Willow Primary School

Computing Knowledge Progression

What is a Computer?

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Hall Cross Y7
• use different digital devices • recognise that you can access content on a digital device • use a mouse, touchscreen or appropriate access device to target and select options on screen • recognise a selection of digital devices • recognise the basic parts of a computer, e.g. mouse, screen, keyboard • select a digital device to fulfil a specific task, e.g. to take a photo	• identify technology • identify a computer and its main parts • use a mouse in different ways • use a keyboard type • use the keyboard edit text • create rules for using technology responsibly	• recognise the uses and features of information technology • identify information technology in the home • identify information technology beyond school • explain how information technology benefits us • show how use information technology safely • recognise that choices are made when using information technology	• explain how digital devices function • identify input and output devices • recognise how digital devices can change the way we work • explain how a computer network can be used share information • explore how digital devices can be connected • recognise the physical components of a network • know how to access the **Google Apps** from **Chrome** and save work to their drive	• describe how networks physically connect other networks • recognise how networked devices make up the internet • outline how websites can be shared via the World Wide Web • describe how content can be added and accessed on the World Wide Web • recognise how the content of the WWW is created by people • evaluate the consequences of unreliable content	• explain that computers can be connected together form systems • recognise the role of computer systems in our lives • recognise how information is transferred over the internet • explain how sharing information online lets people in different places work together • contribute a shared project online • evaluate different ways of working together online including contributing to a shared **Google Site**	• identify how use a search engine • describe how search engines select results • explain how search results are ranked • recognise why the order of results is important, and whom • recognise how we communicate using technology • evaluate different methods of online communication	**Hardware & software** • Input devices • Output devices • Computer components • Application software • System software • Utility software
	Summer 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1	Spring 2

Willow Primary School

Computing Knowledge Progression

Presenting Information & Multimedia 1

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Hall Cross Y7
• use technology to explore and access digital content • operate a digital device with support to fulfil a task • create simple digital content, e.g. digital art • choose media to convey information, e.g. image for a poster	• describe what different freehand tools do • use the shape tool and the line tools • make careful choices when painting a digital picture • explain why I chose the tools I used • use a computer on my own paint a picture • compare painting a picture on a computer and on paper	• know what devices can be used to take photographs • use a digital device to take a photograph • describe what makes a good photograph • decide how photographs can be improved • use tools to change an image • recognise that images can be changed	• recognise how text and images convey information • recognise that text and layout can be edited • choose appropriate page settings • add content to a desktop publishing publication • consider how different layouts can suit different purposes • consider the benefits of desktop publishing • know how to present information in **Google Slides** and **Google Docs**	• identify that sound can be digitally recorded • use a digital device to record sound • explain that a digital recording is stored as a file • explain that audio can be changed through editing • show that different types of audio can be combined and played together • evaluate editing choices made • know how to download their audio file from and iPad into their **Google Drive**	• recognise video as moving pictures, which can include audio • identify digital devices that can record video • capture video using a digital device • recognise the features of an effective video • identify that video can be improved through reshooting and editing • consider the impact of the choices made when making and sharing a video • know how to store, retrieve, and exported videos to **Google Drive**	• review an existing website and consider its structure • plan the features of a web page • consider the ownership and use of images (copyright) • recognise the need to preview pages • outline the need for a navigation path • recognise the implications of linking to content owned by other people • Know how to use **Google Sites**	Folders & File management **Google Drive / Classroom** **Word Processing** • Shapes • Images • Email
	Autumn 1	Spring 1	Autumn 2	Spring 1	Autumn 2	Spring 2	Autumn 1

Willow Primary School

Computing Knowledge Progression

Presenting Information & Multimedia 2

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Hall Cross Y7
• use technology to explore and access digital content • operate a digital device with support to fulfil a task • create simple digital content, e.g. digital art • choose media to convey information, e.g. image for a poster	• use a computer write • add and remove text on a computer • 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 writing on a computer with writing on paper	• say how music can make us feel • identify that there are patterns in music • describe how music can be used in different ways • show how music is made from a series of notes • create music for a purpose • review and refine our computer work	• explain that animation is a sequence of drawings or photographs • relate animated movement with a sequence of images • plan an animation • identify the need to work consistently and carefully • review and improve an animation • evaluate the impact of adding other media to an animation	• explain that digital images can be changed • change the composition of an image • describe how images can be changed for different uses • make good choices when selecting different tools • recognise that not all images are real • evaluate how changes can improve an image • know how to download their image files from and iPad into their **Google Drive**	• identify that drawing tools can be used to produce different outcomes • create a vector drawing by combining shapes • use tools to achieve a desired effect • recognise that vector drawings consist of layers • group objects to make them easier to work with • evaluate my vector drawing • know how to create a vector drawing in **Google Drawings**	Additional time release for SATs preparation	**Desk Top Publishing** • Client requirements • Appropriate tools • House-style sheet • Appropriate content
	Summer 2	Summer 1	Summer 1	Summer 2	Spring 2	Summer 1	Summer 2

Willow Primary School

Computing Knowledge Progression

Data

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Hall Cross Y7
• Access content in a range of formats, e.g. image, video, audio • Answer basic questions about information displayed in images e.g. more or less	• label objects • identify that objects can be counted • describe objects in different ways • count objects with the same properties • compare groups of objects • answer questions about groups of objects	• recognise that we can count and compare objects using tally charts • recognise that objects can be represented as pictures • create a pictogram • select objects by attribute and make comparisons • recognise that people can be described by attributes • explain that we can present information using a computer	• create questions with yes/no answers • identify the object attributes needed to collect relevant data • create a branching database • identify objects using a branching database • explain why it is helpful for a database to be well structured • compare the information shown in a pictogram with a branching database	• explain that data gathered over time can be used to answer questions • use a digital device to collect data automatically • explain that a data logger collects 'data points' from sensors over time • use data collected over a long duration to find information • identify the data needed to answer questions • use collected data to answer questions	• use **Google Forms** to record information • compare paper and computer-based databases • outline how grouping and then sorting data allows us to answer questions • explain that tools can be used to select specific data • explain that computer programs can be used to compare data visually • apply my knowledge of a database to ask and answer real-world questions	• identify questions which can be answered using data • explain that objects can be described using data • explain that formula can be used to produce calculated data • apply formulas to data, including duplicating • create a spreadsheet to plan an event using **Google Sheets** • choose suitable ways to present data	**Spreadsheets (MS Excel)** • Formatting • Formula • Functions • Graphs
	Spring 1	Spring 2	Spring 2	Autumn 2	Summer 1	Spring 1	Summer 1

Willow Primary School

Computing Knowledge Progression

Programming & Algorithms 1

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Hall Cross Y7
• explore technology • repeat an action with technology to trigger a specific outcome • recognise the success or failure of an action • follow simple instructions to control a digital device	• 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 • plan a simple program • find more than one solution to a problem	• describe a series of instructions as a sequence • plain what happens when we change the order of instructions • use logical reasoning to predict the outcome of a program (series of commands) • explain that programming projects can have code and artwork • design an algorithm • create and debug a program that I have written	• explore a new programming environment • identify that each sprite is controlled by the commands I choose • explain that a program has a start • recognise that a sequence of commands can have an order • change the appearance of my project • create a project from a task description	• identify that accuracy in programming is important • create a program in a text-based language • explain what 'repeat' means • modify a count-controlled loop to produce a given outcome • decompose a program into parts • create a program that uses count-controlled loops to produce a given outcome	• control a simple circuit connected to a computer • write a program that includes count-controlled loops • explain that a loop can stop when a condition is met, eg number of times • conclude that a loop can be used to repeatedly check whether a condition has been met • design a physical project that includes selection • create a controllable system that includes selection	• define a 'variable' as something that is changeable • explain why a variable is used in a program • choose how to improve a game by using variables • design a project that builds on a given example • use my design to create a project • evaluate my project	**Introduction to programming** • Hour of code • Logo • Algorithms & logo • Scratch
	Autumn 2	Autumn 2	Spring 1	Spring 2	Spring 1	Autumn 2	Autumn 2

Willow Primary School

Computing Knowledge Progression

Programming & Algorithms 2

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Hall Cross Y7
• recognise that we control computers • input a short sequence of instructions to control a device	• 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	• explain that a sequence of commands has a start • explain that a sequence of commands has an outcome • create a program using a given design • change a given design • create a program using my own design • decide how my project can be improved	• explain how a sprite moves in an existing project • create a program to move a sprite in four directions • adapt a program to a new context • develop my program by adding features • identify and fix bugs in a program • design and create a maze-based challenge	• develop the use of count-controlled loops in a different programming environment • explain that in programming there are infinite loops and count controlled loops • develop a design which 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 a project that includes repetition	• explain how selection is used in computer programs • relate that a conditional statement connects a condition to an outcome • explain how selection directs the flow of a program • design a program which uses selection • create a program which uses selection • evaluate my program	• create a program to run on a controllable device • explain that selection can control the flow of a program • update a variable with a user input • use an conditional statement to compare a variable to a value • design a project that uses inputs and outputs on a controllable device • develop a program to use inputs and outputs on a controllable device	
	Spring 2	Summer 2	Summer 2	Summer 1	Summer 2	Summer 2	