

By the end of KS4, students must be able to:
Computer Science: *OCR GCSE 9-1 (Years 9-11)*:

- Have knowledge and understanding of the main computer components including: the central processing unit (CPU), computer memory and storage, wired and wireless networks, network topologies, system security and system software.
- They will also understand ethical, legal, cultural and environmental concerns associated with computer science
- Apply knowledge and understanding gained in component 01.
- They develop skills and understanding in computational thinking: algorithms, programming techniques, producing robust programs, computational logic, translators and data representation. The skills and knowledge developed within this component will support the learner when completing the Programming Project.
- Develop their practical ability in the skills developed in components 01 and 02. They will have the opportunity to define success criteria from a given problem, and then create suitable algorithms to achieve the success criteria.
- Code their solutions in a suitable programming language, and check its functionality using a suitable and documented test plan.
- Evaluate the success of their solution and reflect on potential developments for the future.

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 9	**Intro to Python**	**Networks**	**Spreadsheets**	**Databases**	**HTML**	**Python**
Students learn how to:	Basic Python, Basic understanding of computers	Basic network knowledge, Additional python concepts	Spreadsheet modelling, Additional python concepts	Creating and using databases, Python challenges	HTML and website development including CSS, Python challenges	Python challenges, Unit 1 systems architecture
Assessment	End of unit test	End of unit test	End of unit test	End of unit test	End of unit test	**EOY Test**
Year 10	**Unit 1 & 7**	**Unit 3 & 7**	**Unit 4 & 7**	**Unit 2 & 7**	**Unit 6 & 7**	**Unit 8 & 4**
	Unit 1 System architecture Unit 7 Programming	Unit 7 Programming Unit 3 Networks	Unit 4 Network security Systems software Unit 7 Python challenges	Unit 2 Data representation Unit 7 Python challenges	Unit 6 Algorithm's Unit 7 Python challenges	Unit 4 Ethics Unit 8 Logic and Languages
Assessment	End of unit test	End of unit test	End of unit test	End of unit test	End of unit test	**EOY Test**
Year 11	**NEA: Python project**	**NEA: Python project**	**NEA: Python project**	**Revision**	**5**	**6**
	NEA: Python project Unit 1 and unit 2: revision, Exam questions	NEA: Python project, Unit 7 and unit 3 revision Exam questions	NEA: Python project, Unit 8 and unit 5 revision Exam questions	Exam revision and past papers	GCSE Terminal exam	
Assessment	NEA OCR CS Paper	NEA OCR CS Paper	OCR CS Paper	OCR CS Papers	**GCSE OCR Terminal exam**	

EPCS6:

Exam board(s) and Specification(s) details:
Pearson Edexcel BTEC Extended Certificate NQF in IT
This qualification is designed for learners who are interested in an introduction to the study of creating IT systems to manage and share information, alongside other fields of study, with a view to progressing to a wide range of higher education courses, not necessarily in IT. The BTEC Level 3 National Extended Certificate is designed as a one-year, full-time course or as part of a two-year, full-time programme with opportunity for inclusion of other BTEC National Level 3 courses or A levels. It consists of three mandatory and two optional units. Unit 1 is externally set and examined (synoptic unit) Unit 2 is externally set and examined Unit 3 is internally set and assessed. In addition, one optional unit will be delivered and assessed.

BTEC IT Extended Certificate NQF	**Term 1**	**Term 2**	**Term 3**	**Term 4**	**Term 5**	**Term 6**
Year 12	**Unit 2: Creating Systems to Manage Information**	**Unit 2: Creating Systems to Manage Information**	**Unit 3: Using Social Media in Business**	**Unit 3: Using Social Media in Business**	**Unit 3: Using Social Media in Business** **Re-take Unit 2 Database exam if needed**	**Unit 1: Information Technology Systems**
Students learn how to:	AO1 Demonstrate knowledge of database development terminology, standards, concepts and processes AO2 Apply knowledge and understanding of database	AO1 Demonstrate knowledge of database development terminology, standards, concepts and processes AO2 Apply knowledge and understanding of database	Completion of Unit 2 and Revision for **January Exam** Explore the impact of social media on the ways in which businesses promote their products and	Develop a plan to use social media in a business to meet requirements	Implement the use of social media in a business	**A** Digital devices in IT systems **A1** Digital devices, **A2** Peripheral devices and media **A3** Computer software in an IT system **A4** Emerging technologies **A5** Choosing IT

	development terminology, standards, concepts and processes to create a software product to meet a client brief AO3 Analyse information about database problems and data from test results to optimise the performance of a database solution AO4 Evaluate evidence to make informed judgements about the success of a database's design and performance AO5 Be able to develop a database solution to meet a client brief with appropriate justification	development terminology, standards, concepts and processes to create a software product to meet a client brief AO3 Analyse information about database problems and data from test results to optimise the performance of a database solution AO4 Evaluate evidence to make informed judgements about the success of a database's design and performance AO5 Be able to develop a database solution to meet a client brief with appropriate justification	services			systems **B** Transmitting data **B1** Connectivity **B2** Networks **B3** Issues relating to transmission of data **C** Operating online **C1** Online systems **C2** Online communities,
Year 13	**Unit 1 - Computer Systems**	**Unit 1 - Computer Systems**	**Unit 6 Website Design**	**Unit 6 Website Design**	**Unit 6 Website Design**	
Students learn how to:	Computer Systems - **A** Digital devices	Completion of Unit 1 and Revision for **Unit 1 January**	**Unit 1 January Exam** Compare	Website Design Produce designs for a website	**Re-take Unit 1 Exam if necessary**	

	in IT systems **A1** Digital devices, **A2** Peripheral devices and media **A3** Computer software in an IT system **A4** Emerging technologies **A5** Choosing IT systems **B** Transmitting data **B1** Connectivity **B2** Networks **B3** Issues relating to transmission of data **G** - Issues: Moral & Ethical, Guidelines & current legislation **F** - Impact of IT systems,	**Exam** **C** Operating online **C1** Online systems **C2** Online communities, **D** - Operating Online, **E** - Protecting Data and information,	principles of website design Evaluate how principles of website design are used to produce creative, high performance websites which meet client requirements	Review & Justify decisions to inform improvements	Website Design Produce a website for intended audience which is optimised Test the website Evaluate designs demonstrating individual responsibilities	