Sept 2020

St Anne's R C Primary School Computing Progression

Computing Vocabulary

Year 1 curriculum objectives (KS1)	Objectives/sticky Knowledge	Vocabulary progression
Computer Science • Pupils should be taught to understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. • Create and debug simple programs. Use logical to predict the behaviour of simple programs. **Information Technology** • Pupils should be taught to use technology purposefully to organise and manipulate digital content. **Digital Literacy** • Pupils should be taught to use technology purposefully to store and retrieve digital content and to recognise common uses of information technology beyond school. • Pupils should be taught to 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 their online technologies.	**Computer Science** I know the importance of following instructions. I can follow and create simple instructions on the computer. I can consider how the order of instructions affects the result. I can use the direction keys to complete the challenges successfully. I understand how to create and debug a set of instructions (algorithm). I understand how to change and extend an algorithm list. I can create a longer algorithm for an activity. I understand what coding means in computing. I can create unambiguous instructions like those required by a computer. I can build one- and two-step instructions using the printable code cards. I can use the 2Code program to create a simple program. I can use Design Mode to add and change backgrounds and characters. I can use a properties table to change the look of objects. I can design a scene for a program. I can use code blocks to make characters move automatically when the green Play button is clicked. I can add an additional character who moves when clicked. I can explore the When Key and When Swiped commands (on tablets if available). I can use the Stop button to make characters stop when the background is clicked. I can use Collision Detection to make objects perform actions. **Information Technology** I can sort items using a range of criteria. I can sort items on the computer using the 'Grouping' activities in Purple Mash. I understand that data can be represented in picture format I can contribute to a class pictogram. I can use a pictogram to record the results of an experiment. I can use an e-books and 2Create a Story. I can continue a previously saved story. I can add animation to a story.	**Computer Science** Instruction Algorithm Computer Program Debug Direction Challenge Arrow Undo Rewind Forward Backwards Right turn Left turn Action Button Character Code block Code design Coder Coding Collision Detection Command Object Input Design Mode Scale When clicked When Key **Information Technology** Sort

Computing Vocabulary

	I can add sound to a story including voice recording and music the children have created. I can work on a more complex story including adding backgrounds and copying and pasting pages I can use additional features to enhance my stories. I can use the sound property. I can share my e-books on a class display board. I can navigate around a spreadsheet. I can explain what rows and columns are. **<u>Digital Literacy</u>** I can login safely. I can start to introduce to the children the idea of 'ownership' of my creative work. I know how to find saved work in the Online Work area and find teacher comments. I know how to search Purple Mash to find resources. I can add pictures and text to work. I can use the Games section on Purple Mash. I understand the importance of logging out when they have finished. I understand what is meant by 'technology'. I have considered types of technology used in school and out of school.	Criteria Pictogram Data Collate Animation E-Book Font File Sound Effect Display Board Backspace Cursor Columns Cells Clipart Delete Lock tool Speak tool Rows Spreadsheet Move cell tool **<u>Digital Literacy</u>** Username Log in Password Log out My work Topics Avatar Notification Tools Save Technology

Computing Vocabulary

Year 2 curriculum objectives (KS1)	Objectives/sticky Knowledge	Vocabulary progression
Computer Science • Pupils should be taught to understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. • Create and debug simple programs. Use logical to predict the behaviour of simple programs. **Information Technology** • Pupils should be taught to use technology purposefully to organise and manipulate digital content. **Digital Literacy** • Pupils should be taught to use technology purposefully to store and retrieve digital content and to recognise common uses of information technology beyond school. • Pupils should be taught to 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 their online technologies.	**Computer Science** I understand what an algorithm is. I can create a computer program using simple algorithms. I can use the button object. I understand how use the Repeat command. I understand how to use the Timer command. I know what debugging means. I understand the need to test and debug a program repeatedly. I can debug simple programs. I can create programs using different kinds of objects whose behaviours are limited to specific actions. I can predict what the objects will do in other programs, based on their knowledge of what the object is capable of. I can discuss how logic helped them understand that they could only predict specific actions, as that is what the objects were limited to. I can use all the coding knowledge, they have learned throughout their programming lessons to create a more complex program that tells a story. **Information Technology** I can explain what rows and columns are in a spreadsheet. I can open, save and edit a spreadsheet. I can add images from the image toolbox and allocate them a value. I can use copying a pasting to help make spreadsheets. I can use tools in a spreadsheet to automatically total rows and columns. I can use a spreadsheet to solve a mathematical puzzle. I can use images in a spreadsheet. I can work out how much I need to pay using coins by using a spreadsheet to help calculate. I can create a table of data on a spreadsheet. I can use the data to create a block graph manually. I can use YES or No questions to separate information. I can construct a binary tree to separate different items. I can use a database to answer more complex search questions.	**Computer Science** Action Algorithm Bug Code block Code design Command Debugging Design mode Input Object Properties Repeat Scale Timer When clicked When key **Information Technology** Backspace Copy and paste Columns Cells Count tool Delete key Equals tool Image box Lock tool Move cell tool Rows Speak tool Spreadsheet Pictogram

Computing Vocabulary

	I can use the search tool to find information I can recall the meaning of key internet terms. I can identify the basic parts of a web search engine search page. I can search for answers to a quiz on the internet. I can use 2Paint a Picture to create art based upon a certain artistic style. I can use the eCollage function in 2Paint a Picture to create surrealist art using drawing and clipart. I understand what 2Sequence is and how it works. I have uploaded and used their own sound chosen from a bank of sounds I have created their own tune using some of the chosen sounds. I have examined a traditional tale presented as a mind map, as a quiz, as an e-book and as a fact file. I know that digital content can be represented in many forms. I have made a quiz about a story using 2Quiz. I have extracted information from a 2Connect file to make a publisher fact file on a nonfiction topic. I can collect, organise and present data and information in digital content. **<u>Digital Literacy</u>** I know how to refine searches using the Search tool. I know how to share work electronically using the display boards. I use digital technology to share work on Purple Mash to communicate and connect with others locally. I have some knowledge and understanding about sharing more globally on the Internet. I understand how we talk to others when they aren't there in front of us. I open and send simple online communications in the form of email. I understand that information put online leaves a digital footprint or trail. I begin to think critically about the information I leave online. I identify the steps that can be taken to keep personal data and hardware secure.	Question Data Collate Binary tree Avatar Database Template BPM Composition Digitally Instrument Sound effects (SFX) Soundtrack Tempo Volume Concept map Quiz Presentation Node Animated Non-fiction Narrative Audience **<u>Digital Literacy</u>** Search Display board Internet Sharing Global Email Attachment Digital footprint

Computing Vocabulary

Year 3 curriculum objectives (KS2)	Objectives/sticky Knowledge	Vocabulary progression
Computer Science • Pupils should be taught to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • 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 **Information Technology** • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • 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. **Digital Literacy** • Pupils should be taught to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour, identify a range of ways to report concerns about	**Computer Science** I can create a design that represents a sequential algorithm. I can use a flowchart design to create the code. I can explain what Object, Action, Output, Control and Event are in computer programming. I can explain how their program simulates a physical system, i.e. my vehicles move at different speeds and angles. I can describe what they did to make their vehicle change angle. I can show that their vehicles move at different speeds I can make use of the X and Y properties of objects in their coding. I can create an if statement in their program. I can use a timer and if statement to introduce selection in their program. I understand what a variable is in programming. I can use a variable to create a timer. I can create a program with an object that repeats actions indefinitely. I can use a timer to make characters repeat actions. I can explore the use of the repeat command and how this differs from the timer. I can debug simple programs. I can explain why it is important to save their work after each functioning iteration of the program they are making. **Information Technology** I can create pie charts and bar graphs. I can use the 'more than', 'less than' and 'equals' tools to compare different numbers and help to work out solutions to sums. I can use the 'spin' tool to count through times tables. I can introduce the Advanced Mode of 2Calculate and use coordinates. **Digital Literacy** I know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away.	Computer Science Action Algorithm Bug Code block Code deign Command Debug Design mode Event If statement Input Output Repeat Object Properties Times Computer simulation Selection Variable **Information Technology** Advance mode Copy and paste Columns Cells Delete Key Equals tool Spin tool Mode cell tool Rows Spreadsheet Touch typing

content and contact. Be discerning in evaluating digital content.	I understand how the Internet can be used to help us to communicate effectively. I understand how a blog can be used to help us communicate with a wider audience I understand that some information held on websites may not be accurate or true. I am beginning to understand how to search the Internet and how to think critically about the results that are returned. I have created their own 'spoof' webpage mock-up. I can identify some physical and emotional effects of playing/watching inappropriate content/games. I can relate cyberbullying to bullying in the real-world and have strategies for dealing with online bullying including screenshot and reporting.	Posture Top row keys Home row keys Bottom row keys Space bar Email CC Attachment Formatting Address book Database Data Question Simulation Graph Field Bar chart Line graph Block graph Animation Audio Font Media Presentation Design templates Presentation program Slide Slideshow Text box Text formatting Transition **<u>Digital Literacy</u>** Password Internet Blog Concept map

Computing Vocabulary

		Username Website Webpage Spoof website PEGI rating Report to teacher

Computing Vocabulary

Year 4 curriculum objectives (KS2)	Objectives/sticky Knowledge	Vocabulary progression
Computer Science • Pupils should be taught to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • 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 **Information Technology** • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • 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. **Digital Literacy** • Pupils should be taught to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour, identify a range of ways to report concerns about	**Computer Science** I can use selection in coding with the 'if/else' command. I understand and use variables in 2Code. I can use flowcharts for design of algorithms including selection. I can use the 'repeat until' with variables to determine the repeat. I know about and use computational thinking terms decomposition and abstraction I know the structure of the coding language of Logo. I can input simple instructions in Logo. I can use the Repeat function in Logo to create shapes. I can use and build procedures in Logo. I understand the different parts that make up a computer. I can recall the different parts that make up a computer. **Information Technology** I can use the formula wizard to calculate averages. I can use a spreadsheet to model a real-life situation. I can add a formula to a cell to automatically make a calculation in that cell. I can explore how font size and style can affect the impact of a text. I can use a simulated scenario to produce a news report. I can use a simulated scenario to write for a community campaign. I can discuss what makes a good animated film or cartoon. I know how animations are created by hand. I can find out how 2Animate can be created in a similar way using the computer. I know about onion skinning in animation. I can add backgrounds and sounds to animations. I can share animation on the class display board and by blogging. I can locate information on the search results page. I can use search effectively to find out information. I can assess whether an information source is true and reliable. I can identify and discuss the main elements of music. I experiment with rhythm and tempo. I can create a melodic phrase.	**Computer Science** Action Alert Algorithm Code design Control Command Debug Design mode Event Flowchart bug Get input If command If/else command Input Object Repeat Selection Computer simulation Simulation Timer Variable Computer virus LOGO BK, FD, LT Repeat SETPC SETPS PU PD Easter egg Motherboard CPU

content and contact. Be discerning in evaluating digital content.	I can electronically compose a piece of music. **Digital Literacy** I know how children can protect themselves from online identity theft. I know that information put online leaves a digital footprint or trail and that this can aid identity theft. I can Identify the risks and benefits of installing software including apps. I understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. I can identify appropriate behaviour when participating or contributing to collaborative online projects for learning. I can identify the positive and negative influences of technology on health and the environment. I can understand the importance of balancing game and screen time with other parts of their lives.	RAM Graphics Network Monitor Speakers Keyboard and mouse **Information Technology** Average Advance mode Copy and paste Columns Cells Charts Equals tool Formula Formula wizard Move cell tool Random tool Rows Spin tool Spreadsheet Timer Font Bold Italic Underline Animation Background Frame Flipbook Onion Skinning Stop motion Play Sound Video clip Internet

Computing Vocabulary

		Internet explorer Search engine Website **<u>Digital Literacy</u>** Cookies Copyright Digital Identity theft Malware Phishing Plagiarism Spam

Computing Vocabulary

Year 5 curriculum objectives (KS2)	Objectives/sticky Knowledge	Vocabulary progression
Computer Science • Pupils should be taught to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • 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 **Information Technology** • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • 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. **Digital Literacy** • Pupils should be taught to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour, identify a range of ways to report concerns about	**Computer Science** I can represent a program design and algorithm. I can create a program that simulates a physical system using decomposition. I can explore string and text variable types so that the most appropriate can be used in programs. I can use the Launch command in 2Code Gorilla I can program a playable game with timers and scorepad. I can create the game environment. I can evaluate their and peers' games. **Information Technology** I can use the formula wizard to add a formula to a cell to automatically make a calculation in that cell. I can copy and paste within 2Calculate. I can use 2Calculate tools to test a hypothesis. I can add a formula to a cell to automatically make a calculation in that cell. I can use a spreadsheet to model a real-life situation and answer questions. I know how to search for information in a database. I can contribute to a class database. I can create a database around a chosen topic. I can begin to use 2Design and Make and the skills of computer aided design. I can explore the effect of moving points when designing. I understand the need for visual representation when generating and discussing complex ideas. I can create a collaborative concept map and present this to an audience. I know what a word processing tool is for. I can add and edit images to a word document. I can use word wrap with images and text. I can change the look of text within a document. I can add features to a document to enhance its look and usability. I can use tables within MS Word to present information.	**Computer Science** Action Alert Algorithm Bug Code design Command Control Debug Design mode Event Get input If command If/else Input Object Output Repeat Selection Simulation Sequence Timer Variable **Information Technology** Average Advance mode Copy and paste Columns Cells Charts Equals tool Formula

content and contact. Be discerning in evaluating digital content.	I can consider page layout including heading and columns **<u>Digital Literacy</u>** I have a greater understanding of the impact that sharing digital content can have. I can review sources of support when using technology and children's responsibility to one another in their online behaviour. I know how to maintain secure passwords. I understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. I am aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. I can reference sources in my work I can search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information.	Formula wizard Move to cell tool Random tool Rows Spreadsheet Spin tool Timer Avatar Binary tree Collaborative Data Database Sort, group, arrange Statistics and reports Table Animation Customise Evaluation Interactive Screenshot Texture Perspective Playability CAD Modelling 3D and 2D Polygon Viewpoint Net 3D printing Points Collaboratively Concept Connection Node Copyright Cursor

Computing Vocabulary

		Document Font In-built styles Merge Cells Paragraph formatting Readability Text formatting Text wrapping Word art Word processing tool **<u>Digital Literacy</u>** Online safety Smart rules Password Reputable Encryption Identity theft Shared image Plagiarism Citations Reference Bibliography

Computing Vocabulary

Year 6 curriculum objectives (KS2)	Objectives/sticky Knowledge	Vocabulary progression
Computer Science • Pupils should be taught to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • 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 **Information Technology** • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • 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. **Digital Literacy** • Pupils should be taught to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour, identify a range of ways to report concerns about	**Computer Science** I can use the program design process, including flowcharts, to develop algorithms for more complex programs using and understanding of abstraction and decomposition to define the important aspects of the program. I can code, test and debug from these designs. I can use functions and tabs in 2Code to improve the quality of the code. I know what a text adventure is. I can make a story-based adventure. I know what the Internet consists of. I know what a LAN and a WAN are. I know the age of the internet. I know what the terms binary and denary mean and how they relate to the number system, the digital system and the terms base-10 and base-2 I relate binary to the on and off states of electrical switches. I can convert numbers from decimal to binary. I can convert numbers from binary to decimal. I can represent states of object in their own program using binary. **Information Technology** I can use a spreadsheet to investigate the probability of the results of throwing many dice. I can create graphs showing the data I have collected. I can create a spreadsheet to create computational models and answer questions. I can identify the purpose of writing a blog and its key features. I can plan the theme and content for a blog and write the content. I consider the effect upon the audience of changing the visual properties of the blog. I understand the importance of regularly updating the content of a blog. I understand how to contribute to an existing blog. I understand how and why blog posts are approved by the teacher. I can create a picture-based quiz for young children. I can make a quiz that requires the player to search a database. I recognise what a spreadsheet looks like. I can navigate and enter data into cells.	**Computer Science** Action Alert Algorithm Code design Command Control Debug Event Flowchart bug Function Get input If/else command Input Object Output Repeat Object Simulation Tabs Selection Sequence Timer Variable Text based adventure Concept map Debug Sprite Function Internet WWW Network Router

content and contact. Be discerning in evaluating digital content.	I can introduce some basic data formulae in Excel for percentages, averages and max and min numbers. I can demonstrate how the use of Excel can save time and effort when performing calculations. I can use a spreadsheet to model a real-life situation. I can demonstrate how Excel can make complex data clear by manipulating the way it is presented. I can create a variety of graphs in Excel. **Digital Literacy** I can identify benefits and risks of mobile devices broadcasting the location of the user/device. I can identify secure sites by looking for privacy seals of approval. I can identify the benefits and risks of giving personal information. I can review the meaning of a digital footprint. I have a clear idea of appropriate online behaviour. I am beginning to understand how information online can persist. I understand the importance of balancing game and screen time with other parts of their lives. I can identify the positive and negative influences of technology on health and the environment.	Local Area Network LAN Wide Area Network WAN Wireless Network cables Base 10 Base 2 Binary Byte Gigabyte Megabyte Kilobyte Integer Machine code Nibble **Information Technology** Advance mode Copy and Paste Columns Cells Charts Dice Equals tool Formula Random tool Rows Move cell tool Spin tool Spreadsheet Timer Audience Blog Blog post Collaborative Icon Alignment Cell reference

Computing Vocabulary

		Range Colum Row Text wrapping Workbook Value **<u>Digital Literacy</u>** Digital footprint Password PEGI rating Phishing Screen time Spoof website