Computing Curriculum

Year group	NC objectives	Objectives
Reception	Technology: children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes	
Year 1	• 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 • use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school • 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	• I can give instructions to my friend and follow their instructions to move around. • I can describe what happens when I press buttons on a robot. • I can press the buttons in the correct order to make my robot do what I want. • I can describe what actions I will need to do to make something happen and begin to use the word algorithm.. • I can begin to use software/apps to create movement and patterns on a screen. • I can use the word debug when I correct mistakes when I program. • I can begin to predict what will happen for a short sequence of instructions • I can use technology to collect information, including photos, video and sound. • I can sort different kinds of information and present it to others. • I can add information to a pictograph and talk to you about what I have found out. • I can use technology to create and present my ideas. • I can use the keyboard or a word bank on my device to enter text. • I can save information in a special place and retrieve it again. • I can recognise ways that technology is used in our classroom, my home and community. • I can begin to identify some of the benefits of using technology I can keep my password private. •I can tell you what personal information is. •I can tell an adult when I see something unexpected or worrying online. •I can talk about why it's important to be kind and polite. •I can recognise an age appropriate website. •I can agree and follow sensible e-Safety rules.
Year 2		• I can give instructions to my friend (using forward, backward and turn) and physically follow their instructions. • I can tell you the order I need to do things to make something happen and talk about

		this as an algorithm.
		• I can program a robot or software to do a particular task.
		• I can use programming software to make objects move.
		• I can watch a program execute and spot where it goes wrong so that I can debug it.
		• I can look at my friend's program and tell you what will happen.
		• I talk about the different ways I use technology to collect information, including a camera, microscope or sound recorder.
		• I can make and save a chart or graph using the data I collect.
		• I can talk about the data that is shown in my chart or graph.
		• I can tell you what kind of information I could use to help me investigate a question.
		• I can use technology to organise and present my ideas in different ways.
		• I can use the keyboard on my device to add, delete and space text for others to read.
		• I can save and open files on the device I use.
		• I am starting to understand that other people have created the information I use.
		• I can identify benefits of using technology including finding information, creating and communicating.
		• I can talk about the differences between the Internet and things in the physical world.
		•I can explain why I need to keep my password and personal information private.
		•I can describe the things that happen online that I must tell an adult about. •I can talk about why I should go online for a short amount of time.
		•I can talk about why it is important to be kind and polite online and in real life.
		•I know that not everyone is who they say they are on the Internet.
Year 3	• 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	• I can break an open-ended problem up into smaller parts. • I can put programming commands into a sequence to achieve a specific outcome. • I can describe the algorithm I will need for a simple task. • I can use repeat commands. • I keep testing my program and can recognise when I need to debug it. • I can detect a problem in an algorithm which could result in unsuccessful programming. • I can save and retrieve work on the Internet, the school network or my own device. • I can tell you ways to communicate with others online. • I can use search tools to find and use an appropriate website. • I can create different effects with different technology tools.

	• 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		• I can combine a mixture of text, graphics and sound to share my ideas and learning. • I can use appropriate keyboard commands to amend text on my device, including making use of a spellchecker. • I can evaluate my work and improve its effectiveness. • I can use an appropriate tool to share my work online. •I can talk about what makes a secure password and why they are important. •I can protect my personal information when I do different things online. •I can recognise websites and games appropriate for my age. •I ask an adult before downloading files and games from the Internet. •I can post positive comments online.
Year 4	• 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		• I can use logical thinking to solve an open-ended problem by breaking it up into smaller parts. • I can use an efficient procedure to simplify a program. • I know that I need to keep testing my program while I am putting it together. • I can use a variety of tools to create a program. • I can recognise an error in a program and debug it. • I recognise that an algorithm will help me to sequence more complex programs. • I recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology. • I can tell you whether a resource I am using is on the Internet, the school network or my own device. • I can identify key words to use when searching safely on the World Wide Web. • I think about the reliability of information I read on the World Wide Web. • I can create a hyperlink to a resource on the World Wide Web. • I can collect data • I can choose the best way to present data to my friends. • I can change the appearance of text to increase its effectiveness. • I can create, modify and present documents for a particular purpose. • I can use a keyboard confidently and make use of a spellchecker to write and review my work. • I can use an appropriate tool to share my work and collaborate online. • I can give constructive feedback to my friends to help them improve their work and refine my

		own work.
		•I choose a secure password and screen name when I am using a website.
		•I can talk about the ways I can protect myself and my friends from harm online.
		•I know that anything I share online can be seen by others.
		•I choose websites, apps and games that are appropriate for my age.
		•I can talk about why I need to ask a trusted adult before downloading files and games from the Internet.
		•I comment positively and respectfully online and through text messages.
Year 5		• I can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program.
		• I can refine a procedure using repeat commands to improve a program.
		• I can use a variable to increase programming possibilities.
		• I can change an input to a program to achieve a different output.
		• I can use 'if' and 'then' commands to select an action.
		• I can talk about how a computer model can provide information about a physical system.
		• I can use logical reasoning to detect and debug mistakes in a program.
		• I use logical thinking, imagination and creativity to extend a program.
		• I can describe the World Wide Web as the part of the Internet that contains websites.
		• I can use a search engine to find appropriate information and check its reliability.
		• I can recognise and evaluate different types of information I find on the World Wide Web.
		• I think about whether I can use images that I find online in my own work.
		• I can use a spreadsheet to collect and record data.
		• I can choose an appropriate tool to help me collect data.
		• I can present data in an appropriate way.
		• I can use text, photo, sound and video editing tools to refine my work.
		• I can use the skills I have already developed to create content using unfamiliar technology.
		• I can review and improve my own work and support others to improve their work.
		• I can choose a secure password and screen name.
		•I protect my password and other personal information.
		•I can explain why I need to protect myself and my friends and the best ways to do

		this, including reporting concerns to an adult. •I know that anything I post online can be seen, used and may affect others. •I can talk about the dangers of spending too long online or playing a game. •I can explain the importance of communicating kindly and respectfully. •I can discuss the importance of choosing an age-appropriate website, app or game. •I can explain why I need to protect my computer or device from harm.
Year 6		• I can deconstruct a problem into smaller steps, recognising similarities to solutions used before. • I can explain and program each of the steps in my algorithm. • I can evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm. • I can recognise when I need to use a variable to achieve a required output. • I can use a variable and operators to stop a program. • I can use different inputs (including sensors) to control a device or onscreen action and predict what will happen. • I can use logical reasoning to detect and correct errors in a algorithms and programs. • I can tell you the Internet services I need to use for different purposes. • I can select an appropriate tool to communicate and collaborate online. • I can talk about the way search results are selected and ranked. • I can check the reliability of a website. • I can tell you about copyright and acknowledge the sources of information that I find online. • I know that websites can use my data to make money and target their advertising • I can select the most effective tool to collect data for my investigation. • I can check the data I collect for accuracy and plausibility. • I can interpret the data I collect. • I can present the data I collect in an appropriate way. • I can talk about audience, atmosphere and structure when planning a particular outcome. • I can combine a range of media, recognising the contribution of each to achieve a particular outcome. • I can be digitally discerning when evaluating the effectiveness of my own work and the work of others. •I protect my password and other personal information.

		•I can explain the consequences of sharing too much about myself online. •I support my friends to protect themselves and make good choices online, including reporting concerns to an adult. •I can explain the consequences of spending too much time online or on a game. •I can explain the consequences to myself and others of not communicating kindly and respectfully. •I protect my computer or device from harm on the Internet.