

Progress in Computing by Year Group (EYFS-KS2)

		By end of EYFS	By the end of Year 1	By the end of Year 2	By the end of Year 3	By the end of Year 4	By the end of Year 5	By the end of Year 6
Computing Strands	Computer Science	Children can: - Understand that remote and programmable toys can be switched on and off. - Understand that remote and programmable toys can follow instructions. - Create a short sequence of instructions for remote and programmable toys.	Children can: - Understand what an algorithm is. - Understand that digital devices work using algorithms. - Control devices through a series of clear and accurate algorithms to achieve a predefined outcome. - Recognise common uses of technology beyond school. For example programming Sky box or using a washing machine or microwave.	Children can: - Understand that real and virtual devices can be controlled by sequences of commands (algorithm). - Plan a set of commands to achieve a specific outcome. - Predict the outcome of an algorithm using logical reasoning. - Control devices through a series of commands (algorithm). - Write, test and debug simple programs. - Understand the benefits of using technology beyond school.	Children can: - Create, refine and debug a series of commands (algorithm) for virtual programmable devices. - Understand and identify simple input and outputs. - Create simple algorithms combining inputs and outputs. - Use repetition in programs to write code using the least number of lines and improving efficiency.	Children can: - Understand and explore different game genres and what makes a good game. - Understand that games, apps and web content are made of code. - Debug existing code to improve it. - Design and code a simple game. - Use selection in their coding. - Transfer existing coding skills between applications.	Children can: - Solve problems by decomposing them into smaller parts. - Convert lines of code into everyday language (pseudocode) and vice versa. - Understand and use variables. - Use selection in programming to create a game aimed at an audience. - To become familiar with inputs and outputs and create algorithms using them to control or simulate physical systems. - Understand what networks (including the internet) are and how they are used to transfer information.	Children can: - To design, write and debug a program to solve a problem. - Include more complex selection linked to variables to programs. Create a program where an event is triggered by a sensor. - To understand that the internet is made up of networks of computers around the world that can provide multiple services.
	Data Handling	Children can: Recognise and label differences in objects (colour, size, etc.)	Children can: - Sort, organise and classify objects based on their properties. - Represent and interpret simple data as pictograms.	Children can: - Represent information as a simple block graph or pictogram. - Organise and interpret data as a simple graph. - Sort and answer questions using yes/no answers.	Children can: - Collect and organise information to find answers to questions. - Create different graphs that show data for different purposes across the curriculum. - Store and access data using a database.	Children can: - Represent data in a database using appropriate data types. - Turn questions into search criteria and use database tools to find answers. - 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.	Children can: - 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. - Use technology to search and sift through large amounts of different types of information. - Use a range of calculations and functions in a spreadsheet.	Children can: - Identify and collect appropriate data to answer their questions. - Use data in an appropriate application to test a theory/hypothesis. - 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. - Collect and represent data using infographics.

							Use a spreadsheet to model given problems.	
	Information Literacy	Children can: Use apps and websites as directed by practitioners in the classroom.	Children can: - Access information comes from a variety of different sources and understand technology allows quick access to these resources. - Explore a variety of digital information as part of a given topic. - Find / access information using technology.	Children can: - Identify information through a range of appropriate forms of media. - Recognise the layout of a web page and interact with it appropriately. - Search for information using child friendly search engines.	Children can: - Use search technologies effectively by identifying specific keywords. - Find and choose appropriate information and use it in other digital forms. - Locate specific information online and recognise that web pages can be organised in different ways.	Children can: - Carry out and modify searches developing keywords to improve search accuracy. - Check the relevancy and accuracy of search results. - Locate online content using some of the available advanced features in search engines.	Children can: - Interpret and validate information from a range of online sources. - Recognise that the Internet may contain material that is irrelevant, bias, implausible and inappropriate. - Search for and save differing types of media using search engine functions. - Use more advanced features of search engines.	Children can: - 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 website and be aware of bias. - Understand how search engines work and rank results.
	Media	Children can: - Choose to use technology to capture images. - Choose to use technology to create videos.	Children can: - Communicate simple ideas through the use of text, images and sounds. - Understand sound and music can be created using a range of simple technology. - Record sound using simple technologies and play back the recordings. - Create an image/animation in a simple graphics application. - Capture images using a range of technologies and share with others.	Children can: - Make simple changes to improve the look and clarity of their work. - Organise and communicate ideas for a specific purpose using appropriate layout and media. - 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.	Children can: - 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 appropriate audio to fit a given context. - Capture, create and enhance new and existing digital images to communicate ideas. - 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.	Children can: - Capture appropriate, quality still and moving images. - Develop an understanding of differing film shots and their effective use. - Create a 2D plan view using basic shapes. - Plan, create and edit an animation, film or slideshow. - Compose, combine and refine music or sounds. - Identify features of good digital creation design. - Collect, create and insert appropriate (fit for purpose) graphics and sound files to create a multimedia presentation.	Children can: - 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, then reflect on its efficacy. - Source, edit and refine music and sound for a given audience or project. - Develop criteria for evaluating theirs and others work.	Children can: - Independently combine various forms of media purposefully as part of a project. - Use a CAD application (3D design tool) to create a representation of an object. - Edit and manipulate multi-track music and sound and refine for a given audience or project. - Evaluate and adapt individual features to enhance the overall presentation.
	(e)Safeguarding	Children can: Identify adults that they trust and listen to their guidance when online.	Children can: Identify trusted adults and ensure a trusted adult knows what they	Children can: Know login details and passwords should only	Children can: Identify the dangers of clicking links they receive when using technology.	Children can: Identify age limits and PEGI ratings for games and understand the	Children can: Understand the terms plagiarism and copyright and be aware of the	Children can: Explain the importance of a balanced lifestyle with respect to technology use.

		• Listen to practitioners on how to use technology responsibly.	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. • Understand that the internet is fun but just like there are rules in the real world to keep you safe there are rules for keeping them safe in the online world.	be shared with trusted adults. • Understand that they can be connected to many people in their life (real life and online). • 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.	• 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 cyberbullying and how to report it. • Understand that not all information you access online is accurate or reliable.	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. • 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.	implications of copying and sharing content without permission. • Use blocking / unsubscribing / reporting mechanisms appropriately. • Control who they interact with online and the information they share. • Describe the causes and consequences of cyberbullying and discuss behaviours and strategies to prevent and stop cyberbullying.	• Explain the importance of a positive 'digital footprint'. • Appropriately configured and secure all devices used to access personal data. • Evaluate whether games, websites and social media are appropriate for specific ages.
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