# PROGRESSION OF KNOWLEDGE AND SKILLS: *Computing*

Thornhill Primary School — *a promise for the future*

| | EYFS Provision | |
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| Computing | **Nursery** | **Reception** |
| | • Use and operate simple equipment – camera, CD player E.g. Children use the Tonie box independently, skipping forwards, backwards and changing the volume.<br>• Play with technological toys . E.g. Sound telephones, remote control cars<br>• Use on/off switches, press buttons for sound and movement. | • Complete a simple program on a computer. E.g. completing games in the Jolly Phonics Software or Ten Town Website.<br>• Use a range of technological tools E.g. Children use the Tonie box independently, skipping forwards, backwards and changing the volume.<br>• Use technological toys to move in various directions. E g Programming Codapillar to follow a route around obstacles<br>• Use ICT to record a special event E.g Use the camera on the ipad to take a photo of a model they have made. |

| Knowledge and Skills | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 |
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| **Vocabulary** | Keyboard, Mouse, Internet, App, Screen, Computer, Save, Print, Click, Website | Algorithm, Sequence, Debug, Program, Open *(a document picture etc.)*, Code, "Space Bar", "Enter Key", Online, Images, Edit | Loop, Repetition, Prediction, Search, Search Engine, Document, Folder, Software, File, Settings, Cursor, Pointer, Settings, Special Characters | Conditional, Selection, Browser, Privacy, Online, Offline, Hacking, Input, Output, Images, Flowchart, WiFi, Router, USB Port | Spreadsheet, Cell, Variable, Object, Transition, Trigger, "Fake News", Presentation, VR (Virtual Reality), AR (Augmented Reality), URL ( Uniform Resource Locator – *Website address…*) | Equation, Manipulate, URL, Version, Hardware, "Print Screen", "Escape Key", "Special Character", Phishing, |
| **Online Safety & Digital Literacy** | Know that the internet is accessed all over the World and know which devices are connected to the internet.<br><br>Know that they should always ask a responsible adult if they want to use a device.<br><br>With support from an adult be able to find information on the internet. | Know devices that enable direct communication between people through images and text.<br><br>Know what personal information is and that they should never share this with anyone they don't know.<br><br>Know that they should tell a trusted adult if they are upset or worried about anything on a device.<br><br>With support be able to use a safe search engine e.g. swiggle | Know that some people are the internet should not be trusted<br><br>Know that concerns about what they see on-line should be reported to a trusted adult<br><br>Use a simple password<br><br>Use a Search engine to find information given key words<br><br>Know which websites are useful<br>l<br>Be able to log in and out of websites used at school | Know that pictures and text share on-line can end up with strangers<br><br>Reliably know what to do if they are exposed to unpleasant materials on any device<br><br>Reliably uses a more complex password to access resources.<br><br>Know what the key words are to enter into a Search engine to find information they want.<br><br>Can select useful websites from the results of a search. | Know the risks posed to them by using Social Media, including understanding that people may not be who they say they are.<br><br>Know that it is irresponsible to share images of friends on-line without their permission.<br><br>Know how to report concerns on-line.<br><br>Effectively use a search engine to find multiple criteria using AND/OR to refine searches<br><br>Know how to compare information from different websites and know that some sites may show bias | Know how to reduce the risks posed by using Social Media by managing their friends lists and privacy settings.<br><br>Know that it is illegal to post or view 'rude' images of children.<br><br>Know that hacking or misusing someone else's account is illegal.<br><br>Know that search results can be manipulated by sponsorship and advertising.<br><br>Know how to validate information found through searches by checking more than one source.<br><br>Know that some news is 'fake.' |
| **Information Technology** | Be able to log onto a computer<br><br>Be able to navigate around the screen with a mouse<br><br>Know how to type text using space bar for separate words to create something meaningful | Be able to save, retrieve and print work<br><br>Know how to type and format text including basic punctuation and capital letters<br><br>Be able to confidently use pointing device<br><br>Be able to add simple images | Be able to log in to computer system as themselves and can find their documents (personal drive)<br><br>Know how to open shared documents and pictures.<br><br>Know how to use software to create a simple brochure or poster. Publisher or Pages | Be able to save a document in a shared folder and retrieve this to continue working on it. Computer. On an iPad work could be shared by Airdrop or equivalent.<br><br>Be able to organise their personal folder effectively for instance by organising work into folders for each year at school | To be able to share their work from their personal folder to work collaboratively with others.<br><br>Know how to use software to create and effective poster or leaflet.<br><br>Be able to select the best program for the task. | Know how to use the main features of office software to produce suitable documents and presentations for an audience. Microsoft Office or Apple suite or equivalent.<br><br>Know how to edit a picture. For instance in Paint.net |

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| | Be able to independently find and open an app on a tablet | Be able to combine simple text and graphics, for instance create a poster for a purpose. | Know how to sequence and add to slides to make a simple presentation Keynote, Powerpoint, iMovie<br><br>Create a meaningful document that contains both pictures and text | Know how to change font size and style; include shapes and backgrounds and to use the Spellcheck function<br><br>To be able to use sequence to create an effective presentation or video Keynote, Powerpoint or iMovie.<br><br>Be able to deliver a simple presentation to their peers | Using software know how to add data into a prepared spreadsheet to answer simple questions. For instance using Excel<br><br>Independently, prepare an effective presentation to show their learning to others which includes some elements of timing or sequence. For instance in Keynote, Powerpoint, iMovie | Know how to create a simple formula in a spreadsheet to work out given mathematical tasks such as adding a set of numbers.<br><br>To create and sequence a video, add sound effects, transitions and title/subtitles. iMovie – much harder in Windows software.<br><br>To be able to use two or more programmes to create a final piece of work. (eg, edit a picture before inserting into a document). |
| **Computer Science** | Know which button on a device represents which action e.g. Bee Bot<br><br>Know how to program a robot to follow simple sequence of instructions (1- 2 turns)<br><br>Be able to make simple predications about an algorithm and a program. The Bee Bow will go….<br>Be able to change (debug) the program to improve the route | Know how to program a robot to achieve set goal (sequence of 6-7 instructions: maze, point collecting)<br><br>Begin to use block programming e.g. Scratch Junior (Alex, Daisy Dino) to complete a simple program.<br><br>Be able to debug more complex problems e.g. a route on a Bee Bot / Blue Bot / Alex / Logo etc… maze. | Be able to use a block program (Scratch Jun, Scratch, Microbit Blocks)) to make a simple programme using sequencing and timing.<br><br>Inputs sets of instructions according to programming language and environment (Logo, Scratch Jnr, Microbit etc..)<br><br>Use a program Logo or Scratch to draw regular 2D shapes<br>Independently be able to debug basic mistakes<br><br>Begin to use conditionals – If I click here then this happens…Scratch Junior, Scratch, Microbit | Be able to use a program to sequence, use conditionals and use a variety of inputs and outputs (Logo/Scratch).<br><br>Be able to explain how their program works<br><br>Be able to modify their program and be able to predict the effects of any changes<br>Knows how to break sets of instructions into short steps to achieve goal. For instance drawing repeated squares to make a pattern, | Use customisation to change a working program to change its effect backgrounds and sprite in scratch)<br><br>Uses loops to achieve goals (Scratch – shapes, letters)<br><br>Uses variables, conditional sentences (when/then), external triggers and loops to achieve set goals (creating game in Scratch, an interactive slides in Powerpoint or Keynote for instance to create an interactive story) | Use conditional sentences (when/then) to program objects (Kodu, Scratch)<br><br>As above but use mathematical expressions when constructing conditionals eg trigger winning when  (If loops >5 then…)<br><br>Be able to explain what a program might do and accurately predict the effect of changes |