



Computing Skills Progression from Nursery to Year 2

Purpose Children learn that technology can help them create, communicate and solve problems safely. Early experiences involve talk, patterns, instructions, real devices and imaginative play across the EYFS; there is no separate statutory Computing area in Nursery or Reception. In Key Stage 1 pupils learn algorithms, simple programs, digital creation and safe use of technology.

Our computing curriculum in practice

Unplugged to digital. Children first give, follow and refine real instructions with movement and objects. They transfer this understanding to a programmable toy or age-appropriate application.

Purposeful technology. A device is chosen because it helps children photograph, draw, record, sequence, retrieve or explain learning. Adults teach the difference between a digital tool and the purpose it serves.

Provision and independence. Nursery and Reception use short, adult-guided experiences alongside physical play. Year 1 revisits taught skills in planned provision. Year 2 sets bounded independent challenges, with online safety supervision and clear help routes.

Values and access. Kindness shapes respectful sharing and digital choices; resilience supports debugging; creativity helps children make useful content. Give access to unplugged tasks, tactile controls, partner roles and visual steps.

The progression at a glance

Skill	Nursery	Reception	Year 1	Year 2
Algorithms	Follow a familiar one-step direction.	Give and follow two or three ordered instructions.	Explain an algorithm as precise steps for a task.	Design and improve an unambiguous sequence.
Programming	Make a toy respond to a button with support.	Program a short route with an adult.	Create and debug a simple program.	Create, debug and explain a longer purposeful program.
Logical reasoning	Predict what a familiar control will do.	Predict where a floor robot may stop.	Predict a program's next action and test it.	Use reasoning to explain why a program behaves as it does.
Digital content	Make marks or take a photo with an adult.	Create and revisit a simple digital image/record.	Create, organise, save and retrieve content.	Select and manipulate content for an audience and purpose.
Safety and help	Ask an adult before using a device.	Say what to do if something on a screen worries them.	Keep personal information private; identify a trusted adult.	Use technology respectfully and explain how to seek help.
Technology in life	Recognise familiar devices in home/role play.	Talk about who uses technology in a familiar place.	Notice common uses of IT beyond school.	Explain how a named service uses IT to help people.

How to read the tables. These are progressive teaching and observation prompts, not an age-based checklist for every child. EYFS experiences build foundations; the full Key Stage 1 programme is taught across Years 1 and 2. Teachers use assessment to revisit or extend a skill.

Algorithms programming and reasoning

Skill	Nursery	Reception	Year 1	Year 2
Ordered instructions	Follow or imitate a simple routine.	Tell a partner a short set of actions in order.	Write or say precise steps to complete a route/task.	Make the instructions unambiguous and adapt them for someone else.
Unplugged sequence	Act out first/next instructions with cards.	Order movement arrows for a floor route.	Use ordered commands and explain that a device follows them.	Test a sequence and identify where an instruction needs changing.
Create a program	Press controls on a supervised toy and notice an effect.	Enter a short sequence for a programmable toy.	Create a simple program that moves a character or robot.	Plan a purposeful route with several steps and implement it.
Debug	Try a different control if a toy does not work.	Notice when a robot stops in an unexpected place.	Find a mistaken instruction and change it.	Explain the cause of an error, change it and retest.
Predict behaviour	Say what may happen after pressing a button.	Point to the place a robot might reach.	Predict a sequence outcome before running a program.	Use the instruction sequence to justify and revise a prediction.
Inputs and outcomes	Explore a button or touch action with adult support.	Connect a button press with what a device does.	Describe how commands produce a visible action.	Trace how a change to a command affects the outcome.

In practice. Classroom link Year 1 group challenges include digital pictures, weather data and ocean coding. For the coding challenge, record the predicted route before running and debugging it so logical reasoning is visible.

Digital content safety and technology in life

Skill	Nursery	Reception	Year 1	Year 2
Create and edit	Explore mark making or take a photograph with adult help.	Choose a tool to make a picture or short voice record.	Create and edit a digital image, sound or simple chart for a purpose.	Choose tools, alter content and explain the intended audience.
Organise store retrieve	Look again at an adult-saved photograph.	Recognise and reopen familiar class content with help.	Name, save and retrieve a digital file using class routines.	Organise and retrieve files independently within a supervised system.
Personal information	Know an adult helps with online/device use.	Recognise that names or photographs are shared with permission.	Keep personal information private; ask before sharing a photo.	Explain examples of private information and safe sharing choices.
Respectful use and help	Use shared devices gently and take turns.	Tell an adult if a screen shows something uncomfortable.	Use devices respectfully; name a trusted adult for concerns.	Describe what to do about concerning content or contact online.
IT beyond school	Notice a till, traffic signal or library scanner.	Talk about how a familiar person uses a device.	Identify common IT uses in shops, libraries or homes.	Explain the purpose of one system and its effect on a user.
Data for a purpose	Match a digital picture to a real observation.	Make a simple class picture record with support.	Record and retrieve weather or plant data digitally.	Organise and present information so another child can answer a question.

What counts as evidence. The current EYFS framework asks providers to have regard to screen use. Keep Nursery and Reception device experiences brief, adult-guided and purposeful; offer physical alternatives and avoid assuming that more screen time means stronger Computing.

Provision and independent application

Skill	Nursery	Reception	Year 1	Year 2
Floor routes and robots	Follow a one-step instruction on a floor grid.	Give a two-step direction to a peer or robot.	Sequence commands and debug a robot route.	Predict, run and explain a revised program.
Photos and digital art	Explore photos of the setting with an adult.	Make and revisit a digital picture.	Create and save an image linked to taught content.	Choose and refine images for a specified audience.
Real-life technology role play	Pretend to use a till or phone with adult talk.	Talk about what familiar devices do.	Identify IT used in a shop, library or home.	Describe benefits and limits of a specific use.
Data and class records	Choose a weather symbol or photo.	Help record weather using pictures.	Make a digital pictogram and retrieve it.	Organise simple records to answer a question.
Continuous provision to Year 2	Adult-guided exploratory play; unplugged options.	Short purposeful access alongside role play.	Offer a taught challenge with a clear save/debug routine.	Set bounded independent tasks and reflect on result and safety.

Curriculum links and coverage

EYFS. No discrete Computing area or Computing early learning goal. Use purposeful links to Understanding the World, Communication and Language, Expressive Arts and Design and Personal Social and Emotional Development.

KS1 computing. By the end of Year 2 address algorithms; creating/debugging programs; logical prediction; creating/organising/storing/manipulating/retrieving content; IT beyond school; safety, privacy and help.

Check in planning. Ensure the program actually runs on a digital device, not only an unplugged route. Teach how to seek help about online content or contact as well as how to keep information private.

Sources. EYFS 2026 statutory framework; DfE Development Matters; DfE KS1 computing programme of study.

Official programmes. EYFS statutory framework for group and school-based providers, effective September 2026; national curriculum in England for Key Stage 1. Development Matters is non-statutory guidance.

EYFS <https://www.gov.uk/government/publications/early-years-foundation-stage-framework--2>

Key Stage 1 <https://www.gov.uk/government/publications/national-curriculum-in-england-computing-programmes-of-study/national-curriculum-in-england-computing-programmes-of-study>