Computing
Curriculum Map

Below is a high-level overview of the knowledge that pupils will learn in Computing, at each year from Year 1 to Year 11, to equip pupils with the skills and knowledge required for them to succeed.

Knowledge, skills and understanding gained at each stage

		Autumn 1	Autumn2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Knowledge	• Computer Science- • Understand what an algorithm is. • Understand that digital devices work using programs • Recognise common uses of technology beyond school. For example programming Sky box or using a washing machine or microwave.	• E-Safeguarding- • Identify trusted adults and ensure a trusted adult knows what they are doing online and inform them if online content makes them feel sad, scared or confused. • Behave in a kind and considerate way to others in the real and virtual world.	Information Literacy- Access information comes from a variety of different sources and understand technology allows quick access to these resources.	Data Handling - Sort, organise and classify objects based on their properties.	Media – Image manipulation Communicate simple ideas through the use of text, images and sounds. Understand sound and music can be created using a range of simple technology. Create an image/animation in a simple graphics application	Project Consolidating learning
	ICT Skills	Control devices through a series of clear and accurate algorithms to achieve a predefined outcome.	Understand that the internet is fun but just like there are rules in the	Explore a variety of digital information as part of a given topic.	Represent and interpret simple data as pictograms.	Mouse control Touch typing Record sound using simple	

			real world to keep you safe there are rules for keeping them safe in the online world.	Find / access information using technology.		technologies and play back the recordings. Capture images using a range of technologies and share with others.	
	NCC Aims	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs. Recognise common uses of information technology beyond school. Year Group Outcome Description	Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	Use technology purposefully to source and manipulate digital content.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Recognise common uses of information technology beyond school.	
Year 2	Knowledge	E safeguarding – Be polite and respectful when communicating & playing games online. Talk to a trusted adult before sharing information about themselves online. Know that some of the people they interact with online may not be who they say they are.	Computer Science– Understand that real and virtual devices can be controlled by sequences of commands. Plan a set of commands to	Media – image manipulation with purpose Make simple changes to improve the look and clarity of their work. Organise and communicate ideas for a specific purpose using	Information Literacy- Identify information through a range of appropriate forms of media.	Data handling – Organise and interpret data as a simple graph. Sort and answer questions using yes/no answers.	

			achieve a specific outcome. Predict the outcome of an algorithm using logical reasoning. Write, test and debug simple programs Understand the benefits of using technology beyond school.				
	ICT Skills	Know login details and passwords should only be shared with trusted adults. Understand that they can be connected to many people in their life (real life and online).	Control devices through a series of commands.	Keyboard skills Record, locate and review sounds and add them to their digital creations. Add music and or a sound to affect the mood and atmosphere of their work. Capture and create images in different graphic applications. Understand and create simple animations	Recognise the layout of a web page and interact with it appropriately. Search for information using child friendly search engines.	Represent information as a simple block graph or pictogram.	
	NCC Aims	Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Recognise common uses of information	Use technology purposefully to source and manipulate digital content.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	

		on the internet or other online technologies.	following precise and unambiguous instructions. Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs. Recognise common uses of information technology beyond school.	technology beyond school.			
Year 3	Knowledge	E-Safeguarding- Identify the dangers of clicking links they receive when using technology. Identify personal information about themselves and others. Explain the possible consequences of sharing personal information online. Know that bullying through the use of technology is called online bullying and how to report it.	Data Handling - Collect and organise information to find answers to questions.	Computer Science- Create, refine and debug a series of commands for virtual programmable devices. Create simple programs combining inputs and outputs. Use repetition in programs to write code using the least number of lines and improving efficiency	Media – Combine and refine text, sound and graphics to communicate information for a given audience. Recognise the key features of different types of information/genres and use appropriate layouts. Understand how audio can enhance multimedia projects including radio and films by creating/choosing	Information Literacy- Use search technologies effectively by identifying specific keywords. Find and choose appropriate information and use it in other digital forms.	

					appropriate audio to fit a given context. Plan and create a simple animation. Understand that evaluation and improvement is a vital part of a design process and technology allows changes to be made quickly and efficiently.		
	ICT Skills	Understand that not all information you access online is accurate or reliable.	Create different graphs that show data for different purposes across the curriculum. Store and access data using a database.	Understand and identify simple input and outputs.	Capture, create and enhance new and existing digital images to communicate ideas.	Locate specific information online and recognise that web pages can be organised in different ways.	
	NCC Aims	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns	: Collect, analyse, evaluate and present data and information using a variety of applications on a range of digital devices.	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	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	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	

		about content and contact. Year Group Outcome		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.	goals, including collecting, analysing, evaluating and presenting data and information.		
Year 4	Knowledge	E-Safeguarding- Identify age limits and PEGI ratings for games and understand the importance of only accessing age appropriate content. Explain the possible consequences of submitting personal information online. Ensure information submitted online is only accessed by the people they trust.	Information Literacy- Carry out and modify searches developing keywords to improve search accuracy.	Data Handling - Represent data in a database using appropriate data types. Turn questions into search criteria and use database tools to find answers.	Computer Science- Understand and explore different game genres and what makes a good game. Understand that games, apps and web content are made of code	Media – Develop an understanding of differing film shots and their effective use. Plan, create and edit an animation, film or slideshow. Identify features of good digital creation design. Collect, create and insert appropriate (fit for purpose) graphics and sound files to	

						create a multimedia presentation.	
	ICT Skills	Identify the similarities and differences of virtual and real world communication to develop an understanding of positive online communication. Use strong passwords for all online accounts and devices.	Check the relevancy and accuracy of search results. Locate online content using some of the available advanced features in search engines.	Use a spreadsheet to enter data and perform simple calculations. Convert data in a spreadsheet into different graph types for different purposes. Change elements of a spreadsheet and understand the effects on other calculations.	Debug existing code to improve it. Design and code a simple game. Use selection in their coding. Transfer existing coding skills between applications.	Capture appropriate, quality still and moving images. Create a 2D plan view using basic shapes. Compose, combine and refine music or sounds.	
	NCC Aims	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Year Group Outcome	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Collect, analyse, evaluate and present data and information using a variety of applications on a range of digital devices.	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	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	

					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.	presenting data and information.	
Year 5	Knowledge	Information Literacy- Interpret and validate information from a range of online sources. Recognise that the Internet may contain material that is irrelevant, bias, implausible and inappropriate.	Data Handling - Create charts using appropriate data to interpret and answer a specific question. Create a database to store and search relevant information. Interrogate a database using suitable questions.	E-Safeguarding- Understand the terms plagiarism and copyright and be aware of the implications of copying and sharing content without permission. Describe the causes and consequences of online bullying and discuss behaviours and strategies to prevent and stop online bullying.	Computer Science- Solve problems by decomposing them into smaller parts. Convert lines of code into everyday language and vice versa. Use selection in programming to create a game aimed at an audience. Understand what networks (including the internet) are and	Media – Create and amend a range of 2D graphic representations using appropriate applications. Create simple 3D graphics using a CAD application. Plan, create and edit an animation, film, slideshow or presentation,	

					how they are used to transfer information.	then reflect on its efficacy. Develop criteria for evaluating theirs and others work.	
	ICT Skills	Search for and save differing types of media using search engine functions. Use more advanced features of search engines.	Use technology to search and sift through large amounts of different types of information. Use a range of calculations and functions in a spreadsheet. Use a spreadsheet to model given problems.	Use blocking / unsubscribing / reporting mechanisms appropriately. Control who they interact with online and the information they share.	Understand and use variables. To become familiar with inputs and outputs and create programs using them to control or simulate physical systems.	Source, edit and refine music and sound for a given audience or project.	
	NCC Aims	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	: Collect, analyse, evaluate and present data and information using a variety of applications on a range of digital devices.	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Year Group Outcome	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	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	

					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.	goals, including collecting, analysing, evaluating and presenting data and information.	
Year 6	Knowledge	E-Safeguarding- Explain the importance of a balanced lifestyle with respect to technology use. Explain the importance of a positive 'digital footprint'. Appropriately configured and secure all devices used to access personal data.	Data Handling - Identify and collect appropriate data to answer their questions. Use data in an appropriate application to test a theory/hypothesis. Collect and	Media – Independently combine various forms of media purposefully as part of a project	Information Literacy- Check plausibility of information from a variety of chosen sources on the same topic. Make informed judgments as to the validity of information on a	Computer Science- To design, write and debug a program to solve a problem. Include more complex selection linked to variables to programs. Create a	

			represent data using infographics.		website and be aware of bias.	program where an event is triggered by a sensor.	
	ICT Skills	Evaluate whether games, websites and social media are appropriate for specific ages.	Refine, search, filter, sort and graph data for purpose in a database or spreadsheet. Use a spreadsheet to create real life models of information to offer a solution to a real life problem.	Edit and manipulate multi-track music and sound and refine for a given audience or project. Use a CAD application (3D design tool) to create a representation of an object. Evaluate and adapt individual features to enhance the overall presentation.	Understand how search engines work and rank results.	To understand that the internet is made up of networks of computers around the world that can provide multiple services.	
	NCC Aims	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Year Group Outcome	Collect, analyse, evaluate and present data and information using a variety of applications on a range of digital devices.	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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	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.	
Year 7		Introduction to BGGS Network Using Email, OneDrive, Teams & SharePoint Internet Safety	Using Desktop publishing software	Algorithms using Scratch Introduction to Sequence, Selection and Iteration	Programming using Scratch Using skills learnt in HT3 into practice	Computer Systems	Using Microbits to program

Year 8		Internet Safety Understanding Binary & Data Representation Logic Gates & Truth Tables	Computational thinking - Creating & following Flowcharts – Using Flowol 3	Creating web pages using HTML	Creating web pages using HTML	Spreadsheet Modelling	Concepts of programming - Programming with edublock
Year 9		Internet safety Image Manipulation - Photopea	Computer Networks	Programming with Python	Programming with Python	Cyber Security	Ethics & Legal
Year 10		Computer Systems Hardware & Software Von Neumann Practical task build PC + OS	Computer Networks - protocols & media -security -Configuration -devices (NAS, printers etc) Practical task: Make ethernet cables & create network	Data Representation – Binary, Sound and Image File Sizes and compression	Advancing programming with python String handling, file access and modular programming	Software Development Understanding flowcharts and pseusocode	Ethical, legal Cyber security Malicious code Social Engineering
Year 11		Revisit python skills NEA practice – Brief breakdown, testing and test tables	NEA Practical (20 hrs)	Computational Thinking & Problem solving	Revisit Paper 1 Theory	Revisit Paper 2 Theory	

Notes

Year 9 Content will include ICT/ Image manipulation skills with view to expand KS4 offering to Creative I media

Year 10 will be moving to OCR Exam board

Year 11 will be completing AQA Spec

This is a Work in progress document. Year 10 & Year 11 sequence may change depending on gaps recognised when students returned and reassessed