THE WARWICKSHIRE ACADEMY

TWA Curriculum, Skills and Intent for Computing

Year Group	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two
Intent of study year 5	The intent of our Year 5 computing curriculum is to provide students with a strong foundation in key computational concepts, digital literacy, and creative digital skills, while fostering problem-solving abilities, critical thinking, and responsible digital citizenship. The overarching goals are to equip students with the knowledge and skills they need to confidently engage with technology and to prepare them for the future as competent, ethical users and creators of digital content.					
5	**Digital Literacy**	**Digital Literacy** **Information Technology** **Computer Science**	**Data and information**	**Creating Media**	**Computer Science**	**Computer Science**
	• Understand the importance of suitable file names and folder structure • Understand the concept of e-safety. • Recognize why online safety is important. • Identify what personal information is. • Learn why it is important to protect personal information online. • Learn how to create a strong and secure password. • Understand the importance of using different passwords for different accounts. • Understand how to search for information safely and effectively. • Learn to evaluate the credibility of online sources. • Learn about respectful and responsible online behaviour. • Understand the impact of cyberbullying and how to prevent it. • Understand what a digital footprint is. • Learn how online actions can leave a digital trail. • Learn about privacy settings and how to use them. • Understand the importance of securing personal devices.	• Recognize the importance of being digitally literate. • Develop essential computer skills (typing, using a mouse, navigating the desktop). • Learn how to use search engines to find information. • Understand how to use keywords for efficient searching. • Develop skills to evaluate the reliability and credibility of online sources. • Learn the basics of creating digital content (images, videos, presentations). • Understand how to use collaborative tools for group projects. • Learn the basics of online communication and netiquette. • Develop an understanding of basic coding concepts. • Gain hands-on experience with a block-based program – scratch.	To use a form to record information. To compare paper and computer-based databases. To outline how questions can be answered by grouping and then sorting data. To explain that tools can be used to select specific data. To explain that computer programs can be used to compare data visually. To use a real-world database to answer questions Students to complete a project applying skills learnt so far through the term on databases.	To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect To recognise that vector drawings consist of layers To group objects to make them easier to work with To apply what I have learned about vector drawings	• To design and program a maze game • To design and program the next level for my Maze Game. • To add a final level, further enhancing the code in a Maze Game. • To add sound effects with a purpose • To design and program a game within Scratch using Boolean operators • To program costume changes for a sprite in a game. To add effects that enhance a game • To add a point-scoring system to a game. To add backdrop changes to a game.	• I can use software to create my own sounds by recording, editing and playing. • I can combine audio effects to create an original radio jingle • I can research and plan digital content for a radio podcast • I can use software to create and present digital content for a radio podcast. • I can design and record a persuasive radio advert for a product or service • I can present and evaluate audio content.

Year Group	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two
Intent of study year 6	The intent of our Year 6 computing curriculum is to prepare students with the essential digital skills, computational thinking abilities, and a deeper understanding of how technology works in the modern world. By the end of Year 6, students should be confident, creative, and safe users of technology, capable of solving problems through programming, handling data responsibly, and understanding the role of digital tools in everyday life.					
6	**Digital Literacy**	**Computer Science**	**Computer systems and networks**	**Data and information**	**Creating media**	**Creating media**

	• Understand the importance of suitable file names and folder structure • Refresh knowledge of key e-safety principles. • Review the importance of digital literacy. • Understand the long-term impact of digital footprints. • Learn strategies to manage and minimize digital footprints. • Deepen understanding of online privacy. • Learn advanced techniques for securing personal information. • Understand the principles of respectful and responsible online communication. • Learn to identify and prevent cyberbullying. • Develop skills to critically evaluate the credibility of online sources. • Understand the impact of misinformation and how to identify it. • Learn advanced search techniques to find accurate information efficiently. • Understand the basics of digital content creation and its ethical implications. • Learn to use digital tools for creating content.	• Introduction to basic coding concepts and principles. • Explore the concept of algorithms and their role in programming. • Introduction to variables and user inputs in programming. • Understand loops and their importance in repetitive tasks. • Introduction to conditional statements and decision-making in programming. • Explore how data is stored and manipulated in digital systems. • Understand the basics of networks and internet communication. • To explain the importance of internet addresses.	To explain the importance of internet addresses To recognise how data is transferred across the internet To explain how sharing information online can help people to work together To evaluate different ways of working together online To evaluate different methods of online communication	To create a data set in a spreadsheet To build a data set in a spreadsheet To explain that formulas can be used to produce calculated data To apply formulas to data To create a spreadsheet to plan an event To choose suitable ways to present data	• Introduction to 3D modelling • To recognise that you can work in three dimensions on a computer • To identify that digital 3D objects can be modified • To recognise that objects can be combined in a 3D model • To create a 3D model for a given purpose • To plan my own 3D model • To create my own digital 3D model	• To review an existing website and consider its structure • To plan the features of a web page • To consider the ownership and use of images (copyright) • To recognise the need to preview pages • To outline the need for a navigation path • To recognise the implications of linking to content owned by other people
Year Group	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two
Intent of study year 7	The intent of our Year 7 computing curriculum is to provide students with a foundational understanding of key computing concepts, digital literacy, and practical skills, setting the stage for more advanced studies in later years. The curriculum aims to nurture curiosity, problem-solving abilities, and a strong understanding of how technology works, while also promoting responsible use of technology in everyday life.					
7	**Digital Literacy**	**Computer Science**	**Computer Science**	**Creating Media**	**Data and information**	**Digital Literacy** **Information Technology**
	• Understand the importance of suitable file names and folder structure • Overview of computing and its role in society. • Basic terminology (hardware, software, input/output devices). • Internet safety, cyberbullying, and responsible use of technology. • Understanding digital footprints and privacy.	• Compare how humans and computers understand instructions (understand and carry out) • Define a sequence as instructions performed in order, with each executed in turn • Predict the outcome of a simple sequence • Modify a sequence	Define a subroutine as a group of instructions that will run when called by the main program or other subroutines Define decomposition as breaking a problem down into smaller, more manageable subproblems Identify how subroutines can be used for decomposition Identify where condition-controlled iteration can be used in a program	Choose search terms relating to a particular issue – online safety Use tools to copy an image into another application Identify key features of a good poster focusing on online safety Plan a poster to clearly convey a message Choose and download a suitable image following the theme Create a poster using a desktop publishing application	• Identify columns, rows, cells, and cell references in spreadsheet software • Use formatting techniques in a spreadsheet • Use basic formulas with cell references to perform calculations in a spreadsheet (+, -, *, /) • Use the autofill tool to replicate cell data • Explain the difference between data and information	• Identify the key features of a word processor • Identify the key features of a word processor • Apply the key features of a word processor to format a document • Evaluate formatting techniques to understand why we format documents

	• Hardware (CPU, memory, storage devices) and software (operating systems, applications). • Basic troubleshooting and maintenance. • Basic concepts of networks, including LANs, WANs, and the internet. • How data travels across networks.	• Define a variable as a name that refers to data being stored by the computer • Recognise that computers follow the control flow of input/process/output • Predict the outcome of a simple sequence that includes variables • Trace the values of variables within a sequence • Make a sequence that includes a variable • Define a condition as an expression that will be evaluated as either true or false • Identify that selection uses conditions to control the flow of a sequence • Identify where selection statements can be used in a program • Modify a program to include selection • Create conditions that use comparison operators (>,<,=) • Create conditions that use logic operators (and/or/not) • Identify where selection statements can be used in a program that include comparison and logical operators • Define iteration as a group of instructions that are repeatedly executed • Describe the need for iteration • Identify where count-controlled iteration can be used in a program • Implement count-controlled iteration in a program • Detect and correct errors in a program (debugging)	Implement condition-controlled iteration in a program Evaluate which type of iteration is required in a program Define a list as a collection of related elements that are referred to by a single name Describe the need for lists Identify when lists can be used in a program Use a list Decompose a larger problem into smaller subproblems Apply appropriate constructs to solve a problem	Modify a logo using a graphic editing program Choose how to combine text and graphics in a slide Use digital tools to provide feedback on design choices Plan a consistent layout for a set of slides Modify a logo so that it fits in with the planned slide styles Create a styled set of slides based on a plan Search for suitable text for slides Search for and add a suitable image Plan how to deliver a presentation Explain your work to others through a presentation	• Explain the difference between primary and secondary sources of data • Collect data • Analyse data • Create appropriate charts in a spreadsheet • Use the functions SUM, COUNTA, MAX, and MIN in a spreadsheet • Analyse data • Use a spreadsheet to sort and filter data • Use the functions AVERAGE, COUNTIF, and IF in a spreadsheet • Use conditional formatting in a spreadsheet • Apply all of the spreadsheet skills covered in this unit	• Select appropriate images for a given context • Apply appropriate formatting techniques • Demonstrate an understanding of licensing issues involving online content by applying appropriate Creative Commons licences • Critique digital content for credibility • Apply techniques to identify whether or not a source is credible • Apply referencing techniques and recognise the concept of plagiarism • Evaluate online sources for use in own work • Construct a blog using appropriate software • Create content for a blog based on credible sources • Construct a blog using appropriate software • Create content for a blog based on credible sources • Apply referencing techniques that credit authors appropriately • Design the layout of the content to make it suitable for the audience

		• Independently design and apply programming constructs to solve a problem (subroutine, selection, count-controlled iteration, operators, and variables)				
Year Group	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two
Intent of study year 8	The intent of our Year 8 computing curriculum is to build on the foundational knowledge acquired in earlier years and prepare students for more advanced concepts in computing. It focuses on developing both technical skills and a deeper understanding of how computing impacts the world. The curriculum generally aims to foster computational thinking, digital literacy, creativity, and problem-solving abilities while promoting responsible use of technology.					
8	**Computer Science**	**Computer Science**	**Computing systems**	**Creating media**	**Computing systems**	**Creating media**
	• Understand the importance of suitable file names and folder structure • Refresh knowledge of basic programming concepts (sequencing, selection, iteration). • Reinforce understanding of algorithms and flowcharts. • Develop simple projects to apply these concepts in Scratch. • Understand the basic syntax and structure of Python. • Learn to use variables and data types. • Write simple programs that take user input and produce output. • Understand and use conditional statements (if, elif, else). • Learn to implement loops (for and while) in Python. • Apply control structures to solve problems and create interactive programs. • Understand the concept of functions and their importance in programming. • Learn to define and call functions in Python. • Use parameters and return values to create reusable code.	• Use multi-branch selection (if, elif, else statements) to control the flow of program execution • Describe how iteration (while statements) controls the flow of program execution • Use iteration (while loops) to control the flow of program execution • Use variables as counters in iterative programs • Combine iteration and selection to control the flow of program execution • Use Boolean variables as flags • Apply the knowledge and skills acquired throughout the term to a comprehensive project. • Develop problem-solving and project management skills. • Present and explain the project, demonstrating understanding of programming concepts and algorithms.	Recall that a general-purpose computing system is a device for executing programs Recall that a program is a sequence of instructions that specify operations that are to be performed on data Explain the difference between a general-purpose computing system and a purpose-built device Describe the function of the hardware components used in computing systems Describe how the hardware components used in computing systems work together in order to execute programs Recall that all computing systems, regardless of form, have a similar structure (‘architecture’) Analyse how the hardware components used in computing systems work together in order to execute programs Define what an operating system is, and recall its role in controlling program execution Describe the NOT, AND, and OR logical operators, and how they are used to form logical expressions Use logic gates to construct logic circuits, and associate these with logical operators and expressions	Use tools to draw and modify shapes Change the position and rotation shapes Explain how z-order determines what is visible Use tools to align and distribute objects to create uniformity Explain how grouping can be used to work with several objects at once Combine two shapes using union, intersection, and difference Explain that vector graphics are made up of paths Create and modify straight and curved paths Change shapes to paths and edit them Choose a project and plan a design Combine tools and techniques to create a vector image Evaluate the project against its given purpose Explain how markup defines what a vector graphic looks like Change an object by modifying its markup Plan improvements and implement them to develop a project Explain key differences between vector and bitmap images	• List examples of representations • Recall that representations are used to store, communicate, and process information • Provide examples of how different representations are appropriate for different tasks • Recall that characters can be represented as sequences of symbols and list examples of character coding schemes • Measure the length of a representation as the number of symbols that it contains • Provide examples of how symbols are carried on physical media • Explain what binary digits (bits) are, in terms of familiar symbols such as digits or letters • Measure the size or length of a sequence of bits as the number of binary digits that it contains • Describe how natural numbers are represented as sequences of binary digits • Convert a decimal number to binary and vice versa	• Describe what HTML is • Use HTML to structure static web pages • Modify HTML tags using inline styling to improve the appearance of web pages • Display images within a web page • Apply HTML tags to construct a web page structure from a provided design • Describe what CSS is • Use CSS to style static web pages • Assess the benefits of using CSS to style pages instead of in-line formatting • Describe what a search engine is • Explain how search engines ‘crawl’ through the World Wide Web and how they select and rank results • Analyse how search engines select and rank results when searches are made • Use search technologies effectively • Discuss the impact of search technologies and the issues that

			Describe how hardware is built out of increasingly complex logic circuits Recall that, since hardware is built out of logic circuits, data and instructions alike need to be represented using binary digits Provide broad definitions of 'artificial intelligence' and 'machine learning' Identify examples of artificial intelligence and machine learning in the real world Describe the steps involved in training machines to perform tasks (gathering data, training, testing) Describe how machine learning differs from traditional programming Associate the use of artificial intelligence with moral dilemmas Explain the implications of sharing program code	Outline which image type best suits which uses	• Convert between different units and multiples of representation size • Provide examples of the different ways that binary digits are physically represented in digital devices	arise by the way they function and the way they are used • Create hyperlinks to allow users to navigate between multiple web pages • Implement navigation to complete a functioning website
Year Group	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two
Intent of study year 9	The intent of our Year 9 computing curriculum is to build on the foundational knowledge acquired in earlier years and prepare students for more advanced concepts in computing. It focuses on developing both technical skills and a deeper understanding of how computing impacts the world. The curriculum generally aims to foster computational thinking, digital literacy, creativity, and problem-solving abilities while promoting responsible use of technology.					
9	**Computer Science**	**Computer Science**	**Computing systems**	**Creating media**	**Computing systems**	**Creating media**
	• Understand the importance of suitable file names and folder structure • Refresh knowledge of basic programming concepts (sequencing, selection, iteration). • Reinforce understanding of algorithms and flowcharts. • Develop simple projects to apply these concepts in Scratch. • Understand the basic syntax and structure of Python. • Learn to use variables and data types. • Write simple programs that take user input and produce output.	• Use multi-branch selection (if, elif, else statements) to control the flow of program execution • Describe how iteration (while statements) controls the flow of program execution • Use iteration (while loops) to control the flow of program execution • Use variables as counters in iterative programs • Combine iteration and selection to control the	• Recall that a general-purpose computing system is a device for executing programs • Recall that a program is a sequence of instructions that specify operations that are to be performed on data • Explain the difference between a general-purpose computing system and a purpose-built device • Describe the function of the hardware components used in computing systems • Describe how the hardware components used in computing systems work together in order to execute programs	• Use tools to draw and modify shapes • Change the position and rotation shapes • Explain how z-order determines what is visible • Use tools to align and distribute objects to create uniformity • Explain how grouping can be used to work with several objects at once • Combine two shapes using union, intersection, and difference • Explain that vector graphics are made up of paths • Create and modify straight and curved paths	• List examples of representations • Recall that representations are used to store, communicate, and process information • Provide examples of how different representations are appropriate for different tasks • Recall that characters can be represented as sequences of symbols and list examples of character coding schemes • Measure the length of a representation as the number of symbols that it contains	• Describe what HTML is • Use HTML to structure static web pages • Modify HTML tags using inline styling to improve the appearance of web pages • Display images within a web page • Apply HTML tags to construct a web page structure from a provided design • Describe what CSS is • Use CSS to style static web pages • Assess the benefits of using CSS to style pages instead of in-line formatting

	• Understand and use conditional statements (if, elif, else). • Learn to implement loops (for and while) in Python. • Apply control structures to solve problems and create interactive programs. • Understand the concept of functions and their importance in programming. • Learn to define and call functions in Python. • Use parameters and return values to create reusable code.	flow of program execution • Use Boolean variables as flags • Apply the knowledge and skills acquired throughout the term to a comprehensive project. • Develop problem-solving and project management skills. • Present and explain the project, demonstrating understanding of programming concepts and algorithms.	• Recall that all computing systems, regardless of form, have a similar structure ('architecture') • Analyse how the hardware components used in computing systems work together in order to execute programs • Define what an operating system is, and recall its role in controlling program execution • Describe the NOT, AND, and OR logical operators, and how they are used to form logical expressions • Use logic gates to construct logic circuits, and associate these with logical operators and expressions • Describe how hardware is built out of increasingly complex logic circuits • Recall that, since hardware is built out of logic circuits, data and instructions alike need to be represented using binary digits • Provide broad definitions of 'artificial intelligence' and 'machine learning' • Identify examples of artificial intelligence and machine learning in the real world • Describe the steps involved in training machines to perform tasks (gathering data, training, testing) • Describe how machine learning differs from traditional programming • Associate the use of artificial intelligence with moral dilemmas • Explain the implications of sharing program code	• Change shapes to paths and edit them • Choose a project and plan a design • Combine tools and techniques to create a vector image • Evaluate the project against its given purpose • Explain how markup defines what a vector graphic looks like • Change an object by modifying its markup • Plan improvements and implement them to develop a project • Explain key differences between vector and bitmap images • Outline which image type best suits which uses • Evaluate their image against the unit assessment	• Provide examples of how symbols are carried on physical media • Explain what binary digits (bits) are, in terms of familiar symbols such as digits or letters • Measure the size or length of a sequence of bits as the number of binary digits that it contains • Describe how natural numbers are represented as sequences of binary digits • Convert a decimal number to binary and vice versa • Convert between different units and multiples of representation size • Provide examples of the different ways that binary digits are physically represented in digital devices	• Describe what a search engine is • Explain how search engines 'crawl' through the World Wide Web and how they select and rank results • Analyse how search engines select and rank results when searches are made • Use search technologies effectively • Discuss the impact of search technologies and the issues that arise by the way they function and the way they are used • Create hyperlinks to allow users to navigate between multiple web pages • Implement navigation to complete a functioning website
Year Group	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two

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TWA Curriculum, Skills and Intent for Computing

Intent of study year 10	The intent of the Digital Functional Skills Level 1 qualification is to equip learners with essential digital skills that are necessary for everyday life, education, and employment. This qualification aims to develop practical digital competencies that enable learners to confidently and effectively use digital technology in various contexts.		
10	**Area 1 - Using Devices and Handling Information**	**Area 2 - Creating and Editing** **Area 3 - Communicating**	**Area 4 – Transacting** **Area 5 - Being Safe and Responsible Online**
	• Carry out searches on the internet (including use of keywords, exact phrases, search filters). • Take account of currency, reliability and copyright when selecting information from the internet. • Understand that search results may include sponsored results or advertisements and be able to recognise these. • Carry out searches for files (including on file names, partial file names, file content). • Create and use a hierarchical folder structure to organise files and use an appropriate file naming convention. • Save a file on cloud storage using one device and open it on another device. • Know and be able to appropriately use terminology (including bytes, kilobytes, megabytes, gigabytes, terabytes) describing data storage requirements. • Know and understand limitations on file sizes when using some online services, and the benefits of using file compression to make effective use of storage capacity and to reduce data transfer times. • Use online resources to identify solutions to common technical problems (including when to reinstall an application, change Wi-Fi settings, change a system or software setting) and apply the solution.	Use suitable applications (including word-processing, document or web presentation software), to enter, edit, format, layout and save information (including text, tables, graphics, charts) for a range of purposes and audiences. Use appropriate layout conventions for information (including formal and informal communication, presentation, advertisement) and audiences (including familiar, unfamiliar audience). Edit (including caption, crop, resize, change contrast, change colour balance) an image using an appropriate tool. Process numeric data using simple formulae (including sum, subtraction, multiplication, division, maximum, minimum, average) using relative cell references. Process (including sort, filter) numeric data by values in a column. Format numeric data (including font sizes, font styles, alignment, cell formatting, merging cells, splitting cells, row height, column width). Chart a single series of numeric data using an appropriate type of chart and apply suitable titles and labels (including chart title, axis titles, data legends and data labels). Use email for a range of contexts and audiences. Use online messages (including instant message, text message, social media) for a range of contexts and audiences. Know what steps can be taken to limit a digital footprint (including use of privacy tools to manage cookies and website tracking, private browsing, restricting GPS information).	• Manage account settings for an online service (including personal details, login credentials, marketing and communication preferences). • Complete online forms and upload documents or images. • Carry out checks to reduce the risks involved in transactions online (including checking for the padlock next to the URL in the browser, checking if the website appears professional with a legitimate domain name, checking reviews). • Understand key rights under data protection laws (including right to see what personal data organisations hold about you, right to withdraw consent) and the circumstances where you can request that personal data be rectified or deleted. • Understand the importance of protecting personal information and privacy online and know methods to do so (including private browsing, social media settings, settings on a mobile device to restrict or grant GPS location information, using a secondary email address). • Know how to backup files to the cloud. • Know how to avoid exposure to malware (including worms, trojans and ransomware). • Know of and know how to minimise the effects of health risks (including weight gain, decline in physical fitness, poor sleep patterns) that may result from using devices and the internet.