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| **Year 1** | | | | | | | | |
| **Unit of Work** | * 1. **Technology Around us**   **(Computing systems**  **and networks)** | | **1.2 Moving a Robot**  **(Programming)** | | * 1. **Digital Writing**   **(Creating Media)** | | * 1. **Programming Animations**   **(Programming)** | |
| **Prior Learning** | Children have come into contact with examples of technology in their everyday lives. They have interacted with technology in continuous provision. | | Children have experience of giving and following instructions to reach the end of mazes. They also have experience of building and drawing using instructions. | | Children have experience of using physical resources to write. They have experience of reading digital writing. | | Children have constructed models by creating and following their own basic algorithms. They have ‘tinkered’, tested and engaged in debugging while doing so. | |
| **Core Learning** | * Locate examples of technology in the classroom and explain how these technology examples help us. * Identify a computer and its main parts. * Use a mouse in different ways. * Use a keyboard to type on a computer. * Use the keyboard to edit text. * Create rules for using technology responsibly | | * Explain what a given command will do. * Act out a given word. * Combine forwards and backwards commands to make a sequence. * Combine four direction commands to make sequences. * Can predict the outcome of a sequence involving up to four commands. * Plan a simple program. * Find more than one solution to a problem. | | * Use a computer to write. * Add and remove text on a computer. * Use Backspace to remove text. * Identify that the look of text can be changed on a computer. * Make careful choices when changing text. * Explain why I used the tools that I chose. * Compare typing on a computer to writing on paper. | | * Choose a command for a given purpose. * Show that a series of commands can be joined together. * Identify the effect of changing a value. * Explain that each sprite has its own instructions. * Design the parts of a project. * Use my algorithm to create a program. | |
| **Vocabulary** | Technology, Computer, Mouse, Trackpad, Keyboard, Screen, Double-click, Typing. | | Forwards, Backwards, Turn, Clear, Commands, Instructions, Directions, Plan, Algorithm, Program, Route | | Word processor, Typing, Keyboard, Keys, Letters, Type, Numbers, Space, Backspace, Text cursor, Toolbar, Select, Font, Undo, Redo, Format | | ScratchJr, Bee-Bot, Command, Sprite, Programming, Programming area, Block, Joining, Start block, Run, Reset, Algorithm, Predict, Effect, Value | |
| **Resources** | **Hardware**  Laptops | **Software**  Paintz | **Hardware**  Bee-Bot | **Software** | **Hardware**  Laptops | **Software**  Microsoft Word | **Hardware**  Tablet | **Software**  ScratchJr |
| **Application Task** | Create a self-portrait using a painting application that is labelled with a name. | | Use knowledge of algorithms to direct a robot through multiple routes in a physical space. | | Use a word processing to create a poster that utilises different text types. | | Create an animation involving movement of sprites using an animation program. | |

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| **Year 2** | | | | | | | | |
| **Unit of Work** | **2.1 Information Technology Around us**  **(Computing systems**  **and networks)** | | **2.2 Digital Photography**  **(Creating Media)** | | **2.3 Robot Algorithms**  **(Programming)** | | **2.4 Programming Quizzes**  **(Programming)** | |
| **Prior Learning** | Children are familiar with example of technology around school. They can name parts of a computer. They have experience at using a trackpad, mouse and keyboard. | | Children have experience of viewing photographs. Children may have experience of taking photographs using technology at home. | | Children have experience of  creating short programs and predicting the outcome of a simple program – (Year 1 Computing) | | Children have an understanding of instructions in sequences and the use of logical reasoning to predict outcomes - (Year 1 and Year 2 Computing) | |
| **Core Learning** | * Identify examples of computers * Describe some uses of computers * Identify examples of IT * Talk about uses of information technology * Recognise common types of technology * List different uses of information technology * Talk about different rules for using IT * Use IT for different types of activities | | * Recognise what devices can be used to take photographs * Take photos in both landscape and portrait format * Improve a photograph by retaking it * Recognise that images can be changed * Apply a range of photography skills to capture a photo * Use a tool to achieve a desired effect * Identify which photos are real and which have been changed | | * Follow instructions given by others * Give clear and unambiguous instructions * Create different algorithms for a range of sequences * Predict the outcome of a sequence * Plan algorithms for different parts of a task * Test and debug parts of a program * Put together the different parts of a program | | * Identify the start of a sequence * Show how to run a program * Predict and change the outcome of a sequence of commands * Match two sequences with the same outcome * Create a program using a given design * Create a program using an original design * Improve a project by adding features * Engage in debugging | |
| **Vocabulary** | Information technology (IT), Computer, Barcode, Scanner/Scan, | | Device, Camera, Photograph, Capture, Image, Digital, Landscape, Portrait, Framing, Subject, Compose, Light Sources, Background, Editing, Filter, Format, Focus | | Instruction, Sequence, Algorithm, Program, Order, Commands, Prediction, Design, Route, Debugging | | Sequence, Command, Program, Run, Start, Outcome, Predict, Program, Blocks, Sprite, Project, Modify, Change, Build, Match, Debug, Evaluate | |
| **Resources** | **Hardware**  Laptops | **Software**  Microsoft PowerPoint | **Hardware**  Digital Camera  Laptops  iPads | **Software** | **Hardware**  Bee-Bot | **Software** | **Hardware**  iPads | **Software**  ScratchJr |
| **Application Task** | Record a positive audio note for others. Paint a digital picture for others. Take a phot that could be safely shared with others. | | Take a photo using a piece of digital technology and modify the image using a range of effects and filters. | | Design, test and debug a program with multiple parts for a robot to traverse a physical space. | | Design an original, interactive quiz using appropriate software. | |

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| **Year 3** | | | | | | | | |
| **Unit of Work** | **3.1 Connecting Computers**  **(Computing systems**  **and networks)** | | **3.2 Sequencing Sounds**  **(Programming)** | | **3.3 Desktop Publishing**  **(Creating Media)** | | **3.4 Events and Actions in Programs**  **(Programming)** | |
| **Prior Learning** | Children are aware of different types of computers and information technology. They are aware of the potential uses of information technology – (Year 2 Computing) | | Children have some prior experience of programming: constructing algorithms for floor robots to follow – (Year 1 and Year 2 Computing) | | Children have early experiences of typing. They also have experience of combing text with images – (Year 1 and Year 2 Computing) | | Children have some prior experience of programming: constructing algorithms for floor robots to follow – (Year 1 and Year 2 Computing) | |
| **Core Learning** | * Explain how digital devices function * Classify input and output devices * identify input and output devices * Recognise similarities and differences between using digital devices and using non-digital tools * Explain how a computer network can be used to share information * Recognise the physical components of a network | | * Identify the objects in a Scratch project * Explain that objects in Scratch have attributes * Recognise that commands in Scratch are represented as blocks * Identify that commands have an outcome * Create a program following a design * Build a sequence of commands * Decide the actions for each sprite in a program * Implement an algorithm as code | | * Recognise how text and images convey information * Change font style, size, and colours * Edit text * Explain what ‘page orientation’ means * Recognise placeholders and say why they are important * Create a template * Paste text and images to create a magazine cover * Identify the uses of desktop publishing in the real world | | * Explain how a sprite moves in an existing project * Create a program to move a sprite in four directions * Use a programming extension * Adapt a program to a new context * Choose suitable keys to turn on additional features * Identify and fix bugs in a program | |
| **Vocabulary** | Digital device, Input, Process, Output, Program, Digital, Non-digital, Connection, Network, Network switch, Server, Wireless access point, Network cables, Network sockets | | Scratch, Programming, Blocks, Commands, Code, Sprite, Motion, Turn, Point in direction, Go to, Glide, Sequence, Code, Run, Order, Note, Chord, Design, Algorithm, Bug, Debug | | Text, Images, Communicate, Font, Font style, Template, Landscape, Portrait, Orientation, Placeholder, Layout, Desktop publishing, Copy, Paste | | Motion, Event, Sprite, Algorithm, Logic, Move, Resize, Extension Block, Pen up, Set up, Action, Design, Debugging, Errors, | |
| **Resources** | **Hardware**  Laptops | **Software**  Paintz | **Hardware**  Laptops | **Software**  Scratch | **Hardware**  Laptops | **Software**  Adobe Spark | **Hardware**  Laptops | **Software**  Scratch |
| **Application Task** | Create a map of the school network showing where the devices of the network are located. | | Use Scratch to create a playable digital piano. | | Use a digital publishing program to create an original magazine cover. | | Design and create a maze-based challenge. | |

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| **Year 4** | | | | | | | | | |
| **Unit of Work** | **4.1 The Internet**  **(Computing systems**  **and networks)** | | **4.2 Repetition in Shapes**  **(Programming)** | | **4.3 Photo Editing**  **(Creating Media)** | | **4.4 Repetition in Games**  **(Programming)** | | |
| **Prior Learning** | Children are aware that computer networks can be used to share information – (Year 3 Computing) | | Children have experience of creating algorithms for robots to follow, (Year 1 and 2 Computing), and of implementing an algorithm as code – (Year 3 Computing) | | Children have some experience at taking and editing photographs using different effects – (Year 2 Computing) | | Children have previous experience of designing and creating programs that includes count-controlled loops – (Year 4 Computing ‘Repetition in Shapes’) | | |
| **Core Learning** | * Describe how networks physically connect to other networks * Recognise how networked devices make up the internet * Outline how websites can be shared via the World Wide Web * Create media which can be found on websites * Recognise how the content of the WWW is created by people * Explain why some information I find online may not be honest, accurate, or legal. | | * Program a computer by typing commands * Create a code snippet * Write and test an algorithm in a text based language * Use a count-controlled loop to produce a given outcome * Predict the outcome of a program containing a count-controlled loop * Modify a count-controlled loop to produce a given outcome * Use a procedure in a program * Design a program that includes count-controlled loops | | * Identify changes that we can make to an image * Change the composition of an image by selecting parts of it * Change images by using a range of effects * Identify how an image has been retouched * Choose appropriate tools to retouch an image * Combine parts of images to create new images * Sort images into ‘fake’ or ‘real’ * Talk about fake images | | * Predict the outcome of a snippet of code * Modify a snippet of code to create a given outcome * Modify loops to produce a given outcome * Choose when to use a count-controlled and an infinite loop * Develop a design that includes two or more loops which run at the same time * Modify an infinite loop in a given program * Design a project that includes repetition * Create and refine a project that includes repetition | | |
| **Vocabulary** | Internet, Network, Router, Network security, Network Switch, Server, Wireless Access Point, Website, Web page, Web address, Browser, Links, Files, Download, Sharing, Ownership, Permission | | Program, Turtle, Commands, Code snippet, Algorithm, Debug, Repetition, Count-controlled loop, Value, Trace, Decompose, Procedure | | Image, Edit, Arrange, Select, Crop, Copyright, Composition, Pixels, Rotate, Flip, Adjustments, Effects, Hue/Saturation, Sepia, Retouch, Clone, Recolour, Adjust, Sharpen, Brighten, Elements, Border, Layer | | Scratch, Programming, Sprite, Blocks, Code, Loop, Repeat, Value, Infinite loop, Count-controlled loop, Animate, Event block, Duplicate, Modify, Design, Repetition, Sprite, Algorithm, Debug, Refine, Evaluate | | |
| **Resources** | **Hardware**  Laptops | **Software**  Various Websites | **Hardware**  Laptops | **Software**  FMSLogo | **Hardware**  Laptops | **Software**  Paint.NET | **Hardware**  Laptops | **Software**  Scratch |
| **Application Task** | Search for the ‘Best Mobile Phone Of The Year’ to determine the validity of internet sources. | | Plan and program a design for wrapping paper that involves a count-controlled loop. | | Create an advert for an imaginary place by editing images to use in the published advertisement. | | Create a playable 2-D game using Scratch. | | |

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| **Year 5** | | | | | | | | |
| **Unit of Work** | **5.1 Systems and Searching**  **(Computing systems**  **and networks)** | | **5.2 Flat-file Database**  **(Data and information)** | | **5.3 Introduction to Vector Graphics**  **(Creating Media)** | | **5.4 Selection in Quizzes**  **(Programming)** | |
| **Prior Learning** | Children are aware that networked devices make up the internet and that websites can be shared via the World Wide Web – (Year 4 Computing) | | Children have experience of gathering and presenting information and data – (various topics of work in subjects such as Maths and Science) | | Children have created digital paintings – (Year 1 Computing). Children have used images in desktop publishing – (Year 3 Computing) | | Children have experience with Scratch and understand the concepts of ‘sequence’ and ‘repetition’ – (Year 5 Computing: ‘Selection in Physical Computing) | |
| **Core Learning** | * Explain that computers can be connected together to form systems * Recognise the role of computer systems in our lives * Recognise that data is transferred using agreed methods * Explain that networked digital devices have unique addresses * Explain that data is transferred over networks in packets * Send information over the internet in different ways * Explain that the internet allows different media to be shared * Compare working online with working offline * Recognise that working together on the internet can be public or private | | * Create multiple questions about the same field * Navigate a flat-file database to compare different views of information * Explain what a ‘field’ and a ‘record’ is in a database * Choose which field to sort data by to answer a given question * Group information to answer questions * Choose which field and value are required to answer a given question * Outline how ‘AND’ and ‘OR’ can be used to refine data selection * Select an appropriate chart to visually compare data * Refine a chart by selecting a particular filter * Refine a search in a real-world context | | * Recognise that vector drawings are made using shapes * Identify the main drawing tools * Move, resize, and rotate duplicated objects * Create a vector drawing by combining shapes * Use the zoom tool to add detail to drawings * Modify objects to create different effects * Change the order of layers in a vector drawing * Copy part of a drawing by duplicating several objects * Group to create a single object * Suggest improvements to a vector drawing | | * Identify and modify conditions in a program * Use selection in an infinite loop to check a condition * Identify the condition and outcomes in an ‘if… then… else…’ statement * Create a program with different outcomes using selection * Design the flow of a program which contains ‘if… then… else…’ * Identify the outcome of user input in an algorithm * Test a program and share it with others * Identify ways a program could be improved * Identify the setup code I need in a program | |
| **Vocabulary** | System, Connection, Digital, Input, Process, Output, Protocol, Address, Packet, Chat, Explore, Slide deck, Reuse, Remix, Collaboration | | Database, Data, Information, Record, Field, Sort, Order, Group, Search, Value, Criteria, Graph, Chart, Axis, Compare, Filter, Presentation | | Vector, Drawing tools, Shapes, Icons, Toolbar, Move, Resize, Colour, Rotate, Duplicate/Copy, Zoom, Select, Rotate, Alignment grid, Handles, Modify, Layers, Order, Group, Ungroup, Vector drawing | | Selection, Condition, Count-controlled loop, Outcomes, Conditional statement, Algorithm, Program, Debug, Question, Answer, Input, Test, Implement, Run, Setup, Evaluate | |
| **Resources** | **Hardware**  Laptops | **Software**  Google Slides | **Hardware**  Laptops | **Software**  j2database | **Hardware**  Laptops | **Software**  Google Drawings | **Hardware**  Laptops | **Software**  Scratch |
| **Application Task** | Work collaboratively to create a shared bank of information using computers. Use this to create a guide for looking after an animal. | | Use a ‘real-world’ database to search for air travel flights that meet specific criteria. Idnetify a preferred flight and explain why it is preferred. | | Use vector drawing skills to create an icon that could be used in a piece of desktop publishing. | | Design an original quiz and implement it as a program. | |

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| **Year 6** | | | | | | | | |
| **Unit of Work** | **6.1 Communication and Collaboration**  **(Computing systems**  **and networks)** | | **6.2** **Web Page Creation**  **(Creating Media)** | | **6.3 Variables in Games**  **(Programming)** | | **6.4 Introduction to Spreadsheets**  **(Data and information)** | |
| **Prior Learning** | Children have an understanding of The Internet and how data is transferred. They have experience of working collaboratively using the internet – (Year 5 Computing) | | Children have experience of: digital writing, digital painting and vector drawing – (Various Units of Work) They have some awareness of how web pages are generally set out – (Various Units of Work) | | Children have experience with Scratch. They are aware of the programming constructs of sequence, repetition, and selection – (Year 5 Computing) | | Children have experience of examining, interpreting, collecting and organising digital data – (Year 5 Computing and various topics of work in subjects such as Maths and Science) | |
| **Core Learning** | * Complete a web search to find specific information * Compare results from different search engines * Describe how search engines select results * Explain that search results are ordered * Explain that a search engine follows rules to rank relevant pages * Describe some of the ways that search results can be influenced * Explain how search engines make money * Identify that there are a variety of ways of communicating over the internet * Choose methods of communication to suit particular purposes * Compare different methods of communicating on the internet * Explain that communication on the internet may not be private | | * Explore Websites and discuss different types of media on them * Know that websites are written in HTML * Recognise the common features of a web page * Plan the features of a web page * Say why copyright-free images should be used in web design * Find copyright-free images * Describe what is meant by the term ‘fair use’ * Add content to an original web page * Recognise the need to preview pages * Explain what a navigation path is * Make multiple web pages and link them using hyperlinks * Create hyperlinks to link to other people's work | | * Identify examples of information that is variable * Identify that variables can hold numbers or letters * Explain that a variable has a name and a value * Recognise that the value of a variable can be changed * Decide where in a program to change a variable * Make use of an event in a program to set a variable * Design a project that builds on a given example * Create the artwork for a project * Test the code that has been written * Identify ways that a game could be improved * Extend a game further using more variables | | * Explain the relevance of data headings * Answer questions from an existing data set * Explain what an item of data is * Apply an appropriate number format to a cell * Build a data set in a spreadsheet application * Construct a formula in a spreadsheet * Identify that changing inputs changes outputs * Recognise that data can be calculated using different operations * Create a formula which includes a range of cells * Apply a formula to multiple cells by duplicating it * Use a spreadsheet to answer questions * Apply a formula to calculate data * Produce a graph to show the answer to questions | |
| **Vocabulary** | Search engine, Google, Bing, Yahoo!, Swisscows, DuckDuckGo, Refine, Index, Crawler, Bot, Ranking, Optimisation, Links, Content creator, Selection, Communication, Internet, Public, Private, One-way, Two-way, One-to-one, One-to-many, SMS, Email, | | Website, Web page, Browser, Media, Hypertext Markup Language (HTML), Logo, Layout, Header, Media, Copyright, Fair use, Home page, Preview, Evaluate, Device, Google Sites, Breadcrumb trail, Navigation, Hyperlink, Subpage, External link, Embed | | Variable, Change, Name, Value, Set, Design, Event, Algorithm, Code, Task, Artwork, Project, Debug, Improve, Evaluate, Share | | Spreadsheet, Data, Data heading, Data set, Cells, Object, Spreadsheet application, Format, Common attribute, Formula, Calculation, Input, Output, Cell reference, Operation, Range, Duplicate, Sigma, Propose, Question, Graph, Chart, Evaluate, Results, Comparison, Software, Tools | |
| **Resources** | **Hardware**  Laptops | **Software** | **Hardware**  Laptops | **Software**  Google Sites | **Hardware**  Laptops | **Software**  Scratch | **Hardware**  Laptops | **Software**  Microsoft Excel |
| **Application Task** | Suggest appropriate modes of Internet communication for a range of specific purposes. | | Design, create and test an original website based around animals. | | Design, code and create a playable game, including creating original artwork. | | Use a spreadsheet to calculate the cost when planning a party for the class. | |