

## Computing/IT Curriculum Overview 2024-25

### Key Stage 3 Curriculum:

Students in Key stage 3 will study the Cabot Learning Federation KS3 Computing Curriculum Topics covering a range of topics throughout the year involving Computer Science and Information Technology Skills.

	<b>Term 1</b>	<b>Term 2</b>	<b>Term 3</b>	<b>Term 4</b>	<b>Term 5</b>	<b>Term 6</b>
<b>Year 7</b>	Using Computers Responsibly  <i>How do we use computers responsibly in the real world?</i>	Hardware & Software  <i>What makes our computers function?</i>	Computational Thinking (Scratch)  <i>How do we begin to solve problems using a computer?</i>	Computational Thinking (Scratch)  <i>How do we begin to solve problems using a computer?</i>	Data Representation  <i>How and why do computers understand data differently to us?</i>	ICT Project (Blog Creation)  <i>How can we use a blog to gain support for a cause?</i>
<b>Year 8</b>	Hardware and Software Applications  <i>How does hardware effect the performance of a system?</i>	Networks  <i>What is a computer network?</i>	Computational Thinking (Flowcharts)  <i>How do we begin to solve problems using a computer?</i>	Computational Thinking (Scratch)  <i>How do we begin to solve problems using a computer?</i>	Data Representation  <i>How and why do computers understand data differently to us?</i>	ICT Project (Vector Graphics)  <i>How can we use software to help create graphics?</i>
<b>Year 9</b>	Algorithms and Programming Techniques (Python)  <i>Understanding programming techniques in python</i>	Algorithms and Programming Techniques (HTML)  <i>Understanding programming techniques in HTML to build webpages.</i>	Networks  <i>Computer networks and internet services</i>	System Security (Cyber Security)  <i>Threats and solutions to network security</i>	Data Representation (Images and Sound)  <i>How and why do computers understand data differently to us?</i>	ICT Project (Photoshop)  <i>Meeting the needs of a client: Creation of a product for a client</i>

## Computing/IT Curriculum Overview 2024-25

### Key Stage 4 Curriculum and assessment:

#### Computer Science

We currently study the [OCR GCSE Computer Science Specification](#)

Topics Studied:

<b>Exam</b>	<b>Topic</b>	<b>Content Summary</b>	<b>Length</b>	<b>Weighting</b>
<b>Paper 1</b>	Computer Systems	Introduces students to the central processing unit (CPU), computer memory and storage, data representation, wired and wireless networks, network topologies, system security and system software. It also looks at ethical, legal, cultural and environmental concerns associated with computer science.	1hr 30 Mins	50 %
<b>Paper 2</b>	Computational thinking, algorithms and programming	Students apply knowledge and understanding gained in component 01. They develop skills and understanding in computational thinking: algorithms, programming techniques, producing robust programs, computational logic and translators.	1hr 30 Mins	50 %

## Computing/IT Curriculum Overview 2024-25

### ***Practical Programming***

Students will be given the opportunity to undertake a programming task(s) during their course of study which allows them to develop their skills to design, write, test and refine programs using a high-level programming language. Students will be assessed on these skills during the written examinations, in particular component 02 (section B).

### ***BTEC Tech Award Level 1/2 in Digital Information Technology***

We also offer students the chance to study the Pearson BTEC Tech Award Level 1/2 in Digital Information Technology

#### **Topics Include:**

<b>Component</b>	<b>Topic</b>	<b>Content Summary</b>	<b>Length</b>
Component 1	Exploring User Interface Design Principles and Project Planning Techniques	Learners will develop their understanding of what makes an effective user interface and how to effectively manage a project. They will use this understanding to plan, design and create a user interface.	Non-Exam Assessment
Component 2	Collecting, Presenting and Interpreting Data	Learners 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.	Non-Exam Assessment
Component 3	Effective Digital Working Practices	Learners will explore how organisations use digital systems, and the wider implications associated with their use	1 hr 30 Mins

## Computing/IT Curriculum Overview 2024-25

### Key Stage 5 Curriculum and assessment:

#### Computer Science

We currently study the [OCR A-Level Computer Science Specification](#)

#### Topics Studied:

Component	Topic	Content Summary	Length	Weighting
Component 1	Computer Systems	<p>Students are introduced to the internal workings of the (CPU), data exchange, software development, data types and legal and ethical issues. The resulting knowledge and understanding will underpin their work in component 03.</p> <p>It covers:</p> <ul style="list-style-type: none"><li>• The characteristics of contemporary processors, input, output and storage devices</li><li>• Types of software and the different methodologies used to develop software</li><li>• Data exchange between different systems</li><li>• Data types, data structures and algorithms</li><li>• Legal, moral, cultural and ethical issues.</li></ul>	2hr 30 Mins	40 %

## Computing/IT Curriculum Overview 2024-25

<b>Component 2</b>	Algorithms and programming	<p>This builds on component 01 to include computational thinking and problem-solving.</p> <p>It covers:</p> <ul style="list-style-type: none"><li>• What is meant by computational thinking (thinking abstractly, thinking ahead, thinking procedurally etc.)</li><li>• Problem solving and programming – how computers and programs can be used to solve problems</li><li>• Algorithms and how they can be used to describe and solve problems.</li></ul>	2hr 30 Mins	40 %
<b>Component 3</b>	Programming Project	<p>Students are expected to apply the principles of computational thinking to a practical coding programming project. They will analyse, design, develop, test, evaluate and document a program written in a suitable programming language. The project is designed to be independently chosen by the student and provides them with the flexibility to investigate projects within the diverse field of computer science.</p>	Non-Exam Assessment	20%

## Computing/IT Curriculum Overview 2024-25

### ***Level 3 Cambridge Technicals: Information Technology***

We also offer students the chance to study an OCR Level 3 Cambridge Technical course in Information Technology

#### **Topics Include:**

<b>Units</b>	<b>Topic</b>	<b>Content Summary</b>	<b>Length</b>
<b>Unit 1</b>	Fundamentals of IT	A sound understanding of IT technologies and practices is essential for IT professionals. Information learnt in this unit will provide a solid foundation in the fundamentals of hardware, networks, software, the ethical use of computers and how business uses IT. After completing this unit, the knowledge, skills and understanding you have developed will underpin your study for the additional units.	1hr 30 Mins
<b>Unit 2</b>	Global information	The purpose of this unit is to demonstrate the uses of information in the public domain, globally, in the cloud and across the internet, by individuals and organisations. You will discover that good management of both data and information is essential, and that it can give any organisation a competitive edge. This unit will provide you with a greater understanding of how organisations use information sources both internally and externally and the types of information you will encounter. The skills gained by completing this unit will give you knowledge of the functionality of information and how data is stored and processed by organisations. You will also learn about how individuals use information of various types. This unit will help you to understand the legislation and regulation governing information that flows into and out of an organisation and the constraints and limitations that apply to it. You will also learn the relationship between data and information.	1hr 30 Mins

## Computing/IT Curriculum Overview 2024-25

<b>Unit 6</b>	Application Design	<p>The world is increasingly reliant on applications that help individuals, businesses and organisations achieve specific activities or purposes. In this unit you will explore potential ideas for a new application and develop the fundamental design for it. You will then develop the designs for an application and how users will interact with it. The application that you design can be for any sector and for any purpose. You will have the opportunity to present your ideas, prototype them, and gain feedback before refining your design. Besides the technical knowledge that you will gain about designing an application, you will also learn key transferable skills such as liaising with clients, questioning people effectively to gain the information you need to develop successful designs, and presenting your ideas to an audience and getting feedback from them.</p>	Non-Exam Assessment
<b>Unit 8</b>	Project Management	<p>This unit will provide you with the opportunity to understand and use various project planning skills and techniques, thereby enabling you to become more effective in the workplace. The key to any project being a success is the planning that takes place. Project management skills are essential transferrable skills that can be used for all IT related projects whether it's traditional methodologies or more recently adapted agile approaches within the IT development environment. These skills can be adapted and used even on the smallest 'tasks' during the planning and implementation stages. Regardless of your job role, you will often be called upon to participate in projects for a variety of reasons; consequently this unit is optional within all four of the specialist pathways. This unit will assist you in developing your skills, knowledge and understanding of different project methodologies and the key factors that can influence the success or failure of a project.</p>	Non-Exam Assessment

## Computing/IT Curriculum Overview 2024-25

<b>Unit 21</b>	Web design and prototyping	Organisations are increasingly reliant on their websites to market goods or services and interact with clients and customers. As technology develops, so does the scope of functionality of websites and the importance of an effective design that meets the needs of the organisation. In this unit you will research, design and produce an interactive, responsive website that is specific to a client's needs, culminating in presenting the concept of the website using the prototype to the client. You will learn about the security risks in website design and how to minimise these threats. This unit will also allow you to incorporate existing interactive elements, as well as prototyping your own website	Non-Exam Assessment
----------------	----------------------------	---	---------------------