

Ditton Primary School



Computing Curriculum Intent

CORE VALUES:

CHILDREN FIRST

RESILIENCE

PIONEERING

Ditton Primary School- COMPUTING progression through EYFS

Understanding the World: Computing Overview

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
<ul style="list-style-type: none"> Finding out & exploring Playing with what they know Being willing to 'have a go' 	<ul style="list-style-type: none"> Being involved & concentrating Keep on trying Enjoying achieving what they set out to do 	<ul style="list-style-type: none"> Having their own ideas (creative thinking) Making links (building theories) Working with ideas (critical thinking)

ELG

NO ELG's are represented for this area.

Focus	Electronic Communication Understanding Technologies	Text and Multimedia	Research and E-Safety	Digital images and audio	Algorithms Handling information	Vocabulary- To be used daily.
Reception Skills	<ul style="list-style-type: none"> Completes a simple program on electronic devices 	<ul style="list-style-type: none"> Begin to list different IT in their home 	<ul style="list-style-type: none"> Begin to give reasons why we need to stay safe online Can use the internet with adult supervision to find and retrieve information of interest to them 	<ul style="list-style-type: none"> Can create content such as a video recording, stories, and/or draw a picture on screen 	<ul style="list-style-type: none"> Develops digital literacy skills by being able to access, understand and interact with a range of technologies 	Internet, website, mouse, images, paint, technology, share, collect, set, sound, communicate, videos, photos, programme

Reception Knowledge	Autumn 1 All about Me	Autumn 2 Families and Celebrations	Spring 1 Up and Down	Spring 2 Growing and changing	Summer 1 Fairy Tales/ Adrift – Houses and Homes	Summer 2 Chester Zoo
	<ul style="list-style-type: none"> Can turn on an Ipad, open a programme and follow instructions. Can explain how to stay safe when using the internet. 	<ul style="list-style-type: none"> Can follow teachers' instructions when using an online interactive programme such as paint or draw. 	<ul style="list-style-type: none"> Can write a variety of CVC words using a keyboard. 	<ul style="list-style-type: none"> To collect information about the measurement of plants and see which was the best environment for growing in. 	<ul style="list-style-type: none"> Can use the I Pad and class cameras to take their own images Can send a group class email to a different class and wait for a response. 	<ul style="list-style-type: none"> Can use 'google' to find out more information about animals and use the images to support their own representations. Can explain who 'hector' is and why we use him.

E-Safety	Computer Skills	Programing	Word Processing skills	Data Collection
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Children to be exposed to key vocabulary daily in provision. High quality resources will be provided for daily accessibility.
 Role-play areas will be a key area where a range of technologies will be used in play- telephones, microwaves, cookers, keyboards, televisions, CD player. These should be modelled.
 Explicit teaching will be needed within this area when using iPads and researching. This should take place in small, guided groups.

Year 1: Computing skills progression

<p>KS1: POS</p> <ul style="list-style-type: none"> - 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. 	<p>Electronic Communication</p> <ul style="list-style-type: none"> - Contribute to a class email to another class/school/teacher etc
<p>Text and Multimedia</p> <ul style="list-style-type: none"> - Work with others and with support to contribute to a digital class resources which includes text, graphic and sound - Open and close windows - Turn a device on - Type using both hands 	<p>Research and E-Safety</p> <ul style="list-style-type: none"> - Explore information from a variety of sources - Save a picture from the internet
<p>Digital Images and audio (photos, paint, animation)</p> <ul style="list-style-type: none"> - Use a range of simple tools to modify a picture/create a picture/use a paint package 	<p>Algorithms (Control)</p> <ul style="list-style-type: none"> - Control simple everyday devices to make them produce different outcomes.
<p>Handling information (databases and graphs)</p> <ul style="list-style-type: none"> - As a class or individually with support, children use a simple pictogram to develop graphical awareness 	<p>Understanding technologies</p> <ul style="list-style-type: none"> - Show an awareness of the range of devices and tools they encounter in everyday life - Show an awareness that why they create one a computer or tablet can be shown to others via another device (e.g. printer, projector, Apple TV)

Year 1 – End points

<p>E-Safety</p>	<ul style="list-style-type: none"> • To understand what information should be kept safe when using the internet. • To understand that everyone leaves a digital footprint. • To understand who to tell if something online upsets them.
<p>Computer Skills & Inputs</p>	<ul style="list-style-type: none"> • To begin to apply mouse and trackpad skills by launching applications, manipulating windows and opening and saving files and folders. • To begin to develop basic computer skills in order to use a desktop or laptop computer. • Have an emerging understanding of what inputs and outputs are.
<p>Word Processing Skills</p>	<ul style="list-style-type: none"> • To begin to develop typing and word processing skills. • To have some knowledge of the location of letters and symbols on the keyboard. • To understand which search engines are age appropriate
<p>Programming Toys</p>	<ul style="list-style-type: none"> • To understand that computers and devices use programs to complete tasks. • To understand an algorithm as a set of step-by-step instructions. • To understand why it is important to be precise when writing an algorithm.
<p>Programming with Scratch JR</p>	<ul style="list-style-type: none"> • To continue to understand the principles of programming. • To develop a sense of creating, debugging and logical reasoning.
<p>Digital Art</p>	<ul style="list-style-type: none"> • To be able to use the influence of other artists to create pictures • To be able to use paint tools to create art digitally

Year 2: Computing skills progression

<p>KS1: POS</p> <ul style="list-style-type: none"> - 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. 	<p>Electronic Communication</p> <ul style="list-style-type: none"> - Work collaboratively by email to share and request information of another class or story character
<p>Text and Multimedia</p> <ul style="list-style-type: none"> - Generate their own work combining in text, graphics and sound. - Save, retrieve and edit work 	<p>Research and E-Safety</p> <ul style="list-style-type: none"> - Use a search engine to find specific and relevant information to use in a topic - Use key words to search for specific information
<p>Digital Images and audio (photos, paint, animation)</p> <ul style="list-style-type: none"> - Use a range of tools and software to create or modify a picture to communicate an idea - Create a simple animation to tell a story 	<p>Algorithms (Control)</p> <ul style="list-style-type: none"> - Control a device, on and off screen, making predictions about the effect their programming will have
<p>Handling information (databases and graphs)</p> <ul style="list-style-type: none"> - Use a graphing package to collect, organise and classify data, selecting appropriate tools to create a graph and answer questions - Enter information into a simple branching database and use it to answer questions - Save, retrieve and edit work 	<p>Understanding technologies</p> <ul style="list-style-type: none"> - Show an awareness of a range of inputs to a computer (Interactive whiteboard, mouse, touch screen, keyboard) - Begin to show an awareness that computers can be linked to shared resources

Year 2 – End points

<p>E-Safety</p>	<ul style="list-style-type: none"> • Understand that technology can be used to communicate • Understand the rules associated with technology use in school and at home • Understand that bullying can happen online and what to do if it is happening
<p>Basic Stop Motion</p>	<ul style="list-style-type: none"> • To understand and be able to explain what a stop motion animation is • To understand how 2D stop motion animations are created
<p>Algorithms</p>	<ul style="list-style-type: none"> • To be able to create, test and debug algorithms. • To use directional language in an algorithm (forwards, backwards, quarter turn).
<p>Data</p>	<ul style="list-style-type: none"> • To know that data is information and this information can be sorted into groups based on criteria. • To know that data can be represented in different ways.
<p>Programming with Conditionals</p>	<ul style="list-style-type: none"> • To use conditionals (if statements) in programming. • To create a simple game program • To identify 'bugs' in an algorithm and 'debug' them accordingly

Word Processing Skills	<ul style="list-style-type: none"> To understand which search engines are age appropriate and safe for cutting and pasting images To understand why we save documents in a folder To understand shortcuts to creating documents To understand how to save to PDF's to protect copyrights of your work
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Year 3: Computing skills progression

<p>KS2: POS</p> <ul style="list-style-type: none"> 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. 	<p>Electronic Communication</p> <ul style="list-style-type: none"> Show good understanding and awareness of the need to abide by school e-safety rules
<p>Text and Multimedia</p> <ul style="list-style-type: none"> Record and present information integrating a range of appropriate media combining text and graphics in printable form 	<p>Research and E-Safety</p> <ul style="list-style-type: none"> Using another curriculum area as a starting point, children ask their own question then use ICT sources to find answers, making use of search engines Children talk about using ICT to find information/resources showing an emerging understanding of internet safety
<p>Digital Images and audio (photos, paint, animation)</p> <ul style="list-style-type: none"> Manipulate digital images using a range of tools in appropriate software to convey a specific mood or idea 	<p>Algorithms (Control)</p> <ul style="list-style-type: none"> Able to type a short sequence of instructions and to plan ahead when programming devices on and off screen
<p>Handling information (databases and graphs)</p> <ul style="list-style-type: none"> Use a simple database (the structure of which has been set up for the) to enter and save information on a given subject Follow straight forward lines of enquiry to search data 	<p>Understanding technologies</p> <ul style="list-style-type: none"> Begin to show discernment in their use of computing devices and tools for a particular purpose and explain why their choice was made Show an understanding that their password is the key to accessing a personalised set of resources and files Show an awareness of where passwords are critical in everyday use (parents accessing bank details)

Year 3 – End points

E-Safety	<ul style="list-style-type: none"> Understand what privacy settings are and what they are used for. Understand why strong passwords are important for protecting data. Understand how to use technology safely in terms of health and well-being.
Audio & Video	<ul style="list-style-type: none"> To know how to use a digital device to record and playback audios To import audio into a movie making software to enhance movie
Presentation Skills	<ul style="list-style-type: none"> To use technology to organise and present ideas To save and retrieve digital work Use design and formatting to enhance digital work

	<ul style="list-style-type: none"> To present and follow a planned outcome
Internet & Networks	<ul style="list-style-type: none"> Have an understanding of the internet as a network linking computers and devices across the world. Have an understanding of how search engines work.
Programming	<ul style="list-style-type: none"> An algorithm is the instructions followed to run a code A program is running the algorithm Using functions will allow for code to be more efficient and also increase their uses
Databases	<ul style="list-style-type: none"> Can follow a branching database. Can create a branching database using objects. Can create a digital branching database

Year 4 : Computing skills progression	
<p><u>KS2: POS</u></p> <ul style="list-style-type: none"> - 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. 	<p><u>Electronic Communication</u></p> <ul style="list-style-type: none"> - Share work that has been done electronically (email) - Seek and respond to feedback
<p><u>Text and Multimedia</u></p> <ul style="list-style-type: none"> - Include sound and video for on-screen presentations which include hyperlinks - Show an awareness of audience - Seek feedback 	<p><u>Research and E-Safety</u></p> <ul style="list-style-type: none"> - Make use of copy and paste becoming aware and showing an understanding of plagiarism - Understand not all information on the internet is accurate - Develop a growing awareness of how to stay safe when using the internet (in school and at home) - Understand the school's internet policies
<p><u>Digital Images and audio (photos, paint, animation)</u></p> <ul style="list-style-type: none"> - Make a short film/animation from images (still and/or moving) that has been sourced, captured or created 	<p><u>Algorithms (Control)</u></p> <ul style="list-style-type: none"> - Use control software devices or simulate this on screen (Scratch) - Predict, test and refine programming
<p><u>Handling information (databases and graphs)</u></p> <ul style="list-style-type: none"> - Work as a class or group to create a data collection sheet and use it to set up a simple database - Enter information and interrogate it (by searching, sorting and graphing etc) 	<p><u>Understanding technologies</u></p> <ul style="list-style-type: none"> - Make choices about devices and tools used for specific purpose and explain in relation to context - Begin to show an awareness of specific tools used in working life - Show an awareness of the need for accuracy in spelling and syntax to search effectively

Year 4 – End points

E-Safety	<ul style="list-style-type: none"> • Have an understanding of what cyberbullying is and what to do if you feel you or someone else is a victim • Have an understanding of what Fake News is and why you should be aware of it • Understand why social media has age restrictions
Word Processing Skills	<ul style="list-style-type: none"> • To understand that word processing documents are used to organise information. • To be able to utilise a number of features on a word processing program. <p>To be able to navigate word for a wider range of outcomes</p>
Audio & Video	<ul style="list-style-type: none"> • To understand inputs and outputs required to play and record audio/sound • To create a film trailer incorporating audio and a variety of filming techniques
Programming	<ul style="list-style-type: none"> • To be able to decompose a problem into smaller parts. • Programs are used for everyday life to automate repeating tasks • Variables are values which change as the program progresses.
Databases	<ul style="list-style-type: none"> • Can follow a branching database. • Can create a branching database using objects. • Can create a digital branching database
Publisher	<ul style="list-style-type: none"> • To use publishing software to create advisements or a range of publications • To apply prior skill development in communication software

Year 5: Computing skills progression

<p>KS2: POS</p> <ul style="list-style-type: none"> - 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. 	<p>Electronic Communication</p> <ul style="list-style-type: none"> - Recognise binary code - Write basic HTML - Understand webpages as a form of communication
<p>Text and Multimedia</p> <ul style="list-style-type: none"> - Use advanced tools in word processing such as text formatting, line spacing etc 	<p>Research and E-Safety</p> <ul style="list-style-type: none"> - Understand the purpose of copyright regulations and the need to repurpose information for a particular purpose - Independently and with due regard for safety, search the internet using a variety of techniques to find a range of information and resources on a specific topic
<p>Digital Images and audio (photos, paint, animation)</p> <ul style="list-style-type: none"> - Use images created or captured as part of a bigger project - Create multiple track compositions that contain a variety of sounds 	<p>Algorithms (Control)</p> <ul style="list-style-type: none"> - Create command sequences to control devices in response to sending (i.e. uses inputs as well as outputs)
<p>Handling information (databases and graphs)</p> <ul style="list-style-type: none"> - Set up and use a spreadsheet model to explore patterns and relationships - Know how to enter simple formulae to assist this process (SUM, AVERAGE, MIN & MAX) 	<p>Understanding technologies</p> <ul style="list-style-type: none"> - Show an understanding of the school network and how it links computers in school and beyond - Compare this with other known networks that may be encountered at home or in the wider world (e.g. banks, hospitals)

Year 5 – End points

E-Safety	<ul style="list-style-type: none"> • Consider the effects of screen time on health, wellbeing and lifestyle and be able to make steps to manage this.
Spreadsheets	<ul style="list-style-type: none"> • Use a spreadsheet to collect and record data using a program such as sheets or Excel. • Enter text and numbers into a spreadsheet. • Add simple formulae (+ - * / SUM, AVERAGE, MIN MAX)
Excel Pie Charts	<ul style="list-style-type: none"> • Ability to use a range of multimedia and word processing packages • Understand that data can be presented in a variety of ways • Understand that pie charts are used in mathematics and can be used to
Networks	<ul style="list-style-type: none"> • Understand how a range of devices store/transport data using packets and IP addresses. • Understand the difference between LAN and WAN
Programming	<ul style="list-style-type: none"> • Variables are added to code to add changing values • Different coding languages are used for different jobs • Codes can be written in different languages which allows for more efficient codes
Audio & Podcasts	<ul style="list-style-type: none"> • Explain and evaluate what features makes good quality audio content. • Explain what a podcast is

Year 6: Computing skills progression

KS2: POS	Electronic Communication
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RESILIENCE

PIONEERING

<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - Share work electronically - Understand networks as part of the World Wide Web
<p><u>Text and Multimedia</u></p> <ul style="list-style-type: none"> - Use effects to convey meaning rather than to impress 	<p><u>Research and E-Safety</u></p> <ul style="list-style-type: none"> - Check websites for security features - Understand the effects of cyberbullying and stereotyping - Use appropriate methods to validate information and check for bias and accuracy
<p><u>Digital Images and audio (photos, paint, animation)</u></p> <ul style="list-style-type: none"> - Use images created, manipulated or captured as part of a bigger project - 	<p><u>Algorithms (Control)</u></p> <ul style="list-style-type: none"> - Design, build, test, evaluate and modify a system; ensuring that it is fit for intended purpose
<p><u>Handling information (databases and graphs)</u></p> <ul style="list-style-type: none"> - Set up and use own spreadsheet containing formulae to investigate - Ask 'What If' questions and change variables in their model - Check for mistakes in formulae regularly 	<p><u>Understanding technologies</u></p> <ul style="list-style-type: none"> - Show an understanding of how filtering and monitoring tools affect their use of the school network and internet

Year 6 – End points

E-Safety	<ul style="list-style-type: none"> • To understand the concept of copyright and what that means when using the internet. • To understand that plagiarism is the act of using someone else's work and pretending it is your own. • Understand how to make a positive contribution to online communities.
Programming	<ul style="list-style-type: none"> • To be able to write commands using simple coding language. • To ensure a sequence is present when coding and understand the importance of this in relation to the desired outcome.
Databases	<ul style="list-style-type: none"> • To understand that different searches can be carried out on a database to refine your search. • To be able to distinguish the difference between AND & OR searches on a database.
HTML	<ul style="list-style-type: none"> • Understand HTML is a coding language used to write webpages • Write simple HTML Code
Presentations using Google Slides	<ul style="list-style-type: none"> • Be able to effectively evaluate own and others' work. • Be able to discuss the purpose and audience of a presentation/piece of work. • Create a document/presentation based on a particular purpose and audience. • Editing presentations within a document without downloading it
Video	<ul style="list-style-type: none"> • To understand some of the different aspects that go into making movies (locations, props, camera, sound etc) • To be able to use video editing software to create a short film • To be able to critically evaluate own and others' work suggesting ways in which it can be improved/edited