Cronton CE Primary School KEYS Curriculum Curriculum Sequencing for Computing

Discipline: Mandatory skills

End points for EYFS	End Points for KS1	End Points for LKS2	End Points for Key Stage Two
Understanding the world- , listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary. Early learning goals- (Begin to show accuracy and care when drawing) Begin to show accuracy when using pen tool on iPad and the mouse on computer.	The child can write their name using a keyboard on different devices. The child can use the shift or caps lock for the initial sound in their name. The child can use digital technologies independently and can demonstrate some basic skills. On a Computer: Use right click on a mouse or trackpad. Close an application by clicking the x icon. Log on and log off on a computer independently. Manipulate an application window by moving and resizing it. Understands that work can be saved and can do with support. On an iPad: Switch on and off the iPad. Change settings on the iPad e.g. volume. Use some basic iPad gestures. E.g. Open the search by swiping down. Know how to scan a QR code. Know when and how to charge the iPad/other digital devices. The child can use simple tools on an interactive whiteboard, e.g. drawing with pen tools. The child can demonstrate an awareness of basic photographic and video techniques to document their own learning. The child can frame the shot carefully and can delete poorly taken photographs/video. The child can with support retrieve their digital work and open it in the appropriate app. The child understands where work can be saved and can do it independently.	The child can show independence and attempt to fix a problem they may have before asking for help. E.g. a website isn't loading. The child understands reading an error message may help fix the problem. The child can attempt some simple steps that may fix the error. For example: Ask a friend if they are having the same problem. Is the wifi turned off / are you in aeroplane mode? Refresh the page. Restart your iPad/computer. The child knows to watch the battery life of a device and can put the device on charge. The child understands that every graphic they see online is an image file. The child understands that different media has different file types and name at least two file types and purpose. Eg. Jpeg are image files and MP4 are video files. The child knows how to use digital books on a mobile device. The child can add annotation to a file or document. The child can explain that an input is data that a computer receives. An output is data that a computer sends. The child can label input and output slots on a device. E.g. USB, HDMI, Firewire, Mini/Micro USB, SD Cards, VGA, DVI, headphone/speaker jack, Lightning connector etc The child knows when using an application how to save their work. The child can choose the best way to save their files. E.g. as an image (jpeg) to share online.	The child can create a QR Code. The child knows that they need to use an app or website to create a QR code. The child can upload a piece of work to a cloud or blog. The child knows what a URL is and how to copy it. The child can print out the QR code and test it. The child can use technology to tell a story. The child understands basic elements of filming such as quality of sound and lighting. The child can edit video clips e.g. trimming and reordering clips. The child can add a voice-over and / or background music to a video. The child can add titles and credits to their video. The child can contribute useful ideas to a partner or group. The child can share a document with another child in order to collaborate. The child can review and improve their own work and support others to improve their work while working in a group. The child can listen to other points of view and give constructive feedback. The child can demonstrate familiarity and confidence when using common office apps e.g. Microsoft Word, Excel, PowerPoint, Text Edit, Notepad, Apple iWorks and Google Docs. The child can create, edit, save, and publish written work independently. The child can troubleshoot basic errors and use shortcuts. The child uses effective language and compelling graphics to compliment their digital work.

	The child can use digital technologies independently to create a presentation or basic digital book that represents an idea or learning during a topic. The child can answer questions about their design choices. The child when typing text on a computer keyboard can use the “shift” key independently to add capital letters and symbols. The child can insert an appropriate emoji to use as a graphic and explain its relevance. The child chooses to apply formatting, effects, filters and transitions to enhance their work.		
Discipline: Digital Literacy			
End points for EYFS	End Points for KS1	End Points for LKS2	End Points for Key Stage Two
	The child can list some uses and purpose of technology in the classroom, at home and beyond. The child can discuss some of the ways in which they use or their parents use 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 The child can give examples of how online communication is used. The child can list different methods of online communication and may be able to discuss this in terms of apps. The child when explaining different ways of communicating online can talk about the differences between the Internet	The child understands that the internet is a computer network. The child understands the internet can provide multiple services, such as the world wide web and email. The child can explain a web sites journey from first request to appearing on the screen to their partner. The child can name the web sites and services that they use and create a world map. The child knows what a URL is The child can explain what copyright is and why we have copyright. The child knows how to recognise copyright material. The child knows that to use copyright material without paying for it or getting consent is against the law. The child can explain the SMART rules about using the internet safely and responsibly. The child can discuss what personal information is and what they shouldn’t be sharing. The	The child understands what equipment will be required to create and share video content. The child can edit a video/vlog. The child can construct a persuasive argument for or against becoming a vlogger. The child understands that information they put online leaves a trail, or what is called a digital footprint. The child can review and improve their own work and support others to improve their work while working in a group. The child can listen to other points of view and give constructive feedback. The child can use advance search tools to refine their web searches. The child knows the information found on some sites will be biased. E.g. newspapers with political stance. The child is aware they should always question the reliability and plausibility of information they find. The child can select trusted and suitable websites to find out information. The child knows that images and text found on websites is subject to copyright.

	and things in the physical world e.g. difference between a face to face chat and an email. The child understands that as communication is private it requires 'signing in' e.g. the use of a username and password. The child knows that people use email for a range of purposes and can make comparisons e.g. sending a letter is like sending an email and discuss the advantages of using technology to communicate. The child can discuss sending and receiving messages via email or instant messaging. They can use vocabulary like 'inbox' and 'attachment'. The child can explain the rules for using technology in the classroom and at home. The child can talk about their use of the internet and why it is important to stick to the rules. The child is beginning to understand why they should go online for a short amount of time and that too much time online (screen time) may not be good for them, especially just before bed. The child understands when to ask for help and who to ask for help.	child understands that they should pause before posting and consider if what they are sharing is appropriate, is it respectful and would it hurt someone's feelings. The child can explain who they should seek help from about online concerns. The child can explain what online bullying/ cyberbullying is and some of the forms it can take. The child knows how to report any concerns and who they consider a trusted adult. The child understands why online accounts need to be signed in to and why passwords should never be shared. The child can talk about what makes a secure password and why they are important. The child can label secure and weak passwords. The child can use a password security checking tool. The child can tell you whether a resource, document or app they are using is on the Internet, the school network or their own device. The child can use computing to communicate and collaborate. The child can explain what Fake News is and outline the purpose of Fake News. The child understands there are a range of sources where information can be sourced and that Fake News can be found on all media. E.g. the internet, newspapers, journals, transcripts from radio or TV programmes, leaflets and photographs. The child can outline pointers that may suggest an article or piece of information may not be true. The child understands that data can be manipulated to make Fake News appear to be true. The child can talk about the potential online risks and ways they can protect themselves and friends from harm	The child understands the legal and moral reasons not to plagiarise or infringe copyright, the impact it can have on the creator of the content and know legal download sites for video and music. Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact The child understands that viruses are just one type of malware. Other types include spyware, worms and trojans. The child knows these are small programs designed to cause trouble by gaining access to your device. Viruses can copy your personal data or slow your device down. A virus spreads by duplicating and attaching itself to other files. The child knows that anti-virus software can help protect devices from infection. The child understands the terms antivirus, firewall, security updates, pop up blocker, scams, phishing, HTTPs, location based settings, in app purchasing, trolling, filtering, malware, etc.

		online. The child can discuss the safety features of websites and apps. E.g. how to block or report content/ user. The child knows they should report concerns to a trusted adult. The child understands that the Internet is a great place to develop rewarding relationships. They understand not to reveal private information to a person they know only online. The child understands that friends/followers profiles may not reflect the truth about their real lives. The child can explain the term 'digital footprint'. The child knows that the information they put online leaves a digital footprint or "trail." This trail can be big or small, helpful or hurtful, depending on how they manage it. The child can search for their own name and usernames in Google to test their digital footprint. The child can discuss how they should act appropriately & respectfully online. The child knows how to deal with online bullying.	
Discipline: **Information Technology**			
End points for EYFS	End Points for KS1	End Points for LKS2	End Points for Key Stage Two
	The child can independently create their own original content using digital technology of their choice. The child can use technology to collect information, that could include photos, video or sound. The child can create a new document and add information. The child can talk about the importance of saving their work. The child has continued to develop their classification skills and can	The child can create digital content using a range of mixed tools/media to improve its design. The child can use appropriate keyboard commands to amend text on my device, including making use of a spellchecker. The child understands what apps may be required to complete a task. E.g. Microsoft Word to create a document or iMovie to edit a video clip. The child demonstrates creativity and independence while using unfamiliar	The child can produce a well scripted podcast plan including elements that they may need such as jingles. The child can record spoken audio clips using an app. The child can edit, enhance and sequence audio clips. The child can add additional elements such as background music, sound effects or jingles. The child can save/share their finished podcast to the appropriate place. The child can collaborate with others to develop and improve work. The child can create documents and presentations with a common design theme. The

	independently carry out simple sorting activities using a digital device. The child can create a presentation or basic digital book that is well designed and has images included. The child can resize images inside a document. The child can use a wider range of punctuation, editing and formatting skills to improve their work. The child can use capital letters, delete key, symbols, numbers and correct grammar such as full stops. The child should be able to discuss how they have changed their work and discuss audience. The child can explain what kind of information could be used to help investigate a question. The child can read a simple database to find information. The child can organise the data they collect. .	apps or technology to create content. The child understands the need to create a plan/ storyboard when producing digital content. They can combine a mixture of text, graphics and sound to share an idea or learning. The child can use an art package using various tools to create their own illustrations. The child can design a simple questionnaire to collect information, and display the information in a graph or table. The child can answer questions based on the data they have collected and present findings. The child can add information to a database. The child can filter and sort records in a database to answer questions. The child understands that the top results are based on things like most popular, recently updated and you can filter results by adding more detail or using advanced tools. The child is able to produce documents and presentations with increasing competence. The child can confidently use different layouts and effects (such as text box, columns, tables, justification, borders, background colour) to refine and improve their work. The child can use features such as; add slide transitions and animation effects. The child can use a keyboard confidently and make use of a spellchecker to write and review their work. The child can search for and use information from a range of sources. The child can make notes from information found on websites to present their findings. The child knows that not all sources of information including websites are	document should provide consistency of font and style. The child can use align text left, right and centre to improve the presentation of text. The child can source, store and combine images from cameras or the internet for a purpose. The child when creating a presentation can trigger animations or link to other slides when objects are pressed. The child can use text, photo, sound and video editing tools to refine their media/content The child can insert a graph in a document / presentation to share findings with others. The child understands the difference between discrete and continuous data and can give an example of both. The child can search a database using different operators to refine my search. The child can use information in a database to create a graph in order to answer questions. The child can use complex searches and advanced tools to find, select and use information. The child can check the reliability of information on the internet. The child can recognise and evaluate different types of information and media they find on the web. The child can take steps to find out who the information on a webpage belongs to. The child can create a digital storyboard with a complete narrative of the project or investigation. The child can produce a story that contains additional details such as characters in the story, dialogue, time, camera details and tools that should be used. The child can storyboard next steps such as editing an animation to improve it / make it more realistic. The child can use complex searches and advanced tools to find, select and use information. The child can check the reliability of information on the internet. The child can recognise and evaluate different types of information and media they find on the web. The child can take steps to find out who the information on a webpage belongs to. The child is aware that information and news can be bias / only presenting one side of an argument or trying to sell an idea or product.

		accurate and can check information using a different sites.	
Discipline: **Computer Science**			
End points for EYFS	End Points for KS1	End Points for LKS2	End Points for Key Stage Two
	The child can understand algorithms as a sequence of instructions. The child can read, follow and create a simple sequence algorithm. The child can understand that an algorithm is a set of instructions to complete a task or solve a problem. They can create a simple everyday sequence of instructions and recognise this as an algorithm. The child can discuss the different steps to sort objects into groups. Then describe this as an algorithm. The child can use symbols to create a sequence of instructions and can press the buttons in the correct order to make a robot reach a desired destination. The child can arrange some printed symbol cards to create a sequence of instructions for a programmable toy or app. Forward, left, right etc. The child can then give these instructions so that the robot can successfully reach a destination. The child can independently correct mistakes (debug). The child can create a simple program E.g. An animation in Scratch Jr. The child can use software or apps to create movement and patterns on a screen. When errors occur the child can debug (fix) the program. The child can create, read and follow written sequence algorithms that include commands with additional detail to carry out a specific task. The child can give	The child can create a detailed flow diagram using the correct symbols. The child can turn an algorithm into a simple program on a digital device. The child keeps testing the program and can recognise when it needs to be debugged. E.g. the child can create a basic game using Tynker / Scratch / Scratch Jr and fix errors. The child can explain the rules behind the simulation and how they can be realistic / represent reality. The child can demonstrate how they solved a problem by breaking it into smaller parts. The child can plan out a program and break it into smaller steps when tackling the structure, incorporating sequencing, commands and procedures. The child can create my own sprite in Scratch/ Scratch Jr. The child can add a repeat command in a program. The child can refine/ improve a program by using the repeat command. The child when viewing a program can identify inputs and outputs. The child can create a program that contains inputs and outputs. E.g. when a button is pressed the program plays a sound. The child can detect potential problems in an algorithm which could result in unsuccessful programming. The child when running a program, can describe what went wrong and offer ideas on how this could be fixed/ debugged. The child can demonstrate the skill of abstraction. E.g. the child can define	The child can independently decompose problems and plan, write and test their algorithms and programs, detecting and correcting errors as needed The child can plan an algorithm that uses coding structures for event handling, selection (“If” and “Then”) and repetition (loops). The child can turn their algorithm into a program with a specific outcome. The child can design and write a more complex program that controls or simulates physical systems and sensors with multiple outcomes. The child after the code has been run, can give a well-thought-through explanation of any errors they identify in program code. The child can suggest how this can be debugged/fixed. The child can explain about the hardware that connects computers. The child knows how data is transmitted via the internet. The child can describe different parts of the Internet and services. The child can use a Trace Route tool to create a map of the sites they visit. The child is repeatedly experimenting, making, testing and debugging their programs. The child can describe how they overcame problems to arrive at a solution. The child can describe how information/data is transported on the Internet and between computers using packets and IP addresses. The child can describe the opportunities computer networks and the internet offer for communication and collaboration. The child can use search engines effectively, and knows how search results are selected and ranked. The child can use advanced search tools to improve their searches.

	instructions to a friend to get them from point A to point B using commands with additional detail such as forward 3, backward 1 and right 90º to solve the problem. They can also physically follow instructions themselves. The child can implement their algorithm as a program on a digital device or programmable toy/robot so it travels from point A to point B by following their algorithm. The child can explain what was wrong and how they fixed it while using the term debug in context. The child understand the difference between inputs and outputs	all the elements in something and then remove the ones that are not needed. The child's algorithm design makes an attempt to show how to accomplish the task in code. The child recognises that using algorithms will also help them solve problems in other learning such as Maths, Science and Design and Technology The children can produce a design (algorithm) for a program that shows that they are thinking of the structure of a program in logical, achievable steps and referencing coding structures. For example, 'if' statements, repeat loops and variables. The child can create a program using applications such as Scratch, the program achieves all the planned outcomes. The child can write a program, incorporating features such as inputs, repetition, variables and procedures. The child attempts to debug their own algorithm/program and corrects/debugs errors in code.	