VALENCE PRIMARY SCHOOL
Subject Progression Grid

Computing Progression Grid

At Valence Primary School Computing is taught through a broad and balanced curriculum that ensures children can develop depth and progression in their knowledge and skills. It is our intention to enable children to find, explore, analyse, exchange and present information. We also focus on developing the skills necessary for children to be able to use information in a discriminating and effective way. We want children to know more, remember more and understand more in computing so that they leave primary school computer-literate.

P.R.A.I.S.E Pride Respect Achievement Independence Success Enjoyment

	Systems & Network	Creating Media	Creating Media	Creating Media	Data & Information	Programming
EYFS	Use a shortcut to open a website or select an appropriate app Use buttons on a webpage to explore the website Know who to go to if they need help when on internet	Develop mouse control on different devices: • Use mouse to draw a simple picture • Use mouse to select a simple tool • Use mouse to open software Use a paint program to make marks, using simple tools, to communicate their ideas Use camera or mobile device to collect photographs	Use different forms of electronic communication in free play Begin to use a keyboard to produce text on screen, and develop familiarity with letters, numbers, backspace, arrow keys and space bar • Use keyboard to type their name • Match upper case and lower case letters	Listen to stories, music on digital devices Use sound recorder or mobile device to record sounds	Begin to develop simple classification skills by carrying out simple sorting activities away from the computer Continue to develop simple classification skills by carrying out simple sorting activities using ICT Produce simple paper-based pictograms as part of a group Produce simple pictograms on the computer as part of a group	Use a variety of electronic toys in play situations (dance mats, remote control toys) using basic directional language Respond to simple cause and effect devices (e.g. push a button to hear a sound) Explore toys that simulate control devices e.g. traffic lights, scanner, microwave, cash tills Explore a simple adventure program or

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						simulation / role play software Explore the commands needed to control a range of electronic toys Be aware of everyday devices that sense data e.g. bar codes, metal detectors, sound recorders, light sensors, automatic doors, thermometers, library card Be aware that people and computers follow instructions Program a simple floor robot (Bee-Bot / Roamer) to carry out a short sequence of steps
Year 1	**Technology around us** To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to	**Digital painting** To describe what different freehand tools do To use the shape tool and the line tools To make careful choices when painting a digital	**Digital writing** To use a computer to write To add and remove text on a computer To identify that the look of text can be changed on a computer		**Grouping data** To label objects To identify that objects can be counted To describe objects in different ways	**Moving a robot** To explain what a given command will do To act out a given word To combine forwards and backwards commands to make a sequence

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	type To use the keyboard to edit text To create rules for using technology responsibly	picture To explain why I chose the tools I used To use a computer on my own to paint a picture To compare painting a picture on a computer and on paper	To make careful choices when changing text To explain why I used the tools that I chose To compare writing on a computer with writing on paper		To count objects with the same properties To compare groups of objects To answer questions about groups of objects	To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem **Introduction to animation** To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a value To explain that each sprite has its own instructions To design the parts of a project To use my algorithm to create a program
Year 2	**IT around us** To recognise the uses and features of information technology	**Digital photography** To know what devices can be used to take photographs		**Making music** To say how music can make us feel	**Pictograms** To recognise that we can count and compare objects using	**Robot algorithms** To describe a series of instructions as a sequence

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	To identify information technology in the home To identify information technology beyond school To explain how information technology benefits us To show how to use information technology safely To recognise that choices are made when using information technology	To use a digital device to take a photograph To describe what makes a good photograph To decide how photographs can be improved To use tools to change an image To recognise that images can be changed		To identify that there are patterns in music To describe how music can be used in different ways To show how music is made from a series of notes To create music for a purpose To review and refine our computer work	tally charts To recognise that objects can be represented as pictures To create a pictogram To select objects by attribute and make comparisons To recognise that people can be described by attributes To explain that we can present information using a computer	To explain what happens when we change the order of instructions To use logical reasoning to predict the outcome of a program (series of commands) To explain that programming projects can have code and artwork To design an algorithm To create and debug a program that I have written **An introduction to quizzes** To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome To create a program using a given design To change a given

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						design To create a program using my own design To decide how my project can be improved
KS1 National Curriculum	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Recognise common uses of information technology beyond school. Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Recognise common uses of information technology beyond school.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies.	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 reasoning to predict the behaviour of simple programs. Recognise common uses of information technology beyond school.
Year 3	**Connecting computers** To explain how digital devices functionTo identify input and output devicesTo recognise how digital devices can change the way we	**Animation** To explain that animation is a sequence of drawings or photographsTo relate animated movement with a sequence of	**Desktop publishing** To recognise how text and images convey informationTo recognise that text and layout can be editedTo choose appropriate page		**Branching databases** To create questions with yes/no answersTo identify the object attributes needed to collect relevant dataTo create	**Sequence in music** To explore a new programming environmentI can identify that each sprite is controlled by the commands I

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	workTo explain how a computer network can be used to share informationTo explore how digital devices can be connectedTo recognise the physical components of a network	imagesTo plan an animationTo identify the need to work consistently and carefullyTo review and improve an animationTo evaluate the impact of adding other media to an animation	settingsTo add content to a desktop publishing publicationTo consider how different layouts can suit different purposesTo consider the benefits of desktop publishing		a branching databaseTo identify objects using a branching databaseTo explain why it is helpful for a database to be well structuredTo compare the information shown in a pictogram with a branching database	chooseTo explain that a program has a startTo recognise that a sequence of commands can have an orderTo change the appearance of my projectTo create a project from a task description**Events and actions**To explain how a sprite moves in an existing projectTo create a program to move a sprite in four directionsTo adapt a program to a new contextTo develop my program by adding featuresTo identify and fix bugs in a programTo design and create a maze-based challenge
Year 4	**The internet** 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	**Photo editing** To explain that digital images can be changed To change the composition of an image To describe how images can be changed for different uses To make good choices when selecting different tools		**Audio editing** 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	**Data logging** To explain that data gathered over time can be used to answer questions To use a digital device to collect data automatically To explain that a data logger collects ‘data points’ from sensors	**Repetition in shapes** 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

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	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 recognise that not all images are real To evaluate how changes can improve an image		editing To show that different types of audio can be combined and played together To evaluate editing choices made	over time To use data collected over a long duration to find information To identify the data needed to answer questions To use collected data to answer questions	produce a given outcome To decompose a program into parts To create a program that uses count-controlled loops to produce a given outcome **Repetition in games** To develop the use of count-controlled loops in a different programming environment To explain that in programming there are infinite loops and count controlled loops To develop a design which includes two or more loops which run at the same time To modify an infinite loop in a given program To design a project that includes repetition

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						To create a project that includes repetition
Year 5	**Sharing information** To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To recognise how information is transferred over the internet To explain how sharing information online lets people in different places work together To contribute to a shared project online To evaluate different ways of working together online	**Vector drawing** 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 evaluate my vector drawing **Video editing** To recognise video as moving pictures, which can include audio To identify digital devices that can record video To capture video using a digital device			**Flat-file databases** To use a form to record information To compare paper and computer-based databases To outline how grouping and then sorting data allows us to answer questions To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually To apply my knowledge of a database to ask and answer real-world questions	**Selection in physical computing** To control a simple circuit connected to a computer To write a program that includes count-controlled loops To explain that a loop can stop when a condition is met, eg number of times To conclude that a loop can be used to repeatedly check whether a condition has been met To design a physical project that includes selection To create a controllable system that includes selection **Selection in quizzes** To explain how selection is used in computer programs To relate that a conditional statement

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		To recognise the features of an effective video To identify that video can be improved through reshooting and editing To consider the impact of the choices made when making and sharing a video				connects a condition to an outcome To explain how selection directs the flow of a program To design a program which uses selection To create a program which uses selection To evaluate my program
Year 6	**Communication** To identify how to use a search engine To describe how search engines select results 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	**3D modelling** To use a computer to create and manipulate three-dimensional (3D) digital objects To compare working digitally with 2D and 3D graphics To construct a digital 3D model of a physical object To identify that physical objects can be broken down into a collection of 3D shapes To design a digital model by combining 3D objects	**Web page creation** 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		**Spreadsheets** To identify questions which can be answered using data To explain that objects can be described using data To explain that formula can be used to produce calculated data To apply formulas to data, including duplicating To create a spreadsheet to plan an event	**Variables in games** 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 use my design to create a project To evaluate my project

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	methods of online communication To develop and improve a digital 3D model		content owned by other people		To choose suitable ways to present data	**Sensing** To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use an conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device
KS2 National Curriculum	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	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	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	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	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use and	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

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	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. 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, including collecting, analysing, evaluating and presenting data and information. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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.	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. 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.