Disciplinary Knowledge Progression - Computing

As **computer scientists** the children build upon their prior knowledge and understanding and become more skilled in:

- **using text and multimedia**
- **digital images**
- **research**
- **safety**
- **control**

Our intention is that when they leave in Year 6, they are able to talk confidently about being safe online, understand when technology can be used to our advantage and have the skills to succeed in an ever-developing digital world.

Disciplinary Knowledge & Skills	Milestones Key Stage 1	Milestones Year 3&4	Milestones Year 5&6
As Computer Scientists, we will learn to use Text and Multimedia	Work with others and with support to contribute to a digital class resource which includes text, graphics, and sound. Generate their own work combining text, graphics, and sound. Save and retrieve and edit their work.	Record and present information integrating a range of appropriate media combining text and graphics in printable form and sound and video for on-screen presentations which include hyperlinks. Begin to show an awareness of the intended audience and seek feed-back	Multimedia work shows restrained use of effects that help to convey meaning rather than impress.
Theme Links	❖ Creating Pictures (Y2) ❖ Presenting ideas (Y2)	❖ Creating Pictures (Y2) ❖ Presenting ideas (Y2) ❖ Presenting - MS PowerPoint (Y3)	❖ Writing for different audiences (Y4) ❖ Word processing (Y5)
As computer scientists, we will learn to use Digital images	Use a range of simple tools in a paint package/image manipulation software to create/ modify a picture. Use a range of tools in a paint package/ image manipulation software to create/modify a picture to communicate an idea. Create a simple animation to tell a story.	Manipulate digital images using a range of tools in appropriate software to convey a specific mood or idea.	Use images that they have sourced/ captured/ manipulated as part of a bigger project (eg presentation or document).
Theme Links	❖ Creating pictures (Y2)	❖ Creating pictures (Y2)	❖ Animation (Y4)
As Computer Scientists, we will learn to use electronic communication	Contribute ideas to a class email to another class/school etc. Work collaboratively by email to share and request information of another class or story character.	Begin to understand the needs to abide by school e-safety rules. Share ICT work they have done electronically by email.	Abide by school rules for e-safety
Theme Links	❖ Online safety	❖ Online safety (3&4) ❖ Email (Y3)	❖ Online safety (5&6)
As Computer Scientists, we will learn to Research and	As a class exercise, explore information from a variety of sources (electronic, paper based etc) They show an awareness of different forms of information. Children use a search engine to find specific relevant information to use in a presentation for a topic.	Use another curriculum area as a starting point, children ask their own questions, then use ICT sources to find answers making use of search engines, an index menu, hyperlinks as appropriate.	Independently and with due regard for safety, search the internet using a variety of techniques to find a range of information and resources on a specific topic. Use appropriate methods to validate information and check for bias and accuracy.

develop E safety knowledge	They can save and retrieve their work.	Children talk about using ICT to find information/ resources noting any frustrations and showing an emerging understanding of internet safety. Develop a growing awareness of how to stay safe when using the internet in school and at home.	Repurpose and make appropriate use of selected resources for a given audiences, acknowledge material used where appropriate.
Theme links	❖ Online safety (Y1&2) ❖ Effective searching (Y2)	❖ Online safety (3 & 4 ❖ Email (Y3) ❖ Effective searching (Y2)	❖ Online safety (5 &6) ❖ Effective searching (Y5&6)
As Computer Scientists, we will learn to control	Control simple everyday devices to make them produce different outcomes. Control a device on and off-screen making predictions about the effects their programming will have. Children can plan ahead.	Children are able to type a short sequence of instructions and to plan ahead when programming devices on and off screen. Engage in Logo based problem solving activities that require children to write procedures to predict, test and modify.	Use control software to control devices. Predict, test, and refine their programming. Independently create sequences of commands to control devices in response to sensing (inputs and outputs) Design, build, test, evaluate and modify the system; ensuring that it is fit for purpose.
Theme links	❖ Coding (Y2)	❖ Coding (Y3) ❖ Simulations (Y3)	❖ Coding (Y4) ❖ Simulations (Y4)
Computing Vocabulary to be taught	steps, order, control, click, mouse, display, event, input, show, hide, object, on-line, services, debug	Events, actions, inputs, conditions, trigger, control, loop, IF THEN, variable, operator, function, internet, www, forum, email, social media, communicate, data	Events, conditions, IF THEN ELSE, variable, triggers, conditions, loop, while, broadcasting, layers, LAN, WAN, router, HTML, devices, encrypt