

Curriculum Overview: Cambridge National Information Technologies

Rationale:

The intent for the year 9 IT content is to equip pupils with the relevant knowledge in creating business solutions using ICT applications. Focusing on data, how it is collected, used, processed, interpreted and presented within the framework of an IT project. We will allow learners to be confident IT users across a range of digital technology, developing their transferable skills and knowledge to continue to be confident IT users with new technology as it emerges.

Software skills that will be delivered will be based on Spreadsheets, Databases, Word Processing, Desktop Publishing and Presentation software. These skills interlink with key terminology and understanding the students require IT theory in the digital world. Spreadsheet application are commonly used to create input, processing and output solutions. This application is used in a variety of business settings that is covered in many different business sectors such as IT, finance, retail, hospitality, educational and government. These skills are transferable across the curriculum and are life skills.

The collection and communication of data and storing of data/information happens all around us. Technology underpins how it's collected and communicated nearly all of the time. It can be seen in all walks of life, from a wearable fitness tracker recording how many steps you have taken, your mobile phone provider recording your usage to create your bill or an online retailer being able to target you with specific promotions based on your purchase history. Knowing how and why data is gathered and being able to turn raw data into something meaningful is essential as the learner moves through education and into employment. To be able to do this the learner will need to have the confidence to use a range of information technology that is currently available, as well as being adaptable and resilient enough to deal with the rapid advances.

Term / Length of Unit	Outline	Assessment	Home Learning	Resources	Knowledge/Skills End Points	Reading
Y9 Autumn	<p>Learners will use different hardware and software technologies to interrogate and model data to create, integrate and format a technological solution for data/information processing and communication.</p> <p>Software key skills: Word processing skills Desktop publishing skills Database software skills</p>	<p>All pupils will be assessed based on skills demonstrated during lessons based on Word processing, Desktop publishing and databases. AFL questioning throughout topic. Assessment via Exam style questions.</p>	<p>Homework tasks to be set in accordance to the school marking policy.</p> <p>3 home learning tasks will be set based on Word processing skills Desktop publishing skills Database software skills</p>	<p>All resources/ PowerPoints/ worksheets/ homework tasks which are relevant to topic being delivered are to be based on resources in shared area.</p> <p>Word Processor Resources(Help Sheets, footnotes, endnotes, creating Index, Mail merge, Watermark, inserting objects, inserting comments, page numbers, captions, table of contents. Database Resources</p>	<p>Software skills pupils should be able to demonstrate: Word processing/desktop publishing (DTP): a. convert table to text and text to table b. use referencing tools i.e. footnotes, endnotes and captions. c. create tables of contents and indexes e. use of macros for automation of tasks f. use of watermarks, sections, headers, and footers g. save and export in appropriate formats</p>	<p>Mail merge Macros Queries Validation verification</p> <p>Pre teaching through modelling how to "read" and analyse word, publisher and database.</p>

			Homework tasks will be based on reinforcing content delivered in current and prior lessons to interleave and embed pupil knowledge.		Database software: <ul style="list-style-type: none"> a. relational database i.e. two tables or more linked by foreign keys b. import data from i.e. www, surveys, other file types. c. data validation techniques i.e. presence check, length check, format check, lookup value, range check, input masks. d. create and use input forms - multiple table entry, sub forms, list box, check box, text field controls - via use of macros (e.g. from switchboard/dashboard to navigate between aspects of the database) e. design and create queries using i.e. multiple tables, wildcards, parameters, crosstab, grouping data in query - SUM, MAX, MIN, complex query and multiple criteria. f. design and create reports using i.e. multiple tables, results of complex queries, applying appropriate security measures to tables, queries, forms, reports, database h. export and link data to other applications/technologies (e.g. hyperlink a database to a presentation, meaning that the data within the presentation is automatically updated with any subsequent changes to the data) 	Step by step guides Guided reading Interpreting scenarios to find solutions
Y9 Spring	Topic 1 Design Tools Mind maps, Library, Tunnel timeline, Presentation,	Working to a brief, students will plan and justify the use of a website for a	Homework tasks to be set in accordance to the school marking policy.	Shared area Topic 1 PowerPoints Phoenix Travel resources and help sheets for creating a website	Develop a website that has a good HCI. Be able to analytically review the design vs. real site.	Visualisation diagram Wireframe Tunnel timeline

	Visualisation diagrams, Wireframes	given scenario. They will create a series of design tools including visualisation diagrams and wireframes to create a website using Dreamweaver			Be able to work reflectively Keywords High-fidelity wireframe Low fidelity wireframe Concurrent Processes	Pre teaching through resources Demonstrating design tools visually
Y9 Spring	Topic 2 HCI in everyday life Know the different display types and sizes that an HCI can be used on • The impact of display and resources on the HCI • Advantages and disadvantages of hardware considerations for using an HCI • Know how the software the HCI will be used on will impact on the design • Know how the digital platform the HCI will be used on will impact on the design	PO1: To understand the term hardware and be able to give examples. PO2: To understand the term software and be able to give examples. PO3: Be able to explain what the 'Human Computer Interface' is PO4: Understand the requirements of different HCI's. PO5: be able to discuss how the effectiveness of the HCI can be impacted by display and computer resources. PO6: Be able to discuss the	Set in line with School policy	PowerPoint on teachers area R:\Computing and ICT\2018-2019\Cambridge Nationals\J836\R050\Topic 2 HCI in everyday life AMT learning resources E learning book	Principles of design tools for application in human computer interfaces. Key words Embedded systems LCD LED Black light OLED WIMP WYSIWYG	Human computer interface HCI Embedded systems Cloud storage Research Guided reading Case studies Interrupting data and abstracting meaning

		<p>advantages of an HCI. PO7: Be able to discuss the disadvantages of an HCI. PO8: To understand the role of an Operating System. PO10: Be able to explain the use of application software. PO11: Discuss the suitability of digital platforms for given contexts</p>	<p>Data Homework sheet</p> <p>Testing homework sheet</p>	<p>Data and information.PPT Data Worksheet Validation and verification.PPT Data Collection and storage.ppt Cloud storage Physical Storage.ppt Application and testing.ppt</p> <p>Cambridge Technical Information tech work book AMT resources</p>		
Y9 Summer	<p>Data manipulation using spreadsheets. Students will learn the skills to be able to create a spreadsheet</p> <p>2.1.1, 2.1.2 & 2.1.3</p>	<p>All pupils will be assessed based on skills demonstrated during lessons based on Presentation and spreadsheet software. AFL questioning throughout topic.</p>	<p>Homework tasks to be set in accordance to the school marking policy.</p> <p>3 home learning tasks will be set based on spreadsheet</p>	<ul style="list-style-type: none"> All resources/ PowerPoints/ worksheets/ homework tasks which are relevant to topic being delivered are to be based on resources in shared area. Using PG online resources and supplementing with practical based assessments. Additional resources to supplement some of the more advance skills. On lookup etc. 	<p>Spreadsheet software:</p> <ul style="list-style-type: none"> Create a spreadsheet solution that is fit for purpose Meaningful worksheet names Manipulation of data using formulas and functions Build in functions I.E SUM, MIN,MAX,AVERAGE, COUNT, IF, COUNTIF VLOOKUP, HLOOKUP, AND, OR, DATE, TODAY,SUMIF, SUBTOTAL Relational operators including .<>=,.<,>,<=,>= Solving formula errors (#div/0. #name? #ref! ETC) 	<p>Goal seek. Functions Formulas</p> <ul style="list-style-type: none"> Step by step guides Guided reading Interpreting scenarios to find solutions

					<ul style="list-style-type: none"> • Effective validation checks within a spreadsheet • Naming of cells or a group of cells • Use of appr • security measures such as lock cells, password protected workbook, worksheet editing • Use of different cell formatting options such as alignment, border, font, shading, text wrap and currency matching the plan and design of the solution • Modelling tools such as what-if and goal seek to predict different outcomes 	
Summer	<p>Topic 3 Data and Testing</p> <p>Understanding how data and information can be collected, stored and used. Student look at how data is processed by giving meaning and context. They developed further their understanding of different data types from there database and spreadsheet skills. They also look at how information is collated and collected from a variety of methods and the appropriates of these methods In collecting data</p>	<p>End of assessment AFL questioning throughout topic.</p> <p>Designing a questionnaire and analysis</p> <p>Exam questions</p>	<p>Data Homework sheet</p> <p>Testing homework sheet</p>	<p>Data and inforamtion.PPT Data Worksheet Validation and verification.PPT Data Collection and storage.ppt Cloud storage Physical Storage.ppt Application and testing.ppt</p> <p>Cambridge Technical Information tech work book</p>	<p>Knowledge of the data protection act (GDPR) and how it relates to their own personal data.</p> <p>Understand what data types are and how they are used.</p> <p>The ability to select information and data can be collected and the type of questions that you may use in a questionnaire survey.</p> <p>Learn how data and information are related to each otherBe able to select the correct storage method for a given scenario.</p> <p>Keywords</p>	<p>Closed questions open questions rank order rating, internet of things,</p> <p>Interrupting data and abstracting meaning Problem solving exercises</p>

	students consider how data is stored and the moral ethic and legal issues surrounding data				Closed questions, open questions, rank order, rating, internet of things, Validation, Verification, Qualitative data, Quantitative data, Reliability, Validity	
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