



			<p>we Control) (Action algorithms) (Programming Direction) (Exploring Digital Sound)</p> <p>Recognises that all software executed on digital devices is programmed. (Exploring Machines we Control.) (Action algorithms) (Programming Direction) (Exploring Digital Sound)</p>	<p>instructions. (Programming with ScratchJnr)</p> <p>Understands that computers have no intelligence and that computers can do nothing unless a programme is executed (Programming with ScratchJnr) (Programming with Logo)</p> <p>Recognises that all software executed on digital devices is programmed. (Programming with ScratchJnr) (Programming with Logo)</p>	<p>Recognises that a range of digital devices can be considered a computer. (Lego WeDo)</p> <p>Recognises and can use a range of input and output devices. Understands how programs specify the function of a general purpose computer. (Lego WeDo) (Programming Scratch Maze Games) (Getting started with Kodu)</p> <p>Creates programs that implement algorithms to achieve given goals. (Lego WeDo)</p> <p>Uses diagrams to express solutions. (real life algorithms)</p> <p>Declares and assigns variables. (Lego WeDo)</p> <p>Knows that computers collect data from various input devices, including sensors and application software. (Lego WeDo)</p>	<p>(Lego WeDo – Give it a scratch)</p> <p>Shows an awareness of tasks best completed by humans or computers. Knows that computers collect data from various input devices, including sensors and application software. (Lego WeDo - Give it a scratch) (Kodu Sports)</p> <p>Recognises that different solutions exist for the same problem. (Lego WeDo - Give it a scratch) (Kodu Sports)</p> <p>Understands the difference between, and appropriately uses if and if, then and else statements. (Kodu Sports)</p> <p>Uses a variable and relational operators within a loop to govern termination. (Lego WeDo - Give it a scratch) (Kodu Sports)</p>	<p>(Programming Robots) (Raspberry Pi)</p> <p>Uses post-tested loop e.g. ‘until’ and a sequence of selection statements in programs, including an if, then and else statement. (Kodu – 3D Pac Man)</p> <p>Understands the difference between, and appropriately uses if and if, then and else statements. (Kodu – 3D Pac Man)</p> <p>Uses a variable and relational operators within a loop to govern termination (Kodu – 3D Pac Man) (Programming Robots)</p> <p>Knows that computers collect data from various input devices, including sensors and application software. (What is a computer?)</p> <p>Understands the difference between hardware and application software, and their roles within a computer system (What is a computer?)</p> <p>Understands the difference between hardware and application software, and their roles within a computer system (Raspberry Pi) (Kodu – 3D Pacman)</p> <p>Understands why and when computers are</p>	<p>(decomposition). (Raspberry Pi)</p> <p>Understands the difference between, and appropriately uses if and if, then and else statements. (Sonic Pi)</p> <p>Uses a variable and relational operators within a loop to govern termination (Sonic Pi)</p> <p>Designs, writes and debugs modular programs using procedures. (Sonic Pi)</p> <p>Understands why and when computers are used. (Inside the Internet)</p> <p>Understands that iteration is the repetition of a process such as a loop (Raspberry Pi) (Sonic Pi)</p> <p>Represents solutions using a structured notation (Sonic Pi)</p> <p>Has practical experience of a high-level textual language, including using standard libraries when programming. (Sonic Pi)</p> <p>Uses a range of operators and expressions e.g. Boolean, and applies them in the context of program control. (Raspberry Pi)</p>
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							<p>used. (What is a computer?)</p> <p>Understands the main functions of the operating system (What is a computer?)</p>	<p>Defines data types: real numbers and Boolean. (Raspberry Pi)</p> <p>Knows that digital computers use binary to represent all data. (Raspberry Pi)</p> <p>Understands how bit patterns represent numbers and images (Raspberry Pi)</p> <p>Knows that computers transfer data in binary. (Raspberry Pi)</p> <p>Understands the relationship between binary and file size (uncompressed) (Raspberry Pi)</p> <p>Recognises and understands the function of the main internal parts of basic computer architecture. (Raspberry Pi)</p> <p>Understands how to construct static web pages using HTML and CSS. (Inside the Internet)</p> <p>Understands data transmission between digital computers over networks, including the internet i.e. IP addresses and packet switching. (Inside the Internet)</p>
IT	Develop fine motor control through activities such as drawing with	Uses known buttons on a keyboard to type for purpose. E.g own name, simple	Recognises that digital content can be represented in many forms. (An intro to digital art)	Recognises that digital content can be represented in many forms. (Intro to Animation)	Recognises different types of data: text, number. (Databases)	Shows an awareness of, and can use a range of internet services, e.g. VOIP. Collects, organises	Understands the difference between data and information. (What is a computer?)	Uses a variety of software to manipulate and present digital content: data and information.

	<p>a tennis ball and paint to represent a mouse, and finger painting to develop controlled double clicks</p> <p>Explores the keyboard and mouse and what happens when buttons are pressed.</p> <p>With adult support is able to use and interact with simple software on the IWB or computer.</p>	<p>words and sentences.</p> <p>Write and draw using simple software with control using a mouse and on an IWB using the pen.</p> <p>Uses simple software with adult support to close a window or open a clean page.</p> <p>Knows that work can be saved or retrieved and works with an adult to do this</p> <p>Understands that information can be recorded through photographs, videos and writing using technology</p> <p>Chooses technology for a purpose and can explain choices.</p>	<p>(Making multimedia stories) (Exploring Digital Sound)</p> <p>Distinguishes between some of these forms and can explain the different ways that they communicate information. (An intro to digital art) (Making multimedia stories)</p> <p>Uses software under the control of the teacher to create, store and edit digital content using appropriate file and folder names. (An intro to digital art) (Making multimedia stories) (Exploring Digital Sound)</p> <p>Understands that people interact with computers. Talks about their work and makes changes to improve it. (An intro to digital art) (Making multimedia stories) (Exploring Digital Sound)</p>	<p>(Finding &amp; Presenting Information) (Writing in Different Styles) (Beginning to Present)</p> <p>Recognises different types of data: text, number. (Finding &amp; Presenting Information)</p> <p>Appreciates that programmes can work with different types of data. (Finding &amp; Presenting Information)</p> <p>Recognises that data can be structured in tables to make it useful. (Finding &amp; Presenting Information)</p> <p>Distinguishes between some of these forms and can explain the different ways that they communicate information. (Intro to Animation) (Finding &amp; Presenting Information) (Writing in Different Styles) (Beginning to Present)</p> <p>Obtains content from the world wide web using a web browser. (Finding &amp; Presenting Information)</p> <p>Recognises and can use a range of input and output devices. Navigates the web and can carry out</p>	<p>Understands the difference between data and information. (Databases)</p> <p>Appreciates that programmes can work with different types of data. (Databases)</p> <p>Recognises that data can be structured in tables to make it useful. (Databases)</p> <p>Knows why sorting data in a flat file can improve searching for information. (Databases)</p> <p>Uses filters or can perform single criteria searches for information. (Databases)</p> <p>Uses a variety of software to manipulate and present digital content; data and information. (Databases) (Communication &amp; Collaboration)</p> <p>Shares their experiences of technology in school and beyond the classroom. (Communication &amp; Collaboration)</p> <p>Shows an awareness of, and can use a range of internet services, e.g. VOIP. Collects, organises and presents data and information in digital</p>	<p>and presents data and information in digital content. (Searching the Web) (Collaborative Websites)</p> <p>Creates digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience. E.g. Blogging. (Searching the Web) (Collaborative Websites) (3D Design – Sketch Up)</p> <p>Makes appropriate improvements to solutions based on feedback received, and can comment on the success of the solution. (Collaborative Websites) (3D Design – Sketch Up)</p> <p>Recognises the audience when designing and creating digital content. (Searching the Web) (Collaborative Websites)</p> <p>Uses criteria to evaluate the quality of solutions, can identify improvements making some refinements to the solution, and future solutions. (Lego WeDo - Give it a scratch) (Kodu Sports)</p>	<p>Knows why sorting data in a flat file can improve searching for information. (Collecting, testing and presenting data)</p> <p>Uses filters or can perform single criteria searches for information. (Collecting, testing and presenting data)</p> <p>Shows an awareness of, and can use a range of internet services e.g. VOIP. Collects, organises and presents data and information in digital content. (Collecting, testing and presenting data)</p> <p>Creates digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience e.g. blogging. (Collecting, testing and presenting data)</p> <p>Makes appropriate improvements to solutions based on feedback received, and can comment on the success of the solution. (Manipulating Sound)</p> <p>Analyses and evaluates data and information, and recognises that poor quality data leads to unreliable results, and inaccurate conclusions. (Collecting, testing</p>	<p>(Manipulating Images) (Video Editing)</p> <p>Shares their experiences of technology in school and beyond the classroom. (Manipulating Images)</p> <p>Talks about their work and makes improvements to solutions based on feedback received. (Manipulating Images) (Video Editing)</p> <p>Makes appropriate improvements to solutions based on feedback received, and can comment on the success of the solution. (Manipulating Images) (Video Editing)</p> <p>Knows the difference between physical, wireless and mobile networks. (Inside the Internet)</p> <p>Recognises the audience when designing and creating digital content. (Inside the Internet)</p>
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				<p>simple web searches to collect digital content. (Finding &amp; Presenting Information)</p> <p>Uses software under the control of the teacher to create, store and edit digital content using appropriate file and folder names. (Intro to Animation) (Finding &amp; Presenting Information) (Writing in Different Styles) (Beginning to Present)</p> <p>Uses a variety of software to manipulate and present digital content; data and information. (Finding &amp; Presenting Information)</p> <p>Understands that people interact with computers. Talks about their work and makes changes to improve it. (Intro to Animation) (Finding &amp; Presenting Information) (Writing in Different Styles) (Beginning to Present)</p>	<p>content. (Databases) (Communication &amp; Collaboration)</p> <p>Creates digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience. E.g. Blogging. (Databases) (Communication &amp; Collaboration)</p> <p>Talks about their work and makes improvements to solutions based on feedback received. (Communication &amp; Collaboration)</p> <p>Makes appropriate improvements to solutions based on feedback received, and can comment on the success of the solution. (Communication &amp; Collaboration)</p>		<p>and presenting data.)</p> <p>Knows the difference between physical, wireless and mobile networks. (What is a computer?)</p> <p>Uses criteria to evaluate the quality of solutions, can identify improvements making some refinements to the solution, and future solutions. (Kodu – 3D Pac Man) (Programming Robots)</p> <p>Knows that there is a range of operating systems and application software for the same hardware. (What is a computer?)</p>	
<b>DIGITAL LITERACY</b>	<p>Knows that you can find information on the internet.</p> <p>Can identify things in their house that use technology to</p>	<p>Can make suggestions for what to search for online</p> <p>Can explain how they think something technological</p>	<p>Knows common uses of information technology beyond the classroom. (Exploring Machines we Control.)</p> <p>Shares their use of technology in school.</p>	<p>Understands the importance of communicating safely and respectfully online, and the need for keeping personal information private. (Finding &amp; Presenting Information)</p>	<p>Demonstrates use of computers safely and responsibly, knowing a range of ways to report unacceptable content and contact when online. (Communication &amp; Collaboration)</p>	<p>Demonstrates use of computers safely and responsibly, knowing a range of ways to report unacceptable content and contact when online. (Searching the Web)</p>	<p>Recognises what is acceptable and unacceptable behaviour when using technologies and online services (Collecting, testing and presenting data.)</p>	<p>Makes judgements about digital content when evaluating and repurposing it for a given audience. (Inside the Internet)</p> <p>Demonstrates responsible use of</p>

	<p>work</p> <p>Uses items of technology in role play.</p> <p>Knows which electrical items are safe to touch and those which are not safe.</p> <p>Can use technology when out in the local area such as the button on the pelican crossing or scanning shopping at self service area.</p> <p>Know that they can say no to another child taking their photograph.</p>	<p>works</p> <p>Can explain how they use technology in their house.</p> <p>Can describe how to operate a familiar device such as the washing machine or microwave.</p> <p>Asks permission before taking another person's photograph</p> <p>Know that they can say no to another child taking their photograph.</p> <p>Can ask for help to close pop ups or something they're not sure about.</p>	<p>(Exploring Machines we Control.)</p> <p>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. ( Covered at the beginning of every topic – Safer Internet Day)</p>	<p>(Beginning to Present)</p> <p>Demonstrates use of computers safely and responsibly, knowing a range of ways to report unacceptable content and contact when online. (Finding &amp; Presenting Information)</p> <p>Knows what to do when concerned about content or being contacted. (Finding &amp; Presenting Information) (Programming with ScratchJnr)</p> <p>Shares their use of technology in school. (Programming with ScratchJnr)</p> <p>Shows and awareness for the quality of digital content collected. (Finding &amp; Presenting Information)</p>	<p>Shows and awareness for the quality of digital content collected. (Communication &amp; Collaboration)</p> <p>Recognises what is acceptable and unacceptable behaviour when using technologies and online services. (Communication &amp; Collaboration)</p>	<p>Shows and awareness for the quality of digital content collected. (Searching the Web)</p> <p>Recognises what is acceptable and unacceptable behaviour when using technologies and online services. (Searching the Web) (Collaborative Websites)</p> <p>Makes judgements about digital content when evaluating and repurposing it for a given audience. Demonstrates responsible use of technologies and online services, and knows a range of ways to report concerns. Selects, combines and uses internet services. Understands the potential of information technology for collaboration when computers are networked. (Searching the Web) (Collaborative Websites)</p>		<p>technologies and online services, and knows a range of ways to report concerns. Selects, combines and uses internet services. (Inside the Internet)</p> <p>Understands the potential of information technology for collaboration when computers are networked (Inside the Internet)</p>
<p><b>Teaching Online Safety</b></p> <p>Autumn – E-Safety Spring – Computing Summer – Wellbeing</p>			<p><b>Aut</b> – Unsafe Communication.</p> <p><b>Spr</b> – Personal Data</p> <p><b>Sum</b> – Online vs Offline behaviour</p>	<p><b>Aut</b> – Challenges</p> <p><b>Spr</b> – Password Phishing</p> <p><b>Sum</b> – Impact on quality of life, physical and mental health and relationships.</p>	<p><b>Aut</b> – Fake profiles</p> <p><b>Spr</b> – Age Restrictions Fake websites and scam emails</p> <p><b>Sum</b> – Online vs. offline behaviour</p>	<p><b>Aut</b> – Content which incites</p> <p><b>Spr</b> – Disformation, misinformation and hoaxes. Privacy settings</p> <p><b>Sum</b> – Impact on quality of life, physical and mental</p>	<p><b>Aut</b> – Live streaming.</p> <p><b>Spr</b> – Content – how can it be used and shared? Targeting of online content – including social media and search engines</p> <p><b>Sum</b> – Online vs.</p>	<p><b>Aut</b> – Abuse (online) Grooming</p> <p><b>Spr</b> – Fraud (online) Persuasive design</p> <p><b>Sum</b> – Impact on confidence – including body confidence</p>

						health and relationships.	offline behaviours	
Organisation and Communication			<b>Aut 1</b> – Action Algorithms	<b>Aut 1</b> – Programming with Logo	<b>Aut 1</b> – Real life algorithms	<b>Aut 1</b> – Scratch – programming animation	<b>Aut 1</b> – Programming Robots	<b>Aut 1</b> – Sonic Pi
			<b>Aut 2</b> – An intro to digital art.	<b>Aut 2</b> – Intro to Animation	<b>Aut 2</b> – Lego WeDo	<b>Aut 2</b> – Lego WeDo – Give it a scratch	<b>Aut 2</b> – Manipulating Sound	<b>Aut 2</b> – Manipulating Images
			<b>Spr 1</b> – Exploring Machines we control.	<b>Spr 1</b> – Finding & Presenting Information	<b>Spr 1</b> – Databases	<b>Spr 1</b> – Searching the Web	<b>Spr 1</b> – Collecting, testing, presenting data.	<b>Spr 1</b> – Video Editing
			<b>Spr 2</b> – Programming Direction	<b>Spr 2</b> – Programming with Scratch Jnr	<b>Spr 2</b> – Programming with Scratch – Maze Games	<b>Spr 2</b> – 3D Design – Sketch up	<b>Spr 2</b> – Raspberry Pi	<b>Spr 2</b> – SATS
			<b>Sum 1</b> – Making multimedia stories	<b>Sum 1</b> – Writing in different styles	<b>Sum 1</b> – Getting started with Kodu	<b>Sum 1</b> – Kodu Sports	<b>Sum 1</b> – Kodu 3D Pac Man	<b>Sum 1</b> – Raspberry Pi
			<b>Sum 2</b> – Exploring digital sound.	<b>Sum 2</b> – Beginning to present	<b>Sum 2</b> – Communication & Collaboration	<b>Sum 2</b> – Collaborative Websites	<b>Sum 2</b> – What is a computer?	<b>Sum 2</b> – Inside the internet
Overarching vocabulary	Control Information Internet Program Technology		Algorithm Data Debug Online Repeat Search Selection Sequence	Browser Computer networks Execute Input Loop Output Software World Wide Web Web browser	Abstraction Block Blocks Palette Browser Command Condition Control Block Costume Decomposition Digital content Evaluation Logic Logical reasoning PageRank Patterns Processor Procedure Repetition (sometimes referred to as ‘iteration’ in upper KS2) Script Scripts area Server Services Simulation Software Sprite Stage Variables		Abstraction Array CPU CSS GPU Hard drive Hardware HTML Iteration List Operating system RAM ROM	