

# Curriculum Overview

## Computing & ICT

### Introduction

This document outlines the curriculum and key considerations including:

- Aims and purpose
- Alignment with the whole school provision and curriculum intent
- A summary programme of study which includes sequencing of taught content

We use the National Curriculum as our statutory foundation and broadly share its principles and aims including:

- 'To provide students with an introduction to the essential knowledge that they need to be educated citizens. To introduce students to the best that has been thought and said; and help engender an appreciation of human creativity and achievement'.
- To prepare students to be confident in themselves, to have a fulfilled and successful life beyond our school – one where they contribute positively to society.
- Our statutory curriculum is just one element in the education of every child. There is time and space in the school day and in each week, term and year to range beyond statutory specifications.
- Provision of a framework of core knowledge around which teachers can develop exciting and stimulating lessons to promote the development of students' knowledge, understanding and skills as part of the wider school curriculum.
- The wider school curriculum includes an extensive range of opportunities and activities that are routinely available to students, are inclusive and reflect our diverse community.

### Numeracy and literacy

Teachers should take opportunities to develop students' mathematical fluency, spoken language, reading, writing and vocabulary within their specific discipline and in line with the expectations laid out in our school curriculum statement.

### Purpose of study

*'A high-quality computing education equips students to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which students are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, students are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that students become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.'* Adapted from National Curriculum, DfE, 2014.



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## **Curriculum Aims**

Our Computing curriculum at Key Stage 3 and 4 is designed to instil in learners a sense of belief in their own abilities and personal characteristics. Through engaging and challenging activities, learners will develop resilience, problem-solving skills, and a growth mindset necessary to thrive in the dynamic field of computing. We aim to foster a culture of curiosity, creativity, and collaboration, where learners are encouraged to take risks, learn from failure, and persevere in the face of challenges.

At the core of our curriculum is the belief that every student has the potential to achieve great things. Through rigorous instruction and hands-on experiences, we strive to equip our learners with the knowledge, skills, and confidence to shape positive futures for themselves. By providing a rich and diverse learning environment, we aim to prepare learners for further study in computing or for successful careers in the digital age. Our curriculum ensures that learners develop a deep understanding of fundamental principles and concepts while also honing their analytical, problem-solving, and computational thinking skills.

Our goal is to empower learners to succeed not only academically but also as responsible, competent, and creative users of information and communication technology. Our curriculum emphasises the importance of digital literacy, ethical computing practices, and online safety, ensuring that learners are equipped to navigate the complexities of the digital world with confidence and integrity.

## **Building on prior learning**

By the end of Key Stage 2, students should have been taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs, work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information
- use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

## **What are the skills gaps?**

Generally, students from feeder primary schools are familiar with using some programmes from Microsoft Office, particularly Word and PowerPoint. Typically keyboard skills increasingly becoming a weakness due to use of smart devices with touchscreens – this leads to some students lacking facility with keyboards and basic computer skills, **file management in particular**. Although the primary curriculum covers coding, this is not always taught consistently across all schools due to limitations on resources in some feeder primary schools, so some students do not have an **understanding** or knowledge of basic coding concepts and skills.

## Curriculum Threads

Disciplinary Knowledge Strands	Year 7	Year 8	Year 9	KS4 GCSE Computer Science	KS4 BTEC Digital Information Technology
E Safety	E-safety focuses on building secure and responsible habits when using technology in school and beyond. Students learn how to protect their online identity and privacy, recognise inappropriate content, contact and conduct, and understand how and when to report concerns.	Revisited through students' increasing independence online. Pupils explore issues such as online reliability, misinformation and fake news, alongside responsible use of data and digital platforms, reinforcing how to stay safe, ethical and critical when engaging with online content and services.	E-safety is explored through a deeper focus on digital footprints, online behaviour and the long-term consequences of digital actions. This is reinforced through cyber security, where students learn about threats, vulnerabilities and the importance of protecting personal data and online identities.	Throughout the OCR GCSE Computer Science course, e-safety is revisited through an understanding of data security, cyber threats and the ethical, legal and environmental impacts of digital technology. Students consider responsible use of computer systems, the consequences of security breaches, and how legislation such as data protection influences computing practice.	E-safety is embedded through <i>Effective Digital Working Practices</i> , where learners explore legal, ethical and security considerations related to the use of digital systems. Students examine cyber security risks, data protection and responsible conduct in digital environments, understanding how to apply safe practices when working with digital information.
Digital Literacy	Digital literacy is introduced through analysing, creating and presenting information using a range of software and multimedia tools. Students develop confidence in managing digital information effectively and using technology appropriately to support learning.	Developed through analysing the reliability of internet sources, understanding primary and secondary research, and introducing data science concepts. Students learn to question the credibility, bias and accuracy of information, and to use digital tools purposefully to interpret and communicate findings.	Digital literacy develops through understanding how online actions contribute to a permanent digital footprint and how digital content can impact reputation, opportunities and wellbeing. Students are encouraged to act responsibly and critically when creating, sharing and managing digital content.	Digital literacy is developed as students learn to interpret technical information, evaluate the impact of emerging technologies and communicate computational ideas clearly. They use appropriate technical terminology and apply their knowledge to real-world contexts, supporting informed and	Digital literacy is developed across all components as learners collect, present and interpret data, evaluate digital tools, and communicate findings. They learn to use software responsibly and effectively, analyse data against real-world criteria, and reflect on digital processes and outcomes to make informed decisions within vocational contexts.

				critical engagement with digital systems.	
Creation and Programming	Students are introduced to programming through block-based coding and flowcharts, allowing them to create simple programs. This builds a foundational understanding of key programming concepts, including sequencing, iteration and selection.	Students progress from block-based programming to text-based Python, applying their skills to create programs with increasing complexity. This is complemented by creative digital outcomes through website and mobile app development, where students design and build functional digital products.	Students further develop their programming skills using Python, applying them to more complex tasks and logical structures. Creative skills are expanded through 3D animation using Blender, enabling students to design and produce sophisticated digital artefacts.	Students build on prior knowledge to design, write and refine programs using text-based programming. They apply programming constructs such as variables, data types, selection, iteration and subroutines, and develop robust, well-structured code to solve increasingly complex problems.	Creation is encountered through the design and development of user interfaces and dashboards. Students apply logical thinking and creative design principles to build effective digital solutions that meet user needs, demonstrating practical creation of digital artefacts.
Algorithmic Thinking	Algorithmic thinking is developed by exploring what algorithms are and how they are used in everyday contexts. Students learn to describe processes as clear, step-by-step instructions that can be followed by a computer or a person.	Algorithmic thinking is strengthened through Python programming and development tasks, where students design, read and refine algorithms. They learn to break down tasks into precise, ordered steps and understand how algorithms underpin software, apps and everyday digital systems.	Algorithmic thinking is embedded through Python programming and animation workflows, where students plan sequences of actions, use logic and structure, and understand how instructions control outcomes in both code and digital creation tools.	Algorithmic thinking is a core focus of the GCSE specification, with students learning to design, trace and evaluate algorithms. They explore standard algorithms for searching and sorting, use pseudocode and flowcharts, and analyse efficiency to understand how algorithms solve problems effectively.	Algorithmic thinking appears as learners plan and structure tasks logically when organising project workflows and designing solutions. They apply sequence and decision-making skills in data manipulation and user interface design, identifying the steps required to transform inputs into meaningful outputs as part of problem solving.
Problem Solving	Problem solving is embedded through the use of flowcharts to plan and generate solutions to simple programming tasks and real-life problems. Students are encouraged to think logically, test ideas and refine their solutions.	Problem solving is embedded throughout programming and data topics, as students identify errors, debug code, test solutions and refine outcomes. They are encouraged to take a logical, iterative approach when tackling	Problem solving is a core focus as students debug Python programs, resolve issues in animations, and refine user interface designs. They apply systematic approaches to overcome challenges, test solutions and improve the	Problem solving is embedded throughout the course as students decompose problems, identify inputs, processes and outputs, and develop logical solutions. They test, debug and refine programs, using computational thinking strategies to	Problem solving is central to the programme: students identify challenges in real-world scenarios, plan and justify solutions, adapt approaches when tools or data introduce limitations, and refine outcomes based on evaluation criteria. These skills are developed

		computational and real-world problems.	functionality and usability of their work.	overcome challenges and improve accuracy and performance.	through iterative project planning and responding to feedback within assessments.
Computing Fundamentals	Computing fundamentals are established through understanding file management, school networks and cloud services. Students learn how to log on securely, save and organise work, and understand the basics of network security and digital storage.	Computing fundamentals are revisited through understanding how computers, networks and data representation work. Students learn about networks, binary representation of images, and how data is stored and transmitted, deepening their understanding of the systems that underpin modern computing.	Computing fundamentals are reinforced through cyber security and user interface topics, helping students understand how systems are designed, how data is protected, and how users interact with technology. Project planning introduces industry-relevant approaches to managing computing projects effectively.	Computing fundamentals are explored in depth through the study of computer systems, including CPU architecture, memory, storage, networks, data representation and operating systems. Students gain a secure understanding of how hardware and software work together, forming the foundation for further study and application in computer science.	Computing fundamentals are encountered as learners gain practical understanding of digital systems, data handling and interpretation, user interface principles and the impact of technology on organisations. They study how systems operate, how data is collected and used for decision-making, and how effective practices support the use of digital technology in work contexts.

### Key Subject Skills – Computing GCSE

Assessment Objective	Descriptor
A01 (30%)	Demonstrate knowledge and understanding of the key concepts and principles of computer science.
A02 (40%)	Apply knowledge and understanding of key concepts and principles of computer science.
A03 (30%)	Analyse problems in computational terms: <ul style="list-style-type: none"> <li>to make reasoned judgements</li> <li>to design, program, evaluate and refine solutions.</li> </ul>

### Key Subject Skills – Digital Information Technology Tech Award

Assessment Objective	Descriptor
A01	Demonstrate knowledge of facts, terms, processes and issues in relation to digital information technology.
A02	Demonstrate an understanding of facts, terms, processes and issues in relation to digital information technology.
A03	Apply an understanding of facts, terms, processes and issues in relation to digital information technology
A04	Make connections with the concepts, issues, terms and processes in digital information technology

## Vocabulary

Having a rich, ambitious, broad vocabulary is vital for learners to succeed, both in school and throughout their lives. Tier 1 vocabulary is the simplest. These are the words we use in everyday conversation, such as “put”, “get”, “walk”, etc. Tier 2 vocabulary are challenging, ambitious words that don’t usually crop up in day-to-day conversation. These are the words that allow learners to access academic texts, such as high-level literature, newspaper articles and exam papers.

Tier 3 vocabulary is the subject-specific vocabulary of a particular discipline. These are words that are uncommon outside of the context of a specific subject and enable learners to communicate effectively within the subject. At Cottingham High School, tier 3 vocabulary is explicitly taught across our school curriculum and is mapped within the schemes of learning.

## Assessment

Formative assessment is used throughout the year to check learners’ knowledge and understanding, using feedback techniques including exit tickets and end of topic quizzes. Summative assessment is calendared at curriculum end points within each academic year and is conducted more formally.

Year	Assessment Window	Topics to be assessed
7	HT2	Range of skills across several pieces of software. Presentation, use of colours, text and evaluation skills.
	HT3	Excel skills, entering numbers and text, formatting data, choosing and using formulas and functions, sorting and filtering data, using comparative operators, using absolute and relative cell references, creating graphs and modelling data.
	HT4	Use of sequencing, sub-routines, count controlled iteration, variables, operators and completion of at least one ‘Explorer’ task. Choose appropriate software, create content for a blog based on credible sources, apply referencing techniques that credit authors appropriately, design the layout of the content to make it suitable for the audience.
	HT6	Sequencing, variables, count controlled iteration, subroutines, condition-controlled iteration, evaluating the loop, lists, decomposition, problem-solving
8	HT2	Computer systems, hardware, software, history of computers, networks and cloud computing.
	HT3	Computational thinking, planning algorithms, sequence and selection of programming, graphic manipulation.
	HT5	Binary representations of text and numbers. Converting and adding binary numbers. File sizes
	HT6	Input/output, arithmetic operations, randomness, selection, and iteration.
9	HT1	Sequences, lists and strings. Operations on sequences of data. Selection, errors, creating lists, iteration, iteration on lists and strings, variables to keep track of counts and sums. Combine key programming language features to develop solutions to meaningful problems.
	HT3	Understanding HTML and CSS and using it to create a web page. Using effective search technologies, using navigation.
	HT4/5	3D animation creation through modelling, texturing and animating. Computational thinking.
	HT6	Plan and create a user interface for a given scenario taking into consideration audience needs, design principles, design psychology, and efficiency.
10 (CS)	HT1	The purpose of the CPU, CPU Performance, Embedded systems, Primary & Secondary Storage, Units, Data Storage
	HT2	Computational thinking, searching algorithms, Sorting algorithms, Flowcharts, Algorithms using pseudocode
	HT3	Sequence & Selection, Iteration, Arrays, Procedures & Functions, Records & Files

	HT4	The Internet and wide area networks, Local area networks, wireless networking, client-server and P”P networks, Standards, protocols & layers.
	HT5	Simple logic diagrams using the operators AND, OR and NOT, Truth tables, Combining Boolean operators using AND, OR and NOT, Applying logical operators in truth tables to solve problems
	HT6	Defensive design, Errors and testing, Translators and facilities, IDEs.
11 (CS)	HT1	Network threats, Preventing vulnerabilities, Operating Systems, Utility Software
	HT2 – HT5	Preparation for GCSE exam - Exam Practice questions
10 (IT)	HT1	User interfaces, Factors and influences, Audience needs, Design principles, Design psychology
	HT2	Completion of controlled assessment – Set assignment from exam board
	HT3	Data Collection and impact: Characteristics of data and information, Representing information, Ensuring data is suitable, Data Collection, Quality of Information, Sectors that use data modelling
	HT4 / HT5	Creating a Dashboard: Spreadsheet basics, Data manipulation methods, Other processing methods, Producing a dashboard, Producing a dashboard with pivot tables, Concluding and reviewing presentation methods.
	HT6	Modern Technologies: Communication technologies, cloud storage and computing, Using cloud technologies, Modern team working, Inclusivity and accessibility, Impacts of modern technologies
11 (IT)	HT1	Cyber Security: System attacks and external threats, Internal threats and impact of breaches, User restrictions and finding weaknesses, Data level protection, Policy, backups and data recovery.
	HT2	Implications of Digital Systems: Shared Data, Environmental Issues, Equal access, Use policies, Data protection, Criminal use. Planning and communication: Data flow diagrams, Flowcharts, System diagrams, Tables
	HT3 – HT5	Preparation for exam - Exam Practice questions

## Curriculum Sequencing

### Key Stage 3: Year 7 – Long Term Planning

	Autumn term	Spring term	Summer term
Knowledge	<p><b>7.1 Clear messaging in digital media</b></p> <ul style="list-style-type: none"> <li>• Presentation</li> <li>• Use of colours</li> <li>• Text</li> <li>• Evaluation skills</li> </ul> <p><b>7.2 Spy School</b></p> <ul style="list-style-type: none"> <li>• Excel skills</li> <li>• Formatting data</li> <li>• Choosing and using formulas and functions</li> <li>• Sorting and filtering data</li> </ul>	<p><b>7.3 Binary and Control</b></p> <ul style="list-style-type: none"> <li>• Binary representation of numbers</li> <li>• Knowledge of control technology.</li> </ul> <p><b>7.4 Programming essentials Pt1</b></p> <ul style="list-style-type: none"> <li>• Sequencing</li> <li>• Sub-routines</li> <li>• Count controlled iteration</li> <li>• Variables</li> <li>• Operators</li> <li>• Completion of at least one ‘Explorer’ task</li> </ul>	<p><b>7.5 Using Media</b></p> <ul style="list-style-type: none"> <li>• Choose appropriate software</li> <li>• Create content for a blog based on credible sources</li> <li>• Apply referencing techniques that credit authors appropriately</li> <li>• Design the layout of the content to make it suitable for the audience.</li> </ul> <p><b>7.6 Programming Essential Pt2</b></p> <ul style="list-style-type: none"> <li>• Sequencing</li> <li>• Variables</li> </ul>

	<ul style="list-style-type: none"> <li>Using comparative operators</li> <li>Using absolute and relative cell references</li> <li>Creating graphs and modelling data</li> </ul>		<ul style="list-style-type: none"> <li>Count controlled iteration</li> <li>Subroutines</li> <li>Condition-controlled iteration</li> <li>Evaluating the loop</li> <li>Lists</li> <li>Decomposition</li> <li>Problem-solving</li> </ul>
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### Key Stage 3: Year 8 – Long Term Planning

	Autumn term	Spring term	Summer term
Knowledge	<p><b>8.1 Do Aliens Exist?</b></p> <ul style="list-style-type: none"> <li>Research methods</li> <li>Reliability and bias</li> <li>Data analysis using Excel</li> <li>Presenting information using DTP</li> </ul> <p><b>8.2 Technology</b></p> <ul style="list-style-type: none"> <li>Computer systems</li> <li>Hardware</li> <li>Software</li> <li>History of computers</li> <li>Networks and cloud computing</li> </ul>	<p><b>8.3 Interactive Button Quiz</b></p> <ul style="list-style-type: none"> <li>Computational thinking</li> <li>Planning algorithms</li> <li>Sequence and selection of programming</li> <li>Graphic manipulation</li> </ul> <p><b>8.4 Computer Crime and Cyber Security</b></p> <ul style="list-style-type: none"> <li>Email scams</li> <li>Computer misuse</li> <li>Protecting personal data</li> <li>Copyright</li> <li>Health &amp; safety</li> </ul>	<p><b>8.5 Representations, From Clay to Silicon</b></p> <ul style="list-style-type: none"> <li>Binary representations of text and numbers</li> <li>Converting and adding binary numbers</li> <li>File sizes</li> </ul> <p><b>8.6 Introduction to Python Programming</b></p> <ul style="list-style-type: none"> <li>Input/output</li> <li>Arithmetic operations</li> <li>Randomness</li> <li>Selection</li> <li>Iteration</li> </ul>

### Key Stage 3: Year 9 – Long Term Planning

	Autumn term	Spring term	Summer term
Knowledge	<p><b>9.1 Digital Literacy</b></p> <ul style="list-style-type: none"> <li>E-safety</li> <li>Consequences</li> <li>Image manipulation</li> <li>Use of DT</li> </ul> <p><b>9.2 Python Programming with sequences of Data</b></p> <ul style="list-style-type: none"> <li>Sequences, lists and strings</li> <li>Operations on sequences of data</li> <li>Selection</li> <li>Errors</li> </ul>	<p><b>9.3 Data Science</b></p> <ul style="list-style-type: none"> <li>How to use Data to investigate problems</li> <li>Identifying patterns and trends in data</li> <li>Problem solving</li> </ul> <p><b>9.4 Developing for the Web</b></p> <ul style="list-style-type: none"> <li>Understanding HTML and CSS</li> <li>Using it to create a web page</li> <li>Using effective search technologies</li> <li>Using navigation</li> </ul>	<p><b>9.5 Media Animations</b></p> <ul style="list-style-type: none"> <li>3D animation creation through modelling</li> <li>Texturing and animating</li> <li>Computational thinking</li> </ul> <p><b>9.6 Designing a User Interface</b></p> <ul style="list-style-type: none"> <li>Plan and create a user interface for a given scenario taking into consideration audience needs</li> <li>Design principles</li> <li>Design psychology</li> </ul>

	<ul style="list-style-type: none"> <li>• Creating lists</li> <li>• Iteration</li> <li>• Iteration on lists and strings</li> <li>• Variables to keep track of counts and sums</li> <li>• Combine key programming language features to develop solutions to meaningful problems</li> </ul>		<ul style="list-style-type: none"> <li>• Efficiency</li> </ul>
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Key Stage 4 Year 10 – Long Term Planning – OCR GCSE

	Autumn term	Spring term	Summer term
Knowledge	<p><b>1.1 Systems Architecture</b></p> <ul style="list-style-type: none"> <li>• The purpose of the CPU</li> <li>• CPU Performance</li> <li>• Embedded systems</li> </ul> <p><b>1.2 Memory and Storage</b></p> <ul style="list-style-type: none"> <li>• Primary &amp; Secondary Storage</li> <li>• Units</li> <li>• Data Storage</li> </ul> <p><b>Practical Programming</b></p> <ul style="list-style-type: none"> <li>• Programming fundamentals</li> <li>• Selection and iteration</li> </ul> <p><b>2.1 Algorithms</b></p> <ul style="list-style-type: none"> <li>• Computational thinking</li> <li>• Searching algorithms</li> <li>• Sorting algorithms</li> <li>• Flowcharts</li> <li>• Algorithms using pseudocode</li> <li>• Interpret, correct and complete algorithms</li> </ul> <p><b>Practical Programming</b></p> <ul style="list-style-type: none"> <li>• Programming Functions</li> </ul>	<p><b>2.2 Programming fundamentals</b></p> <ul style="list-style-type: none"> <li>• Sequence &amp; Selection</li> <li>• Iteration</li> <li>• Arrays</li> <li>• Procedures &amp; Functions</li> <li>• Records &amp; Files</li> <li>• Introduction to SQL.</li> </ul> <p><b>Practical Programming</b></p> <ul style="list-style-type: none"> <li>• Programming Regular Expressions</li> </ul> <p><b>1.3 Computer Networks, connections &amp; Protocols</b></p> <ul style="list-style-type: none"> <li>• The Internet and wide area networks</li> <li>• Local area networks</li> <li>• Wireless networking</li> <li>• Client-server and P2P networks</li> <li>• Standards, protocols &amp; layers.</li> </ul> <p><b>Practical Programming</b></p> <ul style="list-style-type: none"> <li>• Programming Using Lists</li> <li>• Sorting lists</li> </ul>	<p><b>2.4 Boolean Logic</b></p> <ul style="list-style-type: none"> <li>• Simple logic diagrams using the operators AND, OR and NOT</li> <li>• Truth tables</li> <li>• Combining Boolean operators using AND, OR and NOT</li> <li>• Applying logical operators in truth tables to solve problems</li> </ul> <p><b>Practical Programming</b></p> <ul style="list-style-type: none"> <li>• Programming Reading files</li> <li>• Writing file</li> </ul> <p><b>2.3 Producing robust programs</b></p> <p>Defensive design Errors and testing Translators and facilities IDEs</p> <p><b>2.5 IDEs</b></p> <p>Practical Programming</p> <ul style="list-style-type: none"> <li>• Programming Two-dimensional lists</li> <li>• Programming techniques</li> </ul> <p><b>Revision</b></p>

Key Stage 4: Year 11 – Long Term Planning – OCR GCSE

	Autumn term	Spring term	Summer term
Knowledge	<p><b>1.4 Network Security</b></p> <ul style="list-style-type: none"> <li>• Network threats</li> <li>• Preventing vulnerabilities</li> <li>• Operating Systems</li> <li>• Utility Software</li> </ul> <p><b>1.5 Systems Software</b></p> <ul style="list-style-type: none"> <li>• Programming techniques</li> <li>• Practical problems</li> </ul> <p><b>Non Exam Assessment</b></p> <p><b>Exam prep</b></p> <p><b>1.6 Ethical, legal, cultural &amp; environmental impacts of digital technology</b></p> <ul style="list-style-type: none"> <li>• Ethical and cultural issues</li> <li>• Environmental issues</li> <li>• Legislation and privacy.</li> </ul> <p><b>Non Exam Assessment</b></p> <p><b>Exam prep</b></p>	<p><b>Revision and Exam preparation</b></p>	<p><b>Revision and Exam preparation</b></p>

Key Stage 4 Year 10 – Long Term Planning – BTEC Digital Information Technology

	Autumn term	Spring term	Summer term
Knowledge	<p>Component 1 – Exploring User Interface Design Principles and Project Planning Techniques Preparation for the Non-Examination Assessment (NEA) to be completed in Spring term Y10</p> <p><b>Learning Outcome A:</b></p> <ul style="list-style-type: none"> <li>• Types of user interface</li> <li>• Interface uses</li> </ul>	<p>Component 1 – Exploring User Interface Design Principles and Project Planning Techniques</p> <p>Coursework Students will develop their knowledge and understanding of what makes an effective user interface and how to effectively manage a</p>	<p>Component 2 – Collecting, Presenting and Interpreting Data Preparation for the Non-Examination Assessment (NEA) to be completed in Autumn term Y11</p> <p><b>Learning Outcome A:</b></p> <ul style="list-style-type: none"> <li>• Characteristics of data and information</li> <li>• Representing Data</li> </ul>

	<ul style="list-style-type: none"> <li>• Factors affecting interface choice</li> <li>• Hardware &amp; software influences</li> <li>• Audience accessibility needs</li> <li>• User interface design principles</li> <li>• Retaining user attention</li> <li>• Intuitive designs</li> <li>• Designing a user interface</li> </ul> <p><b>Learning Outcome B:</b></p> <ul style="list-style-type: none"> <li>• Project planning techniques</li> <li>• Project proposals and plans</li> <li>• Initial designs</li> <li>• Developing user interfaces</li> </ul> <p><b>Learning Outcome C:</b></p> <ul style="list-style-type: none"> <li>• Reviewing interfaces</li> </ul>	<p>project. They will use this understanding to plan, design and create a user interface.</p> <p>The assignment for this component consists of four tasks.</p> <p><b>Task 1</b> Complete a project proposal template using a project proposal brief, taking into consideration the purpose and audience, project requirements, user accessibility needs and any constraints. Use software to create a project plan using project planning and design methodologies and taking into consideration the project proposal brief and overall timescales for the project.</p> <p><b>Task 2</b> Design an initial user interface for four screens of a user interface that meets user requirements and user accessibility needs and other specific hardware and software needs and design considerations.</p> <p><b>Task 3</b> Use their initial design to develop a working prototype of the four screens of the user interface that meets user requirements and user accessibility needs.</p> <p><b>Task 4</b> Review their user interface and project planning techniques against the following criteria</p> <ul style="list-style-type: none"> <li>• user requirements</li> <li>• ease of use</li> <li>• design principles</li> <li>• accessibility features.</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring data is suitable for processing</li> <li>• Data collection</li> <li>• Quality of information</li> <li>• Sectors that use data modelling</li> <li>• Threats to individuals</li> </ul> <p><b>Learning Outcome B:</b></p> <ul style="list-style-type: none"> <li>• Data processing methods</li> <li>• Producing a dashboard</li> </ul> <p><b>Learning Outcome C:</b></p> <ul style="list-style-type: none"> <li>• Drawing conclusions based on data findings</li> <li>• How presentation affects understanding</li> </ul>
Assessment	Non-Examination Assessment (NEA)		Non-Examination Assessment (NEA)

	<p>Assessment Criteria</p> <p>Task 1</p> <ul style="list-style-type: none"> <li>• appropriate consideration of the project requirements with accurate reference to the project brief</li> <li>• appropriate consideration of the user requirements with accurate reference to the project brief</li> <li>• appropriate consideration of the constraints with accurate reference to the project brief</li> <li>• appropriate consideration of timescales, including tasks and sub-tasks with accurate reference to the project brief</li> <li>• appropriate consideration of key milestones with relevant reference to realistic timings</li> <li>• appropriate consideration of task dependencies with accurate reference to the project brief.</li> </ul> <p>Task 2</p> <ul style="list-style-type: none"> <li>• developed initial designs that meet user requirements</li> <li>• appropriate consideration of user accessibility features with accurate reference to the project brief</li> <li>• appropriate consideration of design visualisation including input or output screens with accurate reference to the project brief.</li> </ul> <p>Task 3</p> <ul style="list-style-type: none"> <li>• appropriate use of design principles with effective use of layout, whitespace and consistency</li> <li>• appropriate use of navigation methods with accurate reference to the project brief</li> <li>• appropriate consideration of user experience and accessible needs with accurate reference to the project brief.</li> </ul> <p>Task 4</p> <ul style="list-style-type: none"> <li>• developed and appropriate lines of reasoning on how the user interface meets user requirements and ease of use</li> <li>• developed and appropriate lines of reasoning on the use of design principles and accessibility features</li> <li>• developed and appropriate lines of reasoning on the use of design principles and accessibility features</li> </ul>	<p>Assessment Criteria</p> <p>Task 1</p> <ul style="list-style-type: none"> <li>• developed and appropriate account of the impact of the data</li> <li>• lines of reasoning that are appropriate and logical and related to the context of the scenario</li> <li>• appropriate suggestions to the context of the scenario.</li> </ul> <p>Task 2</p> <ul style="list-style-type: none"> <li>• appropriate use of the required data manipulation, advanced data manipulation and data processing methods</li> <li>• accurate results produced from the manipulation and processing of data</li> <li>• appropriate data summaries used, showing accurate results</li> <li>• appropriate use of a range of presentation methods</li> <li>• appropriate use of a range of presentation features</li> </ul>
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Key Stage 4: Year 11 – Long Term Planning – BTEC Digital Information Technology

	Autumn term	Spring term	Summer term
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<p>Knowledge</p>	<p>Component 2 – Collecting, Presenting and Interpreting Data</p> <p>Coursework Students will understand the characteristics of data and information and how they help organisations in decision making. They will use data manipulation methods to create a dashboard to present and draw conclusions from information.</p> <p>The assignment for this component consists of three tasks.</p> <p>Task 1 Explore the suitability of two given data collection methods used by an organisation for a given dataset.</p> <p>Task 2 Carry out different manipulation and processing methods in order to create a dashboard, providing data summaries using appropriate presentation methods and features.</p> <p>Task 3 Analyse a dataset, present their findings and draw conclusions based on these findings. Explore how presentation affects understanding in the dataset and how they could be improved.</p>	<p>Component 3 – Effective Digital Working Practices Students will explore how organisations use digital systems and the wider implications associated with their use.</p> <p><b>A - Modern Technologies:</b></p> <p><b>Modern Technologies:</b></p> <ul style="list-style-type: none"> <li>• Communication Technologies</li> <li>• Features of Cloud Storage</li> <li>• Features of Cloud Computing</li> <li>• Platform Selection</li> <li>• How modern and traditional systems work</li> <li>• Implications for organisations when choosing</li> </ul> <p><b>Impact of Modern Technologies:</b></p> <ul style="list-style-type: none"> <li>• Changes to teams by modern technologies</li> <li>• Modern technologies on manage</li> <li>• Communication using modern technologies</li> <li>• Inclusivity by modern technologies</li> <li>• Positive and negative impacts</li> </ul> <p><b>B - Cyber Security:</b></p> <p><b>Threats to data:</b></p> <ul style="list-style-type: none"> <li>• Why they are attacked</li> <li>• External threats</li> <li>• Internal threats</li> <li>• Impact of security breach</li> </ul> <p><b>Prevention &amp; Management:</b></p> <ul style="list-style-type: none"> <li>• User access protection</li> <li>• Data level protection</li> <li>• Finding vulnerabilities</li> </ul> <p><b>Policy:</b></p> <ul style="list-style-type: none"> <li>• Defining Responsibilities</li> <li>• Defining Security Parameters</li> <li>• Disaster Recovery Policy</li> <li>• Actions after an attack</li> </ul>
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Assessment	Non-Examination Assessment (NEA)  Assessment Criteria Task 3 <ul style="list-style-type: none"><li>• complete and appropriate set of findings provided from the dataset and dashboard.</li><li>• conclusions with lines of reasoning that are relevant to the context of the scenario</li><li>• lines of reasoning on the use of presentation features</li><li>• lines of reasoning on the use of presentation features</li></ul>	1hr 30min external assessment of the knowledge, understanding and skills acquired and developed across the qualification
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