



# CURRICULUM PLAN

## DIGITAL INFORMATION TECHNOLOGY

BRAMHALL HIGH SCHOOL

## Curriculum Intent

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Learners who generally achieve at Level 2 across their Key Stage 4 learning might consider progression to:

- A Levels as preparation for entry to higher education in a range of subjects
- study of a vocational qualification at Level 3, such as a BTEC National in ..., which prepares learners to enter employment or apprenticeships, or to move on to higher education by studying a degree in the business sector.

## YEAR 10

Term	Programme of Learning	Links to the National Curriculum / Specification / Additional	Assessments	What extra learning opportunities are planned?	Disciplinary Literacy
<b>Term 1a</b>	<p>Learners will understand the use of different types of user interface and how they vary across different uses, devices and purposes.</p> <p>Learners will understand the varying needs of the audience and how they affect both the type and the design of the interface.</p> <p>Learners will understand how design principles provide both appropriate and effective user interaction with hardware devices.</p>	<p><b>A1 User interfaces:</b></p> <ul style="list-style-type: none"> <li>• Types of user interface</li> <li>• Range of uses and devices</li> <li>• Factors affecting the choice of user interface:</li> <li>• Hardware and software influences:</li> </ul> <p><b>A2 Audience needs:</b></p> <ul style="list-style-type: none"> <li>• Accessibility needs</li> <li>• Skill level</li> <li>• Demographics</li> </ul> <p><b>A3 Design principles:</b></p> <ul style="list-style-type: none"> <li>• Colours:</li> <li>• Font style/size</li> <li>• Language</li> <li>• Amount of information</li> <li>• Layout</li> <li>• User perception of</li> <li>• Retaining user attention</li> <li>• Intuitive design</li> </ul>	<p>Component 1 - Pearson set Assignment (Internal)</p> <p><i>Externally moderated</i></p> <p>Component 2 - Pearson set Assignment (Internal)</p> <p><i>Externally moderated</i></p>	<p><b>AMAZON</b> Fulfilment Centre Tour (Subject to Availability)</p> <p>Independent opportunities for students to report on their own experience of using digital information systems outside school.</p> <p>E.g. MacDonald's ordering systems, ticketing systems at cinemas and railway stations. Self-service checkouts at supermarkets</p>	<p>Interface Usability Accessibility GANNT Chart Constraints</p>

	<p>Learners will understand the techniques that can be used to improve both the speed and access to user interfaces.</p> <p>Learners will understand project planning techniques used to develop a project proposal and project plan for the development of a user interface for a given brief.</p> <p>Learners will understand how to produce an initial design using design principles.</p>	<p><b>B1 Project planning techniques:</b></p> <ul style="list-style-type: none"> <li>• Planning tools</li> <li>• Methodologies</li> </ul> <p><b>B2 Creating a project proposal and plan:</b></p> <p>Project proposal</p> <ul style="list-style-type: none"> <li>• User accessibility requirements</li> <li>• Constraints</li> </ul> <p>Project plan</p> <ul style="list-style-type: none"> <li>• Timescales</li> </ul> <p><b>B3 Creating an initial design</b></p> <ul style="list-style-type: none"> <li>• Producing a design that: meets user requirements</li> <li>• Producing a design specification that includes: Sketches/Hardware and software requirements</li> <li>• Producing a design that allows for: Increased user confidence/familiarity Reduced learning time of new interfaces/features Reduced time to complete tasks Increased user attention Reduced need for specialised knowledge.</li> </ul>			
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<p><b>Term 1b</b></p>	<p>Learners will understand how to use their design to produce a user interface.</p> <p>Learners will understand how to review the success of the user interface and the use of their chosen project planning techniques.</p> <p><b>Component 1 - Pearson set Assignment (Internal)</b></p> <p><i>Externally moderated</i></p>	<p><b>B4 Developing a user interface</b> Initial design using the design principles listed in A3 Design principles.</p> <p><b>C1 Review: Be able to review a user interface</b></p> <ul style="list-style-type: none"> <li>Identify strengths and weaknesses of the user interface</li> <li>Suggest improvements that could be made to the user interface to better meet the audience needs.</li> </ul>			
<p><b>Term 2a</b></p>	<p>Learners will understand the concepts of data and that data is meaningless without converting it into information by adding structure and context.</p>	<p><b>A1 Characteristics of data and information</b></p> <p>Characteristics of data:</p> <ul style="list-style-type: none"> <li>No meaning</li> <li>No structure</li> <li>No context</li> <li>Unprocessed.</li> </ul> <p>Characteristics of information:</p> <ul style="list-style-type: none"> <li>Has meaning</li> </ul>			<p>Data vs Information Validation Verification Primary Data Secondary Data</p>

	<p>Learners will understand the different ways of representing information and will be able to explain situations where they would be used.</p>	<ul style="list-style-type: none"> <li>• Has structure</li> <li>• Has context</li> <li>• Is processed.</li> </ul> <p><b>A2 Representing information</b></p> <ul style="list-style-type: none"> <li>• Text • Numbers • Tables • Graphs/charts • Sparklines • Infographics</li> </ul>			
<p><b>2a</b></p>	<p>Learners will understand the methods that can be used to ensure data input is suitable and within boundaries so that it is ready to be processed.</p> <p>Learners will understand the different types of data collection methods, the strengths and weaknesses of each, how data collection features affect its reliability and how the collection of data could be improved.</p>	<p><b>A3 Ensuring data is suitable for processing</b></p> <p>Validation methods:</p> <ul style="list-style-type: none"> <li>• Range check</li> <li>• Type check</li> <li>• Presence check</li> <li>• Length check.</li> </ul> <p>Verification methods:</p> <ul style="list-style-type: none"> <li>• Proofreading</li> <li>• Double entry</li> </ul> <p><b>A4 Data collection</b></p> <p>Primary Data Secondary Data</p> <p>Data collection features:</p> <ul style="list-style-type: none"> <li>• Size of sample</li> <li>• Who was in the sample</li> <li>• Where the data was collected</li> </ul>			

<p><b>Term 2b</b></p>	<p>Learners will understand the factors that affect the quality of information.</p> <p>Learners will understand how different types of data are used by organisations for data modelling.</p> <p>Learners will understand the different threats that face individuals who have data stored about them.</p>	<ul style="list-style-type: none"> <li>• When the data was collected</li> <li>• Methods used.</li> </ul> <p><b>A5 Quality of information</b>  <i>Quality of information factors:</i>            Source/collection method, Accuracy, Age, Completeness, Amount of detail, Format/Presentation and Volume.</p> <p><b>A6 Sectors that use data modelling</b></p> <p>Types of sectors, to include:</p> <ul style="list-style-type: none"> <li>• Transport</li> <li>• Education</li> <li>• Retail</li> <li>• Banking</li> <li>• Entertainment</li> <li>• government</li> <li>• Health care</li> <li>• Construction</li> <li>• Communication</li> <li>• Health and safety</li> <li>• Sport and fitness.</li> </ul> <p><b>A7 Threats to individuals</b>            Threats to individuals, to include:</p> <ul style="list-style-type: none"> <li>• Invasion of privacy</li> <li>• Fraud</li> <li>• Targeting vulnerable groups of people</li> <li>• Inaccurate data could be stored.</li> </ul>			<p>Modelling            Accuracy            Fraud            Data Manipulation</p> <p>Absolute            Relative            Macros            Conditional - Formatting</p>
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<b>Term 3a</b>	Learners will understand how data can be imported from an external source. They will then explore how to accurately apply data processing methods to aid decision making.	<b>B1 Data processing methods</b> These include:  Data manipulation methods: <ul style="list-style-type: none"><li>• Importing data</li><li>• Formulae</li><li>• Functions</li><li>• Sorting</li></ul> Advanced manipulation methods: <ul style="list-style-type: none"><li>• Decision-making functions, to include IF, WHATIF, SUMIF</li><li>• Look-up functions</li><li>• Count functions</li><li>• Logical operators, to include NOT, AND, OR</li><li>• Grouping</li><li>• Subtotal functions</li><li>• Filtering</li></ul>			



		<p>Other processing methods:</p> <ul style="list-style-type: none"> <li>• Absolute and Relative cell referencing</li> <li>• Macros</li> <li>• Linking worksheets</li> <li>• Comments</li> <li>• Hiding / Unhiding and freezing</li> <li>• Conditional Formatting</li> </ul>			
<b>Term 3b</b>	<p>Learners will use a dashboard to select and display information summaries based on a given data set.</p> <p>Learners will use a dataset and dashboard to present findings and draw conclusions based on their findings.</p>	<p><b>B2 Producing a dashboard</b></p> <p>Showing data summaries from the data set:</p> <p>Totals, Counts, Averages, Percentages Sales Breakdowns and Departmental/Section breakdown.</p> <p>Appropriate presentation methods:</p> <p>Pivot tables, Sparklines, Graphs/ Charts and Form Controls</p> <p><b>C1 Drawing conclusions based on findings in the data:</b></p> <p>Findings to include:</p> <ul style="list-style-type: none"> <li>• Trends</li> <li>• Patterns</li> <li>• Possible errors</li> </ul>			<p>Dashboard</p> <p>Pivot tables</p> <p>Sparklines</p> <p>Trends</p> <p>Patterns</p>

	<p>Learners will investigate how well the presentation methods and features listed in B2 have been used.</p> <p><b>Component 2</b> – formal assessment under supervision of exam board set task</p>	<p><b>C2</b> <i>How presentation affects understanding</i></p> <p>To ensure they do not lead to:</p> <ul style="list-style-type: none"><li>Information being misinterpreted</li><li>Information being biased</li><li>Inaccurate conclusions being made.</li></ul>			
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## YEAR 11

Term	Links to the National Curriculum / Specification / Additional	Assessments	What extra learning opportunities are planned?	Disciplinary Literacy
<p><b>Term 1a</b></p>	<p><b>A: Modern technologies</b></p> <p>Understand how and why modern technologies are used by organisations and stakeholders to access and manipulate data, and to provide access to systems and tools in order to complete tasks. Learners should understand the implications of these tools and technologies for organisations and stakeholders.</p>	<p><b>A1 Modern technologies</b></p> <p>Communication technologies:</p> <ul style="list-style-type: none"> <li><i>Networks:</i> Setting up ad hoc networks Security Issues Performance Availability</li> </ul> <p>Features and uses of cloud storage.</p> <p>Features and uses of cloud computing.</p> <p>How the selection of platforms and services impacts on the use of cloud technologies.</p> <p>How cloud and ‘traditional’ systems are used together.</p> <p>Implications for organisations when choosing cloud technologies.</p>	<p>An exam worth 60 marks will be completed under supervised conditions. The supervised assessment period is 1 hour and 30 minutes and should be arranged in the period timetabled by Pearson. The assessment availability is January/February and May/June. First assessment is January/February 2024.</p>	<p>Cloud storage Cloud Computing Platform Ad hoc Stakeholder</p>

	<p>Learners should understand how modern technologies impact on the way organisations perform tasks. Learners should understand how technologies are used to manage teams, to enable stakeholders to access tools and services, and to communicate effectively. Learners should understand the positive and negative impact that the use of modern technologies has on organisations and stakeholders</p>	<p><b>A2</b> <i>Impact of modern technologies</i></p> <p>Changes to modern teams facilitated by modern technologies.</p> <p>How modern technologies can be used to manage modern teams.</p> <p>How organisations use modern technologies to communicate with stakeholders.</p> <p>How modern technologies aid inclusivity and accessibility.</p> <p>Positive and negative impacts of modern technologies on organisations.</p> <p>Positive and negative impacts of modern technologies on individuals</p>			
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<p><b>Term 1b</b></p>	<p><b>B: Cyber security</b></p> <p>Learners should understand why systems are attacked, the nature of attacks and how they occur, and the potential impact of breaches in security on the organisation and stakeholders.</p> <p>Learners should understand how different measures can be implemented to protect digital systems. They should understand the purpose of different systems and how their features and functionality protect digital systems. Learners should understand how one or more systems or procedures can be used to reduce the nature and/or impact of threats</p>	<p><b>B1 Threats to data</b></p> <p>Why systems are attacked.</p> <p>External threats (threats outside the organisation) to digital systems and data security.</p> <p>Internal threats (threats within the organisation) to digital systems and data security.</p> <p>Impact of security breach</p> <p><b>B2 Prevention and management of threats to data</b></p> <p>User access restrictions: Passwords, Physical Security, Biometrics, Two-Factor Authentication</p> <p>Data level protection: Firewalls, Encryption, Back-ups, Virus Protection</p> <p>Finding weaknesses and improving system security</p>			<p>Breach Threats Restrictions Biometrics</p>
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<p><b>Term 2a</b></p>	<p>Learners should understand the need for and nature of security policies in organisations. They should understand the content that constitutes a good security policy and how it is communicated to individuals in an organisation. To ensure that potential threats and the impact of security breaches are minimised, learners should understand how procedures in security policies are implemented in organisations.</p> <p><b>C: The wider implications of digital systems</b> Learners should understand the wider implications of digital systems and their use. Learners should understand how legislation covering data protection, computer crimes and intellectual property has an impact on the way that organisations and individuals use digital systems and data. Learners should understand the procedures that organisations must follow in order to conform to legal requirements and professional guidelines.</p>	<p><b>B3 Policy</b></p> <p>Defining responsibilities</p> <p>Defining security parameters</p> <p>Disaster recovery policy</p> <p>Actions to take after an attack</p> <p><b>C1 Responsible use</b></p> <p>Shared data (location-based data, transactional data, cookies, data exchange between services)</p> <p>Environmental</p>			<p>Policy Parameters Cookies Transactional data Ethical Legal</p>
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	<p>Learners should understand the scope and purpose of legislation (valid at time of delivery) that governs the use of digital systems and data, and how it has an impact on the ways in which organisations use and implement digital systems. Learners should understand the wider ethical considerations of use of technologies, data and information, and organisations' responsibilities to ensure that they behave in an ethical manner.</p>	<p><b>C2 Legal and ethical</b></p> <p>Importance of providing equal access to services and information</p> <p>Net neutrality and how it impacts on organisations.</p> <p>The purpose and use of acceptable use policies</p> <p>Blurring of social and business boundaries</p> <p>Data protection principles</p> <p>Data and the use of the internet</p> <p>Dealing with intellectual property</p> <p>The criminal use of computer systems</p>			
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CURRICULUM PLAN – DIGITAL INFORMATION  
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<p><b>Term 2b</b></p>	<p><b>D: Planning and communication in digital systems</b></p> <p>Learners should be able to interpret and use standard conventions to combine diagrammatical and written information to express an understanding of concepts.</p> <p>Understand how organisations use different forms of notation to explain systems, data and information:</p>	<p><b>D1 Forms of notation</b></p> <p>Understand how organisations use different forms of notation to explain systems, data and information</p> <p>Be able to interpret information presented using different forms of notation in a range of contexts.</p> <p>Be able to present knowledge and understanding using different forms of notations</p>			<p>Notation</p>
<p><b>Term 3a</b></p>	<p>Exam Preparation</p>				



