

Computing Knowledge Progression Grid - KS2 - Cycle 1 and Cycle 2

Key stage 2 - National Curriculum

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output.
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration.
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

	Year 3/4	Year 5/6
Autumn 1	Digital Literacy - Online safety (PM 3.2) Digital Literacy – Online (PM 4.7) Browsing and Searching • I can use technology safely and responsibly • I can recognise acceptable/ unacceptable behaviour • I can identify how to report concerns • I can locate information on the search results page • I can use searches effectively to find information • I can assess whether an information source is true and reliable Digital Literacy – The Internet (NCC Yr 4) • I can describe the internet as a network of networks. • I can demonstrate how information is shared across the internet • I can explain that the internet is used to provide many services • I can recognise that the World Wide Web contains websites and web pages • I can explain why some information I find online may not be honest, accurate, or legal	Digital Literacy - Online safety Computer Science – Programming (PM 5.1) • I can explain some ways to use technology safely and responsibly • I can recognise acceptable/unacceptable behaviour • I can use different sources to double check information found online • I can use simplified code to make a programme more efficient • I can define what a simulation is • I can simulate a physical system using 2code • I can solve a problem by decomposing it into smaller parts • I can define a variable as something that is changing • I can improve a game by using variables Computer Science – Programming (PM 6.1) • I can design a programme that has a timer and a score • I can use selection, conditional statements and variables within my programme • I can create a programme that uses functions and explain why they are useful • I can use flowcharts to create and debug code • I can evaluate, edit and improve my programme Digital Literacy – Word Processing and Presenting Data (C1 and C2) • I can confidently enter information into a 'word' document and change the text font, size, colour • I can use text boxes, bullet points and centralise my work • I can insert an image and table into my word document

Computing Knowledge Progression Grid - KS2 - Cycle 1 and Cycle 2

Autumn 2	Digital Literacy – Multimedia – Desktop publishing (NCC Yr 3) • I can set up and name a file • I can enter information into a 'word' document • I can choose a theme and enter information into a powerpoint slideshow • I can recognise how text and images convey information. • I can change the font, size and colours of text to improve the impact of my document. • I can explain what page orientation means and change this. • I can add content to my publication to create a magazine cover. • I can consider how layout can suit the purpose of a document. Digital Literacy - Online safety (PM 4.2) • I can protect myself from online identity theft • I can identify the risks and benefits of installing software • I can identify appropriate behaviour online • I can understand the importance of balancing screen time • I can identify the positive and negative influences of technology on health and the environment.	Digital Literacy - Online safety Digital Literacy – Internet Systems and Searching NCC Y5 • I can explain that computers can be connected together to form systems. • I can recognise the role of computer systems in our lives. • I can identify how to use a search engine. • I can describe how search engines select and rank results. • I can name sources of help if something concerns me online (childline, cybermentors etc) • I can explain what sort of privacy settings might be relevant to reducing different risks. • I can explain when and when not to answer a question online. Digital Literacy - Online safety (PM 6.2) Digital Literacy – Networks (PM 6.6) • I can explain what my digital footprint is how to protect it • I can identify secure websites by recognising the padlock or http address • I can explain some benefits and risks to sharing my location on a digital device • I can explain some positive and negative influences of technology on my health and wellbeing • I can explain what the internet and the world wide web is • I can share examples of the differences between the www and the internet • I can explain that computers can be connected together to form systems • I can recognise the role of computer systems in our lives • I can recognise how we can communicate using technology • I can explain how we access the internet within school
Spring 1	Computer Science – Coding (PM 3.1) • I can design and write programs that accomplish specific goals • I can debug programs • I can use repetition commands • I can use "if" statements Computer Science – Coding (PM 4.1) • I can design, code and test programs • I can debug programs with confidence	Information Technology - Data (PM5.4) Data Bases • I can explain what a database and a database field is • I can navigate a database in different ways to find information and answers to questions • I can create and enter information into a database • I can outline how 'and' and 'or' can be used to refine data selection • I can group and sort data to answer questions effectively Information Technology - Data - Spreadsheets (PM 3.3/6.3)

Computing Knowledge Progression Grid - KS2 - Cycle 1 and Cycle 2

	- I can use repetition commands with confidence - I can use “if” and “else” statements with confidence	- I can create a spreadsheet to plan an event - I can explain what an item of data is - I can create simple formula that use different variables - I can apply formulas to data - I can create a spreadsheet to answer a mathematical question based on probability - I can create formulae on a spreadsheet to help solve a problem - I can use a spreadsheet to model a real life situation and come up with solutions eg. budgeting for a party - I can make a graph or chart from my calculations on a spreadsheet
Spring 2	Computer Science - Programming 2 -NCC Yr 3 Sequencing sounds - I can identify the objects in a scratch project. - I can explain that commands in Scratch are represented as blocks. - I can identify that commands have an outcome. - I can explain that a program has a start. - I can explain what a sequence is. - I can create a project from a task description using algorithms. Computer Science - Programming 2 - NCC yr 4 Repetition in shapes - I can program a computer by typing commands - I can write an algorithm to produce a given outcome - I can explain what repeat means and design a programme using repetition - I can use a count-controlled loop to produce a given outcome - I can decompose a task into small steps	Computer Science – Programming (PM5.5) Game Creator - I can create a background and setting for my game by uploading images and using drawing tools - I can design and create a game quest - I can edit scene elements using game creator tools and create the desired effect for my game - I can evaluate and improve the programming sequence of my game Computer Science – Programming (PM6.5) Text Adventure - I can use 2Create a Story to make, test and debug a choose your own adventure story - I can read and understand the code within a given text adventure - I can debug more complex code including various functions, variables and loops
Summer 1	Information Technology – Multimedia (PM4.6) / Stickbots - I can explain that animation is a sequence of still images - I can plan an animation with settings, characters and events - I can review and improve my animation - I can enhance my animation using media such as sound - I can navigate the StickBots software - I can use StickBots to create a simple animation Information Technology - Multimedia - NCC Yr 4 Photo editing - I can use photo editing software to crop and rotate an image - I can experiment with different colour effects	Information Technology – Multimedia (PM5.6) 3D Modelling - I can explain that CAD means computer aided design and give examples of how it is used in industry - I can state whether an image is 2D , 3D or a net - I can use the 2Design programme to create a model vehicle - I can adapt a model vehicle by moving points to alter the shape - I can design a 3D model, changing the style, colour and texture to fit certain criteria - I can refine a 2D design and print the net to create a 3D model Information Technology – Multimedia - Blogging (PM 6.4) - I can explain the key features of a blog - I can plan and write a blog with a specific purpose

Computing Knowledge Progression Grid - KS2 - Cycle 1 and Cycle 2

	• I can explain how cloning and colour effects can be used in photo editing • I can combine images for a purpose • I can evaluate how changes can improve an image	• I can comment on a post. • I can explain some of the issues surrounding inappropriate posts and cyberbullying.
Summer 2	Information Technology – Data -Simulations and Graphing (PM 3.7, 3.8) • I can enter data into 2Graph • I can select an appropriate graph to represent the data • I can collect data and represent it in graph form • I can insert a graph into a simple document Information Technology – Branching Databases Yr 3 NCC • I can investigate questions with yes/no answers. • I can identify the attributes needed to collect data about an object. • I can explain why it is helpful for a database to be well structured. • I can plan a branching database independently. • I can make an identification tool	Information Technology – Multimedia – Video Production (NCC Yr 5) • I can explain what makes a video effective • I can use a digital device to record video • I can capture video using a range of techniques • I can import and edit a video. • I can consider the impact of the choices made when making and sharing a video Information Technology - Computer Science - Coding (Microbit) (PM 3.10/5.10) • I understand the micro:bit is a tiny computer which needs instructions (an algorithm) in code to make it work. • I can use the MakeCode editor to create instructions in code that the micro:bit can understand and then transfer them to the micro:bit. • I can code the micro:bit to make different outputs happen depending on different inputs. Eg, Create a heart, emotion badge, or step counter