Adlington Primary School



Computing

End Points Curriculum Plan

This end points curriculum plan is designed to show the knowledge that will be covered in Computing at Adlington Primary School. The curriculum combines both the conceptual and procedural knowledge within Computing. Information on the organisation and delivery of Computing can be found in the Computing Progression.

At Adlington Primary School we want all of our children to develop the following characteristics of user of IT during their time with us:

- Competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects.

- The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity.

- An understanding of the connected nature of devices.

- The ability to communicate ideas well by using applications and devices throughout the curriculum.

- The ability to collect, organise and manipulate data effectively.

End Points Computing Curriculum Plan

		Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
To code (using Scratch)	**Motion**	• Control motion by specifying the number of steps to travel, direction and turn.	• Use specified screen coordinates to control movement.	• Set IF conditions for movements. Specify types of rotation giving the number of degrees.
	Looks	• Add text strings, show and hide objects and change the features of an object.	• Set the appearance of objects and create sequences of changes.	• Change the position of objects between screen layers (send to back, bring to front).
	Sounds	• Select sounds and control when they are heard, their duration and volume.	• Create and edit sounds. Control when they are heard, their volume, duration and rests.	• Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation.
	Draw	• Control when drawings appear and set the pen colour, size and shape.	• Control the shade of pens.	• Combine the use of pens with movement to create interesting effects.
	Events	• Specify user inputs (such as clicks) to control events.	• Specify conditions to trigger events.	• Set events to control other events by 'broadcasting' information as a trigger.
	Control	• Specify the nature of events (such as a single event or a loop).	• Use IF THEN conditions to control events or objects.	• Use IF THEN ELSE conditions to control events or objects.
	Sensing	• Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?).	• Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to questions).	• Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions
	Variables and list	• From Year 3 onwards.	• Use variables to store a value. • Use the functions define, set, change, show and hide to control the variables.	• Use lists to create a set of variables.
	Operators	• From Year 3 onwards.	• Use the Reporter operators () + () () - ()	• Use the Boolean operators () < () () = ()

			() * () () / () to perform calculations.	() > () ()and() ()or() Not() to define conditions. • Use the Reporter operators () + () () - () () * () () / () to perform calculations. Pick Random () to () Join () () Letter () of () Length of () () Mod () This reports the remainder after a division calculation Round () () of ().

To connect		• Participate in class social media accounts. • Understand online risks and the age rules for sites.	• Contribute to blogs that are moderated by teachers. • Give examples of the risks posed by online communications. • Understand the term 'copyright'. • Understand that comments made online that are hurtful or offensive are the same as bullying. • Understand how online services work.	• Collaborate with others online on sites approved and moderated by teachers. • Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. • Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder. • Understand the effect of online comments and show responsibility and sensitivity when online. • Understand how simple networks are set up and used.
To communicate		• Use a range of applications and devices in order to communicate ideas, work and messages. • Develop correct use of key board including the spacebar, backspace, delete, shift(for capital letters) and enter key • Begin to use both hands for typing. • Select appropriate images to add to work • Add captions to photographs and graphics • Word process short texts-working directly at the computer • Navigate around text in a variety of ways(mouse, arrow keys) when editing text	• Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally. • Use different font sizes, colours and effects to communicate meaning • Use various layouts, formatting, graphics and illustrations for different purposes or audiences • Use page setup to select different page sizes and orientations • Use cut, copy and paste to refine and re-order content • Use appropriate editing tools to ensure work is clear and error free-spell checker, thesaurus, find and replace • Select text using an appropriate method-e.g. highlighting or clicking text to select	• Choose the most suitable applications and devices for the purposes of communication. • Use many of the advanced features in order to create high quality, professional or efficient communications. • Continue to develop correct use of the keyboard with increasing speed and accuracy • Develop and use criteria to evaluate design and layout of a range of resources including websites, pages on VLE, online resources and presentations • Create an outline plan for a non-linear presentation; producing a diagram to demonstrate understanding how pages link and the need for clarity. • Develop the use of hyperlinks to produce more effective, interactive, non-linear presentations

		• Save print, retrieve and amend work. • Know that text can be different colours, sizes and styles and these can be changed. • Know that multimedia includes sound, text and graphics. • Know that ICT can be used to communicate ideas in different ways- text, images, tables and sound.	• Make simple changes to selected text –e.g. colour, style , size • Select and import sounds from other sources-own recordings, sound effects and music • Recognise and use key layout and design features, e.g. text boxes , columns and borders • Insert and edit simple tables • Create a range of hyperlinks and produce a non-linear interactive presentation • Recognise intended audience and suggest improvements to make their work more relevant to that audience • Through self and peer assessment, evaluate presentation sand suggest suitable improvements to their work • Recognise the features of good page design and multimedia presentations • Consider how design features meet the needs of the audience, e.g. poster, newspaper etc • Understand that evaluation and improvement are vital parts of the design process and that ICT allows changes to be made quickly and efficiently • Begin to understand that images, sounds and text can be subject to copyright. • Compare and contrast the impact of using different sounds, words and images from a variety of electronic sources. • Develop an increasing sense of audience and talk about the impact	• Develop consistency across a document, using the same styles of font etc • Make effective use of transitions and animations in presentations. Consider their appropriateness and overall effect on the audience. • Independently select process and import images, video and sounds form a variety of sources to enhance work • Format and edit work to improve clarity and purpose using a range of tools, e.g. cut and paste, justify, tabs, insert and replace • Make use of reviewing tools (comments) in word processors to collaborate and evaluate each other's work • Through peer and self-assessment, evaluate presentations and make improvements, • Demonstrate awareness of intended audience in their work • Independently select the most appropriate ICT tools for their intended purpose and audience • Understand the importance of evaluation and adaptation of individual features to enhance an overall presentation • Understand the potential of multimedia to inform or persuade and know how to integrate words, images and sounds imaginatively for different audiences and purposes. • Recognise the features of good design in different printed and electronic texts e.g. poster, website, presentation. Talk about design in the context of their own work

			of choices and decisions in their work	• Understand that images, sounds and text can be subject to copyright and abide by copyright rules when creating a presentation.
To collect		• Use simple databases to record information in areas across the curriculum.	• Devise and construct databases using applications designed for this purpose in areas across the curriculum.	• Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner.

Computing Opportunities

EYFS	Key Stage 1	Key Stage 2
• Be able to access games/activities on the Interactive Whiteboard. • Be able to use the iPad to record their learning with Photos and Videos, for e.g. pictures of models / videos of imaginative role-play. • Be able to access simple programmes on an iPad. • Be able to programme a Bee-Bot to complete a simple, pre-planned command sequence.	• Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions. • Write and test simple programs. • Use logical reasoning to predict the behaviour of simple programs. • Organise, store, manipulate and retrieve data in a range of digital formats. • Communicate safely and respectfully online, keeping personal information private and recognise common uses of information technology beyond school.	• Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selections and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs. • Use logical reasoning to explain how a simple algorithm works, 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. • Describe how internet search engines find and store data; use search engines effectively; be

		discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely. • Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.