



Computing Progression

Our Computing curriculum develops children's understanding of digital technology and their ability to use it purposefully. Through the Teach Computing sequence, children learn how computers and networks work, create digital content, organise information and design programs to solve problems.

How learning develops

Children begin by using familiar devices, following instructions and creating simple digital work. They build towards explaining connected systems, designing more complex programs and choosing tools for a particular audience or purpose. Testing, debugging and evaluating help children improve their work throughout the sequence.

Phase	The developing learner
Years 1 and 2	Recognise technology in everyday life. Use a keyboard, mouse and simple software; create pictures, text, photographs and music; group data; and write and debug short sequences of commands.
Years 3 and 4	Explain how devices and networks connect. Develop animation, publishing, audio and image-editing skills. Use branching databases and data loggers, and program sequences, events and repetition.
Years 5 and 6	Explore searching, communication and collaboration. Create video, vector graphics, websites and 3D models. Use databases and spreadsheets, and combine selection, variables and physical inputs and outputs in programs.

The strands connect

Computing systems and networks, creating media, programming, and data and information provide the main unit structure. Across these areas, children develop algorithms, design and evaluate projects, use tools effectively, consider the impact of technology and learn about safety and security.

For example, creating a quiz draws together an algorithm, programming, digital artwork and testing. Creating a website combines layout and media choices with navigation, ownership of content and consideration of the reader's experience.

Reading the progression tables

This document covers Years 1–6. Each table summarises how knowledge and skills develop across the supplied KS1 and KS2 Teach Computing maps. The final page lists all six units for each year in their suggested teaching order.

The sequence describes progression within Computing. Responsible choices and critical evaluation appear within relevant units, alongside the practical skills children use to create and share digital work.



Computing systems networks and data

Children move from recognising familiar technology and grouping objects to explaining connected systems and using digital data to answer more complex questions.

Stage	Systems and networks	Data and information
Year 1	Identify technology and a computer's main parts. Use a mouse and keyboard, log in, save work and reopen files. Explain how technology helps people.	Label and group objects by their properties. Count and compare groups, choose useful groupings and record findings to answer questions.
Year 2	Recognise information technology in school and beyond. Explain common uses, how devices can work together and why people use them.	Collect data using tally charts and create pictograms. Compare attributes, draw simple conclusions and present information in different ways.
Year 3	Explain inputs, processes and outputs. Identify networked devices and describe how connections, switches, servers and wireless access points help information to be shared.	Use yes/no questions and attributes to create branching databases. Plan a logical structure, identify objects and test whether the identification tool works.
Year 4	Describe the internet as a network of networks and distinguish it from the World Wide Web. Explain how websites are stored, accessed and created by people.	Use sensors and data loggers to collect data over time. Choose questions, plan collection, examine readings and draw conclusions from the data.
Year 5	Explain how connected computer systems support everyday tasks. Use and refine searches, and explain how search engines select and rank results.	Use flat-file databases with fields and records. Group, sort and filter using criteria, including AND and OR, then select charts to compare data and answer questions.
Year 6	Explain internet addresses and how data travels in packets. Compare online communication and collaboration, including shared files and public or private working.	Build and format spreadsheet data sets. Use formulas and cell ranges, recognise how changing inputs affects results, and choose tables or charts to present answers.

Key vocabulary

An input supplies information to a computer; an output is what it produces. A network connects devices. A database organises records, while a spreadsheet organises data in cells and can calculate results using formulas.



Creating digital media

Children progress from using individual tools to combining media and making deliberate choices about layout, composition, editing and the user's experience.

Stage	First media unit	Second media unit
Year 1	Digital painting: use freehand, line and shape tools. Choose colours and brush sizes, explain tool choices and compare digital painting with painting on paper.	Digital writing: enter and remove text, use capitals and formatting, change fonts and undo edits. Judge whether changes improve writing and compare typing with handwriting.
Year 2	Digital photography: capture photographs, choose portrait or landscape orientation and improve framing and lighting. Edit images and recognise that photographs can be changed.	Digital music: explore rhythm, pitch and patterns. Create a sequence of notes for a purpose, listen critically and refine the composition.
Year 3	Stop-frame animation: plan a storyboard, create a sequence of images with small changes and work consistently between frames. Review, improve and add other media to the finished animation.	Desktop publishing: combine text and images to communicate clearly. Choose page orientation, placeholders, fonts and layouts that suit the purpose of a publication.
Year 4	Audio production: plan, record and edit a podcast. Combine sounds, improve recordings and distinguish saving an editable project from exporting a finished audio file.	Photo editing: crop, rotate, recolour, clone and combine images. Create a composition for a purpose and use feedback and criteria to improve the result.
Year 5	Video production: plan scenes using a storyboard, choose camera angles and filming techniques, and record sound. Reshoot, edit and export video, evaluating the impact of creative choices.	Vector graphics: create drawings from shapes and lines. Resize, rotate, duplicate, align, layer and group objects to make a detailed image for a specific purpose.
Year 6	Web page creation: plan a layout, add suitable media and preview pages on different devices. Create hyperlinks and navigation, consider image ownership and evaluate the user's experience.	3D modelling: position, resize, rotate and combine three-dimensional objects. Plan a model for a purpose, use accurate dimensions and refine it against the design.

Increasing independence

Across the media units, children move from explaining which tool they used to justifying how combinations of tools and design choices meet a purpose. Reviewing and editing become part of the creative process.



Algorithms and programming

The sequence builds from ordered instructions to events, repetition, selection and variables. Children apply these ideas in both screen-based projects and controllable devices.

Stage	Programming A	Programming B
Year 1	Moving a robot: predict what commands will do, combine movements and turns, plan a sequence and debug errors. Explore different programs that reach the same destination.	Programming animations: join blocks, use a start command and change values. Give sprites their own instructions and turn an algorithm into a tested animation.
Year 2	Robot algorithms: explain how changing instruction order changes outcomes. Predict sequences, plan routes, divide tasks into parts, and create and debug a robot program.	Programming quizzes: explain that sequences have a start and an outcome. Adapt a design, create an original quiz, and test and improve it against the intended result.
Year 3	Sequencing sounds: use Scratch sprites, backdrops and command blocks. Start programs in different ways, order sounds and implement a design as code.	Events and actions in programs: link an event to an action, control movement with keys and add features. Design, debug and evaluate a maze-based challenge.
Year 4	Repetition in shapes: use a text-based language, recognise repeated patterns and write count-controlled loops. Break tasks into smaller steps, use procedures and debug the program.	Repetition in games: distinguish count-controlled and infinite loops. Use two or more loops at the same time, adapt existing code and create a game that uses repetition.
Year 5	Selection in physical computing: control outputs through a microcontroller. Use loops and conditions, respond to inputs and build a physical project using if...then selection.	Selection in quizzes: connect conditions to outcomes using if...then...else. Plan branching program flow, respond to user input, and test, evaluate and extend a quiz.
Year 6	Variables in games: explain how a named variable stores a changeable value. Set and update variables using events, then design, test and improve a game.	Sensing movement: use a controllable device with physical inputs and outputs. Combine conditions, comparisons, selection and variables, then test and debug against a design.

Key vocabulary

An algorithm is a precise set of instructions. Debugging means finding and fixing errors. Repetition runs instructions more than once; selection chooses an action according to a condition; a variable stores a value that can change.



Design evaluation and responsible use

As practical skills grow, children become more thoughtful about how technology is used, how content is created and how their own work can be improved.

Stage	Designing testing and improving	Critical and responsible use
Year 1	Choose tools and artwork to suit a task. Plan a simple program, predict what it should do and test it. Explain preferences when comparing digital and non-digital work.	Create rules for using technology responsibly. Explain how rules help keep people safe and healthy when using technology at home and beyond.
Year 2	Use a design to create a program, adapt it and develop an original project. Review photographs and music, identify improvements and explain changes.	Explain how rules support safe use of IT and recognise choices about its use. Give examples of information that should not be shared and recognise that photos may be altered.
Year 3	Use storyboards, layouts and algorithms to plan. Test a database or program, review animation frames and use feedback to make improvements.	Compare digital devices with non-digital tools and explain how technology changes the way people work. Consider how text, images and layout communicate messages.
Year 4	Break programming tasks into smaller steps. Choose when to use different loops, check work against criteria and use feedback to improve audio and images.	Explain why networks need protection. Recognise that online content may be unreliable, consider ownership, and think carefully before sharing or resharing information.
Year 5	Produce detailed plans for videos, vector drawings and programs. Choose tools and techniques for a purpose, test outcomes and explain how editing improves the final result.	Recognise that search results can be influenced and that search engines have limitations. Explain why ranking matters and consider the impact of choices when making and sharing video.
Year 6	Design with an audience or user in mind. Preview websites on different devices, refine 3D models and test programs against their designs using different debugging approaches.	Consider copyright and suitable image use. Evaluate links to other people's content, choose communication methods for a purpose and recognise that online communication may not be private.

Progression across projects

Children increasingly explain their choices using the intended outcome, evidence from testing and the needs of an audience. They learn that a technically successful project also needs clear content, suitable design and thoughtful decisions about use and sharing.



Suggested unit sequence

Each year contains six units. The order below follows the Teach Computing maps and shows how systems, media, programming and data recur throughout the sequence.

Year	Units 1 to 3	Units 4 to 6
Year 1	1. Technology around us 2. Digital painting 3. Moving a robot	4. Grouping data 5. Digital writing 6. Programming animations
Year 2	1. IT around us 2. Digital photography 3. Robot algorithms	4. Pictograms 5. Digital music 6. Programming quizzes
Year 3	1. Connecting computers 2. Stop-frame animation 3. Sequencing sounds	4. Branching databases 5. Desktop publishing 6. Events and actions in programs
Year 4	1. The Internet 2. Audio production 3. Repetition in shapes	4. Data logging 5. Photo editing 6. Repetition in games
Year 5	1. Systems and searching 2. Video production 3. Selection in physical computing	4. Flat-file databases 5. Introduction to vector graphics 6. Selection in quizzes
Year 6	1. Communication and collaboration 2. Web page creation 3. Variables in games	4. Spreadsheets 5. 3D Modelling 6. Sensing movement

Source

Teach Computing Curriculum Maps for Key Stages 1 and 2, version 1.2. Unit names and progression are summarised from the learning objectives and success criteria in these maps.