# Stubbins Primary School
# Computing Progression of Skills

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|---|---|---|---|
| **Computing systems and networks (Digital literacy)** | • I can recognise and name a range of digital devices, e.g. laptop, phone, games console.<br>• I can log on to the school computer / unlock the school tablet with support.<br>• I can identify the basic parts of a computer, e.g. mouse, keyboard, screen.<br>• I can use a suitable access device (mouse, keyboard, touchscreen, switch).<br>• I can explain why we use passwords and recognise examples of personal information<br>• I know who to tell if concerned about content | • I can explain how IT is used at home<br>• I can explain how IT is used in different places<br>• I can use a simple password to log onto the computer or a website.<br>• I can identify rules for acceptable use of technology in school.<br>• I know what personal information is and the need to keep it private.<br>• I can recognise that some information found online may not be true. | • I can describe what a computer is (input > process > output).<br>• I can recognise that school computers are connected.<br>• Keeping password safe<br>• When not to share personal info<br>• Games/films have age ratings | • Remember and use an individual password.<br>• Recognise what kinds of websites are trustworthy sources of information.<br>• Recognise the benefits and risks of different apps and websites.<br>• Recognise that the media can portray groups of people differently.<br>• Can rate a game or film they have made and explain their rating | • I can explain the difference between the internet and the World Wide Web; and between a search engine and a web browser<br>• I can perform a complex search for information<br>• Know where to find copyright free images and audio, and why this is important.<br>• Critically evaluate websites for reliability of information and authenticity. | • Explain what makes a strong password and why this is important at school and in the wider world.<br>• Explain how algorithms are used to track online activities with a view to targeting advertising and information.<br>• Know that there are laws around the purchase of games; the production, sending and storage of images; what is written online; and around online gambling |
| **Creating media (Information technology)** | • I can select basic tools/options to change the appearance of digital content, e.g. filter on an image / font / size of paintbrush.<br>• I can combine media with support to present information, e.g. text and images.<br>• I can type text using a keyboard | • I can create simple digital content for a purpose, e.g. digital art.<br>• I can capture, edit and improve my photos<br>• Present ideas and information by combining media, e.g. text and images.<br>• I can identify which photos are real and which have been changed | • I can present ideas and information by combining media independently, e.g. text and images.<br>• I can design and create simple digital content for a purpose/audience, e.g. poster.<br>• I can edit digital content to improve it, e.g. resize text. | • Collect, organise and present information using a range of media.<br>• Design, create and edit digital content for a specific purpose<br>• Identify the features of a good piece of digital content and apply these in own design.<br>• Know where to find copyright free content, e.g. creative images.<br>• Collaborate with peers using online tools | • Use different drawing tools to create images<br>• Create images by layering and duplicating images to create more complex pieces of work<br>• Evaluate and improve their own designs | • Select, combine and remix a range of media to create original content.<br>• Consider all steps of the design process when creating content (e.g. identify problem, plan, create, evaluate, share.)<br>• Identify the most effective tools to present information for a specific purpose. |

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| **Data and information (Information technology)** | • I can describe objects using labels<br>• I can find objects with similar properties<br>• I can answer questions about groups of objects<br>• I can decide how to group objects to answer a question<br>• I can record and share what I have found | • I can recognise charts and pictograms and explain why we use them.<br>• I can explain information shown in a simple chart or pictogram.<br>• I can modify simple charts/pictograms, e.g. add title, item or labels.<br>• I can identify the key features of a chart or pictogram.<br>• I can collect and present data on a topic | • I can use a branching database<br>• I can create a branching database<br>• I can identify the features of a good question in a branching database.<br>• I can evaluate a given branching database and suggest improvements | • Draw conclusions from information stored in a database, chart or table.<br>• Design a questionnaire and collect a range of data on a theme.<br>• Choose appropriate formats to present data to convey information | • I know the difference between data and information<br>• I can perform a search to answer questions about data<br>• I can create graphs and charts from data | • Recognise what a spreadsheet is and what it is used for.<br>• Use simple formulae in a spreadsheet to find out information from a set of data.<br>• Collect data for a purpose and plan out a spreadsheet to present it effectively, using relevant formulae.<br>• Produce graphs from data in a spreadsheet to answer a question.<br>• Analyse and evaluate data and information in a spreadsheet, chart or database. |
| **Programming (Computer science)** | • I can create a simple program e.g. to control a floor robot.<br>• I can predict the outcome of a simple algorithm or program.<br>• I can explain what an algorithm is and create one<br>• I can debug an error in a simple algorithm or program e.g. for a floor robot. | • I can predict the outcome of an algorithm or program with multiple steps.<br>• I can identify and correct errors in a given algorithm or program, and recognise the term debugging.<br>• I can explain what an algorithm and program are<br>• I can plan out a program by creating an algorithm, and evaluate its success. | • Modify an existing program,<br>• Create examples of algorithms containing count-controlled loops.<br>• Use a forever loop in a program to keep something happening.<br>• Identify errors in a block or text-based program and correct them.<br>• Recognise that different inputs can be used to control a program | • Create a program using a range of<br>• Events/inputs to control what happens.<br>• Explain when to use forever loops and count-controlled loops, and use them in programs.<br>• Recognise selection in a program or algorithm.<br>• Use selection in algorithms in programs e.g. if…then…<br>• Design a program for a purpose.<br>• Recognise common mistakes in programs and how to correct them. | • Name a range of sensors in physical systems<br>• Predict what will happen in a program or algorithm when the input changes<br>• Use two-way selection i.e. if…then…else…<br>• Recognise variables in a program<br>• Create programs including ‘repeat until’ loops.<br>• Create and use simple variables, e.g. to keep score.<br>• Create an algorithm for a physical system (with sensor) | • Design and program a system that uses sensors.<br>• Recognise and use procedures (sub-routines) in programs.<br>• Plan out a program in detail, including task, algorithm, code and execution level.<br>• Use nested selection statements in a program<br>• Combine a variable with relational operators (< = >) to determine when a program changes<br>• Recognise key concepts (sequence, selection, repetition and variables) |

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| **Vocabulary** | • Technology, Computer, mouse/trackpad, keyboard, screen, click, drag, draw, double-click, Input device, Shift, space bar, Safely, responsibly, computer, technology<br>• paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool<br>• Forwards, backwards, turn, clear, go, commands Instructions, algorithm, program<br>• Word processor, backspace, toolbar, bold, italic, underline,<br>• ScratchJr, Bee-Bot, command, sprite, compare, programming, block, joining, start block, run, background, delete, reset, algorithm, predict, effect, change, value, block program. | • Information technology (IT), computer, barcode, scanner/scan<br>• Device, camera, photograph, capture, image, digital<br>• Framing, focal point, subject matter, field of view, format, compose<br>• Natural lighting, artificial lighting,<br>• Instruction, sequence, clear, unambiguous, algorithm, program<br>• Debugging, command, program, run, program, start Sprite, design, modify, change<br>• organise, data, object, tally chart, votes,<br>• Pictogram, Attribute, group, | • Digital device, input, output, process Program Connection, network, network switch, server, wireless access point (WAP)<br>• Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop Sequence, event, task, design, code, run the code Design, algorithm, bug, debug<br>• Branching database, database, attribute, value, questions, objects, equal, even, separate<br>• Text, images Landscape, portrait, orientation, placeholder, template<br>• Motion, event, sprite, algorithm, logic Move, resize, extension block, | • Internet, network, router, network security Network switch, server, wireless access point (WAP), router, route tracing, browser content, download, sharing, ownership, permission<br>• Program, turtle, commands, code snippet Algorithm, design, debug, Logo commands, Pattern, repeat, repetition, count-controlled loop, algorithm,<br>• Data, table (layout) Input device, sensor, data logger, data point, interval, analyse, data set, import, export<br>• Scratch, programming, sprite, blocks, code, loop, repeat, value, Block, forever, infinite loop, count-controlled loop, costume design, algorithm, duplicate, debug, refine, evaluate | • System, connection, digital, input, process, output Protocol, address, packet<br>• Microcontroller, Crumble controller, components, LED, Sparkle, program, repetition, infinite loop , selection, controlled loop,Task, design, selection, condition, action, microcontroller, algorithm,<br>• Database, data, information, record, field, sort, order, group graph, chart, axis, compare, filter<br>• Vector, drawing tools, shapes, object, icons, toolbar organise, zoom, select, rotate, object, alignment grid, resize, handles, consistency, | • refine index, crawler, bot, search engine, Ranking, Website, web page, browser, media, Hypertext Markup Language (HTML) Web page, website, logo, layout, header, media, purpose Copyright, fair use, hyperlink,<br>• Variable, name, value, set, change<br>• Task, algorithm, design, artwork, program, project, code, test, debug<br>• Spreadsheet, data, data heading, data set, cells, columns and rows, Formula, calculation, input, output. cells, cell reference<br>• 2D, 3D, Rotate, position, select, duplicate Dimensions, placeholder,<br>• Micro:bit, MakeCode, input, process, output, flashing, USB Selection, condition, if… then… else, variable, random accelerometer |