**Year 13 Topics**

**In year 13** we teach the following topics over the course of the year. Each topic draws on prior learning from previous years and builds on understanding from the KS3 programme of study. Each topic develops and deepens the Core knowledge that will underpin all areas of the curriculum at KS5 and onward into undergraduate courses.

| **Learning Aim A – Understand the principles of website development** | | | | |
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| **Topic** | **Rationale** | **Knowledge acquisition** | **Key vocabulary** | **Skills and enrichment** |
| **A1 Purpose and principles of website products** | Learners need to understand the purpose and principles of website products | Purpose of websites, including the features of:<br>• content-based (Web 2.0 technologies)<br>• product and/or service-based<br>• target audience, e.g. social networker, seekers, gamers, buyers, age profile, gender<br>• requirements, e.g. user-friendly, consistent, navigational, customisable, flexible | Social networker, seekers, gamers, buyers, age profile, gender, user-friendly, consistent, navigational, customisable, flexible, wikis, blogs, online applications, podcasting, ecommerce, real-time information, download services, virtual learning environments, communication. | independence,<br>problem solving,<br>evaluation<br>analysis,<br>creativity<br>literacy<br>numeracy<br>oracy<br>research |
| | | Principles of website design. | Usability, white space, site layout, accessibility, spacing, navigation, typography, alignment, clarity, consistency/intuitiveness, accuracy, content, media, simplicity. | |
| | | Media and objects | Position, colour, contrast, size, appropriateness. | |
| | | Creativity and innovation | Unconventional layouts, white space, ‘outside of the box’ thinking, golden ratio. | |
| | | Search engine optimisation | Indexing (meta tags), use of keywords, importance of updates, limiting crawling. | |

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| **A2 Factors affecting website performance** | Learners will learn about factors affecting website performance | Where scripts run (on the web server – server-side scripts, or the local client machine – client-side scripts). | Client side, server side, scripting, browser compliance, bandwidth availability, compression | independence, problem solving, evaluation analysis, creativity literacy numeracy oracy research |
| | | Browser compliance, e.g. which elements are supported by different browsers. | Optimisation, device detection | |
| | | Server-side factors | Bandwidth availability, number of hits, file types | |
| | | Client-side factors | Upload and download speeds, browser, cache memory, processor speed, interactivity, broadband, narrow band, wireless, fixed line | |
| **Learning aim B – Design a website to meet client needs** | | | | |
| **Topic** | **Rationale** | **Knowledge acquisition** | **Key vocabulary** | **Skills and enrichment** |
| **B1 Website design** | Learners will understand the steps involved in developing a design for a client website. | Problem definition statement requirements: intended audience, full summary of the problem to be solved, constraints, benefits, nature of interactivity, complexity of the website. | Milestones, feedback, black box testing, goes live, audience | independence, problem solving, evaluation analysis, creativity literacy numeracy oracy research |
| | | Purpose requirements as defined in a client brief for their interactive website. | | |
| | | Application of website design principles by professionally created websites. | | |
| | | Initial design ideas/prototypes (illustrating design principles) and the requirements<br>• for an interactive website, including:<br>• diagrammatic illustrations, e.g. storyboard, mood board, wireframe, site maps<br>• realistic representations<br>• search engine optimisation<br>• alternative design ideas/prototypes, including compatibility with mobile/tablet devices | Ergonomics, accessibility, minimalism, prototyping, interactive, static, Transport layer security (TLS), diagrammatic illustrations, storyboard, mood board, wireframe, site maps, representations, search engine optimisation | |

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| | | Client-side scripting design tools and techniques, e.g. pseudocode, flow charts (including use of British Computer Society (BCS) standard flow chart symbols) used to develop original code | Java, validation, runtime, pseudocode, flow charts, code, off the shelf, bespoke scripting, algorithm | |
| | | Effective use of ready-made and/or original assets, e.g. a digital animation, digital graphic, digital audio and video, or any other combined assets. | Compression, digital animation, digital graphics, digital audio, digital video, combined assets. | |
| | | Obtaining and using feedback from others to help refine alternative design ideas/ prototypes and make decisions. | Feedback, quantitative questioning, qualitative questioning, survey | |
| | | Testing plan requirements and its completion with test data, to test functionality | Testing, functionality, test data | |
| | | Identifying technical and design constraints and working around them.<br>Legal and ethical considerations applicable to the equivalent legislation in England, Wales and Northern Ireland:<br>• Copyright, Designs and Patents Act 1988 and its requirements in terms of protecting software products and digital media, such as images, music and films.<br>• Data Protection Act 1998 and the requirements it places on organisations to keep data about living individuals secure. | Malware, encryption, copyright, patents, data protection, GDPR, legal, ethical | |

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| **B2 Common tools and techniques used to produce websites** | Students learn the use of tools and techniques and their suitability for different client requirements. | HTML, HTML5 and subsequent updates | Patches, back-compliance, HTML, HTML5, CSS, HTML, Inline, header, pixel perfect, open tag, close tag, title | independence, problem solving, evaluation analysis, creativity literacy numeracy oracy research Dreamweaver skills |
| | | Tables | DIV tags, padding, border, row, column, span | |
| | | Forms, text field, text area, buttons, radio buttons, check boxes. | Post method, forms, text field, text area, buttons, radio buttons, check boxes, input type, error | |
| | | Navigation, menus, hyperlinks (internal and external), anchors. | Spry, widgets, Navigation, menus, hyperlinks, anchors. | |
| | | Interactive components, e.g. hot spots, pop-ups, buttons, menus, rollover images. | Interactive components, hot spots, pop-ups, buttons, menus, rollover images, navigation | |
| | | Colour schemes, styles and templates. | Colour schemes, styles and templates. | |
| | | CSS, e.g. background colour, background images, text formatting, borders, padding, heading styles, element position | CSS, template, background colour, background image, text formatting, borders, padding, heading styles, element position | |
| | | Embedded multimedia/digital asset content, e.g. digital animation, digital graphics, digital audio, digital video | Embedded multimedia, digital asset content, digital animation, digital graphics, digital audio, digital video | |
| | | Accessibility features, e.g. alternative tags, zoom features, text-to-speech | Accessibility, alternative tags, zoom features, text-to-speech | |
| | | The World Wide Web Consortium (W3C®) standards for accessibility and HTML compliance. | The World Wide Web Consortium (W3C®) standards, accessibility, HTML compliance. | |
| | | Platform compatibility, e.g. browser, operating system, mobile devices. | Platform compatibility, browser, operating system, mobile devices. | |
| | | Exporting and compressing of digital assets into suitable file types. | Exporting, compression, digital assets, file types. | |

| Learning Aim C – Develop a website to meet client needs | | | | |
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| **Topic** | **Rationale** | **Knowledge acquisition** | **Key vocabulary** | **Skills and enrichment** |
| **C1 Client-side scripting languages** | Students learn about client-side scripting languages | Embedding of original client-side scripts into web pages to provide more interactivity and improve the usability of the website. | Embedding, client-side scripts, interactivity, usability, | independence, problem solving, evaluation analysis, creativity literacy numeracy oracy research Dreamweaver skills |
| | | Types of web-scripting languages, e.g. JavaScript®, VBScript®. | Interaction, dynamic HTML, JavaScript®, VBScript® | |
| | | Uses of scripting languages, e.g. alerts, confirming choices, browser detection, creating rollovers, checking/validating input, handling forms. | Scripting, alerts, confirming choices, browser detection, creating rollovers, checking, validating input, handling forms | |
| | | Constructs, e.g. syntax, loops, decision making, functions, parameter passing, handling events, methods. | Constructs, syntax, loops, decision making, functions, parameter passing handling events, methods, objects, array, dot operator, RWD | |
| **C2 Website development** | Students learn about creation of interactive websites | Use of CSS | HTML tags, CSS frameworks, box model, access CSS from HTML doc types | independence, problem solving, evaluation analysis, creativity literacy numeracy oracy research Dreamweaver skills |
| | | Use of original client-side scripting | Client-side scripting | |
| | | Compatibility with mobile and tablet devices | Compatibility, mobile devices | |
| | | Effective use of tools and techniques | Tools, techniques | |
| | | The uploading of files to a web server or host computer/device. | Web server, web host | |
| **C3 Website review** | Students learn about reviewing interactive websites | Quality in comparison with other similar websites | Refinement, mean regression, | independence, problem solving, evaluation analysis, creativity literacy numeracy oracy research Dreamweaver skills |
| | | Suitability for intended purpose and audience | Suitability, purpose, audience | |
| | | Suitability against the client's requirements, including optimisation | Suitability, client's requirements, website optimisation | |
| | | Legal and ethical constraints. | Legal constraints, ethical constraints | |
| | | Strengths and improvements. | Strengths, improvements. | |

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| **C4 Website optimisation** | Students will learn about optimising an interactive website | Performance and user testing<br>Obtaining and evaluating feedback from others<br>Checking interactivity<br>Checking compatibility<br>Refinements and making improvements to meet client needs to optimise the website. | Website optimisation, HTTP requests, style sheets, CSS, compression, bandwidth, response time, WYSIWYG, oversized images, external style sheet, interactivity, feedback, compatibility, testing, test plan. | independence,<br>problem solving,<br>evaluation<br>analysis,<br>creativity<br>literacy<br>numeracy<br>oracy<br>research<br>Dreamweaver skills |
| **C5 Skills, knowledge and behaviours** | Students will learn about monitoring, reviewing and evaluating their own progress. | Planning and recording, including the setting of relevant targets with timescales, how and when feedback from others will be gathered.<br>Reviewing and responding to outcomes, including the use of feedback from others, e.g. IT professionals and users who can provide feedback on the quality of the website and their suitability against the original requirements.<br>Demonstrate own behaviours and their impact on outcomes to include professionalism, etiquette, supporting others, timely and appropriate leadership, accountability and individual responsibility.<br>Evaluating outcomes to help inform high-quality, justified recommendations and decisions. | Quantitative feedback, qualitative feedback, target setting, client requirements, professionalism, etiquette, supporting others, time management, appropriate leadership, accountability, individual responsibility | independence,<br>problem solving,<br>evaluation<br>analysis,<br>creativity<br>literacy<br>numeracy<br>oracy<br>research<br>Dreamweaver skills |