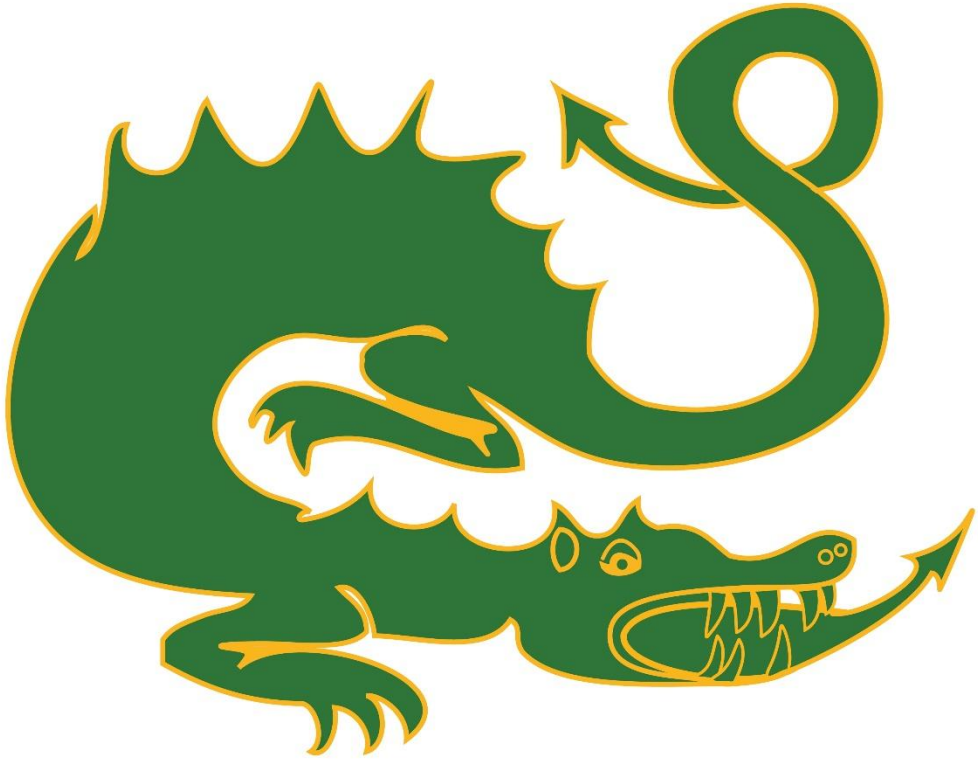
Leechpool Computing
Knowledge and Skills Progression



Computing: AGE RELATED STATUTORY COVERAGE		
EYFS	**KEY STAGE ONE LEARNING**	**KEY STAGE TWO LEARNING**
• 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). • Explain the reasoning for rules, know right from wrong and try to behave accordingly. • Develop their fine motor skills so they can use a range of tools competently, safely and confidently. • Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Safely use and design a varieties of materials, tools and techniques, experimenting with colour, design texture, form and function.	• 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.	• 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.

Skills Map – **Computing**		
Early Years – Computing		
PSED	**Physical Development**	**EAD**
• 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). • Explain the reasoning for rules, know right from wrong and try to behave accordingly.	• Develop their fine motor skills so they can use a range of tools competently, safely and confidently.	• Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Safely use and design a varieties of materials, tools and techniques, experimenting with colour, design texture, form and function.

Skills Map – Computing			
Year 1			
CODE	**CREATE**	**COMMUNICATE**	**COLLECT**
• Give simple instructions to move from one point to another. • Give instructions to a programmable toy. • Predict what will happen for a short sequence of commands for a programmable toy. • Begin to create an algorithm to achieve a specific purpose. • Use the word debug to correct any mistakes when programming a BeeBot.	• Become familiar with the common tools of SeeSaw. • Type using a virtual keyboard. • Understand significant keys such as 'space bar'. • Comment on posts on Seesaw. • Use touchscreen devices to interact • Recognise uses of technology in their homes and in their community. • Use search engines to find out specific information. • Use search engines to find images.	• Explore what cyber-bullying means & what to do when they encounter it. • Understand how to be kind and polite online, just as you would offline. • Knowing that you, and an adult you can trust, should only know your password.	• Take photographs, video and record sound to evidence learning experiences. • Look at how data is representing digitally. • Contribute to and interpret a pictogram. • Organise various images into a pictogram.

Skills Map – Computing			
Year 2			
CODE	**CREATE**	**COMMUNICATE**	**COLLECT**
• Give clear instructions forward, backward and turn (right-angle) instructions. • Plan a set of instructions to create basic shapes using Logo. • Watch a simple Logo program execute, using the word debug when talking about fixing any mistakes. • Make predictions about what will happen and test results of other pairs. • Compare the similarities and differences of Physical robots (BeeBots) and virtual ones (Logo).	• To independently log on to a computer. • Open up programs such as word or powerpoint. • Type simple sentences using a keyboard. • Save documents using the 'Save As' button. • Delete text using the 'delete' and 'backspace' keys. • Use control key to access other icons. • Begin to understand there are a variety of sources of information and begin to recognise the differences. • Begin to understand what the internet is and the purposes that it is used for. • Understand different ways of online communication such as emails. • Open various multimedia attachments from emails, being aware not all may be safe.	• Stay safe online by choosing appropriate websites/games to go on. • To understand the importance of keeping their identity hidden online. • Learn that many websites ask for information that is private & discuss how to responsibly handle such requests such as pop-up ads.	• Take and save photographs, video & record sound to capture learning. • Ask questions and consider how they will collect information. • Collect data and discuss different ways to represent it. • Display data using a bar chart.

Skills Map – Computing			
Year 3			
CODE	**CREATE**	**COMMUNICATE**	**COLLECT**
• To create a sprite and background on Scratch. • To move a Sprite in different ways, using blocks. • Explore how to add different loops for sprites. • To understand what a collision means. • To set starting positions for sprites for a fluent restart of a game. • To create a simple jumping game which includes a score system.	• Explore & begin to evaluate the use of multimedia to enhance communication. • Create & begin to edit presentation documents & text, experimenting with fonts, size, colour, alignment for emphasis & effect. • Use a range of animations using PowerPoint. • Use two hands to type. • Amend text & save changes. • Copy and paste text by right clicking. • Save work on the school network, on the internet and on individual devices. • Become familiar with various online and offline platforms for video editing. • Create own music using different apps. • Edit video clips, shortening their length. • Explore the use of transitions in video clips, knowing why they are used. • Present information with an edited video.	• Discuss what actions could be taken if they are uncomfortable or upset online e.g. Report Abuse button. • To understand not all websites are safe and child-friendly. Look for the 'lock'. • Know that if they put information online it leaves a digital footprint or "trail" and they need to manage it so it's not hurtful.	• Find out information from a pre-prepared database, asking questions about the data. • Construct and use a branching database. • Record data in a variety of ways • Present data for others • Use a data logger to monitor changes and dicsuss the outcomes seen.

Skills Map – Computing			
Year 4			
CODE	**CREATE**	**COMMUNICATE**	**COLLECT**
• To design a program for a specific audience. • To use the draw function to create a unique sprite. • Use sequence, selection, and repetition in programs using various forms of input and output. • To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • To write and debug programs that accomplish specific goals.	• Explore how multimedia can create atmosphere & appeal to different audiences. • Be confident in creating & modifying text & presentation documents to achieve a specific purpose. • Use art programs & online tools to modify photos for a specific purpose using a range of effects. • Explore the use of videos to present work. • Use a keyboard effectively, including the use of keyboard shortcuts • Know how to spell check work. • Choose appropriate tools for communication and collaboration and use them responsibly. • Talk about the different elements on web pages. • Consider reliability of information and ways it may influence you. • Check who the owner is before copying photos, clipart or text. • Find out who the information presented on a webpage belongs to. • Understand that information shared online is their property and they are responsible.	• Talk about what games they enjoying playing and what good choices are when playing games e.g. content, screen time. • Realise that not all websites are equally good sources of information. • Explore using the safe and responsible use of online communication tools e.g. blogs, messaging.	• Plan and create a database to answer questions. • Identify different types of data. • Ask questions carrying out simple searches on a database. • Identify inaccurate data. • Present data in appropriate format for an audience. • Use a data logger to record and compare individual readings.

Skills Map – Computing			
Year 5			
CODE	**CREATE**	**COMMUNICATE**	**COLLECT**
• To plan algorithms using different techniques such a mind mapping or story boards. • To use bitmap or vectors to create own assets. • To sequence, selection, and repetition in programs; work with variables and various forms of input and output. • To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • Design, write and debug programs that accomplish specific goals. • Solve problems by decomposing them into smaller parts.	• Select an appropriate ICT or online tool to create and share ideas. • Explore the effects of multimedia (photos, video and sound) in a presentation or video and show how they can be modified. • Develop skills using transitions and hyperlinks to enhance the stricture of presentations. • Use a wide range of effects in art programs and online tools, discussing the choices made and their effectiveness. • Know how to use text and video editing tools in programs to refine their work. • Use online tools to create and share presentations. • Choose appropriate tools for image manipulation. • To understand reasons why images may be manipulated. • Manipulate an image to change its shape and colour. • Layer images on top of each other. • Create an imaginative scene using editing software, combining the use of different tools. • Present an edited image, discussing when / where it shouldn't be used.	• Recap on the dangers of the internet. • Discuss the importance of keeping an adult informed about what you are doing online and how to report concerns. • Explore ways in which they can help others become more aware – focus on children.	• To collect and record information using spreadsheets and databases. • To carry out complex searches using and/or; ≤ / ≥. • Solving problems and presenting answers using data tools. • Analyse information and be able to question data produced. • Be able to select appropriate use of a data logger for an investigation and interpret the findings.

Skills Map – Computing			
Year 6			
CODE	**CREATE**	**COMMUNICATE**	**COLLECT**
• To plan out algorithms of code using flow charts to explain the computational logic. • To piece together advanced command blocks using reasoning. • 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. • To adapt premade code to achieve a different output that suits the required needs. • Begin using advanced command blocks to program and complete mathematical equations.	• Identify the purpose for selecting an appropriate online tool. • To understand audience, atmosphere and structure when presenting various information. • Collect information and media from a range of sources (considering copyright issues) into a presentation for a specific audience. • Use sound, images, text, transitions and hyperlinks effectively. • Store presentations, notes and videos online where they can be accessed by themselves and shared with others. • Evaluate the effectiveness of their own work and the work of others. • Choose appropriate tools for 3D image manipulation. • Create a 3D image, manipulating its shape and form. • Attach multiple shapes together. • Create an imaginative 3D environment using editing software, combining the use of different tools. • Present a 3D environment, being able to discuss what was a challenge to create.	• Understand their own personal use of the internet and choices they make. • Understand how to protect devices from virus threats. • Understand the importance of understanding online addiction. • Explore ways in which they can help others become more aware (both adults and children).	• Using the whole data process – generate, process, interpret, store, and present information – understanding the need for accuracy and checking plausibility. • To select appropriate data tools depending on the required outcome. • To identify and present results clearly to show your findings. • Interrogate a database, refining searches to provide answers to questions. • Plan investigations using the outcomes from a data logger to show findings.

Computing: VOCABULARY MAP						
EYFS	**KEY STAGE ONE**		**KEY STAGE TWO**			
	(anti)clockwise above app below centre coding computer control design direction double-click down Google instruction internet keyboard left-click menu mouse position program right-click robot rule screen search engine shut down start touch-screen turtle underneath up web	(de)bug (sub)folder application audio back-space caps-lock close control data delete device editing/presentation software enter file hardware highlight horizontal image information internet search left turn object open password process return right turn save save-as select shift text vertical video window	algorithm blog community control alt copy crop cursor cut digital resources digitise drag drop email flip font forum icon input maximise minimise output paste personal data post programming language purpose rotate screengrab sequence series short cut social media tab URL value vlog word processing	angle animation pane back up browser cause characteristic gigabyte* (including knowledge of common file sizes e.g. photo, document) JPEG logical reasoning MPEG pattern pdf physical pixel pop up publish quality repetition resolution selection sensor share simulation structure system transition USB video conference WAV	audience bookmarks complex cookies deconstruct efficiency fibre-optic field file directory flash drive identity theft improve internet/browser history open source password strength permissions recipient reply reply-all router send server Wikis	aesthetics analyse authentic binary controversy copyright cumulative functionality interface intersecting IP address phishing plagiarism plausible prejudice radial simultaneous terabyte user virus