



Golden Threads

With Y7 coming from many different primary schools and from data of previous surveys done at the start of the year with Y7 pupils in which the number and content of IT lessons varied, the IT topics selected for Y7 aim at levelling up all pupils by equipping them with basic skills needed to use computers confidently and effectively. They are then introduced to basic computer science concepts through programming in Scratch.

Enrichment

Review and Evaluation

	Topics & Substantive Knowledge	Disciplinary Knowledge	Assessment	Misconceptions	Key Vocabulary	Knowledge Tracking
Term 1	<p>Basic IT skills</p> <p>Understanding of Digital Identity and Security: pupils develop an understanding of the importance of digital identity management, learning to create and maintain secure usernames and passwords to protect their online information and presence.</p> <p>Proficiency in Using Collaboration Tools: Pupils gain the ability to effectively use digital collaboration tools like Microsoft Teams, enhancing communication and teamwork in an online educational environment.</p> <p>Remote Access and Network Connectivity: pupils securely access and navigate school networks and resources from remote locations, ensuring continuous learning and resource utilization.</p>	<p>Skill: create strong, unique passwords and understand the mechanisms of authentication.</p> <ul style="list-style-type: none"> Procedure: Consistently applying best practices for digital security, such as regular password updates and not sharing login credentials. Thinking: awareness of online security risks and understanding the impact of digital footprints. <p>Skill: Competency in navigating and using features of collaboration tools like Microsoft Teams for communication and document sharing.</p> <ul style="list-style-type: none"> Procedure: Regular practice of participating in online sessions. 	<p>Name: T1-Y7-BSkills-Assessment</p> <p>Content: Knowledge fluency: demonstrate understanding of basic key terms learned</p> <p>Flexibility of knowledge gained, and application of skills learned: to be demonstrated by completing a sequence of instructions that requires use of skills taught</p> <p>Date: last lesson of the term</p>	<p>Misconception about Digital Identity and Security</p> <p>Misconception: Many pupils believe that a strong password alone is enough to secure their digital accounts and identity.</p> <p>Reality: While strong passwords are crucial, digital security is multi-faceted. It also involves being aware of phishing attempts and knowing the importance of not sharing personal information online. Security is not just about a password; it's about a range of practices that work together to protect digital identity.</p>	<p>Tier 2 vocabulary</p> <p>Authenticate: To prove or serve to prove to be real, true, or genuine; often used in the context of verifying a user's identity in digital platforms.</p> <p>Collaborate: To work jointly with others or together, especially in an intellectual endeavour, such as using digital tools for group projects or remote learning.</p> <p>Tier 3 vocabulary</p> <p>Channel: In Microsoft Teams, a channel is a subdivision within a team, created to organize conversations and files around specific term topics, projects.</p> <p>Collaboration Space: includes features where students can collaboratively work on documents, engage in discussions, and share resources, enhancing the teamwork and collaborative learning experience.</p>	<p>The knowledge and skills acquired in this unit will lay the groundwork for the future IT topics. It will be crucial for their day-to-day digital interactions both inside and outside of school, including use of online resources and understanding the implications of their digital actions.</p>



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Term 2	<p>Skills: Word Processing</p> <p>Link to NC unit “Using Media”</p> <ul style="list-style-type: none"> Identify the key features of a word processor Select the most appropriate software to use to complete a task Apply appropriate formatting techniques <p>Understanding of Basic Word Processing Functions and Tools: pupils can identify and use fundamental word processing tools</p> <p>Knowledge of Document Layout and Design Principles: good document design in word processing involves applying principles that enhance readability and visual appeal. These principles include alignment (ensuring text and images are aligned to create a tidy, organized look), contrast (using font sizes, bolding, or colour to make important elements stand out), hierarchy and consistency.</p> <p>Proofreading is a critical final step in the word processing workflow, ensuring that documents are free of errors: pupils use built-in spell check and grammar check tools</p>	<p>Proficiency in Using Word Processing Software</p> <p>Skill: Navigating and utilizing the features of word processing software like Microsoft Word</p> <ul style="list-style-type: none"> Procedure: pupils learn how to open and create new documents, use toolbars and menus to access various features (like formatting text, inserting tables or images), and understand how to save, share, or print their documents. <p>Applying design principles</p> <p>Skill: applying basic design principles to create visually appealing and readable documents.</p> <ul style="list-style-type: none"> Procedure: involves pupils using alignment tools to organize content, apply contrast effectively through font choices and colour schemes, and establish a clear hierarchy with headings and subheadings. 	<p>Name: T2-Y7-WP-Assessment</p> <p>Content:</p> <p>Knowledge fluency: demonstrate understanding of word processing basic key terms meaning</p> <p>Skills fluency: to be demonstrated by selecting and applying appropriate skills for creating a word-processed document based on specific instructions -that prompt to use the skills taught.</p> <p>Date: last lesson of the term</p>	<p>Misconception about Design Principles: More Is Better</p> <p>Reality: a common misconception in document design is that using a variety of fonts, colours, and other formatting features will make a document more attractive and engaging. However, the reality is that overuse or inconsistent application of these elements can actually lead to a cluttered and confusing layout.</p> <p>Misconception about Proofreading Tools: complete accuracy</p> <p>Reality: while spell check and grammar check tools in word processors are incredibly useful and can catch many common errors, they are not perfect. They might not pick up on context-specific mistakes.</p>	<p>Tier 2 vocabulary</p> <p>Format: arrangement or style of text within a document, including aspects like font type, size, colour, and paragraph alignment.</p> <p>Edit: In word processing, this term refers to the process of revising or modifying a document to improve its content, clarity, and overall presentation. Editing can include correcting grammatical errors, refining the choice of words, and reorganizing paragraphs.</p> <p>Tier 3 vocabulary</p> <p>Ribbon: In word processing software, the ribbon is the strip of buttons and icons located at the top of the window.</p> <p>Icon: An icon in word processing software is a small graphic symbol that represents a program, a function, a file, or a command. Icons are used within the ribbon.</p> <p>Layout: In the context of word processing, layout refers to the arrangement of text, images, and other elements on a page</p>	<p>This term’s curriculum links to word processing skills introduced in Key Stage 2.</p> <p>This term’s curriculum will link to the learning of all subsequent topics and work pupils will do on computer in all subjects, since they will need to use word processing skills to write and complete worksheet activities.</p>



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Term 3	<p>Skills: Presentation</p> <p>Link to NC unit “Clear messaging in digital media”</p> <ul style="list-style-type: none"> Identify the key features of a presentation software Choose how to combine text and graphics in a slide <p>Understanding slide layouts and design principles: pupils should understand how to use various slide layouts in PowerPoint to effectively present information. This includes knowledge of how text, images, and other multimedia elements can be arranged on a slide for clarity and visual appeal.</p> <p>Knowledge of tools and features for content creation: pupils should understand how these elements can be used to enhance the communication of their message and keep the audience engaged.</p> <p>Presentation skills and audience engagement: Beyond the technical aspects of using PowerPoint, pupils should learn how to effectively present their slides to an audience. This includes understanding the importance of speaking clearly and confidently, making eye contact, and engaging with the audience.</p>	<p>Knowledge of tools and features for content creation: pupils should be able to utilize PowerPoint’s tools and features to create content. This includes adding and formatting text, inserting and manipulating graphical elements (like images, charts, and shapes), and using transitions and animations.</p> <p>Design and composition Skills: To effectively apply their understanding of slide layouts and design principles, pupils need skills in visual design and composition. This includes the ability to select appropriate templates, colour schemes, and fonts that enhance the readability and aesthetic appeal of their presentation. They should be able to arrange text, images, and other elements on a slide in a manner that is both visually pleasing and functionally practical, demonstrating an understanding of the balance between visual appeal and informational clarity.</p>	<p>Name: T3-Y8-PP-Assessment</p> <p>Content: Knowledge fluency: demonstrate understanding of slides presentation basic key terms meaning</p> <p>Skills fluency: to be demonstrated by selecting and applying appropriate skills for creating slides presentation based on specific instructions -that prompt to use the skills taught.</p> <p>Date: last lesson of the term</p>	<p>All Information needs to be on the slides: pupils often believe that a good PowerPoint presentation requires every detail and piece of information to be included on the slides. This can lead to slides that are overcrowded with text and difficult to read.</p> <p>More effects and animations make a better presentation: A common misconception is that adding numerous animations, transitions, and flashy effects will make a PowerPoint presentation more engaging and effective. In reality, overuse of these elements can be distracting, detract from the message, and make the presentation look unprofessional. It’s important for pupils to understand that simplicity often leads to clarity and that the use of animations and effects should be purposeful and limited to enhancing the overall communication of the key points.</p> <p>Good design is primarily about aesthetics: While the visual appeal of a presentation is important, pupils might mistakenly prioritize aesthetics over functionality and clarity. They may focus heavily on choosing attractive colour schemes, fonts, and backgrounds without considering readability, content hierarchy, and the overall purpose of the presentation.</p>	<p>Tier 2 vocabulary</p> <p>Analyse: This involves examining the components of the PowerPoint presentation, understanding how they contribute to the overall effectiveness, and determining what works well and what doesn’t. Analysis is crucial in revising and improving presentation design.</p> <p>Emphasize: In the context of a PowerPoint presentation, this refers to making certain elements stand out to draw the audience’s attention. This could involve using bold text, a different colour, or highlighting in some way to stress the importance of specific points or information.</p> <p>Tier 3 vocabulary</p> <p>Storyboarding: A method used in planning presentations where each slide is sketched out (like a comic strip) to represent how the story will unfold. In PowerPoint, this involves planning the sequence of slides and the flow of content, which is fundamental in creating a coherent and effective presentation.</p> <p>Transition: In PowerPoint, a transition is an effect that is used to introduce a slide. It’s a specific term within presentation software that refers to the animation or movement from one slide to the next, and it can be key in maintaining audience engagement.</p> <p>Hyperlink: A feature in PowerPoint that allows the user to link from a slide to another slide, a web page, or an external file. Understanding hyperlinks is crucial for creating interactive presentations or directing viewers to additional resources.</p>	<p>The PowerPoint presentation unit in Key Stage 3 builds upon basic IT skills acquired in earlier stages, such as operating computers and using basic software applications. It leverages these foundational skills to introduce students to more complex aspects of digital literacy.</p> <p>This unit is pivotal as it not only enhances students’ abilities in creating and delivering presentations but also fosters critical thinking, design aesthetics, and effective communication skills. Following this unit, students are well-prepared to progress to more advanced IT topics, such as website design or multimedia editing, where they can apply and expand upon these presentation skills.</p>



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Term 4	<p>Skills: Excel</p> <p>Link to NC unit “Modelling data using spreadsheets”</p> <ul style="list-style-type: none"> 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 (+, -, *, /) <p>Data organization and management skills: To effectively utilize Excel for data entry and manipulation, pupils must have the skill to organize data logically. This involves understanding how to structure data in rows and columns, use appropriate data types, and apply basic sorting and filtering techniques.</p> <p>Attention to detail: When working with Excel, a small error can significantly impact the outcome of the data analysis. Pupils must cultivate a strong attention to detail to ensure accuracy in data entry, formula construction, and function implementation.</p>	<p>Numerical competency: Excel is extensively used for numerical calculations. To apply basic Excel skills effectively, pupils need a good grasp of basic math and statistics. This includes understanding operations like addition, subtraction, multiplication, and division, as well as more complex functions like averages. This competency allows students to correctly apply formulas and functions in Excel, ensuring accurate data processing and analysis.</p> <p>Logical thinking and problem-solving skills: Excel is a tool that often requires logical thinking to structure data and solve problems. Pupils should be skilled in identifying patterns, categorizing data, and using logical functions like IF statements. The ability to approach problems logically and use Excel’s tools to find solutions is crucial for tasks such as data manipulation, creating formulas, and automating tasks within spreadsheets.</p>	<p>Name: T4-Y8-Excel-Assessment</p> <p>Content:</p> <p>Knowledge fluency: demonstrate understanding of spreadsheet basic key terms meaning</p> <p>Skills fluency: to be demonstrated by selecting and applying appropriate skills for creating spreadsheet, writing simple formulas, completing a basic spreadsheet model with missing data and formula writing simple formulas</p> <p>Date: last lesson of the term</p>	<p>Misconception: appearance and design aren’t important in spreadsheets</p> <p>Reality: While the functional aspect of a spreadsheet is crucial, its visual layout and design are also important. A cluttered, poorly organized, or visually unappealing spreadsheet can be difficult to navigate and understand. Proper formatting, including the use of headers, cell alignment, colour coding, and consistent fonts, plays a significant role in making a spreadsheet user-friendly and ensuring the data is easy to read and interpret.</p> <p>Misconception: spreadsheets are primarily for complex mathematical calculations</p> <p>Reality: While spreadsheets like Excel are powerful tools for performing complex calculations, they are also incredibly versatile and can be used for a wide range of tasks beyond complex math. This includes organizing data, creating simple to-do lists, managing budgets, planning events. Pupils often underestimate the utility of spreadsheets in everyday tasks and project management.</p>	<p>Tier 2 vocabulary</p> <p>Analyse: To examine data in detail to identify patterns, trends, or insights. In spreadsheets, this often involves looking at numbers or data sets to draw conclusions.</p> <p>Interpret: To explain the meaning or significance of data. In the context of spreadsheets, this refers to understanding what the numbers and results of formulas indicate.</p> <p>Tier 3 vocabulary</p> <p>Cell Reference: The unique identifier of a cell, which is determined by the column letter and row number (e.g., A1, B2). Understanding cell references is crucial for navigating and manipulating a spreadsheet.</p> <p>Formula: A set of instructions written in a spreadsheet to perform calculations. Formulas often involve cell references and mathematical operators.</p> <p>Function: A predefined formula in spreadsheet software. Functions perform specific calculations using a particular set of values in a particular order (e.g., SUM, AVERAGE).</p>	<p>The spreadsheet skills unit in Key Stage 3 builds upon foundational IT competencies, such as basic computer operations and introductory data handling.</p> <p>This unit equips pupils with essential skills in data organization, analysis, and presentation using spreadsheets, serving as a cornerstone for advanced computational thinking and problem-solving.</p> <p>It bridges the gap between basic computer literacy and advanced IT applications, fostering analytical and technical skills vital in the digital age.</p>



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Term 5	<p>Intro to Programming – 1</p> <p>Link to NC unit “Programming essentials in Scratch-Part 1”</p> <ul style="list-style-type: none"> Compare how humans and computers understand instructions (understand and carry out) Define a sequence as instructions performed in order, with each executed in turn Modify a sequence Predict the outcome of a simple sequence Define a variable as a name that refers to data being stored by the computer Make a sequence that includes a variable <p>Programming Languages: Understanding that there are various programming languages (like Python that pupils will learn later), each with its own syntax and use cases. Scratch is an introduction to programming as a beginner-friendly “language”.</p> <p>Basic syntax and structure: Knowledge of fundamental programming concepts such as variables and basic operators (addition, subtraction, multiplication, division).</p> <p>Control Structures: Understanding of basic control structures in programming, such as if-else statements, loops (for, while), which allow for conditional execution of code segments.</p> <p>Debugging: Basic skills in identifying and fixing errors (bugs) in simple programs</p>	<p>Attention to detail: Crucial for grasping basic syntax and structure, as programming often requires precise commands and syntax.</p> <p>Critical evaluation and debugging skills: Pupils must develop a critical eye to evaluate their own code, identify errors, and apply systematic methods to debug and resolve issues.</p>	<p>Name: T5-Y8-Prog1-Assessment</p> <p>Content: 30 questions online quiz about the keywords, concepts learned this term. Includes questions with code for pupils to identify errors, fill in missing lines of code based on a given task to code.</p> <p>Date: last lesson of the term</p>	<p>Misconception: Programming is only about writing code</p> <p>Reality: While coding is a fundamental aspect, programming also involves problem-solving, planning, designing algorithms, understanding logic, and debugging. It’s not just about writing lines of code but about developing a solution to a problem.</p> <p>Misconception: Programming requires advanced mathematical skills</p> <p>Reality: Basic programming often requires only fundamental math skills. While certain areas of programming, like game development or machine learning, might require advanced mathematics, most everyday coding tasks can be accomplished with basic arithmetic and logical reasoning.</p>	<p>Tier 2 vocabulary</p> <p>Sequence: The order in which a series of events, movements, or steps occur. In Scratch, understanding sequence is crucial for programming a series of actions or instructions.</p> <p>Debug: The process of identifying and removing errors from computer hardware or software. In Scratch, debugging involves finding and fixing blocks that don’t work as intended.</p> <p>Tier 3 vocabulary</p> <p>Sprite: An object in Scratch which performs actions according to the scripts assigned to it. Sprites can be characters or objects that interact in a Scratch project.</p> <p>Script: A collection of blocks in Scratch that control the actions of sprites. Scripts are the fundamental element for creating programs in Scratch.</p> <p>Conditional Statement: A programming concept that performs different actions depending on whether a specified Boolean condition is true or false. In Scratch, this is represented with ‘if’ and ‘if-else’ blocks.</p>	<p>The basic programming skills unit in KS3 builds on foundational digital literacy acquired earlier, introducing students to structured thinking and problem-solving through coding. This unit lays the groundwork for more advanced computational concepts, fostering logical reasoning and creativity.</p>



	Topics & Substantive Knowledge	Disciplinary Knowledge	Assessment	Misconceptions	Key Vocabulary	Knowledge Tracking
Term 6	<p>Introduction to Programming – 2</p> <p>Link to NC unit “Programming essentials in Scratch-Part 2”</p> <ul style="list-style-type: none"> Define a subroutine as a group of instructions that will run when called by the main program or other subroutines Identify where condition-controlled iteration can be used in a program Implement condition-controlled iteration in a program <p>Functions and Procedures: Familiarity with the concept of functions (or procedures) – blocks of code that perform a specific task and can be reused throughout the program.</p> <p>Algorithmic Thinking: Developing the ability to solve problems using algorithmic thinking, which involves breaking down problems into step-by-step procedures that can be coded into a program.</p>	<p>Abstraction and modular thinking: Necessary for understanding functions and procedures. This involves the ability to think abstractly about a task and encapsulate it into a reusable function, thereby understanding the bigger picture while managing smaller, modular components of code.</p> <p>Algorithmic thinking: Pupils need to be able to devise step-by-step strategies (algorithms) for solving problems and translating these into a programmable format, considering both efficiency and effectiveness of their solutions.</p>	<p>Name: T6-Y8-Prog2-Assessment</p> <p>Content: a (scaffolded) project that pupils must complete on their own, through which they demonstrate the fluency and flexibility of their coding skills/knowledge that they gained</p> <p>Date: Hand-in 2 lessons before last –of the term</p>	<p>Misconception: Scratch Doesn’t Teach Real Coding</p> <p>Reality: Scratch teaches the principles of coding using a block-based approach, which abstracts complex syntax but still requires logical structure and thought. The skills and concepts learned in Scratch, such as sequencing, looping, and conditional statements, are foundational to all programming languages.</p>	<p>Tier 2 vocabulary</p> <p>Algorithm: A set of instructions designed to perform a specific task. In the context of Scratch, pupils create algorithms to dictate the behaviour and interactions of sprites.</p> <p>Tier 3 vocabulary</p> <p>Loop: A programming structure that repeats a sequence of instructions until a specific condition is met. In Scratch, loops are used to repeat actions, such as in ‘forever’ or ‘repeat’ blocks</p>	<p>Following this unit, pupils progress to complex programming languages and concepts, such as Python, and delve into topics like web development and software engineering.</p> <p>Its placement is crucial as it transitions pupils from general computer use to understanding how software is created, a key skill in our increasingly digital world.</p>