**Thrapston Primary School Skills Progression**

**Subject area: Computing**

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| **Basic computer skills** | **Most children will be able to:**<br>-recognise that pressing buttons will make a device respond eg. remote control toy<br>- recognise that moving the mouse, physical or tracker pad - moves the pointer on the screen<br>- recognise the effect of pressing the mouse buttons<br>-use the keyboard to enter letters strings (play writing) | **Most children will be able to:**<br>- use the mouse and the keyboard to explore programs<br>- be aware of the effect of pressing the mouse buttons and using this to drag objects on the screen. | **Most children will be able to:**<br>-know how to switch on a computer<br>-begin to logon independently<br>-begin to shutdown properly<br>- be able to print work using the Print icon<br>- use both hands on the keyboard<br>- load programs with support<br>- know that work can be saved and retrieved<br>- save work with support<br>- retrieve work with support | **Most children will be able to:**<br>-turn computers on and off correctly<br>-logon to the computers independently<br>- load programs independently<br>-print work independently<br>- save work independently<br>- retrieve work independently<br>- make simple modifications to their work (edit)<br>- practise keyboard skills using both hands, try to use more than two fingers, and try to use the thumb on the spacebar.<br>-identify that they can cut, copy and paste information, and do this with support | **Most children will be able to:**<br>- identify that work can be saved in different places<br>- recognise folders and, with support, create and name new folders<br>- use Print Preview<br>- make changes to their work (edit)<br>- select items and use cut, copy and paste as necessary – begin to develop an awareness of the shortcut keys for these *(ctrl c – copy, ctrl v – paste, ctrl x – cut)*<br>- describe their work and how they have used ICT | **Most children will be able to:**<br>-with support, choose an appropriate program to perform a task<br>-plan what they are going to do and evaluate the results<br>-understand that work<br>can be saved in different places<br>– begin to develop awareness of the shortcut keys to save and print *(ctrl s – save and ctrl p – print)*<br>-understand and use the hierarchical file system<br>-consolidate keyboard skills – developing more speed and fluency when typing<br>-describe their work and explain how and why they have used ICT | **Most children will be able to:**<br>- choose an appropriate program to perform a task<br>- combine and refine information from various sources.<br>- interpret and question the plausibility of information.<br>- describe and discuss their work and explain how and why they have used ICT<br>- use a variety of programs with increasing competence | **Most children will be able to:**<br>- choose and combine the use of appropriate ICT tools to complete a task<br>- critically evaluate the fitness for purpose of work as it progresses<br>- describe and discuss their work and explain how and why they have used ICT<br>- use a variety of programs with competence independently |

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| **Basic Skills Word Processing and email** | **Most children will be able to:**<br>-use the keyboard to enter letters strings<br>(play writing) | **Most children will be able to:**<br>- begin to use the space bar to break letter strings into groups of letters<br>-use the BackSpace key to delete and use a wordbank or word list to enter text e.g. to match with pictures. | **Most children will be able to:**<br>- put text on screen<br>- use upper and lower case<br>- use the space bar<br>- use the Return key<br>- use the Shift key to make a capital letter<br>- know that mail can be sent all over the world electronically via computers (email) | **Most children will be able to:**<br>- know that text can be saved and retrieved<br>- change the font style<br>- change the font size<br>- change the font colour<br>- use the cursor (arrow) keys for simple on screen editing<br>- with support, import graphics and add text with support<br><br>-with support, write and send a short email | **Most children will be able to:**<br>- select text and change the font style, size and colour<br>- select text and use Bold and Underline icons *(Begin to recognise the shortcut keys – ctrl B – Bold, ctrl U – underline and ctrl I – italics)*<br>-use the cursor (arrow) keys for simple on screen editing<br>- use the scroll bars to view different parts of the document justify / align text<br>- import graphics and add text<br>-compose and send email e.g. to a prearranged partner in another class in the school/ another school<br>– begin to be aware of email safety rules | **Most children will be able to:**<br>- import graphics and use the Picture Toolbar to choose the text wrapping<br>- use the spell checker<br>- use Find, search and replace if appropriate<br>- use Page Setup to choose Portrait or Landscape page as appropriate<br>- learn how to insert and use a simple table<br>- use the Zoom menu to view the whole page<br>- use email as a communication tool e.g. to exchange information with pupils in another school as part local study work<br>- with support, send a picture or document as an attachment<br>-be aware of email safety rules | **Most children will be able to:**<br>-begin to use the shortcut keys to highlight text *(ctrl + shift and arrow l/r)* and to change the font size *(ctrl [ – smaller and ctrl ] – larger)*<br>- use and practise their word processing skills in a range of contexts<br>- use email as a communication tool to collaborate with other pupils e.g. to work together on a project<br>- send a picture or document as an attachment<br>- know that email can be sent or copied to more than one person<br>- know that an email can be forwarded to another person<br>- begin to be aware that computer viruses can be sent via email<br>- be aware of email safety rules | **Most children will be able to:**<br>-use and practise their word processing skills in a range of contexts<br>- use email as a communication tool to collaborate with other pupils<br>- be aware that computer viruses can be sent via email<br>- be aware of email safety rules |

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| **Programming**<br><br>**Planning, writing and testing computer programs from digital devices, from floor turtles to tablets** | **Most children will be able to:**<br>- learn to switch on a programmable toy to activate movement<br>- play with remote control toys | **Most children will be able to:**<br>- follow simple instructions e.g. playing at robots, country dancing (pre-Logo activities)<br>- play with programmable robots.<br>-to input instructions one at a time. | **Most children will be able to:**<br>- follow directions to move around a large space<br>- use directional commands – forwards, backwards, left, right and Go<br>-record a set of instructions<br>-**program** a BeeBot to follow one instruction at a time<br>-**program** a BeeBot to follow a sequence of instructions<br>-program a robot to follow an **algorithm**.<br>-**debug** programs (fix problems)<br>- predict how their program will work. | **Most children will be able to:**<br>- plan a sequence of instructions to move sprites in Scratch/ ScratchJr<br>- create, test and debug programs for sprites in Scratch/ScratchJr<br>-work with input and output in Scratch/ ScratchJr<br>- use repetition in their programs<br>- design costumes for sprites<br>-use different events to launch **code** | **Most children will be able to:**<br>- plan and create an algorithm for an animated scene in the form of a storyboard.<br>- write a program in Scratch to create the animation, including characters, dialogue, costumes, backdrops and sound.<br>- review their animation programs and correct mistakes. | **Most children will be able to:**<br>- develop an educational computer game using selection and repetition.<br>- use variables<br>-use the *if/then/else* block correctly<br>-use the *repeat* block correctly<br>- start to debug computer programs<br>- consider the input and output – *use the keyboard for input and the screen for output* | **Most children will be able to:**<br>- create original artwork and sound for a game<br>- design and create a computer program for a computer game, which uses sequence, selection, repetition and variables<br>- detect and correct errors in their computer game<br>- use iterative development techniques (making and testing a series of small changes) to improve their game.<br>-explain how their game works | **Most children will be able to:**<br>- plan a complex project by decomposing it into smaller parts.<br>- work with physical components of a system.<br>- be able to use criteria to provide others with feedback on their work.<br>-compare possible toy designs<br>-program the micro:bit to control their toy<br>-identify problems with their toy<br>-identify bugs in their program |

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| **Computational Thinking**<br><br>**Some of the computer science foundation- particularly algorithms, logical reasoning and decomposing problems into smaller parts *(Input – process – output)*** | **Most children will be able to:**<br>- with support, use a digital camera or digital video camera to take pictures | **Most children will be able to:**<br>- with more independence, use a digital camera or digital video camera to take pictures<br>-be aware that digital pictures and video can be displayed on a computer screen<br>- with support, use cassette recorders/ Dictaphones/ sound buttons to record and playback sounds e.g. own voice | **Most children will be able to:**<br>- break down a process into simple, clear steps<br>- use the different features of a video camera<br>- use a video camera to capture moving images<br>- edit a video to include an audio commentary<br>- discuss their work and think about how it could be improved<br>-develop collaboration skills | **Most children will be able to:**<br>-observe and describe carefully what happens in computer games<br>- use logical reasoning to make predictions of what a program will do and test these predictions<br>- think critically about computer games and their use<br>- create sequences of instructions for a virtual robot to solve a problem<br>-work out strategies for playing a game well | **Most children will be able to:**<br>-develop a number of strategies for finding errors in programs<br>-build up resilience and strategies for problem solving<br>-increase their knowledge and understanding of a coding program e.g. Scratch<br>- recognise a number of common types of bugs in software | **Most children will be able to:**<br>- program using the MakeCode – block based environment<br>-design their own algorithm for the micro:bit<br>- to test and debug programs they write, using an on screen simulator and the micro:bit<br>-identify the inputs and outputs of the micro:bit<br>-explain what a MakeCode program does | **Most children will be able to:**<br>-send and receive messages using Morse and semaphore<br>- encrypt and decrypt messages in simple cyphers<br>-recognise the importance of using complex passwords | **Most children will be able to:**<br>- develop their ability to reason logically about algorithms<br>-find optimum routes on a simplified map<br>-find and record an algorithm<br>-record algorithms for linear, binary and random search<br>-record an algorithm for sorting |

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| **Creativity**<br><br>**Creating and refining original content using digital tools across a range of media.** | **Most children will be able to:**<br>- with support, use a digital camera or digital video camera to take pictures/video<br>- with support, use cassette recorders/CD players to listen to pre-recorded sound. | **Most children will be able to:**<br>- experiment with an art package trying different tools and effects, as one of a range of media available<br>- begin to use an art package as medium to convey their ideas, as one of a range of media available<br>- experiment with a range of image effects when taking pictures.<br>-explain their choices when discussing their artwork | **Most children will be able to:**<br>-create blocks of colour with well-defined edges<br>-select and set brushes and colours<br>-create artwork in a range of styles on iPads<br>- use the undo function if they make a mistake<br>- experiment with their ideas<br>- use multiple layers in their art<br>- transform layers<br>- choose colours appropriately to paint on top of photographs<br>-create images made up of lines | **Most children will be able to:**<br>-consider the technical and artistic merits of a photograph<br>- use the iPad/digital device camera app<br>-take digital photographs<br>-review, reject or pick the images they take<br>- edit and enhance their photographs<br>-crop and straighten digital photos<br>-apply adjustments and effects to photographs | **Most children will be able to:**<br>-develop their web based research skills<br>-structure, prepare and deliver a talk about a given topic or subtopic studied in another curriculum area.<br>-record a piece to camera<br>-edit a movie using static images and green screen footage<br>-give constructive, critical feedback on recorded presentations | **Most children will be able to:**<br>-create a repeating percussion rhythm<br>-play music using virtual instruments<br>-compose or edit tunes using the piano roll (pitch and duration) tool<br>-perform electronic music using pre-recorded loops, and create their own loops<br>-create a multi-track composition or performance using multiple instruments<br>-give feedback to others on their compositions and performances | **Most children will be able to:**<br>-develop familiarity with a simple CAD (computer aided design) tool<br>-develop special awareness by exploring and experimenting with a 3-D virtual environment<br>-develop greater aesthetic awareness<br>-use the web to explore virtual art galleries<br>-create simple objects using SketchUp | **Most children will be able to:**<br>-manage or contribute to large collaborative projects, facilitated using online tools<br>-write and review content<br>-source digital media while demonstrating safe, respectful and responsible use<br>-design and produce a high quality print document |

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| **Digital Literacy**<br><br>**Using and understanding the internet, the web and search engines, effectively and safely.** | **Most children will be able to:**<br>- explore sources of information using technology modelled by adults.<br>(Link to reading – recognising print conveys meaning)<br>-use the keyboard to enter letters strings<br>(play writing)<br>- have experience of multimedia presentations (being shown to them) | **Most children will be able to:**<br>- explore sources of information using iPads to search for information with support. (Links to reading, recognising that information can be retrieved)<br>- begin to use the space bar to break letter strings into groups of letters<br>-use the BackSpace key to delete and use a wordbank or word list to enter text e.g. to match with pictures.<br>- recognise the use of digital images and sounds used in multimedia presentations. | **Most children will be able to:**<br>-decide on the content/plan a small multimedia eBook<br>-choose and import images to their eBook<br>-record an audio commentary<br>-show that they have thought about their intended audience<br>-add and format titles and other text<br>-think carefully about protecting their privacy<br>-respect other people's copyright<br>-revise and improve their work | **Most children will be able to:**<br>-develop collaboration skills through working as part of a group<br>-develop research skills through searching for information on the internet<br>-think through privacy implications of their use of search engines<br>-be more discerning in evaluating online information<br>-improve note-taking skills through the use of mind mapping<br>-develop presentation skills through creating and delivering a short multimedia presentation<br>-add questions and information from independent research to a mind map<br>-locate information from relevant websites | **Most children will be able to:**<br>-create a number of structured presentations<br>-narrate presentations<br>-consider issues of privacy and trust when sharing information | **Most children will be able to:**<br>-create a sequence of blog posts on a theme<br>-incorporate additional media<br>-comment on the posts of others<br>-develop a critical, reflective view of a range of media, including text | **Most children will be able to:**<br>-identify the name and function of components making up the school's network<br>-structure a webpage<br>-add content to a webpage<br>-understand the difference between the Internet and the web<br>-describe how data is transmitted via the internet<br>-explain parts of a URL | **Most children will be able to:**<br>-argue their viewpoint effectively, supporting their views with sources<br>-counter someone else's argument while showing respect and tolerance<br>-judge the reliability of an online source<br>-explain how search results are selected and ranked<br>-write a post on a given topic, justifying their argument<br>-respond to points made on others' posts<br>-suggest what a pupil might do if being bullied |

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| **Communication/ Collaboration**<br><br>**Making the most of computers and the internet for communicating with one of many and working together on projects.** | **Most children will be able to:**<br>- with support, use cassette recorders/CD players to listen to pre-recorded sound. | **Most children will be able to:**<br>- with support, use cassette recorders/Dictaphones/ sound buttons to record and playback sounds e.g. own voice, others voices experiment with music software. | **Most children will be able to:**<br>-record audio on a digital device<br>-program sprites to playback recorded audio in ScratchJr/ Scratch<br>-program ScratchJr/ Scratch to create repeating rhythms<br>-explore different effects that can be applied to audio<br>-create a repeating percussion rhythm using a virtual drum machine<br>-experiment with a range of virtual instruments | **Most children will be able to:**<br>-use storyboards to plan an animation<br>-create their own original characters, props and backgrounds for an animation<br>-use a digital camera to capture frames for an animation<br>-film, review and edit a stop-motion animation<br>-record audio to accompany their animation<br>-provide constructively critical feedback to their peers | **Most children will be able to:**<br>-understand the conventions for collaborative online work, particularly in wikis<br>-become familiar with Wikipedia, including potential problems associated with its use<br>-practise research skills<br>-write for a target audience using a wiki tool<br>-develop collaboration skills<br>-develop proofreading skills | **Most children will be able to:**<br>-develop an appreciation of the links between geometry and art<br>-become familiar with the tools and techniques of a vector graphics package<br>-develop an understanding of turtle graphics<br>-experiment with the tools available, refining and developing their work as they apply their own criteria to evaluate it and receive feedback from their peers.<br>-develop some awareness of computer generated art<br>-create a tessellating pattern | **Most children will be able to:**<br>-plan a non-linear presentation<br>-create text as part of a presentation<br>-add and edit images in a presentation<br>-use hyperlinks for navigation between the slides of a presentation<br>-record and add audio narration to a presentation<br>-to use commenting tools to give feedback on a presentation | **Most children will be able to:**<br>-think critically about how video is used to promote a cause<br>-storyboard an effective advert for a cause<br>-work collaboratively to shoot original footage and source additional content<br>-acknowledge intellectual property rights<br>-work collaboratively to edit the assembled content to make an effective advert<br>-export a completed advert |

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| **Productivity**<br><br>**Collecting and analysing data and information using computers, organising, manipulating and presenting this to an audience** | **Most children will be able to:**<br>- sort objects practically by a given criteria | **Most children will be able to:**<br>- discuss sorting criteria<br>-begin to develop simple classification skills | **Most children will be able to:**<br>-input information to create a database<br>-identify groups of records that meet a criteria<br>-ask questions about the records to identify groups and individuals<br>-organise real and virtual cards into groups<br>-follow questions in a tree to identify individuals<br>-enter data using a form<br>-apply filters to a table | **Most children will be able to:**<br>-sort and classify a group of items by answering questions<br>-collect data using tick charts or tally charts<br>-take, edit and enhance photographs<br>-use Google Sheets or Microsoft Excel to produce basic charts<br>-record information on a digital map<br>-summarise what they have learned in a presentation | **Most children will be able to:**<br>-understand some elements of survey design<br>-understand some ethical and legal aspects of online data collection<br>-use the Internet to facilitate data collection<br>-use charts to analyse data<br>-gain skills in interpreting results | **Most children will be able to:**<br>-understand different measurement techniques for weather – both analogue and digital<br>-use computer based data logging to automate the recording of some weather data<br>-use spreadsheets to create charts<br>-analyse data, explore inconsistencies in data and make predictions<br>-practise using presentation and video software | **Most children will be able to:**<br>-explore real-world and imagined locations in VR (if possible)<br>-create 360 photosphere images<br>-link digital physical objects to digital content using QR codes<br>-create their own VR scene<br>-program objects and interactions in VR | **Most children will be able to:**<br>-train a neural net to classify images<br>-train a machine learning system to identify sentiments<br>-consider some ethical principles in designing AI systems<br>-to use speech recognition in some of their own programs<br>-explain the role of input nodes |