Barleyhurst Park Curriculum Progression for Computing

	Nursery	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multimedia Text and Images			To group by characteristics. To identify the basic data types of image, video, audio and text. To match images and audio data types using a simple drag and drop activity. To draw their favourite dinosaur, add a text name and simple text description. To create a simple, pictorial storyboard, retelling a story in the correct order.		To recognise how text and images convey information. To recognise that text and layout can be edited. To choose appropriate page settings To add content to a desktop publishing publication To consider how different layouts can suit different purposes. To consider the benefits of desktop publishing	To create a presentation which is interesting and informative. To use the features of the program to enhance the content e.g. transitions and animations. To search for, save and import pictures into a presentation. To edit and review content for accuracy and interest. To explain that digital images can be changed. To describe how images can be changed for different uses. To make good choices when selecting different tools. To recognise that not all images are real. To evaluate how changes can improve an image.	To be able to draw 3D shapes using SketchUp. To be able to add detail to 3D drawings. To be able to add and manipulate 3D models. To be able to create a complex 3D model. To identify that drawing tools can be used to produce different outcomes. To create a vector drawing by combining shapes. To use tools to achieve a desired effect. To recognise that vector drawings consist of layers. To group objects to make them easier to work with. To apply what I have learned about vector drawings.	To review an existing website and consider its structure. To plan the features of a web page. To consider the ownership and use of images (copyright). To recognise the need to preview pages. To outline the need for a navigation path. To recognise the implications of linking to content owned by other people. To create a mock-up of an interface of a new app.
Multimedia Sound and Motion			To identify the basic data types of image, video, audio and text. To match images and audio data types using a simple drag and drop activity. To capture role play, using a simple digital camera. To capture role play, using a simple digital audio device (microphone). To learn that images, audio and video can be combined using software.		To understand that animations are produced by viewing a sequence of frames in order and that the brain perceives this as a moving image. To understand that animations are smoother if they have more frames with smaller movements. To import an appropriate background, saving it first from the internet. To animate a range of different figure types and discuss why too many, or too few, pivot points can be challenging.	To identify that sound can be digitally recorded. To use a digital device to record sound. To explain that a digital recording is stored as a file. To explain that audio can be changed through editing. To show that different types of audio can be combined and played together. To evaluate editing choices.		To develop skills in managing and manipulating images, audio and video. To present ideas for a new piece of wearable tech, including a recorded advert. To be able to use appropriate software and other tools effectively to write a film script. To locate and check appropriate digital content, and provide accurate crediting of sources. To use digital recording devices to film and import into video editing software. To plan, conduct and import video interviews as part of a short film. To use video editing software to create a short film. To use video editing software to turn a film project into a finished movie and present it.

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	Nursery	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Handling Data			To collect data using a tally sheet. To display data using simple pictograms. To sort a list based on one criteria.	To identify the basic data types of image, video, audio and text. To ask and answer simple questions about data. To organise digital content in simple ways. To know what a branching database is and how it can be used. To create a simple branching database. To design a simple tally sheet for data collection. To collect data from relevant people using a tally sheet. To understand that data can be displayed graphically and this can make data easier to interpret. To know what a block graph is.		(Covered in Year 4 Science) To create a branching database. To explain why it is helpful for a database to be well structured.	.	To create a data set in a spreadsheet. To build a data set in a spreadsheet. To explain that formulas can be used to produce calculated data. To apply formulas to data. To create a spreadsheet to plan an event. To choose suitable ways to present data
Technology In Our Lives	Remember rules without needing an adult to remind them.	Be able to switch devices on and off. To recognise and use a variety of technology in home and school independently.	To learn the names of basic parts of the computer. To explain, in simple terms, the functions of main parts of a computer. To learn that a mouse is an input device that controls a pointer on the screen. To become more confident using a mouse when completing simple tasks. To learn that a keyboard is an input device that allows a user to input letters, numbers and symbols. To become more confident using a keyboard by typing simple words and sentences combining numbers, letters and symbols. To learn that a screen is an output device that displays information. To learn that a CPU contains the computer 'brain'. To be able to explain that a CPU processes instructions given by input devices. To be able to explain that a CPU gives instructions to output devices.	To identify the main parts of a computer. To describe the function of the main parts of a computer. To know that a computer follows instructions. To explain the basic functions of the CPU. To explain the basic function of the memory. To describe a simple relationship between the parts of a computer. To name a sound file format, for example .mp3. To know that sound and video files are stored on a digital device. To name a video file format, for example .mov. To explain the basic function of the hard drive. To discuss that a hard drive stores data and form analogies with other data storage devices. To name common uses of technology within school. To name common uses of technology outside of school. To explain why technology is useful in the local environment.	To explain how digital devices function. To identify input and output devices. To recognise how digital devices can change the way we work. To explain how a computer network can be used to share information. To explore how digital devices can be connected. To recognise the physical components of a network.	To describe how networks physically connect to other networks. To recognise how networked devices make up the internet. To outline how websites can be shared via the World Wide Web. To describe how content can be added and accessed on the World Wide Web. To recognise how the content of the WWW is created by people. To evaluate the consequences of unreliable content.	To identify how to use a search engine. To describe how search engines select results. To explain how search results are ranked. To recognise why the order of results is important, and to whom. To recognise how we communicate using technology. To evaluate different methods of online communication.	

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	Nursery	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Coding And Programming	Match their developing physical skills to tasks and activities in the setting. Explore how things work.	Be able to switch devices on and off. Take a photo of a particular item/person. Expressive arts Story writing through the use of multimedia tools. -Include their own voice recording and musical sounds. Understanding the world -Use paint projects to explore different celebrations. -Purposeful selection of colours. -Purposeful mark making. Begin to understand how instruct using Bee Bots.	To identify incorrectly sequenced instructions. To predict what will happen if incorrectly sequenced instructions are followed. To sequence instructions into the correct order. To learn that an 'algorithm' is a term used to describe a sequence of instructions for a computer to follow. To understand why algorithms should be accurate. To identify and correct errors in sequencing. To know and understand the term 'debugging'. To know what a flowchart is and understand how it can be followed. To rearrange a simple flowchart into the correct order. To debug their own and others' flowcharts. To identify and represent repetition in a flowchart. To be able to explain that an algorithm is a term used to describe a sequence of instructions. To be able to debug algorithms. To control an onscreen device. To predict what will happen when controlling an onscreen device. To begin to understand that a computer program executes an algorithm. To be able to spot errors and debug instructions to achieve specific goals.	To know what a flowchart is and understand how it can be followed. To arrange a simple flowchart into the correct order. To use 'repeat', 'repeat until' and 'wait until' instructions within a flowchart. To debug their own and others' flowcharts. To be able to identify algorithms represented in flowcharts that will create 2D shapes. To identify and correct errors in flowchart algorithms. To begin to understand that computers use programs to implement algorithms. To control an onscreen device. To give instructions accurately to an onscreen device. To begin to understand that a computer program executes an algorithm. To be able to spot errors and debug algorithms and programs. To understand that a programmable robot can be controlled by pressing buttons. To predict what will happen when programming a floor robot. To identify and correct errors in programs (debugging). To test and debug a programmed algorithm to achieve an intended goal. To explain verbally how they chose the best algorithm and programmed their robot.	To explore a new programming environment (Scratch) To identify that commands have an outcome To explain that a program has a start. To recognise that a sequence of commands can have an order. To change the appearance of a project. To create a project from a task description To explain that animation is a sequence of drawings or photographs. To relate animated movement with a sequence of images To plan an animation To identify the need to work consistently and carefully. To review and improve an animation. To evaluate the impact of adding other media to an animation To explain how a sprite moves in an existing project. To create a program to move a sprite in four directions. To adapt a program to a new context. To develop my program by adding features. To identify and fix bugs in a program. To design and create a maze-based challenge.	To identify that accuracy in programming is important. To create a program in a text-based language. To explain what 'repeat' means. To modify a count-controlled loop to produce a given outcome. To decompose a program into parts / chunks. To create a program that uses count-controlled loops to produce a given outcome. To be able to program an Edison robot using barcodes. To us EdBlocks to write simple sets of code for Edison robots. To be able to use 'loop' command blocks and different outputs.	To understand what visual programming is. To investigate and evaluate the features of a programming software. To program Kodu using 'when' and 'do' instructions. Top use tools and features to create an original landscape. To program a character to be controlled around a custom track to reach a goal. To program a character to follow an automatic path. To be able to use EdScratch to create coding to program a robot. To edit variables so that programming becomes more accurate and the robot completes its journey. To debug algorithms if mistakes occur so that the robot is able to complete the given task. To use loop coding blocks to allow a set of instructions to be repeated until a given time. To define a 'variable' as something that is changeable. To explain why a variable is used in a program. To choose how to improve a game by using variables. To design a project that builds on a given example.	To learn the fundamentals of visual coding and problem solving. To program a personalised version of a popular platform game. To evaluate a range of different types of programming through short gaming experiences. To use EdScratch alongside a secondary device (remote control/ barcode) to program and control a robot(s). To edit variables so that programming becomes more accurate and the robot completes its task successfully. To debug algorithms if mistakes occur so that the robot is able to complete given tasks. To use loop coding blocks to allow a set of instructions to be repeated until a given time.

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	Nursery	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Online Safety	Remember rules without needing an adult to remind them.	Recognise that anyone can say no to somebody who makes them feel sad, uncomfortable, embarrassed or upset. Recognise ways to use the internet to communicate. Describe ways that some people can be unkind online and offer examples of how this can make others feel. Understand how to use the internet to find information and identify devices to use. Identify rules that help keep us safe and healthy in and beyond the home when using technology. Identify some simple examples of my personal information and can describe who would be trustworthy to share this information with.	To identify and discuss how to stay safe at different physical locations. To begin to understand how to stay safe when online. To understand how to behave positively with others when face-to-face and online. To create a memorable password that is not easily identified by others. To understand why passwords need to be kept private. To stay safe by accurately entering the website address. To understand what to do if they visit a website they don't recognise. To begin to understand how to stay safe when online. To discuss people who are not friends, who they might meet online. To know that online friends should behave kindly and if they upset you, tell someone. To say why it is important to name and date my work. To begin to decide what needs copyright. To be able to select and use safe search filters. To know to speak to a trusted adult if I see, hear or read something online that upsets me. To be able to spot when something online might not be safe. To be able to make links between the offline and online world. To recognise what personal information can affect my safety. To know who to tell if someone asks for my personal information. To say why email is a good way of communicating. To suggest ways to use email safely. To know what to do if an email is received from someone unknown. To recognise potential dangers online. To guide others to make safe choices online.	To discuss people who are not friends that they might meet online. To know that an avatar is a picture to represent a person online. To know that an avatar is a way of protecting identity online. To discuss the differences between collaborating when face-to-face and when online. To respect the views of others. To explain how comments can be misunderstood when online compared with face-to-face. To know who to go to for help and support when they have concerns about content on the internet. To begin to understand how to stay safe when online. To identify what to do when a friend upsets them – tell someone. To explain what 'digital footprint' means. To explain how other people might use the information I put online. To identify which keywords provide good search results. To be able to use a website to search for information. To identify websites that are suitable for my age. To know what to do if a website makes me feel uncomfortable in any way. To be able to explain likes and dislikes about a website. To be able to use clues to decide who a website is aimed at. To be able to identify unkind online behaviour. To know what to do if someone is being unkind to me online. To be able to safely search for information online. To be able to choose appropriate websites for my age.	To recognise cyberbullying. To identify a safe person to tell if cyberbullying is encountered. To know that cyberbullying can happen via a range of devices. To identify adverts online. To identify a targeted advert. To explore how companies use websites to promote products. To create a strong password. To explain why a strong password is important. To explain what privacy settings are. To identify an email that should not be opened. To know how to safely send an email. To know how to safely receive an email. To identify different forms of online communities. To identify the positive and negative aspects of an online community. To use online safety knowledge to plan a party using online methods.	To know how to respond to hurtful messages online. To edit own messages to make sure I am not being unkind. To access a trusted search engine. To use strategies which improve results when searching online. To explain how to use other people's work respectfully. To explain what a citation is. To explain why plagiarism is harmful. To identify information that should not be shared online. To know why it is dangerous to share some information online. To understand why some websites ask for registration information. To explain what digital citizenship is. To explain how to be a good citizen in real life. To apply understanding of online safety to write a guide.	To look at the sender and subject to spot a spam email. To identify the potential dangers of spam email. To know what to do with spam emails. To explain why it is important to cite a source. To cite a website. To follow a citation to access an online resources. To explain the rules for creating a strong password. To explain why having a strong password is important. To recognise changes that have been made to an original photograph. To digitally alter a photograph. To understand not everything seen online is true. To understand how fake photographs can make people feel bad about themselves. To explain how to stay safe online. To give examples of unsafe online behaviour. To explain how to apply online safety rules to a given scenario. To explain how to stay safe online. To give examples of unsafe behaviour.	To say what bullying and cyberbullying are. To suggest ways in which people could deal with cyberbullying. To know why cyberbullying can be as harmful as in-person bullying. To look in the address bar of a website so check for security. To identify the lock symbol in an address bar. To find a link to a privacy policy. To understand why I should ask an adult if I am unsure. To identify warning signs that a website might not be secure. To identify personal information. To explain why someone might have an online Friendship. To explain what to do if I am asked or told something online which makes me. Uncomfortable. To explain some of the dangers of revealing personal information to an online friend. To know what a stereotype is. To understand how a stereotype can be harmful. To compare gender stereotypes. To identify a gender stereotype in a media message. To identify a situation I should be careful in online. To choose an appropriate action online to stay safe. To know what the SMART acronym means. To use knowledge of online safety to create a multiple-choice quiz. To support others in their understanding of online safety.

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	KS1	Lower KS2	Upper KS2
Multimedia Text and Images	Children begin to understand the particular purposes technology can be used for and that by adding text and images you can communicate with technology. Children develop their skills in typing, selecting tools and organising information. **KS1 Computing National Curriculum** Children use technology purposefully to create, organise, store, manipulate and retrieve digital content. Children can: a add text strings, text boxes and show and hide objects and images, manipulating the features. b use various tools, such as brushes, pens, eraser, stamps and shapes, and set the size, colour and shape. c use applications and devices in order to communicate ideas, work, messages and demonstrate control. d save, retrieve and organise work. use key vocabulary to demonstrate knowledge and understanding in this strand: paint, colour, brush, tools, settings, undo, redo, text, image, size, poster, launch, application, software, window, minimise, restore, size, move, screen, close, click, drag, log on, log off, keyboards, keys, mouse, click, button, double click, drag, present.	Children develop their skills of formatting using keyboard commands, organising their work to demonstrate effect. In LKS2, they will have the opportunity to express themselves more through digital technology, art, PowerPoint and posters. Children should continue to demonstrate control when operating tools as in KS1. **KS2 Computing National Curriculum** Children understand computer networks, including the internet; how they can provide multiple services, such as the world wide web, and the opportunities they offer for communication and collaboration. They 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. Children can: a create different effects with different technological tools, demonstrating control. b use appropriate keyboard commands to amend text on a device. c use applications and devices in order to communicate ideas, work, and messages. d save, retrieve and evaluate work, making amendments. e insert a picture/text/graph/hyperlink from the internet or a personal file. f use key vocabulary to demonstrate knowledge and understanding in this strand: draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck.	Children begin to look at new software, creating 3D models and learning how to orbit, zoom and develop their editing skills further. They become more confident in inserting links, images and formatting text to create effect. **KS2 Computing National Curriculum** Children 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. Children can: a use the skills already developed to create content using unfamiliar technology. b select, use and combine the appropriate technology tools to create effect. c review and improve their own work and support others to improve their work. d save, retrieve and evaluate their work, making amendments. e insert a picture/text/graph/hyperlink from the internet or personal file. use key vocabulary to demonstrate knowledge and understanding in this strand: window, layout, text, font, colour, format, heading, hyperlink, 2D shape, 3D shapes, orbit, pan, zoom, eraser, dimension, measurement, guide.
Multimedia Sound and Motion	Children begin to develop their creativity using technology through recording sound. Children will also begin to develop their editing skills and control of the tools. **KS1 Computing National Curriculum** Children use technology purposefully to create, organise, store, manipulate and retrieve digital content. Children can: a use software to record sounds. b change sounds recorded. c save, retrieve and organise work. use key vocabulary to demonstrate knowledge and understanding in this strand: commands, add sound.	Children develop their editing skills further by cropping, organising and arranging film clips. They are able to share work and offer feedback and ideas for improvement with animation and film, giving their opinion on which software to use. In LKS2, children also look at the history of animation and reflect upon the changes over time. **KS2 Computing National Curriculum** Children 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. Children can: a use software to record, create and edit sounds and capture still images. b change recorded sounds, volume, duration and pauses. c use software to capture video for a purpose. d crop and arrange clips to create a short film. e plan an animation and move items within each animation for playback. use key vocabulary to demonstrate knowledge and understanding in this strand: audio, sound, video, movie, embed, link, file format, animate, animation, still image, flip book, frame, onion skinning, loop, frame rate, record, stop, play, stop motion, stop frame.	Children begin to look more into multimedia broadcasting, learning new skills including recording jingles, podcasts and narration. They become more confident in post-production with editing, trimming and refining their work based on plans they have made. **KS2 Computing National Curriculum** Children 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. Children can: a collect audio from a variety of resources including own recordings and internet clips. b use a digital device to record sounds and present audio. c trim, arrange and edit audio levels to improve quality. d publish their animation and use a movie editing package to edit/refine and add titles. use key vocabulary to demonstrate knowledge and understanding in this strand: audio, record, edit, play stop, skip, waveform, input, output, record, edit, play podcast, digital content, downloadable, backing track, voiceover, mute, gain, production, post-production, documentary, project, evaluation, screening, ceremony, upload.
Handling Data		Children begin to explore expressing information in tables, sorting and organising information for others to be able to understand. **KS2 Computing National Curriculum** Children 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. Children can: a talk about the different ways data can be organised. b sort and organize information to use in other ways. c search a ready-made database to answer questions. use key vocabulary to demonstrate knowledge and understanding in this strand: Google Docs, insert, table.	Data Handling in UKS2 focuses on selecting the correct method to display data and using software such as spreadsheets. Children also learn how to check the accuracy of data and compare data for a specific purpose. **KS2 Computing National Curriculum** Children 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. Children can: d construct data on the most appropriate application. e know how to interpret data, including spotting inaccurate data and comparing data. f use keyboard shortcuts and functions to input data on spreadsheets and create formulas for spreadsheets. g add data to an existing database. use key vocabulary to demonstrate knowledge and understanding in this strand: Google Docs, insert, table, spreadsheet, cell, row, column, formula/formulas, calculate, format, edit, insert, ascending, descending.

Technology In Our Lives	Children begin to make links to how they use technology outside of the classroom. They begin to think about the benefits of using technology in their lives, making links to learning about online safety. **KS1 Computing National Curriculum** Children recognise common uses of technology beyond school. They use technology safely and respectfully, keeping personal information private; they identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. Children can: a recognise ways that technology is used in the home and community, e.g. taking photos, blogs, shopping. b use links to websites to find information. c recognise age-appropriate websites. d use safe search filters. use key vocabulary to demonstrate knowledge and understanding in this strand: filter, Google, search engine, image, keyboard, email, internet, subject, address, communicate, sender, safe, secure.	Children refer to online safety rules when discussing technology in their lives. They are able to navigate between websites and use safe search terms on trusted search engines. They become more confident in using email for communication, including attaching and saving files from emails. **KS2 Computing National Curriculum** Children understand computer networks, including the internet; how they can provide multiple services, such as the world wide web, and the opportunities they offer for communication and collaboration. They use search technologies effectively, appreciate how results are selected and ranked, and are discerning in evaluating digital content. Children can: a explain ways to communicate with others online. b describe the world wide web as the part of the internet that contains websites. c add websites to a favourite list. d use search tools to find and use an appropriate website and content. e use strategies to improve results when searching online. use key vocabulary to demonstrate knowledge and understanding in this strand: filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media.	Children can use safe search terms on trusted search engines, and evaluate websites based on layout and information. They become more confident in understanding Google rankings, adverts and the reliability of websites. **KS2 Computing National Curriculum** Children understand computer networks, including the internet; how they can provide multiple services, such as the world wide web, and the opportunities they offer for communication and collaboration. They use search technologies effectively, appreciate how results are selected and ranked, and are discerning in evaluating digital content. Children can: a search for information using appropriate websites and advanced search functions within Google. b use strategies to check the reliability of information (cross-check with another source such as books). c talk about the way search results are selected and ranked. d check the reliability of a website, including the photos on site. e tell you about copyright and acknowledge the sources of information. use key vocabulary to demonstrate knowledge and understanding in this strand: world wide web, search, search engine, advanced search, results, Google, browser, terms of use, bias, authority, citation, plagiarism, source, website, secure, https, site, domain, website, browser, address bar.
Coding And Programming	Children begin to understand their influence on technology by developing their programming skills to determine output. They begin to understand that an algorithm is a series of steps for solving problems and a code is a series of steps that machines can execute. They begin to explore debugging, predicting when codes may not work and changing them. **KS1 Computing National Curriculum** Children understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions. They create, debug and use logical reasoning to predict the behaviour of simple programs. Children can: a give commands one at a time to control direction and movement, including straight, forwards, backwards, turn. b control the nature of events: repeat, loops, single events and add and delete features. c give a set of instructions to follow and predict what will happen. d improve/change their sequence of commands by debugging. use key vocabulary to demonstrate knowledge and understanding in this strand: algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, blocks, sequence, project, repeat, repeat forever, invisible, grow, shrink.	Children build on their programming skills by solving problems and programming commands to achieve a specific outcome. They begin to write programs, explain algorithms and identify errors in their work. **KS2 Computing National Curriculum** Children design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; they solve problems by decomposing them into smaller parts. They use sequence, selection, and repetition in programs and work with variables and various forms of input and output. They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Children can: a use logical thinking to solve an open-ended problem by breaking it up into smaller parts. b write a program, putting commands into a sequence to achieve a specific outcome. c give a set of instructions to follow and predict what will happen. d keep testing a program and recognise when it needs to be debugged. e use variables to create an effect, e.g. repetition, if, when, loop. use key vocabulary to demonstrate knowledge and understanding in this strand: decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable.	Children build on their programming skills by using new systems such as a flowchart. They continue to break down problems and create algorithms to solve them. They are able to explain the outcome of an algorithm with confidence and accuracy. **KS2 Computing National Curriculum** Children design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; they solve problems by decomposing them into smaller parts. They use sequence, selection, and repetition in programs and work with variables and various forms of input and output. They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Children can: a use external triggers and infinite loops to demonstrate control. b follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols. c use conditional statements and edit variables. d decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program. e keep testing a program and recognise when it needs to be debugged. use key vocabulary to demonstrate knowledge and understanding in this strand: flowchart, algorithm, control, output, symbol, start, stop, delay, process, decision, loop, backdrop, script, block, repeat, commentary, sequence, consequence, debug, program, Kodu, world, object, tool palette, program environment, smooth, flatten, raise.
Online Safety	Children begin to consider their activity on the internet and learn about ways to keep themselves safe and why it is important to do so. They also compare appropriate and inappropriate activity on the internet and decide what to do next. **KS1 Computing National Curriculum** Children can use technology safely and respectfully, keeping personal information private; they identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. Children can: a identify what things count as personal information. b identify what is appropriate and inappropriate behaviour on the internet. c agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords. d seek help from an adult when they see something that is unexpected or worrying. e demonstrate how to safely open and close applications and log on and log off from websites. use key vocabulary to demonstrate knowledge and understanding in this strand: safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, key, question, tell, safe, share, stranger, danger, internet.	Children become more aware of their digital footprint by reflecting on their experience on the internet. They are able to understand more about age-appropriate websites and adverts and how adverts are used by companies. Children are also introduced to the concept of plagiarism and citation. **KS2 Computing National Curriculum** Children use technology safely, respectfully and responsibly. They recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content and contact. Children can: a reflect on their own digital footprint and behaviour online. b identify what is appropriate and inappropriate behaviour on the internet, recognising the term cyberbullying. c agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords. d seek help from an adult when they see something that is unexpected or worrying. e demonstrate understanding of age-appropriate websites and adverts. use key vocabulary to demonstrate knowledge and understanding in this strand: safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying/bullying, plagiarism, profiles, account, private, public.	Children are encouraged to identify online risks and share their knowledge of the risks and consequences for people online. They begin to think more critically about what they see online and look at the concept of fake news and false photographs. **KS2 Computing National Curriculum** Children use technology safely, respectfully and responsibly. They recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content and contact. Children can: a protect their password and other personal information. b be a good online citizen and friend. c judge what sort of privacy settings might be relevant to reducing different risks. d seek help from an adult when they see something that is unexpected or worrying. e discuss scenarios involving online risk. use key vocabulary to demonstrate knowledge and understanding in this strand: spam, link, privacy, virus, scam, phishing, inbox, junk, sender, subject, secure, safe, account, online, private, social media, adverts, cyberbullying, reporting, anonymous, victim, fraud/fraudulent, policy, private/personal.

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