EYFS	
Areas of Learning	**Reception Development Matters 2020 Statements**
*Representing data through sorting and categorising objects in unplugged scenarios. *Recognising that a range of technology is used in places such as homes and schools. *Learning to log in and log out when using the internet, alongside an adult *Learning what to do if they come across something that worries them or makes them feel uncomfortable. * Use logical reasoning to read simple instructions and predict the outcome. *Following instructions as apart of practical activities and games and learning to debug when things go wrong. *Learning that an algorithm is a set of instructions to carry out a task, in a specific order. *Experimenting with programming a Bee/Bot giving simple commands. *Learning to debug instructions with help of an adult. **Physical Development** *Representing data through pictograms. *Learning what a keyboard is and how to locate relevant keys. *Learning what a mouse is and developing basic mouse skills such as moving and clicking. **Expressive Arts and Design** *Using a simple online paint tool to create digital art.	**Understanding the World** Explore how things work. Remember rules without needing an adult to remind them. Match their developing physical skills to tasks and activities in the setting Show resilience and perseverance in the face of a challenge. • Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'. **Physical Development** Match their developing physical skills to tasks and activities in the setting. Develop their small motor skills so that they can use a range of tools competently, safely and confidently. **Personal, Social and Emotional Development** Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly. **Expressive Arts and Design** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function

KS1 National Curriculum Expectations	KS2 National Curriculum Expectations
Pupils should be taught about: • 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	**Pupils should be taught about:** • 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

	EYFS	KS1	LKS 2	UKS2
Computer Science (CS) Algorithms, problem solving and programming	**Reception** *Identify algorithms used in everyday life. *Begin to sequence instructions. *Recognise, use and understand directional language. *Perform a simple program on the floor robot. *Recognise that a string of instructions or commands placed together can create a simple program.	**Year 1** *Describe algorithms as sequences of instructions in everyday contexts. *Plan a sequence of steps to solve real life problems. *Program floor robots using sequences of instructions (using directional language) to implement an algorithm. *Create programs for floor robots and sprites on the screen using a number of steps in order before pressing the Go button. *Begin to use conditional language like "if" and "when. **Year 2** *Describe algorithms as sequences of instructions or sets of rules in everyday contexts; understand the importance of order and accuracy of these. *Program on screen using sequences of instructions to implement an algorithm. *Create programs as sequences of instructions when programming on screen, correcting any errors. *Begin to experiment with variables.	**Year 3** *Design and write a program using a block language (programs to include movement, dialogue, sound effects, stages, sprites, loops and variables) without user interactions. *Use sequence in programs. Write a program to produce output on screen. *Explain how loops and random numbers are used in a program. *Explain how conditional statements are used in a program. *Understand what it means to decompose an algorithm and decompose a program into smaller parts. **Year 4** *Design and write a program using a block language to a given brief, including simple interaction (programs to include variables, stages, artificial intelligence and a scoring system). *Use sequence and repetition in programs. *Write a program that accepts keyboard input and produces on-screen output. *Develop their own simulation of a simple physical system on screen.	**Year 5** *Design, write and debug a program using a block language based on their own ideas (programs to include multiple sprites, multiple variables, sensors and conditional statements). *Use sequence, selection and repetition in programs. *Write a program that accepts keyboard and mouse input and produces output on screen and through speakers. *Develop their own simple computer control application. *Plan a solution to a problem using decomposition. **Year 6** *Design, write and debug a program using a second programming language based on their own ideas (using loops, sprites that move in a variety of ways, allowing them to disappear and appear randomly, manipulate variables and use operators that determine an outcome of a conditional statement). *Use sequence, selection, repetition and variables in programs. *Write a program that accepts inputs other than keyboard and mouse and produces outputs other than screen or speakers. *Design, write and debug their own computer control application. *Solve problems using decomposition, tackling each part separately. *Understand that coding is the use of programming languages to make games, programs and computers things. *Write and adapt programmes using Javascript and Python (print command,

				run button, input command, random command)
Computer Science Logical Reasoning	**Reception** *Describe what they think a program will do.	**Year 1** *Explain what they think a program will do. **Year 2** *Give logical explanations of what a program will do under given circumstances, including some attempt at explaining why it does what it does.	**Year 3** *Use logical reasoning to predict outcomes and detect errors in programs. *Use and explain a simple, sequence-based algorithm in their own words. **Year 4** *Use logical reasoning to detect and correct errors in programs. *Explain an algorithm using sequence and repetition in their own words.	**Year 5** *Explain a rule-based algorithm in their own words. *Use logical reasoning to detect errors in algorithms. **Year 6** *Give clear and precise logical explanations of a number of algorithms. *Use logical reasoning to detect and correct errors in algorithms (and programs).
Computer Science Networks and search engines	**Reception** *Recognise technology that is used at home and in school. *Understand what a computer is and the different uses of computers i.e. learning, communicating, finding information, playing games etc.	**Year 1** *Understand the ways devices are used in the classroom and at home *Use a search engine to find information **Year 2** *Understand the ways devices are used in the workplace and the wider world. *Use key words in a search engine to find information. *Explain and understand how an email is sent.	**Year 3** * Begin to recognise the different parts of a school network e.g. WIFI point, server *Understand that email and videoconferencing are made possible through the internet. * Use search operators i.e. + - to filter information in a search engine **Year 4** *Use and explain how search engines work. * Recognise different parts of a school or office network e.g. server, switch, router, client, WIFI point, *Explain how the internet makes the web possible. *Understand that search engines rank pages according to relevance. *Create a webpage and explain how web pages are created and transmitted.	**Year 5** ***** Recognise different parts of a school or office network e.g. server, switch, router, client, Wi-Fi point, and explain the purpose of each. *Explain how search engines are ranked. * Use a search engine efficiently by filtering and begin to understand how results are selected and ranked *Understand how data routing works on the internet. *Explain how web pages are created and transmitted in their own words. **Year 6** ***** Recognise the different services that computer networks can provide i.e. the World Wide Web * Use a search engine efficiently by filtering and deepen their understanding of how results are selected and ranked *Understand how mobile phones or other networks operate. *Understand how domain names are converted into IP addresses on the

				internet. *Appreciate that search engines rank pages based on the number and quality of in-bound links.
Information Technology Digital Productivity Creating content	**Reception** *Use digital technology to store and access content with some support. *Create content using digital technology. *Begin to use a mouse to navigate around a computer screen.	**Year 1** *Use digital technology to store and retrieve content. *Identify different kinds of content. *Create original content using digital technology. *Use a mouse to navigate around the computer screen. **Year 2** *Store, organise and retrieve content on digital devices for a given purpose. *Create and edit original content for a given purpose using digital technology. *Present findings using software and interpret the data. *Input data accurately and present this information in graphical format.	**Year 3** *Use a range of programs on a computer. *Design and create content on a computer. *Collect and present information. **Year 4** *Use and combine a range of programs on a computer. *Design and create content on a computer in response to a given goal. *Collect, analyse and present data.	**Year 5** *Use and combine a range of programs on multiple devices. *Design and create programs on a computer in response to a given goal. *Analyse and evaluate information. **Year 6** *Select, use and combine a range of programs on multiple devices. *Design and create systems in response to a given goal. *Analyse and evaluate data using their chosen software and graphs.
Information Technology Searching	**Reception** *Manage a device by correctly closing websites or apps and safely turning on and off.	**Year 1** *Use a search engine to find information **Year 2** *Use key words in a search engine to find information.	**Year 3** *Search for information within a single site. *Describe how search engines select pages according to keywords found in the content. **Year 4** *Use a standard search engine to find information using a range of strategies to be more successful in finding reliable information.	**Year 5** *Use filters to make more effective use of a standard search engine. Understand that search engines use a cached copy of the crawled web to select and rank results. **Year 6** *Make use of a range of search engines appropriate to finding information that is required.
Digital Literacy Digital Citizenship & Technology Digital Creativity	**Reception** *Describe what personal information is. *Understand the importance of asking for help from an	**Year 1** *Identify what personal information is. *Identify what to do if they see disturbing content online at home or at school. *Identify ways to keep themselves safe while using digital technology. *Understand that information on the	**Year 3** *Identify who they can trust and share their personal information with online. *Use digital technology safely and show respect for others when working online. *Identify how to report concerns and	**Year 5** *Demonstrate that they can act responsibly when using the internet. *Discuss the consequences of particular behaviours when using digital technology. *Know how to report concerns and inappropriate behaviour in a range of

	adult when on the internet. *Identify some ways technology is used at home and in school.	internet can be seen by others. *Describe some of the risks that occur on the internet. *Show an awareness of how IT is used for communication beyond school. **Year 2** *Explain what personal information is and develop awareness of why it is special and should not be shared. *Explain what to do if they have concerns about content or contact online. *Keep safe and show respect to others while using digital technology. *Identify ways they can use the Internet to communicate with family and friends. *Show an awareness of how IT is used for a range of purposes beyond school.	inappropriate behaviour in school. *Recognise unacceptable behaviour when using digital technology. *Decide whether a web page is relevant for a given purpose or question. *Use email and videoconferencing in class appropriately. *Explain and understand online protocols, in order to stay safe on the web. *To identify cyberbullying and its consequences. *Identify the risks on online gaming and know how to protect themselves. **Year 4** *Demonstrate that they can act responsibly when using computers. *Identify and explain the differences between acceptable and unacceptable behaviours when using digital technology. * Know who to talk to about concerns and inappropriate behaviour at home or in school. *Decide whether digital content is relevant for a given purpose or question. *Collaboratively communicate with peers on a shared wiki appropriately. *Begin to use a range of online communication tools, such as forums, email and polls in order to formulate, develop and exchange ideas. *Describe the meaning of copyright and the importance of acknowledging sources.	contexts. *Decide whether digital content is reliable and unbiased. *Work collaboratively with peers on a class website or blog. *Explain what is meant by copyright. **Year 6** *Show that they can think through the consequences of their actions when using digital technology. *Identify principles underpinning acceptable use of digital technologies. *Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts. *Articulate an opinion about the effectiveness of digital content. *Use online tools to plan and carry out a collaborative project successfully.