Computing Progression of Skills and Knowledge

Key to understanding this document: Black = National Curriculum objectives   Red = Knowledge/Skills to be taught Green = Resources to be used

Area of Learning	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Using Technology	Please see EYFS Curriculum - Understanding the World Point 15	To begin to independently access a laptop or iPad e.g. logging on and opening programs following clear instructions. 2Simple

To understand the (space, enter, full stop) keys on a keyboard.

To be able to make simple choices about which hardware is most appropriate to use and begin to explain why. Compare iPad & camera through discussion

To begin to produce work using a laptop independently or collaboratively. 2Simple –change colour of font, size and pictures | To confidently access a laptop or iPad and save and print.

To begin to develop familiarity of position of letter keys.

To understand how to use the shift key.

To be able to make choices about which software is most appropriate to use – Compare: 2Simple photo editor, simple editing of photos (this can be cross-curricular and only needs to be in 2Photo program)

To independently use a variety of hardware for different purposes – using an iPad, to take photos and add text on piccollage, 2Simple photo editor, simple editing of photos (this can be cross-curricular and | To develop typing speed and accuracy to develop competency. Use BBC Dance Mat typing to supplement word processing skills.

To be able to make choices about which software or hardware is most appropriate to use and to explain – Publisher, 2Publish

To continue to produce work using a computer, using more advanced features of programs and tools – Publisher, Creating a textbox, bullet point list, word art, headings

To use a wide range of programs to create documents and presentations – Word, PowerPoint, creating transitions, designs, fonts | To use collaborative software padlet and googledocs.

To use copy, paste and cut keys to move information. Use shorthand keys too (Ctrl+C, Ctrl+V and Ctrl+Z).

To independently use a variety of hardware for different purposes e.g. creating videos using tablet software.

To use data within spreadsheets to create graphs or present data in different ways – pie charts and line graphs

To select and a manipulate sound and images using a digital device. Use iMovie on the iPad to manipulate sound and images simultaneously. | To compare programs of a similar nature and evaluate which is most effective performing specific tasks. E.g. PowerPoint, publisher, word – which is best?

To continue to produce work using a computer, using more advanced features of programs and tools e.g. use margin tools and text book links on publisher, bullet points, columns etc. on word.

To begin to create documents and presentations using advanced features such as adding / creating sounds, hyperlinks, video timings.

To use technology, including spreadsheets, to | To continue to produce work using a computer, using more advanced features of programs and tools e.g. organisational features, background with audience in mind, text boxes.

To competently create documents and presentations that serve a purpose and suit the needs of an intended audience.

To undertake market research, collecting relevant data, analysing and evaluating before presenting using a suitable software.

To use complex sound editing technology to manipulate a range of sound. Use 'Audacity' on a laptop to create and manipulate sound (this could be linked |

		To begin to develop understand the purpose of and begin to use a range of different technology e.g. creating documents 2Simple To recognise common uses of information technology beyond school - mobile phones/tablets/games consoles To be able to discuss their use of technology at home – mobile phones, tablets, games consoles	only needs to be in 2Photo program) To begin to produce work using a laptop independently, using simple features of programs and tools – italics, bold, underline PowerPoint. To begin to develop an understanding of creating presentations to organise ideas – PowerPoint, pictures and recording sound To create a simple database and graph – 2Simple To recognise the link between collecting data and creating a simple graph 2Simple To recognise common uses of information technology including at school. – discuss carpark barrier, school entry fobs	To understand the basic structure of a database and to add simple data to an excel document and use information for a bar graph – excel To select and manipulate an image using a digital device. Use Polygen on the iPad to manipulate a photograph. To select and a manipulate sound using a digital device. Use Melody Jams on the iPad to manipulate basic sound. Save as documents on the pupil shared area of the intranet.	WITHIN SCIENCE use makey makey hardware (linked to electricity topic) to understand how a physical system works.	create graphs and present data in different ways using basic formulae. To independently manipulate an image using a complex digital device. Use 'Gimp' on the laptop to manipulate images in a range of ways.	to the Y6 production or Enterprise). To manipulate an image using Augmented Reality (AR) on a digital device. Use 'Augment' or 'Arkit' on the iPads to add AR to a photograph or poster (this can be easily applied to the Y6 Enterprise project posters).

Using the Internet		To understand why we use the internet to answer specific questions. To be able to explore a variety of electronic information – simple webpage To understand that messages can be sent electronically in a variety of ways – send a class email to another Y1 class	To be able to navigate a simple webpage to find specific information- text/images/video etc. and know that some are more useful than others. To understand a website has a unique web address and how to find menu buttons and links To understand that messages can be sent electronically in varying ways - send own email, discuss text and game chat.	To be able to navigate a webpage and search independently for specific and appropriate information. To understand a website has a unique web address and understand the need for accuracy.	To be able to navigate a search engine using key search terms e.g. What did the Romans eat? To be able to skim read for relevant information and modify search key words if necessary. To understand that search results are ranked in order of relevance but may include advertising etc. To begin to create basic website (using google apps). These should include hyperlinks, insert, print screen, crop and previously learnt skills from other program. Copy and paste from the internet within research.	To be able to use advanced search tools. To be able to skim read for relevant information and identify the impact of incorrect information or data which may contain irrelevant, bias or implausible data. To understand the issues surrounding copyright. To share and exchange ideas using electronic communication e.g. email to answer questions To understand the safety issues surrounding sending and receiving emails. To create a website showing an increasing degree of skill for a specific audience. Writing an email adding an attachment and using the bcc/cc addressing on KLZ (ensure all children	To be able to use advanced search tools and check plausibility of information, understanding the impact of incorrect information. To understand the issues surround copyright and plagiarism and the importance of acknowledging sources. To understand that search results and ranked in order of relevance and compare a range of sources to check validity of information. To create a website and analyse its effectiveness. Google apps to create website.

						have access to a KLZ login prior to the lesson).	
Programming & Control		To begin to understand the term algorithm as a set of instructions to control or command a program. ***The above objective will be covered by complete the following compulsory projects:*** 1) Program a Bluetooth Beebot (a blubot) to follow simple command. 2) Supplement this learning with the iPad app 'Daisy Dinosaur'.	To understand that an algorithm is a set of instructions to achieve a goal on a program. To create and debug (correct errors) in simple programs. To be able to use logical reasoning to predict the behaviour of simple programs. ***The above objectives will be covered by complete the following compulsory projects:*** 1) Program a Bluetooth Beebot (a blubot) using the iPad app to move in specific way – use block code to create loops and repeat. 2) Follow Lego Wedo **Project 8, 15 or 16** to build a physical resource and create a basic algorithm (120 minutes approx.).	To be able to design, write block code and debug (correct errors), simple algorithms that accomplish specific goals. To be able to work with simple variables and some basic forms of input and output ***The above objectives will be covered by complete the following compulsory projects:*** 1) Choose from Lego Wedo **Projects 1-7** (120 minutes each) to build and move a physical system. 2) Use iPad app 'Scratch Jr' to create a block code with 1 variable. This could be linked to the term's topic as you wish. 3) Use Hour of Code website to build	To design, write and debug (correct errors) more complex algorithms that accomplish specific goals. To be able to work with an increasing number of variables and forms of input and output To sequence algorithms to enable effective program function. ***The above objectives will be covered by complete the following compulsory projects:*** 1) Choose from Lego Wedo **Projects 9, 10, 11, 12, 13, 14, 17, 21, 22, 23 or 24** (120 minutes each) to build and move a physical system, combining variables for a purpose with a more complex physical resource.	To continue to design, write and debug (correct errors) more complex algorithms that accomplish specific goals. To be able to work with an increasing number of variables and forms of input and output. To continue to sequence algorithms and selection in programs in order to control a physical system. ***The above objectives will be covered by complete the following compulsory projects:*** 1) Use scratch to recap learning from previous year. (Use speech, sensor blocks, repeat until/if/when blocks). 2) Use knowledge of scratch to use	To be able to make choices about which software is most appropriate to use and explain why. To continue to design, write and debug (correct errors) more complex algorithms that accomplish specific goals. To problem solve using knowledge of variables to see the impact upon inputs and outputs. To create an efficient sequence of algorithms to control a physical system. Ensure children seek to use shortest most efficient way to achieve intended outcome – looping & repeat / repeat until blocks etc ***The above objectives will be covered by complete the following compulsory projects:***

		Col A	Col B	Col C	Col D	Col E	Col F
					upon Scratch Jr knowledge. 4) Use 'Spritebox' app on the iPad to transfer coding skills to another gaming platform.	2) Use Scratch on the iPad to incorporate speech, sensor blocks, repeat until/if/when blocks.	MBlockly on the iPads to control Mbots to follow a specific set of instructions. Move to using the laptop software for controlling Mbots using the same skills 3) On the laptops, use above knowledge to program Ohbots to follow a specific set of instructions.	1) Make the link between coding and block code using the app 'Hopscotch' on the iPads. 2) Following this, use Python in pieces on the laptop to continue to link coding and block code.
Online Safety		To be able to use technology safely and respectfully, knowing which personal information should be kept private. To understand that the internet can be used for unkind purposes and know who to tell or what to do if they see something upsetting online – tell a trusted adult or discontinue use To be aware that people online may not be who they say they are. To demonstrate an age-related	To be able to use technology safely and respectfully, keeping personal information private. To have a developed understanding that information communicated online can be public and permanent - sending a text message or chatting on a games console (relevant to your class) To begin to understand the meaning of cyberbullying and know who to tell or what to do if they see something upsetting online e.g. a trusted	To have an understanding that information published online is public and permanent – Discuss WhatsApp or other social media platform relevant to your class To know the meaning of cyberbullying and the forms it can be seen within and know who to tell or what to do if they see something upsetting online e.g. a trusted adult or use block/report features To understand the need for a safe and secure password.	To have an understanding that information published online is public and permanent and be aware of privacy settings on certain websites/apps. To know the meaning of 'cyberbullying' and how to be an up stander. Know who to tell or what to do if they see something upsetting on line. E.g. a trusted adult or use the report/block features To develop an understanding on why there are age restrictions within apps/games and that	To have an understanding that information published online is public and permanent and be aware that privacy settings can be changed on websites or apps. To recognise warning signals to identify that someone may not be who they say they are online. E.g. asking for personal information, photos, school, address, phone number. To further understand the digital consent age of 13 is related to sponsored advertising ad what this entails	To use their understanding that information published online is public and permanent to underpin their use of the internet. To understand how the digital consent age of 13 is relevant to the apps used (relevant to the individual class) To know that privacy settings on websites will affect communicating and collaborating online. To understand which kinds of behaviours constitute cyberbullying and know how to prevent

understanding of E-safety when communicating online. Ensure that this is appropriate to your class e.g. only video chat when an adult is around	adult or use block/report features. To understand the need for a safe and secure password. To further understand that people online may not be who they say they are. To demonstrate an age-related understanding of E-safety when communicating online. Ensure that this is appropriate to your class e.g. only video chat when you have asked permission	To further understand that the internet is a great way to find information and communicate with people but that people online may not be who they say they are. To begin to understand why there are age restrictions on apps and games and that the digital consent age of 13 is related to sponsored advertising and not just the content of the app itself. To demonstrate an age-related understanding of E-safety when communicating online. Ensure that this is appropriate to your class e.g. how to keep safe using apps and games that the class are using.	people online may not be who they say are. To further understand the digital consent age of 13 is related to sponsored advertising and not just the content of the app itself and the use of photos on social media. To demonstrate an age-related understanding of E-safety when communicating online. Ensure that this is appropriate to your class e.g. only chat to people online that you know and ensure an adult is around.	(explain sponsored advertising and how sponsors use the information) and not just the content of the app itself and the use of photos on social media. To understand which kinds of behaviours constitute cyberbullying and know how to prevent or respond to it e.g. tested adult or report/block features on websites. To demonstrate an age-related understanding of E-safety when communicating online. Ensure that this is appropriate to your class e.g. what videos and photos it is appropriate to upload to social media and only if an adult has given you permission.	or respond to it e.g. trusted adult or report/block features on websites. To recognise warning signals to identify that someone may not be who they say they are online. E.g. asking for personal information, photos, school, address, phone number. To demonstrate an age-related understanding of E-safety when communicating online. Ensure that this is appropriate to your class e.g. what videos and photos it is appropriate to upload to social media only if an adult has given you permission. Conversation around self-esteem using social media. Dove Real Beauty campaign discussing photo-shopping images: https://www.youtube.com/watch?v=wpM499XhMJQ

Key Vocabulary		technology software hardware email laptop computer iPad/tablet algorithm communicate internet information mouse login username keyboard space enter full stop password	hyperlink navigate record debug *algorithm* cyberbullying PowerPoint data database webpage website save print search online block report mouse track pad password	*debug* *algorithm* input output Publisher textbox Word documents Excel save as folder open intranet destination folder network variables	search engine Google *debug* *algorithm* spreadsheets copy paste cut cloud Google Doc collaborative privacy settings up-stander	attachment bcc/cc *debug* *algorithm* copyright consent secure	*debug* *algorithm* plagiarism plausibility phishing