Academic Year
2021-2022

Computing Overview

SUBJECT LEADER: SOPHIE WOOD

Early Years

Computing	
Skills: To use Apps and simple games Autumn	To open a variety of apps and close them using the home button. To develop basic skills by using controls within games. To use the keyboard To use the camera app to take pictures. To develop hand eye coordination by moving sound with the iPads
Safety: Asking for Help Autumn	To know to lock the iPad or call for an adult if we need help. To spot an app purchase button or pop up and know what to do if one opens while we are playing. To see adults using technology in different ways and know that technology can help us to learn.
Programming: Instructions Spring	Children have the opportunity to follow simple instructions. To give simple instructions. To discuss what order to complete a task in. To repeat tasks to find quicker ways of completing them.
Programming II: Manipulating Equipment Spring	To explore simple games and robots. To see that actions have an effect on objects. To use Beebot mats to practice exploring simple programming.
Application and Design: Using the iPad to draw Summer	To use a simple drawing app to make marks on an iPad. To select and explore different mark making tools on the iPad. To erase mistakes on an iPad to improve an image.
Application and Design: Using the iPad to learn Summer	To use a basic video to build or develop a skill a skill (e.g. drawing/dance) To use an educational app. To record a basic video telling a grown up something you have learned.

Key Stage 1

Year 1

Unit of Learning	National Curriculum Statements	Key Knowledge	Vocabulary
Skills and Safety (Autumn)	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 content or contact on the internet or other online technologies.	**Skills: Photography** To explore the basic principles of Photography, such as focal point, foreground and background, and the importance of light To explore how photography is used in the modern era. To learn about photo editing using apps such as Adobe Photoshop Express. To discuss and explore what makes a good photograph and how they can ensure their photos are of high quality. **Safety: Sharing Images Safely** To identify what personal information is. To explain how you can identify personal information from an image. To edit/check photographs to ensure they are safe to share. To explore ways of sharing images.	Device Screen Keyboard Input Output Password Internet Safety Information Internet search
Programming (Spring)	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	**Operating a Floor Turtle: Beebots** To explain what a given command will do To act out a given word (commands) To combine forwards and backwards commands to make a sequence To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem **Introducing Animation: Scratch Junior** 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	Task Design Code Running the code

		To use my algorithm to create a program	
Application and Design (Summer)	Use technology purposefully to create, organise, store, manipulate and retrieve digital content recognise common uses of information technology beyond school	**Digital Photography** To know what devices can be used to take photographs 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 **Making Music Using Garage Band** To say how music can make us feel 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	Digital content File Store Retrieve Manipulate Computational Thinking

Year 2

Unit of Learning	National Curriculum Statements	Key Knowledge	Vocabulary
Skills and Safety (Autumn)	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 content or contact on the internet or other online technologies.	**Skills: Making a Film Trailer (iMovie)** To film and sequence short videos for a particular purpose. To create 'mood' within a short film and stick to a specific 'theme' whilst filming. To edit videos to the correct length and snip any unwanted content. To select film from pre saved clips in the photo gallery and place it within a short sequence. **Safety: Sharing Content Safely** To explore the fundamentals of internet safety through real life scenarios. To develop strategies to keep themselves safe online as well as identifying potentially harmful situations and what to do if they find themselves in dangerous situations.	Device Screen Keyboard Input Output Password Internet Safety Information Internet search

		To explore how to deal with difficult situations online and who they can ask for help. To identify what personal information is and what they should and shouldn't post online.	
Programming (Spring)	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	**Beebots** To describe a series of instructions as a sequence 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 **Scratch** 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 design To create a program using my own design To decide how my project can be improved	Algorithm Sequence Debugging Data Logical reasoning Variables
Application and Design (Summer)	Use technology purposefully to create, organise, store, manipulate and retrieve digital content recognise common uses of information technology beyond school	**Digital Artwork** To describe what different freehand tools do To use the shape tool and the line tools To make careful choices when painting a digital picture To explain why I chose the tools I used to create different effects. To use a computer on my own to paint a picture To compare painting a picture on a computer and on paper **All about me: Pages (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 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	Digital content File Store Retrieve Manipulate Computational Thinking

Lower Key Stage 2

Year 3

Unit of Learning	National Curriculum Statements	Key Knowledge	Vocabulary
Skills and Safety (Autumn)	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 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	**Skills: Filming a Vlog** To plan and film sections of a video sharing knowledge of a particular subjects. To edit films together to create a Vlog. To add graphics to a video and add an opening and closing image. **Safety: Sharing Videos Online, What does my online presence say about me?** To understand what an online personality is. To explain how my actions and words can affect others and learn ways to ensure that my online presence is positive. To understand what things are safe to share online and which things are personal information that I should keep private. To understand that some video sharing sites have comment sections and develop a Class Code of Conduct for using them.	Computer Networks Device Screen Keyboard Input Output Password Internet Safety Information Internet search
Programming (Spring)	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	**Hour of Code: Minecraft for Education** https://code.org/hourofcode/mc Define “coding” and “computer science” Identify key computer science vocabulary Identify places to go to continue learning computer science and coding **Scratch: Creating a simple game.** To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program	Algorithm Sequence Debugging Data Logical reasoning Variables

	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	To design and create a maze-based challenge	
Application and Design (Summer)	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.	**Collaborative information sharing: Creating a Wiki** To learn about types of Wiki's and their uses. To help create a class Wiki on a shared subject. To collaborate with other children and share ideas and feedback with a group. To use a search engine safety to collect information on a given subject.	Digital content File Store Retrieve Manipulate Computational Thinking

Year 4

Unit of Learning	National Curriculum Statements	Key Knowledge	Vocabulary
Skills and Safety (Autumn)	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 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	**Skills: Using Browsers** To use a browser to find and store information. To understand browser 'History' and use the basic functions of Chrome. **Safety: The Internet** To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content To describe how content can be added and accessed on the World Wide Web To outline how websites can be shared via the World Wide Web To recognise how networked devices make up the internet To describe how networks physically connect to other networks	Computer Networks Device Screen Keyboard Input Output Password Internet Safety Information Internet search

Programming (Spring)	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	**Hour of Code: Kodable** https://www.kodable.com/hour-of-code/maze-maker?utm_campaign=partner&utm_medium=learn-page&utm_source=hoc-activity&utm_content=maze-maker Students will be able to create solvable mazes while applying grade-level geometry concepts. **Scratch: Loops** 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 To create a project that includes repetition	Algorithm Sequence Debugging Data Logical reasoning Variables
Application and Design (Summer)	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.	**Introduction to G:Suite Applications- Creating Presentations: Google Slides** To master the basics of Google Slides. To embed a variety of other media types into a presentation. To learn how to give a high quality presentation and present to our peers.	Digital content File Store Retrieve Manipulate Computational Thinking

Upper Key Stage 2

Year 5

Unit of Learning	National Curriculum Statements	Key Knowledge	Vocabulary
Skills and Safety (Autumn)	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 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	**Skills: Processing Documents (Creating an internet safety poster)** To select and adapt a template for a specific purpose. To format text to ensure it is visually appealing To gather and present information in an interesting and engaging way.	Computer Networks Device Screen Keyboard Input Output Password Internet Safety Information Internet search
Programming (Spring)	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	**Kodu: 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	Algorithm Sequence Debugging Data Logical reasoning Variables
Application and Design (Summer)	Select, use and combine a variety of software (including internet services) on a range of digital	**St Peter's Website: Developing a website to promote our school. (Google Sites)**	Digital content File

	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.	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 content owned by other people	Store Retrieve Manipulate Computational Thinking

Year 6

Unit of Learning	National Curriculum Statements	Key Knowledge	Vocabulary
Skills and Safety (Autumn)	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 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	**Safety: Communication** To identify how to use a search engine 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 methods of online communication To send and receive an email To identify potentially dangerous emails	Computer Networks Device Screen Keyboard Input Output Password Internet Safety Information Internet search
Programming (Spring)	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	**Kodu: Variables** 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	Algorithm Sequence Debugging Data Logical reasoning Variables

	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		
Application and Design (Summer)	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.	**Google Sheets: Spreadsheets and data management** 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 To choose suitable ways to present data	Digital content File Store Retrieve Manipulate Computational Thinking