VOCATIONAL ICT Year 10 Curriculum End Points and Key Vocabulary

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Ethos Links	**STEM** – problem solving when identifying suitable input and output devices for specific scenarios, applying knowledge of storage technologies (magnetic, optical, cloud) and connectivity options, using systems and utility software tools to improve efficiency and maintain performance, designing and interrogating databases using queries, forms, and reports, applying knowledge of fields, records, entities, relationships, and referential integrity, minimising redundancy through effective database design, importing and managing data using CSV files, and testing ICT solutions with valid, extreme, and erroneous data to ensure accuracy, functionality, and reliability **Character** – resilience in understanding and applying technical knowledge across hardware, software, and database concepts, critical thinking in matching solutions to real-world scenarios and evaluating their effectiveness, responsibility in ensuring ethical, accurate, and sustainable use of ICT systems and data, and professionalism in presenting well-reasoned, user-friendly, and fit-for-purpose ICT solutions	**STEM** – problem solving through applying the concept of GIGO to identify and improve data accuracy, understanding encoding methods and their advantages/drawbacks, analysing the effects of data compression, applying verification techniques to ensure data reliability, and designing and interrogating databases using queries, forms, and reports. This includes applying knowledge of fields, records, entities, relationships, and referential integrity, minimising redundancy through effective database design, importing and managing data using CSV files, and testing solutions with valid, extreme, and erroneous data to ensure accuracy, functionality, and reliability **Sustainability** – considering how compression and efficient database design reduce storage and transmission demands, leading to lower energy use, and promoting the sustainable management of digital information **Character** – resilience in applying technical processes such as encoding, verification, and complex database concepts, critical thinking in evaluating the reliability and usefulness of data and interpreting client briefs, responsibility in ensuring accuracy, validation, and ethical handling of data, and professionalism in presenting user-friendly, accurate, and fit-for-purpose solutions	**STEM** – problem solving through analysing the characteristics of LANs, WANs, client-server and peer-to-peer networks, applying knowledge of IP and MAC addressing, evaluating the advantages and disadvantages of network topologies, understanding the role of protocols and packet switching, and comparing wired and wireless connection methods (Bluetooth, NFC, RFID, 3G/4G/5G, satellite, Ethernet, USB). Applying formulas and complex spreadsheet functions (e.g. nested IF, VLOOKUP) alongside what-if analysis tools, structuring spreadsheets with validation and formatting for accuracy, using form controls and pivot tables to enhance interactivity and identify trends, and testing solutions against requirements to ensure accuracy, reliability, and effectiveness **Character** – resilience in mastering complex technical concepts such as networking protocols and advanced spreadsheet functions, critical thinking in evaluating and justifying design choices (e.g. topologies, formulas, and analysis techniques), responsibility in minimising risks, ensuring accuracy, and applying ethical practices in handling data, and professionalism in producing accurate, reliable, and client-focused digital solutions that are fit for purpose	**STEM** – problem solving through applying formulas, complex functions (e.g. nested IF, VLOOKUP), and what-if analysis tools, structuring spreadsheets with clear formatting and validation rules, using form controls to enhance interactivity, applying pivot tables to identify trends, and testing solutions against client requirements to ensure accuracy, reliability, and effectiveness **Character** – resilience in mastering complex spreadsheet tools and advanced calculations, critical thinking in selecting and justifying formulas, charts, and analysis techniques, responsibility in ensuring data accuracy and reliability through testing and validation, and professionalism in developing polished, client-focused spreadsheet solutions that meet success criteria	**STEM** – problem solving when selecting appropriate image formats for different scenarios, applying knowledge of bitmap and vector properties, understanding how resolution and pixel dimensions affect image quality, and analysing the advantages and disadvantages of file formats for storing and sharing static images **Character** – creativity in applying colour theory, shapes, and typography to design meaningful logos, critical thinking in comparing bitmap and vector graphics for different uses, responsibility in selecting file formats that balance quality with efficiency, and professionalism in producing clear and purposeful visual content	**STEM** – problem solving through analysing client requirements to design effective digital solutions, applying knowledge of layouts, formatting, file types, image qualities, resolution, and colour modes, creating and importing structured data sources for mail merge, using merge fields and standard templates, applying standard and advanced editing tools to create, modify, and enhance content, and evaluating outputs against client briefs and success criteria **Character** – responsibility in producing professional, accurate, and fit-for-purpose documents and images, resilience in learning and mastering technical features such as merge fields, data sources, and advanced editing tools, creativity in producing original designs, critical thinking in justifying design choices and evaluating effectiveness, and professionalism in exporting, presenting, and reviewing outcomes against client and success criteria

Learning End Points	Hardware Devices	Data	Networks & Connectivity Methods	Spreadsheets	Graphics	Automated Documents
	Hardware Devices By the end of this unit students will know and understand: • The purpose for a wide range of input and output devices • How an input or output device is suitable for a given scenario • The purpose of secondary storage • How magnetic storage works • The differences between different optical storage mediums • What is meant by cloud storage • What is meant by a computer port and list examples of different ports **Software** By the end of this unit students will know and understand: • The purpose of systems software • How different tools provided by systems software can improve productivity in relation to time/resource management • The purpose of utility software • The purpose of the following types of software and how they can be used to improve productivity 　○ Information handling software 　○ Communications software 　○ Specialised software **Databases** By the end of this unit students will know and understand: • The main components of a database: fields, records, and primary keys • That data can be interrogated using queries, forms, and reports • The purpose of a form in capturing and validating data	**Data** By the end of this unit students will know and understand: • How data becomes information and then knowledge • The purpose of GIGO (Garbage In Garbage Out) to find accurate data • The purpose of encoding data and the benefits and drawbacks of doing so • The impact compression can have on data • What is meant by verification and understand the methods used to verify data **Databases** By the end of this unit students will know and understand: • The purpose of a query and how queries can be used to interrogate and manipulate data • How to apply different types of queries: single criteria, multiple criteria, wildcard, parameter, and calculations • That records in a database can be added, edited, and deleted to maintain and update data • That forms are designed to simplify data entry and navigation by including relevant fields, validation, and user-friendly layouts • That forms can be customised to include branding elements such as images for business purposes • That reports are used to present the results of queries and can be customised to follow a house style or client specification • That data must be checked and tested to identify and remove errors • That test plans are used to organise testing and should	**Networks & Connectivity Methods** By the end of this unit students will know and understand: • The characteristics associated with a LAN and a WAN • The characteristics associated with a client-server and a peer-to-peer network • The difference between a MAC address and an IP address • The differences and similarities associated with different types of network hardware • The characteristics of a star, bus and ring network topology • The advantages and disadvantages to using each network topology • A range of network protocols • The role of each network protocol and in particular, packet switching • How data can be intercepted over a network and strategies that can be used to minimise the risk • What is meant by 'computer network operation' • Connection methods, short range wireless connection (802.11 Bluetooth), near-field communication (NFC) and radio-frequency Identification (RFID) • Medium range wireless connection (3G/4G/5G), long range wireless connection (microwave, satellite), ethernet, USB, micro-USB and USB C **Spreadsheets** By the end of this unit students will know and understand: • That client requirements must be analysed to design	**Spreadsheets** By the end of this unit students will know and understand: • That pivot tables are used to summarise, analyse, and identify patterns or trends within large sets of data • That sorting, filtering, and charting techniques must be selected and justified based on the purpose of the spreadsheet and the client's requirements • That complex functions (e.g. nested IF, IFERROR, COUNTIF, VLOOKUP, HLOOKUP) are used to perform advanced calculations and analysis • The importance of justifying the selection of complex functions to ensure they meet the needs of the solution • That data can be modified and enhanced to improve the functionality and effectiveness of a spreadsheet • That spreadsheets should be checked against success criteria defined in the planning phase to ensure they meet the client brief • That what-if analysis tools (e.g. goal seek, scenario manager) can be used to model different outcomes and support decision-making • That test plans should include valid, extreme, and erroneous data to fully test a spreadsheet solution • That testing results should be recorded in a structured test table to provide evidence of functionality • That testing outcomes must be evaluated to identify successes, failures, and improvements, and that recommendations should be made for implementation	**Graphics** By the end of this unit students will know and understand: • The concept of colour theory and how colours create different meanings. • The use of shapes, symbols, and typography, and how they contribute to a logo. • The properties of bitmap images. • The properties of vector graphics. • The differences between bitmap and vector graphics and their suitability for different scenarios. • How resolution and pixel dimensions affect the quality of an image file. • The range of file formats used to store static images. • The advantages and disadvantages of different static image file formats.	**Automated Documents** By the end of this unit students will know and understand: • The components of a range of business documents such as: business letter, invoice, contract, newsletter, and financial report • That success criteria are used to measure whether a document solution meets the requirements of the client brief • That client requirements must be analysed to design an effective automated document solution • That standard documents are structured with consistent layouts, placeholders, formatting, and features • That design choices must be justified to ensure documents are fit for purpose and professional in appearance • That data sources for mail merge can be created or imported and must be structured effectively for use in an automated document • That merge fields are used to insert data from the source into the standard document at appropriate points • That performing a mail merge produces multiple customised documents based on the data source • That the effectiveness of merged documents should be reviewed and evaluated against the client brief and success criteria **Graphics NEA Task** By the end of this unit students will know and understand: • How to analyse a client brief and define success criteria to guide planning and evaluation.

	• The success criteria and requirements of a client brief when designing a database solution • That entities and relationships can be represented using an Entity Relationship Diagram (ERD) • How database structures are designed to minimise data redundancy • The difference between primary keys and foreign keys and their role in maintaining referential integrity • That data types and field properties must be carefully chosen to match the intended use of the data • That validation rules are applied to fields to reduce input errors and maintain data integrity • That CSV files can be used to import data into a database system • The role of queries in extracting, filtering, and combining data to meet specific requirements • That reports can be designed to present data in a structured and meaningful format	include valid, extreme, and erroneous data • That evidence of testing (e.g., pass/fail results) is required to demonstrate database functionality • The reasons why different testing methods are applied and how these ensure accuracy and reliability • That testing results should be evaluated to identify successes, failures, and possible improvements	an effective spreadsheet solution that meets the brief • That success criteria are used to measure whether the spreadsheet meets the needs of the client • That spreadsheets are structured using worksheets, rows, columns, cells, and ranges • That formatting techniques (e.g. borders, shading, number formats, alignment) improve readability and presentation • That different data types (e.g. text, number, date, currency, percentage) are used to ensure data is stored correctly • That conditional formatting can be applied to highlight data dynamically • That validation rules and messages are used to restrict input, prevent errors, and guide users • That the quality of data affects the reliability and accuracy of the spreadsheet • That formulas and functions are used to perform calculations and analyse data (e.g. SUM, AVERAGE, IF, VLOOKUP) • The importance of selecting and justifying formulas and functions to suit the intended purpose • That form controls (e.g. drop-down lists, checkboxes, buttons) can add functionality and improve user interaction • That sorting and filtering tools are used to organise and analyse data effectively • That charts (e.g. bar, line, pie) are used to present key data visually in a meaningful way			• That planning involves sketches, annotated layouts, and consideration of the target audience and purpose. • The range of possible image sources (own or third-party) and the need to respect copyright and intellectual property rights. • The qualities and limitations of digital images, including size, resolution, format, and colour mode (RGB/CMYK). • The differences between raster and vector images, and between common file types (e.g. JPEG, PNG, TIFF), in terms of resolution, scalability, and file size. • The standard and advanced tools and techniques available to create, edit, and combine images. • That final images must be stored in editable formats and exported in suitable formats for different purposes (e.g. web, print, transparency).

| Key Vocabulary | • Hardware Keywords
• Software Keywords
• Database Keywords | • Data Keywords
• Database Keywords | • Networks & Connectivity Methods Keywords
• Spreadsheets Keywords | • Spreadsheets Keywords | • Graphics Keywords | • Automated Documents Keywords |