Preston Candover Computing Curriculum

Progression in Skills and Knowledge

Primary Themes incorporating Taxonomy strands		Year R EYFS – Computing is embedded into continuous provision and is used to enrich the prime and specific areas of learning.	Years 1/2	Years 3/4	Years 5/6
Computing Systems and Networks	**Skills**	Operate some technologies (bee-bots, Apps on IPad, computer programs) Use a range of old and new technology purposefully	Year 1: Recognise technology in our lives, both in school and outside of school Identify parts of a computer Identify uses of technology Use a mouse in different ways Type letter on a keyboard Year 2: Identify IT and how its responsible use improves our world in school and beyond. Use a mouse with increasing accuracy Use a range of tools purposefully Type letter keys and begin to type some symbols	Year 3: Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks. Year 4: Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	Year 5: Use IT systems Safely use a search engine to search the internet. Year 6: Identify how data is transferred Identify how information is shared online.
	Knowledge	Say what is and is not technology Identify and compare computer systems from the past with the present Identify technology in school and at home Begin to identify parts of a computer Describe what some devices do Explain what a computer is and how it can be used Recognise digital devices and what they can be used for	Year 1: How to use technology safely What are information technologies used for The names of parts of the computer The letter keys on a keyboard Year2: How to use technology safely Describe the benefits of IT Understand how IT can work together Letter keys and some symbols on a keyboard	Year 3: How devices can be connected Know what an input, process and output is Year 4: Know what the WWW stands for What a network is Why it is important to evaluate online content	Year 5: Recognise IT systems around us and how they allow us to search the internet. How to use a search engine Year 6: Explore transferring data Explore sharing information safely
Data & Information	**Skills**	Group objects according to their properties (pictograms) Ask and answer simple questions Begin to collect and record data	Year 1: Label objects Sort and group objects by properties Compare groups of objects Ask and answer questions about groups of objects Year 2: Collect data using tally charts Organise and present data on a computer Compare ways of collecting data	Year 3: Building and using branching databases to group objects using yes/no questions. Year 4: Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	Year 5: Use a database to order data Create charts to answer questions Year 6: Answering questions by using spreadsheets to organise and calculate data.
	Knowledge	Say what data is Describe properties of objects	Year 1: Explain what data is	Year 3: What a branching database is	Year 5: Understand how to represent data in a chart

		Explain how pictograms help us Know how to keep their personal information secure	Be able to read a simple graph Objects can be counted What properties are Year 2: What a graph represents Read and interpret axis titles Explain efficient ways of collect data (tally) What data is and how it is used	Why branching databases are useful to sort information Year 4: Why data is collected overtime Explain what averages are	Know how to read charts Year 6: Understand how a spreadsheet is organised Know how to manipulate data in a spreadsheet
Programing	**Skills**	Follow a sequence to move a bee-bot Begin to program a car/bee-bot with some accuracy Use controls to operate technology Use programmable bee bots and cars to create and follow routes	Year 1: Write short algorithms and programs for floor robots Predict program outcomes. Design and program the movement of a character Combine forwards, backwards, left, right commands to order a sequence Fix a problem in an algorithm Year 2: Create and debug programs Use logical reasoning to make predictions. Design algorithms and programs that Combine directional commands to order and input a sequence use events to trigger sequences of code Find and fix and a problem in an algorithm	Year 3: Creating sequences in a block-based programming language to make music. Writing algorithms and programs that use a range of events to trigger sequences of actions. Year 4: Using a text-based programming language to explore count-controlled loops when drawing shapes. Using a block-based programming language to explore count-controlled and infinite loops when creating a game.	Year 5: Exploring conditions and selection using a programmable microcontroller. Exploring selection in programming to design and code an interactive quiz Year 6: Exploring variables when designing and coding a game. Designing and coding a project that captures inputs from a physical device.
	Knowledge	Say that a sequence is a set of instructions That IT does not have its own brain and cannot think for itself, and so needs programming (given instructions)	Year 1: What an algorithm is What a command is How algorithms are inputted into bee-bots Know forwards, backwards, left and right Year 2: What a sequence is The meaning of trigger What directions are How to de-bug programs Know full turns, half turns, quarter turns	Year 3: What a sequence is and how it is implemented on devices How algorithms are triggered Year 4: What vocabulary is used to describe programming steps How count-controlled and infinite loops are controlled and edited in programming	Year 5: What conditions and selection are and how they are implemented on programmable devices Know how to manipulate selection and code Year 6: Know what a variable is Be able to identify variables Understand how IT works together Know what an input is
Creating Media	**Skills**	Can use a computer to paint Use tools to rub out mistakes, change colour of paint and move a mouse Print their digital paintings	Year 1: Choose appropriate tools in a program to create art, and making comparisons with working non-digitally. Using a computer to create and format text, before comparing to writing non-digitally. How to save and open files How to resize images Year2: Capture and changing digital photographs for different purposes.	Year 3: Capturing and editing digital still images to produce a stop-frame animation that tells a story. Creating documents by modifying text, images, and page layouts for a specified purpose. Year 4: Capturing and editing audio to produce a podcast, ensuring that copyright is considered. Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	Year 5: Planning, capturing, and editing video to produce a short film. Creating images in a drawing program by using layers and groups of objects Year 6: Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation. Planning, developing, and evaluating 3D computer models of physical objects.

			Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.		
	Knowledge	Say what they used to create their painting Begin to save paintings with an adult Understand that their digital painting can be printed Know how to edit/ manipulate media (rub out, change line thickness, change colour)	Year 1: Simple tools can be used to create media (painting, drawing, text) Not all media content is real and can be trusted Say how handwriting and typed text are similar and different Year 2: Simple tools can be used to create, edit and manipulate media Not all media content is real and may be have been digitally manipulated Save, open and manipulate files	Year 3: Understand what media is E-safety rules Know that not all images seen are trustworthy What tools are used to edit still images, text and page layout Year 4: Understand what media is E-safety rules Know what tools can manipulate audio and images How to reflect on editions using correct vocabulary What the required purpose of media is Understand what copyright is	Year 5: Understand what media is and how it is shared Follow E-safety rules Know what tools can manipulate video to edit Understand that layering and grouping objects can make IT more logical Understand how tools are used to manipulate digital drawing Year 6: Know and follow E-safety rules Understand what copyright is and why it is used Know which tools enhance aesthetics and navigation How 3D models are reprehensive of physical objects
Online Safety	**Education for a connected world**	**<u>Cycle 1 & 2</u>** **Self-image and identity** - I can recognise that I can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who asks me to do something that makes me feel sad, embarrassed or upset. - I can explain how this could be either in real life or online. **Online relationships** -I can give examples of how I (might) use technology to communicate with people I know. **Health, wellbeing and lifestyle** -I can identify rules that help keep us safe and healthy in and beyond the home when using technology. -I can give some simple examples **Privacy and security** -I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). -I can describe the people I can trust and can share this with; I can explain why I can trust them.	**<u>Cycle 1</u>** **Health, well-being, and lifestyle** - I can identify rules that help keep us safe and healthy in and beyond the home when using technology - I can give some simple examples **Copyright and ownership** -I know that work I create belongs to me. **Self-image and identity** - I can recognise that I can say 'no'/'please stop'/'I'll tell'/'I'll ask' to somebody who asks me to do something that makes me feel sad, embarrassed or upset -I can explain how this could be either in real life or online - If something happens that makes me feel sad, worried, uncomfortable, or frightened I can give examples of when and how to speak to an adult I can trust - identify that some images are not real (fake) **Privacy and security** II can identify some simple examples of my personal information (e.g. name, address, birthday, age, location) -I can describe the people I can trust and can share this with; I can explain why I can trust them -I can recognise more detailed examples of information that is personal to me (e.g.	**<u>Cycle 1</u>** **Managing online information** - I can use key phrases in search engines. - I can use search technologies effectively. **Copyright and ownership** - I can explain why copying someone else's work from the internet without permission can cause problems. - I can give examples of what those problems might be. - When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. - I can give some simple examples. - I can give examples of content that is permitted to be reused. - I can demonstrate the use of search tools to find and access online content which can be reused by others **Managing online information** - I can use key phrases in search engines -I can use search technologies effectively **Copyright and ownership** - When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it - I can demonstrate the use of search tools to find and access online content which can be reused by others	**<u>Cycle 1</u>** **Managing information online** -I can describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites) -I can use different search technologies -I can evaluate digital content and can explain how I make choices from search results - I can describe and assess the benefits and the potential risks of sharing information online **Copyright and ownership** -I can assess and justify when it is acceptable to use the work of others -I can give examples of content that is permitted to be reused **Privacy and Security** **-**I can describe strategies for keeping my personal information private, depending on context **Online relationships** -I can use the internet with adult support to communicate with people I know. (EY-7) Managing information online -I can navigate online content, websites, or social media feeds using more sophisticated tools to get to the information I want (e.g. menus, sitemaps, breadcrumb-trails, site search functions). (11-14) **Copyright and ownership**

			where I live, my family's names, where I go to school) **<u>Cycle 2</u>** **Health, well-being and lifestyle** - I can identify rules that help keep us safe and healthy in and beyond the home when using technology - I can give some simple examples Copyright and ownership - I know that the work I create belongs to me - I can name my work so that others know it belongs to me **Copyright and ownership** -I know that work I create belongs to me - I can name my work so that others know it belongs to me **Privacy and security** -I can give reasons why I should only share information with people I choose to and can trust.	**<u>Cycle 2</u>** **Managing online information** -I can analyse information to make a judgement about probable accuracy, and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others. -I can explain what is meant by fake news, e.g. why some people will create stories or alter photographs and put them online to pretend something is true when it isn't. -I can describe ways of identifying when online content has been commercially sponsored or boosted, (e.g. by commercial companies or by vloggers, content creators, or influencers). -I can describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful. **Copyright and ownership** -I can explain why copying someone else's work from the internet without permission can cause problems -I can give examples of what those problems might be -When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it -I can give some simple examples **Self-image and identity** -I can describe ways in which people might make themselves look different online	-I can explain why copying someone else's work from the internet without permission can cause problems. -I can give examples of what those problems might be. -When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. -I can give some simple examples. -I can assess and justify when it is acceptable to use the work of others. -I can give examples of content that is permitted to be reused. -I can demonstrate the use of search tools to find and access online content which can be reused by others. -I can demonstrate how to make references to and acknowledge sources I have used from the internet. -I can explain the principles of fair use and apply this to case studies. (11-14) **<u>Cycle 2</u>** **Self-image and identity** -I am aware that a person's online activity, history or profile (their 'digital personality') will affect the type of information returned to them in a search or on a social media feed, and how this may be intended to influence their beliefs, actions and choices. **Managing online information** -I can explain how search engine rankings are returned and can explain how they can be influenced (e.g. commerce, sponsored results) **Health, well-being and lifestyle** -Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour