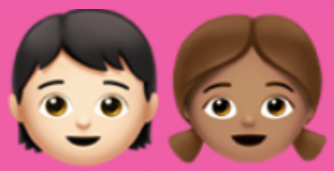
Year 4

Computing Progression Planning

Knowsley CLCs

Primary Computing Scheme of Work

Inspire a lifelong love of play, design, code, and invention with technology.



Knowsley
City Learning Centres

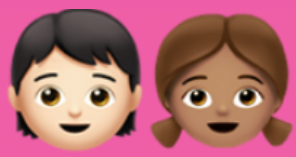
Year 4: Objectives

Assessment & Computing POS

Knowsley CLCs

Primary Computing Scheme of Work

Inspire a lifelong love of play, design, code, and invention with technology.



Essential (MS): Age appropriate skills for the use of core devices and applications within their setting.	**Computer Science (CS):** Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs.	**Information Technology (IT):** Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	**Digital Literacy (DL):** Recognise common uses of information 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.
(MS) I can label the different types of input connections on devices.	(CS) I can design an algorithm to simulate a real-life situation.	(IT) I can improve the quality and presentation of my work using editing and formatting techniques.	(DL) I can collaborate online to create digital content.
(MS) I can explain common file types.	(CS) I can solve an open-ended problem by breaking it up into smaller parts.	(IT) I can create with technology. E.g. Video, animation, 3D	(DL) I can evaluate information presented to me to make informed choices about what is Fake News.
	(CS) I can design and write a program for a given purpose including specific programming features.	(IT) I can use a search engine and I am aware that not everything I read online is correct. (Online Bullying)	(DL) I can describe strategies for safe and fun experiences in a range of online social environments and I'm respectful to others online. (Online Relationships)
	(CS) I can test existing programs to see how they could be improved.		(DL) I understand that people may have a different online identity to that in real life and am able to interact with others. (Self Image)
	(CS) I can understand the different methods of communication using the internet.		(DL) I am aware others can find information out about me by searching online. (Online Reputation)
			(DL) I know which technologies are used for online bullying and I am considerate of others when posting myself. (Online Bullying)
			(DL) I understand the impact technology can have on my health, well being and lifestyle. (Health well being)
			(DL) I am aware that some people want to access my data and can take appropriate measures to ensure this doesn't happen. (Privacy and Security)
			(DL) I understand the need for copyright and the consequences of ignoring it. (Copyright)

The **'My Online Life'** activity supports the key aims of the government's Internet Safety Strategy (Digital Literacy) of supporting children to stay safe and make a positive contribution online, as well as enabling teachers to develop effective strategies for understanding and handling online risks. The framework has been produced by the UK Council for Child Internet Safety (UKCCIS).

Year 4 Activities

Knowsley CLCs

Primary Computing Scheme of Work

Inspire a lifelong love of play, design, code, and invention with technology.

Digital Literacy	Computer Science	Information Technology	Byte Size & Fun
Y4.1 Fake or Real?: Fake news is a serious concern and in this activity children will learn how they can sort the truth from the lies. Making videos to show what they have found out. Assessment: 7, 10, 12, 14	**Y4.2 Hour of Code:** The class will sign up for Hour of Code and work through various challenges. The class can also choose to take part in global coding events. Assessment: 4, 5, 6	**Y4.3 Dinosaurs:** In this activity the children will make their own summer blockbuster. They will learn all about filming techniques and storytelling skills. Assessment: 2, 8, 9	**Y4.4 Minecraft Challenges:** Who is the best at building. The children take part in a series of maths/Minecraft challenges. Assessment: 9, 11
Y4.5 My Online Life: This activity takes place over the course of the term. It covers all the DFE statutory requirements for digital literacy and online safety. Assessment: 7, 10, 12, 13, 14, 15, 16, 17, 18, 19	**Y4.6 Games Designer:** The children will learn all about the career of games designer. They will play games, write reviews and then design and prototype their own game. Finally they will pitch their game idea to the class. Assessment: 1, 2, 3, 4, 5, 6	**Y4.7 Endangered Animals:** The children will learn online research skills, create illustrations and posters to raise awareness of our planet's endangered animals. The children will also get involved with environmental campaigns. They will make a class film about how making small changes can help e.g. air pollution and turning off your engines. Assessment: 2, 8, 9, 11	**Y4.8 Wizard School:** The children will undertake a series of creative challenges based around the Harry Potter books. Assessment: 8, 9

Mandatory Skills	
1	I can label the different types of input connections on devices.
2	I can explain common file types.
Computer Science	
3	I can design an algorithm to simulate a real-life situation.
4	I can solve an open-ended problem by breaking it up into smaller parts.
5	I can design and write a program for a given purpose including specific programming features.
6	I can test existing programs to see how they could be improved.
7	I can understand the different methods of communication using the internet.
Information Technology	
8	I can improve the quality and presentation of my work using editing and formatting techniques.
9	I can create with technology. E.g. Video, animation, 3D
10	I can use a search engine and I am aware that not everything I read online is correct. (Online Bullying)
Digital Literacy	
11	I can collaborate online to create digital content.
12	I can evaluate information presented to me to make informed choices about what is Fake News.
13	I can describe strategies for safe and fun experiences in a range of online social environments and I'm respectful to others online. (Online Relationships)
14	I understand that people may have a different online identity to that in real life and am able to interact with others. (Self Image)
15	I am aware others can find information out about me by searching online. (Online Reputation)
16	I know which technologies are used for online bullying and I am considerate of others when posting myself. (Online Bullying)
17	I understand the impact technology can have on my health, well being and lifestyle. (Health well being)
18	I am aware that some people want to access my data and can take appropriate measures to ensure this doesn't happen. (Privacy and Security)
19	I understand the need for copyright and the consequences of ignoring it. (Copyright)

Example Curriculum Map for Computing

Knowsley CLCs
Primary Computing Scheme of Work
Inspire a lifelong love of play, design, code, and invention with technology.

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Programmable Toys / Devices	Examples of possible technology experiences	Two effective learner objectives to be the focus for the year
Approximate Length of half term	7 Weeks	8 Weeks	6 Weeks	6 Weeks	5 Weeks	7 Weeks	N/A	N/A	N/A
Computing Subject	**Digital Literacy**	**Information Technology**	**Compter Science**	**Digital Literacy**	**Information Technology**	**Compter Science**			
Year 4	**Y4.5 My Online Life:** This activity takes place over the course of the term. It covers all the DFE statutory requirements for digital literacy and online safety. Assessment: 7, 10, 12, 13, 14, 15, 16, 17, 18, 19	**Y4.7 Endangered Animals:** The children will learn online research skills, create illustrations and posters to raise awareness of our planet's endangered animals. The children will also get involved with environmental campaigns. They will make a class film about how making small changes can help e.g. air pollution and turning off your engines. Assessment: 2, 8, 9, 11	**Y4.2 Hour of Code:** The class will sign up for Hour of Code and work through various challenges. The class can also choose to take part in global coding events. Assessment: 4, 5, 6	**Y4.1 Fake or Real?:** Fake news is a serious concern and in this activity children will learn how they can sort the truth from the lies. Making videos to show what they have found out. Assessment: 7, 10, 12, 14	**Y4.3 Dinosaurs:** In this activity the children will make their own summer blockbuster. They will learn all about filming techniques and storytelling skills. Assessment: 2, 8, 9	**Y4.6 Games Designer:** The children will learn all about the career of games designer. They will play games, write reviews and then design and prototype their own game. Finally they will pitch their game idea to the class. Assessment: 1, 2, 3, 4, 5, 6	Crumbles Makey Makey Sphero Ozbots	Legoland 02 Digital Gurus Barclays Digital Local Amazon Warehouse Newstead Abbey - Ada Lovelace Local Radio Station Technology / STEM Museum or University Bletchley Park Apple Store Visit with Workshop Microsoft Store & Workshop Google VR Expeditions Big Bang STEM Roadshow / Code Show	Resilience and Challenge Ability to work with each other

What the children learn in Year 4

Essential: Age appropriate skills for the use of core devices and applications within their setting.	About physical input and output slots on a device e.g. USB, HDMI, etc. About applications how to save their work in a range of locations. The best way to save their files e.g. as an image (jpeg) to share online.
(CS) Computational Thinking: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	To design a simple algorithm to show a real- life situation. About the valuable skills of abstraction and decomposition when tackling more complex problems.
(CS) Coding: Create and debug simple programs.	About the structure of a program and learn to plan in logical, achievable steps. To write a complex program, incorporating features such as selection, inputs, repetition, variables and procedures. To attempt to debug their own programs and corrects/debugs errors in code.
(CS) Logical Reasoning: Use logical reasoning to predict the behaviour of simple programs.	To recognise an error in an existing program and attempt to debug/fixed the program. To investigate existing programs, evaluating them and consider how they could be improved.
(CS) Networking:	About the key services that can be used to communicate on the internet. To recognise the main components (hardware) which allow computers to join and form a network.
(CS) Online:	That search engines use algorithms to sort websites.
(IT) Harnessing Technology: Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	To produce documents, media and presentations with increasing independence and competency that present data/ information. To use a keyboard confidently and make use of tools such as a spellchecker. About new forms of technology e.g. AR, Virtual Reality, Wearable Technology etc.
(IT) Online:	To search for and use information from a range of sources. About making notes from information found on websites to present their findings. That not all sources of information including websites are accurate and can check information using different sites.
(DL) Technology in the Real World: Key Stage 1: Recognise common uses of information technology beyond school.	To differentiate between apps that use Internet, the school network or that are self contained on a device. To use computing to communicate and collaborate. About documents and methods of collaboration over the internet.
(DL) Media & Content:	More about what Fake News is, it's purpose and that Fake News can be found on all media. How to identify Fake News. That data can be manipulated to make Fake News appear to be true.
(DL) Online Safety: 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 potential risks and ways they can protect themselves and friends from harm online. The safety features of websites and apps. e.g. block or report.They should report concerns to a trusted adult. The Internet is a great place to develop rewarding relationships. Not to reveal private information to a person they know only online. That friends/followers profiles may not reflect the truth about their real lives. The term 'digital footprint' and that the information they put online leaves a digital footprint or "trail" which can be positive and negative. To search for their own name and usernames in Google to test their digital footprint. How they should act appropriately & respectfully online. How to deal with online bullying. How photos can be altered digitally and the creative upsides of photo alteration, as well as its power to distort perceptions of beauty and health. Why copyright laws exist and presenting others work as one's own is called plagiarism. To use a copyright free image gallery, or they can change the search criteria. The positive and negative effects technology may have on their health. Why they need to ask a trusted adult before downloading files and games from the Internet e.g. virus. To choose secure passwords. Why using an avatar and online name is advisable.

What digital skills will the children learn in Year 4?

Knowsley CLCs
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Inspire a lifelong love of play, design, code, and invention with technology.

Technology in your setting	**These are Bronze skills. The children should already be secure with these skills.**									
Can you use an iPad?	I know how to turn an iPad on/off/ sleep	I know how to use home button, open, close & quit an app	I know how to adjust the volume / mute / plug in headphones	I know how to search the iPad	I know how to take a good quality photo & edit in the Photo app E.g. crop it	I know how to use mark up on an image / annotate	I know how to check the battery and charge the iPad	I know how to use double-tap to reveal the recently used apps / quit apps	I know how to use the keyboard & add special characters/ emojis	I know how to take a screenshot and edit/crop in the Photo app
Can you use a Chromebook?	I know how to turn a Chromebook on/off	I know how to sign into your Chromebook for the first time / lock and/or Sign out of the Chromebook	I know how to adjust the volume / mute / plug in headphones	I know how to launch the Chrome browser from the Shelf	I know how to use the Touchpad / mouse (including right click)	I know how to use the Chrome browser / search the web	I know how to check the battery and charge	I know how to explore and open the Chrome Apps within the Launcher	I know how to use the keyboard & add special characters/ emojis	I know how to print a page
Can you use the Cloud / Files & Folders / Seesaw?	I know how to sign in using a QR code / sign out (Using Seesaw app)	I know how to take and upload a photo / video (Using Seesaw app)	I know how to create a drawing (Using Seesaw app)	I know how to add a note / like / comment (Using Seesaw app)	I know how to record my voice (Using Seesaw app)	I know how to access my cloud / shared area for the first time	I know how to create a folder(s) and add a colour to a folder	I know how to delete a folder/file	I know how to upload an image & video	I know how to search for a file or folder
Can you use a browser?	I know how to identify & launch the browser on my devices	I know how to point and click to navigate on existing links / website shortcuts	I know how to use the tool bar and can explain it's features e.g. home button or back button	I know how to play and pause video or audio on a website	I know how to do a basic keyword search using an internet browser	I know how to enter a URL to access or open a specific website	I know how to adjust the volume of content being played	I know how to sign in to an online account	I know how to refresh or reload a web page in an internet browser	I know how to open multiple windows / tabs in a browser
Can you use a word processing app?	I know how to open or create a new document / select a theme	I know how to type in basic text, using capital letters and spaces	I know how to save my document in my folder	I know how to print my documents	I know how to change the text colour	I know how to bold, italicise and underline text	I know how to change the font & size	I know how to insert a shape & edit shape	I know how to add an emoji or symbol	I know how to insert an image / word art
Can you use a presentation app?	I know how to open or create a new document / select a theme	I know how to insert a new slide with different layouts and move slides	I know how to add text content to slides / delete parts of a layout	I know how to insert an image / clip art	I know how to change the background image/ colour / change the text colour	I know how to change the font & size / bold, italicise and underline text	I know how to duplicate a slide / delete a slide	I know how to insert a new text box	I know how to add transitions to a slide / animate an object on a slide	I know how to insert a shape/ change the fill colour of a shape
Can you use a spreadsheet app?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Can you use a drawing app?	I know how to select and open a drawing application	I know how to use a mouse / trackpad to draw lines	I know how to use different colours	I know how to use different drawing tools/pens/ textures/eraser tool	I know how to print my drawings	I know how to zoom in and out on parts of my drawing / move the canvas	I know how to rotate a shape / drawing	I know how to insert an image or shape	I know how to use fill colour tools	I know how to change the line weight/thickness
Can you fix problems?	I know how to respectfully use technology	I know how to check the volume if the sound isn't working	I know how to ask the person next to me before asking the teacher	N/A	N/A	N/A	N/A	N/A	N/A	N/A

What digital skills will the children learn in Year 4?

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Technology in your setting	These are Silver skills. The children should be working towards being secure with all silver and starting on gold skills. ☆				
Can you use an iPad?	I know how to transfer pictures/video via Airdrop/ Classroom app	I know how to access the control centre	I know how to cut, copy & paste text and images from the web	I know how to connect to a display / airplay	I know how to create a screencast video with the microphone enabled
Can you use a Chromebook?	I know how to cut, copy & paste text and images from the web	I know how to make the Chrome browser window full screen / minimise the Chrome browser window	I know how to insert usb peripherals e.g. camera or usb drive	I know how to use tabbed browsing	I know how to take a photo using the Webcam
Can you use the Cloud / Files & Folders / Seesaw?	I know how to access your files from another / multiple devices	I know how to upload a folder to a specific place	I know how to download a various file types (Excel, Word, PowerPoint files etc)	I know how to upload a various file types (Excel, Word, PowerPoint files etc)	I know how to rename / move a folder or file
Can you use a browser?	I know how to cut, copy & paste text and images from the web	I know how to save / download files from the web to your device	I know how to adjust the text, image and video sizes	I know how to conduct research, analyse and interpret the information I locate	I know how to perform a keyword search within a web page
Can you use a word processing app?	I know how to right, centre and left align text	I know how to create a numbered/bulleted list	I know how to insert a link	I know how to insert a table & graph	I know how to use the spell checker
Can you use a presentation app?	I know how to play and present from the presentation	I know how to copy/paste URL to insert a link to a website	I know how to insert a video / or embed via URL	I know how to insert a chart/ graph & table	I know how to use spelling and grammar checker
Can you use a spreadsheet app?	I know how to open / create a new spreadsheet & add a title	I know how to add a number to a cell / word / image.	I know how to format text and cells.	I know how to print.	I know how to input a range of data.
Can you use a drawing app?	I know how to duplicate, copy and paste shapes or layers	I know how to resize drawings	I know how to add text, stickers or emojis	I know how to add shadows / experiment with colour	I know how to alter transparent / alpha
Can you fix problems?	I know how to quite an app if it crashes	I know how to restart my device if it crashes	I know how to keep check the battery life	I know how to reload a webpage	I know how to make sure I'm connected to the wifi

What digital skills will the children learn in Year 4?

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Technology in your setting	These are Gold skills. The children should be working towards being secure with all silver and starting on gold skills.				
Can you use an iPad?	I know how to use the split screen with two apps E.g. Safari & Notes app for research.	I know how to use iPad advanced user gestures e.g. switch apps.	I know how to use split screen with same app but using multiple files. E.g. two Keynote files.		
Can you use a Chromebook?	I know how to search folders and open files using Drive app.	I know how to use trackpad gestures / keyboard shortcuts.	pin a Chrome App to the Shelf / pin a webpage to your desktop.		
Can you use the Cloud / Files & Folders / Seesaw?	I know how to get the file size of a document or folder.	I know how to share a folder or file for collaboration / share a link (file).	I know how to explain clouds and saving work to someone else.		
Can you use a browser?	I know how to use advanced searches techniques to improve my results and research.	I know how to turn on/off accessibility features / configure browser features.	I know how to turn on the reader view to show just the text.		
Can you use a word processing app?	I know how to collaborate on a document / make a comment / add notes.	I know how to export the document in a different format / publish.	I know how to share my document with others.	I know how to use shortcut / quick keys (e.g. command+c, command+v).	
Can you use a presentation app?	I know how to add speaker notes.	I know how to add audio / record narration.	I know how to create complex animations.	I know how to use shortcut / quick keys (e.g. command+c, command+v).	
Can you use a spreadsheet app?	I know how to use text and number formatting options.	I know how to merge the cell contents / select a range of cells. Add and delete rows/ columns. Add new sheets.	I know how to cut, copy, and paste cell content / insert a hyperlink to text.	I know how to use data and insert a simple formula	I know how to create a simple chart from some sample data.
Can you use a drawing app?	I know how to create an illustration.	I know how to change the canvas size.	I know how to change the order of a shapes/layers.	I know how to a save the drawing in different formats.	I know how to save with transparent background.
Can you fix problems?	I know how to search for a file.	I know how to find a deleted file.	I know how to make a duplicate of a file.	I know how to read any error message and follow any instructions that may help.	I know how to check there is paper in the printer.

Overview of an effective learner in computing

We believe there are core digital skills that children must possess.

- 'All children must have a basic understanding of coding and how the web works.'
- 'All children must able to evaluate online information and be social media savvy.'
- 'All children must understand online safety rules and know how to report and block.'
- 'All children must be proficient with word processing and able to use cloud storage.'
- 'All children must be able to create visually engaging content/presentations in order to present learning to others.'
- 'All children must have experience of online collaboration and using communication tools.'
- 'All children must be taught the concept of personal archiving and possess their own digital portfolio of work.'

We also encourage schools to go beyond these essential digital skills and the computer program of study. When teaching computing, please include at least two effective learner objectives to be the focus for the year. These are in addition to the specific objectives in each Computing activity. Choose learners who exemplify these qualities to receive the end of unit certificates and computing wow moment cards.

Objectives for all pupils: As you observe and converse with the children about their use of computing you may wish to hand out wow moment cards. These can be found on the following page.

Ability to work independently	Ability to work with each other	Resilience and Challenge	Creativity	Academic Progress
I do not rely on the teacher or other children for support. I can take independent notes or photographs at appropriate times to support my learning.	I am willing to work with others. I share thoughts and ideas with the rest of the group or class. I communicate appropriately and put forward my ideas within a group. I can give others constructive feedback on their ideas.	I attempt any task and try hard. I ask relevant questions of the teacher. I engage in different activities and small competitions, accepting and embracing challenges. I see difficult tasks as a challenge, something I must work at and learn from.	I can come up with ideas and use these ideas to help myself. I am keen to express my ideas in different ways. I take other's ideas into account alongside my own. I use a wide variety of sources effectively.	I am enthusiastic about the lesson and happy to contribute. I am keen to improve my knowledge and understanding. I understand how to improve.

COMPUTING
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WOW MOMENT
Ability to work with each other

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Resilience and Challenge

COMPUTING
WOW MOMENT
Creativity

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WOW MOMENT
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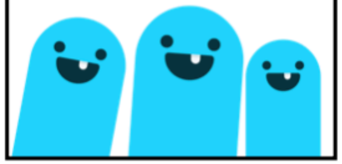

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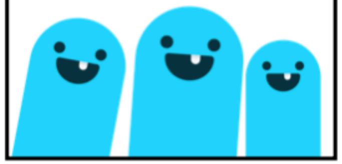

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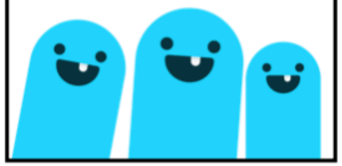

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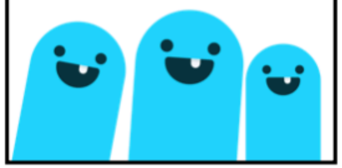

Year 4 Progression - Mandatory Skills

Computing Strand: Mandatory Skills	Statement	What to Observe in Learning		
		Working towards expectations	Meeting expectations	Exceeding expectations
Essential: Age appropriate skills for the use of core devices and applications within their setting.	I can label the different types of input connections on devices.	The child understands that external peripherals such as printers, keyboards, speakers, microphones and pen drives can be plugged into devices. The child understands the difference between input and output and can give examples.	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 can give examples of specific uses of inputs and outputs e.g. HDMI is for displays or televisions. VGA is for connecting to the projector. USB is for connecting the keyboard or mouse.
	I can explain common file types.	The child understands that applications will only open specific file types e.g. Word opens .doc files but not video files such as .mp4.	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 discuss the common file types and their uses, including; jpeg, pdf, doc, animated gif, mp3 and mp4.	The child can describe what cloud computing is. The child can add work to folders within my own digital pupil portfolio, saving them in the relevant file types.

Year 4 Progression - Computer Science

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Inspire a lifelong love of play, design, code, and invention with technology.

Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations	Meeting expectations	Exceeding expectations
(CS) Computational Thinking: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	I can design an algorithm to simulate a real-life situation.	The child can relate the concept of algorithms back to everyday real-life activities. The child can design a simple algorithm to show a real- life situation without reference to the code required e.g. the child can write a simple traffic light algorithm.	The child can demonstrate the skill of abstraction e.g. the child can define 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 child's design uses coding structures for selection ("If" and "Then") and repetition. The child can include the use of a sensor to detect a change which can select an action within their program.
	I can solve an open-ended problem by breaking it up into smaller parts.	The child understands that sometimes a problem can be so big or complex that they may struggle knowing where to start. The child can explain the computing term 'decomposition' and why this is a useful skill to help solve problems.	The child can demonstrate a clear process when solving problems. The child breaks the problem up into smaller parts e.g. what am I trying to do? What have I done already that might help? What do I think the program should be doing? What is it actually doing? Is there more than one solution? How can I test my solution?	The child can recognise that an algorithm will help them to sequence more complex problems/programs.
(CS) Coding: Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	I can design and write a program for a given purpose including specific programming features.	The children can produce a simple design (algorithm) for a program that shows the basic structure they want to create without referencing the code required. The child can create a program using applications such as Scratch that achieves at least some of the desired outcomes.	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.	The child can explain the coding features they have used e.g. they understand that 'if statements' are for selection and they are about asking the program to make a choice. They can understand how variables can be used to store information while a program is running.
(CS) Logical Reasoning: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	I can test existing programs to see how they could be improved.	The child can 'read' programs with several steps and predict the outcome accurately.	The child can recognise an error in an existing program and suggest how it might be debugged/ fixed. The child can investigate existing programs, evaluating them and consider how they could be improved.	The child can discuss how a program might be improved by incorporating features such as inputs, repetition, variables and procedures.

Year 4 Progression - Computer Science

Knowsley CLCs
Primary Computing Scheme of Work
Inspire a lifelong love of play, design, code, and invention with technology.

Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations	Meeting expectations	Exceeding expectations
(CS) Networking: Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web	I can understand the different methods of communication using the internet.	The child understands that the internet is a network of connected devices and it provides multiple services, such as the world wide web and email.	The child can identify and discuss the key services that can be used to communicate on the internet. The children can recognise the main components (hardware) which allow computers to join and form a network.	The child understands and can discuss the online safety implications associated with different methods of communication.
(CS) Online: Appreciate how [search] results are selected and ranked				

Year 4 Progression - Information Technology

Computing Strand: Information Technology	Statement	What to Observe in Learning		
		Working towards expectations	Meeting expectations	Exceeding expectations
(IT) Harnessing Technology: Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	I can improve the quality and presentation of my work using editing and formatting techniques.	The child understands that they need to consider the user/the person reading their work and make appropriate improvements. The child can use basic formatting tools e.g. they can change the background colour, size of the text, font and add images.	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 give constructive feedback to friends to help them improve their work and refine my own work. The child understands the different types of media content that can be added to a document. The child can use photos, video and sound to create an atmosphere when presenting work to different audiences.
	I can create with technology. E.g. Video, animation, 3D	The child with support can create content with unfamiliar apps or technology. The children with support can share digital content.	The child is confident using a range of software/apps to create content. 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 apps or technology to create content. The child understands the need to create a plan/storyboard when producing digital content. **For example:** The child can create a well presented digital document to retell a story. The child can plan an animation using a storyboard. 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 is a confident user of technology. The child recognises that similar icons/ features are present within apps and that these are consistent across different types of applications e.g. the export/save button, the add image button or record button. The child is able to create with a range of software/apps e.g. create films, animations, manipulate images, create illustrations, green screen etc.
(IT) Online: Use search technologies effectively	I can use a search engine and I am aware that not everything I read online is correct. (Online Bullying)	The child understands the layout of a search engine and can enter keywords in the search field. The child can identify key words to use when searching safely on the World Wide Web.	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 accurate and can check information using different sites.	The child can use more complex search criteria to narrow down their searches.

Year 4 Progression - Digital Literacy

Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations	Meeting expectations	Exceeding expectations
(DL) Technology in the Real World Understand the opportunities [networks] offer for communication and collaboration	I can collaborate online to create digital content.	The child can use a shared space online to save and share their work. The children can discuss key concepts relating to online safety and can use a basic concept mapping app such as Popplet or Padlet to show their understanding.	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 e.g. the child can post to a class blog and explain how to use it correctly with others. The child understands certain documents can be shared and worked on collaboratively e.g. Google Docs. The child can take part in collaborative activities e.g. contribute to a class / school blog, share information with link class in another school to find out about a different locality.	The child can comment positively and respectfully when using collaborative online tools. The child can help others to understand the importance of online safety. The child can create a hyperlink to a resource on the World Wide Web in order to share it.
(DL) Media & Content: Be discerning in evaluating digital content	I can evaluate information presented to me to make informed choices about what is Fake News.	The child when presented with both true and Fake News can choose which news stories could be fake. The child can discuss examples of Fake News based on the class lessons. The child understands the different ways data can be captured and presented online.	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 knows why it is important they know how to check information to protect themselves against Fake News. The child knows that not all sources of information including websites are accurate and can check information using different sites. The child can appraise selected webpages for credibility and information at a basic level. The child knows what plagiarism is and when they can use the work of others.

Year 4 Progression - Digital Literacy

Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations	Meeting expectations	Exceeding expectations
(DL) Online Safety: Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	I can describe strategies for safe and fun experiences in a range of online social environments and I'm respectful to others online. (Online Relationships)	The child can outline their digital life in terms of the apps, services and websites they use. The child can explain the importance of using the internet safely and responsibly.	The child can talk about the potential online risks and ways they can protect themselves and friends from harm 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 can explain what it means to be a good digital citizen and how they should be responsible and respectful online.
	I understand that people may have a different online identity to that in real life and I'm able to interact with others. (Self Image)	The child understands that not everyone online is who they say they are and can't always be trusted.	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 knows that some communication online could be spam or from online bots (not real people). The child can discuss the forms it takes and they can identify strategies for dealing with suspicious messages/ emails.
	I am aware others can find information out about me by searching online. (Online Reputation)	The child knows that anything they post online can be seen by others e.g. if they write a comment on a YouTube video, other users can read this.	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 to manage their online reputation.
	I know which technologies are used for online bullying and I am considerate of others when posting myself. (Online Bullying)	The child can discuss online bullying and the apps/websites where it may take place.	The child can discuss how they should act appropriately & respectfully online. The child knows how to deal with online bullying.	The child when given specific online scenarios can discuss how to comment positively and respectfully online.

Year 4 Progression - Digital Literacy

Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations	Meeting expectations	Exceeding expectations
(DL) Online Safety: Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	I understand the impact technology can have on my health, well being and lifestyle. (Health well being)	The child can describe their use of technology inside and outside of school.	The child understands how photos can be altered digitally. The child can consider the creative upsides of photo alteration, as well as its power to distort perceptions of beauty and health. The child can discuss the positive and negative effects technology may have on their health.	The child can explain why they should choose websites and games that are appropriate for their age. The child can help their friends make good choices about the time they spend online.
	I am aware that some people want to access my data and can take appropriate measures to ensure this doesn't happen. (Privacy and Security)	The child knows how and why to keep their personal information private. The child can display themselves appropriately online, e.g. avatar instead of a profile picture, appropriate username and no personal information.	The child can talk about why they need to ask a trusted adult before downloading files and games from the Internet e.g. virus and malware. The child can choose a secure password when they are using a website or app. The child can explain why using an avatar and online name is advisable.	The child can explain what makes a secure complex password and give an example. The child can discuss how they can protect themselves from online identity theft.
	I understand the need for copyright and the consequences of ignoring it. (Copyright)	The child can explain what copyright is and give an example based on lesson activities.	The child can explain why copyright laws exist. The child knows that copying the work of others and presenting it as one's own is called plagiarism. The child can use a copyright free image gallery, or they can change the search criteria in Google images to copyright free.	The child can explain when and how it's ok to use the work of others (different types of copyright).

What vocabulary will the children learn in Year 4?

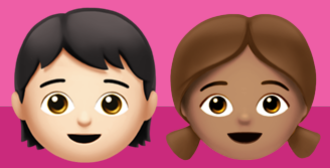
Year Group	Key Vocabulary / Commonly used.	These could be introduced as word of the week.
Year 4	**3D / 2D** 3D means three-dimensional, i.e. something that has width, height and depth (length). 2D shapes are shapes with two dimensions, such as width and height. **Algorithm** Steps to follow to achieve a task. **Browser** A computer program used to access the World Wide Web. **Code** Lines or blocks of instructions (see program). Command A step or line of programming (instruction for younger children). **Computational Thinking** An analytical approach to 'problem' solving (involving abstraction, decomposition, logical thinking, pattern, evaluation, generalisation) **Computer** A device that takes input, processes it, then produces output. **Computer networks** Connected devices that make it possible to transfer data using an agreed method ('protocol'). **Control** In general, control refers to the ability to manage, organise, or run something on a computer. **Data** Numbers that represent images, video, text and sound. **Debug** Finding and correcting errors. **Decomposition** Splitting things into smaller parts. **Digital Footprint** A person's trail of data on the internet that can last indefinitely. **Emoticon / Emoji** The use of icons or text to portray mood or facial expression, e.g. :) when happy and :(when sad. **Google** Is one of a number of search engines that help us find information on the web. **Information** Data processed and/or presented to users in a meaningful way. **Instructions** Computer instructions are a set of steps. **Internet** The global collection of computer networks and their connections, all using shared protocols (TCP/IP) to communicate.	**Input** A method of computers receiving data (Eg. keyboard, mouse, touch, sensors etc,). **Keyboard** A board of keys. One of the primary input devices used with a computer. **Logical reasoning/thinking** A systematic approach to solving problems or deducing information using a set of universally applicable and totally reliable rules. **Output** The information produced by a computer system for its user, typically on a screen, through speakers or on a printer, but possibly though the control of motors in physical systems. Also an action performed by the computer e.g. switching on a light, moving a turtle or sprite across the screen. **Program** A sequence of instructions written to perform a specified task on the computer. **QR Code** A QR code (short for "quick response" code) is a type of barcode that contains a matrix of dots. It can be scanned using a QR scanner or a smartphone with built-in camera. **Repetition (Repeat / loop)** Instructions that can be repeated until a condition is met – i.e. a loop. Sometimes referred to as 'iteration'. **Robot** Robots have a reprogrammable brain (a computer) that moves a body. **Save** Save is the process of writing data to a storage medium, such as a floppy disk, CD-R, USB flash drive, or hard drive. **Sequence** A set of instructions that are followed in order. **Share** Sharing is the practice of sharing or offering access to digital information or resources, including documents, multimedia (audio/video), graphics, computer programs, images and e-books. **Technology** Technology is the skills, methods, and processes used to achieve goals. **URL** Uniform Resource Locator: a nickname (address) for a website **Zoom** To cause text or other graphics in a window or frame to appear larger on the screen.

Teaching Key Computing Vocabulary

Knowsley CLCs

Primary Computing Scheme of Work

Inspire a lifelong love of play, design, code, and invention with technology.



Year Group	Key Vocabulary: When should words be introduced. This is a guide to key computing vocabulary for year groups or Key Stage.
Foundation	Algorithm, sequence, instructions, camera, robot, QR code, sequence, share, technology, control, Google, information, internet, algorithm, computer, iPad/tablet, app (application), keyboard, button, printer, save, zoom.
Year 1	3D, program, debug, design, emoji, search, selection, website, personal information, link, menu, icon, trusted adult, online, sign in, game, wireless (Wifi), online bullying, landscape, portrait, Bluetooth, download, frame, processor, green screen, hard drive, illustration, log in, tool, send, follow, digital, communicate.
Year 2	Browser, computer networks, data, computational thinking, execute/run, input, output, software, World Wide Web (WWW), password, username, interact, images, facts, scan, chat, post / re-post, copyright, backdrop, repeat / loop, characters, avatars, fictitious/fake, evaluation, publish, trust, stroke, template, reputation, identity, digital book (eBook/ePub).
Year 3	Block, palette, code/coding, command, decomposition, sprite, stage, condition, control block, costume, digital content, simulation, hyperlink, attachment, URL, blog/blogging, consequences, illustrator, untrusted, cyberbully, cyberbullying, reliable, MegaByte, GigaByte, report, sceptical, verify, fake news, soundtrack, VR (virtual reality), font, shortcut, shots, 360º Video, authenticate, multimedia.
Year 4	Logical reasoning, audio, selection, page ranking, hacker, repetition (sometimes referred to as 'iteration' in upper KS2), script, scripts area, secure (https), PEGI, netiquette, conditional, scene, filters, griefing, storyboard, cloud computing, positive online communication, online persona, digital footprint, animation, age restrictions, social network, screenshot, screencast.
Year 5	Abstraction, vlog, YouTuber, IP address, pixels, vector, HTML, CSS, services, ISP, LAN, TCP/IP, variables, hub, peripheral, bandwidth, CEOP, ChildLine, cache, harassment, plagiarism, infringe copyright, illegal downloads, streaming, blocking, victim, cookie, junk mail, RAM / ROM, USB, ZIP, augmented reality, bit & bytes, upload, score, podcast, edit.
Year 6	Antivirus, new media, collaboration, visual coding, text based coding, adware, trojan, feedback, bot, boolean, checksum, server, firewall, generalisation, security updates, plug in, pop up blocker, scams, phishing, location based settings, in app purchasing, trolling, sexting, exclusion, doxxing, catfishing, flaming, fabotage, creeping, dissing, ghosting FTP, filtering, malware, screen time, balanced lifestyle, configuring.

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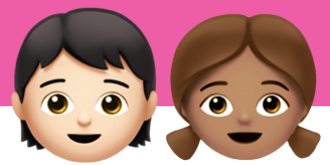
Primary Computing Scheme of Work

Inspire a lifelong love of play, design, code, and invention with technology.



A

Abstraction
Taking the detail out of a 'problem' to make it easier to solve.

Adware
Software application which displays adverts and can redirect searches.

Algorithm
Steps to follow to achieve a task.

Application (App)
A program (such as a word processor or a spreadsheet) that performs one of the important tasks for which a computer is used

B

Bandwidth
The amount of data that can fit through an Internet connection.

Block
An instruction in Scratch. Blocks linked together are called a script or program in Scratch. Also to block someone from contacting a user on a social media account for example.

Blog/Blogging
Short for 'web log', a shared online journal or diary. Normally a webpage containing users' opinions/experiences/observations.

Bluetooth
Allows the exchange of data over short distances from devices.

Boolean
A variable whose value can only be true or false.

Bot
A program that can do things without a user needing to give instructions. Many bots are malware.

Browser
A computer program used to access the World Wide Web.

Button
In computing, the term button refers to any graphical control element that provides the user a simple way to trigger an event.

C

Camera
A digital camera is a hardware device that takes photographs and stores the image as data on a memory card.

Canvas
A region on which you can draw lines, shapes or text.

Catfishing
This is where someone steals your photos and uses them as their own, usually in a bid to meet other people on the internet or to trick or fool someone.

CEOP
Child Exploitation and Online Protection Command is tasked to bring offenders to UK Courts.

Checksum
The total number of packets sent to/from a router.

Circumventor Sites
Parallel websites that allow children to bypass sites their adults have blocked.

Cloud computing
A system in which data is stored on a central server owned by a company (e.g. Google) and accessed virtually.

Code
Lines or blocks of instructions (see program).

Computer
A device that takes input, processes it, then produces output.

Computer networks
Connected devices that make it possible to transfer data using an agreed method ('protocol').

Control
In general, control refers to the ability to manage, organise, or run something on a computer.

Costume
In Scratch, the costume is what a sprite can look like on screen.

Command
A step or line of programming (instruction for younger children).

Computational Thinking
An analytical approach to 'problem' solving (involving abstraction, decomposition, logical thinking, pattern, evaluation, generalisation)

Condition
Something that is either true or false

Cookie
A small file which records a user's personal preferences, shopping choices and other information.

Copyright
Gives the creator of an original work ownership rights.

Creeping
Someone who follows someone else's social network profile closely.

Cyberbullying
The use of electronic communication to bully someone.

D

Data
Numbers that represent images, video, text and sound.

Debug
Finding and correcting errors.

Decomposition
Splitting things into smaller parts.

Decoy App
These apps help children hide videos/images from their parents.

Digital Footprint
A person's trail of data on the internet that can last indefinitely.

Digital content
Any media created, edited or viewed on a computer.

Dissing
The act of commenting on a status with single liners that insult a specific person.

Download
Transfer of a file, from a central computer to your computer.

Doxxing
The publishing of an individual's home address or bank details etc.

E

Ebook / ePub
Digital book format file.

Emoticon / Emoji
The use of icons or text to portray mood or facial expression, e.g. :) when happy and :(when sad.

Etiquette
A set of rules that people try to abide by out of respect for other people around them.

Evaluation
Is this 'good'? Can it be improved?

Exclusion
This occurs when an individual is passively ignored or actively rejected by others, and can occur face-to-face (offline) or via the Internet (online).

Execute
Run or follow a series of instructions in a program.

F

Fabotage
Accessing someone else's social media account without their knowledge and changing information on it.

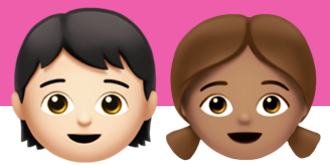
File format
The particular code that a file is stored in. Different software and devices use different formats, e.g. video uses MP4 and audio use Mp3.

Firewall
A system designed to prevent unauthorised access to your computer when connected to a network such as the Internet.

Flaming
Flaming is the act of posting or sending offensive messages over the Internet. These messages, called "flames," may be posted within online discussion forums, or sent via instant messaging programs.

Fraping
This is a combination of 'Facebook' and 'rape' and it is when someone has used your Facebook account without permission and destroyed comments or pictures, or created new and offensive comments and pictures pretending to be you.

FTP
File Transfer Protocol. A service for moving files from one computer to another.



G

Gamer
A person who plays video games including online, likely with other online users.

Gamer Tag
An alter ego made from an alias, picture or avatar. Sometimes these are offensive.

GB GigaByte
1024 kilobytes. Unit of measuring data.

Generalisation
Adapting solutions already found to solve new problems.

Geocaching
Is an outdoor activity in which the participants use (GPS) to hide and seek containers, called “geocaches”.

Geotag
To attach the exact geographical coordinates of longitude and latitude to a digital image, giving the location of where it was taken.

Ghosting
This means breaking off a relationship by stopping all communication and contact without any apparent warning or justification.

Google
Is one of a number of search engines that help us find information on the web.

Griefer
Someone who deliberately harasses online gamers during a gaming session.

Grooming
Someone who gains a child’s trust for sexual exploitation or trafficking.

H

Hacker
A person who uses technology to gain unauthorised access to information.

Harassment
This is the act of sending continuously offensive, rude and insulting messages.

Hardware
The physical parts of a computer system, e.g. the CPU and the devices connected to it.

HDMI (high-definition multimedia interface)
Required for connecting devices to show high-definition video.

HTML
Hyper Text Markup Language: the ‘code’ used to create and lay out web pages.

Hub
A device that joins a group of computers together.

I

Identity theft
A crime that involves someone pretending to be another person in order to steal money or obtain other benefits.

In-app purchasing
Purchases of services or products are possible within some apps, such as game apps, and real money is required by them.

Incognito browsing
This allows a user to browse the web without their history being recorded on their device.

Information
Data processed and/or presented to users in a meaningful way.

Instructions
Computer instructions are a set of steps.

Input
A method of computers receiving data (Eg. keyboard, mouse, touch, sensors etc,).

Instant Messenger
A way of communicating where messages are sent over the internet in real time.

Internet
The global collection of computer networks and their connections, all using shared protocols (TCP/IP) to communicate.

Internet Shaming
Online shaming is a form of Internet vigilantism in which targets are publicly humiliated using technology like social and new media.

IM (DM / PM)
Instant message also known as direct message, Private or personal message. These are messages sent between users via the internet or social media apps. These are very popular with younger generations.

IP Address
Numerical label assigned to each device on a computer network.

ISP
Internet Service Provider. The company you pay to connect you to the Internet.

J

Java
Programming language that enables the browser to perform a function or feature not normally available

JavaScript
Programming language that allows a web designer to add extra features to their web page.

JPEG
A format for compressing image files.

Junk Mail
Unwelcome or unwanted emails also know as SPAM.

K

Kbps
Kilobits Per Second, primarily used to measure data transfer rates.

Keyboard
A board of keys. One of the primary input devices used with a computer.

Keyboard Shortcut
Key combination that performs a certain command, such as copy or paste.

Keywords
Words or phrases that describe content.

Kilobyte
Most often used to measure the size of small files.

L

LAN
Local Area Network. Computers connected together that are geographically close to each other (e.g. home or school).

Link
Allows users to navigate. E.g. by clicking on a link, the user can 'jump' to a new screen.

Logical reasoning/thinking
A systematic approach to solving problems or deducing information using a set of universally applicable and totally reliable rules.

M

Malware
Software that is designed to cause problems for users.

Metadata
Provides information about the content of a digital item, e.g. each digital image from a digital camera has a file attached listing such things as date, time, camera and shutter speed.

Multimedia
A combination of different content types such as text, audio, still images, animation and video.

N

Navigation
If a product is interactive, the user must be able to move around it easily. Navigational aids such as buttons and links are an important feature of interactive digital products.

Navigation bar
Usually placed along the top or side of the screen, this consists of a series of links to other screens. The navigation bar appears in the same position on every screen of the product, making it easy for users to find their way around.

Netiquette
Netiquette is the code of good behaviour on the internet. As the internet changes, so does netiquette.

Network
A group of computers that are connected (including the Internet).

O

Outing
'Outing' people by publishing or disseminating confidential information online.

Output
The information produced by a computer system for its user, typically on a screen, through speakers or on a printer, but possibly though the control of motors in physical systems. Also an action performed by the computer e.g. switching on a light, moving a turtle or sprite across the screen.

P

Packet
Small pieces of data.

PageRank
A way of ordering the results of a search on the internet.

Pattern
Finding and using repetition in programs.

Pharming
Directing a user to a bogus website that pretends to be a real one in order to extract information from them.

Phishing
A form of Internet fraud that aims to steal valuable information such as credit card details, usernames and passwords.

Photo Sharing
Some apps allow users to share images for a few seconds. These apps can be very damaging to children.

Printer
A printer is an external hardware output device that takes the electronic data stored on a computer or other device and generates a hard copy of it.

Profile
Often social media sites will allow users to create their own personal profiles which other users can see.

Program
A sequence of instructions written to perform a specified task on the computer.

Q

QR Code
A QR code (short for "quick response" code) is a type of barcode that contains a matrix of dots. It can be scanned using a QR scanner or a smartphone with built-in camera.

QWERTY
This term is used to describe a standard (Latin alphabet-based) keyboard.

R

RAM / ROM
Random access memory (RAM) is a form of computer data storage. Read-Only Memory - is a computer hard drive.

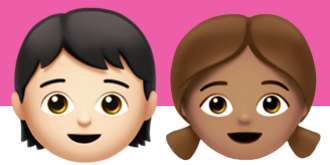
Repetition
Instructions that can be repeated until a condition is met – i.e. a loop. Sometimes referred to as ‘iteration’.

Resolution
The number of distinct pixels in each dimension that can be displayed.

Roasting
Girls are ganging up on boys in a new cyberbullying craze called “roasting”. The new bullying takes place via mobile apps such as WhatsApp, Instagram or Facebook, where girls pick on a boy and vent the most offensive abuse until the victim “completely cracks”.

Robot
Robots have a reprogrammable brain (a computer) that moves a body.

Router
A device which can be either wired or wireless and is used to connect devices to the internet.



S

Save
Save is the process of writing data to a storage medium, such as a floppy disk, CD-R, USB flash drive, or hard drive.
Search
Finding data or information that satisfies condition(s). Such as web pages containing supplied keywords, or files on a computer with certain properties.
Selection
A way in computer programs to make choices (e.g. IF..THEN)
Selfie
Self-portrait photo often taken at arm's length using a Smartphone and uploaded to social media.
Sequence
A set of instructions that are followed in order.
Services
Programs running on computers, typically those connected to the internet, for example, to transmit a web page, deliver an email or allow a text, voice or video conversation.
Sexting
Sending and receiving sexually explicit images/videos via IM, text or social media.
Share
Sharing is the practice of sharing or offering access to digital information or resources, including documents, multimedia (audio/video), graphics, computer programs, images and e-books.
Simulate
Using computers to imitate real-world scenarios
Social networking
An online community where people can communicate and share information.
Software
Computer programs and applications (apps)
Spam
Messages sent to large numbers of users for the purpose of phishing, spreading malware and advertising.
Sprite
(in Scratch) an object that can be controlled by programming. Scratch projects are made up of objects called sprites.
Spyware
Software that can be installed on your computer without your knowledge, which collects information and sends details to another computer on the Internet.
Stage
This is where you see your stories, games, and animations come to life. Sprites move and interact with one another on the Stage.

T

TB
Terabyte or 1024 gigabytes.
TCP/IP
Language computers use to communicate.
Technology
Technology is the skills, methods, and processes used to achieve goals.
Trojan
A program that appears legitimate but which performs some harmful activity when it is run. Trojans often sneak in attached to a free game.
Troll
A user who posts inflammatory messages typically on Social Media sites to upset others.

U

Upload
Transfer a file from your computer to a central computer, e.g. your ISP.
URL
Uniform Resource Locator: a nickname (address) for a website
USB (Universal Serial Bus)
A standard method of connecting devices such as keyboards and printers to a computer.

V

Variables
A way in which computer programs can store, retrieve or change simple data, such as a score, the time left, or the user's name.

Video Hosting Sites
Websites and apps which allow users to post and view video clips, like YouTube.

Virus
A program designed to cause other programs on a computer to malfunction or stop working altogether.

Vlog (Vlogger)
Short for 'video log', a shared online journal or diary. Normally a video shared to YouTube or Vimeo containing users' opinions/experiences/ observations.

W

Web Server
A computer connected to the Internet that provides access to (hosts) websites.

World Wide Web (WWW)
All of the web pages on the Internet, accessed using a browser.

Wireless (wifi)
Devices that are connected without wires or cables. They communicate via radio waves.

X Y Z

You Tube
A video sharing and streaming platform.

Zip
A compressed file format for emailing files or downloading.

Zoom
To cause text or other graphics in a window or frame to appear larger on the screen.