Sandon Primary Academy – Computing: Year 4

Where we improve our knowledge and understanding of technology to enable us to participate and change technological world around us in a safe way.

Autumn Term	Spring Term	Summer Term
Computer Science: Programming Learning the basics of programming in Scratch, children will create a simple script, use decomposition and understand what variables are.	**Computer Science: Computer Systems and Networks** Working collaboratively in a responsible and considerate way as well as looking at a range of collaborative tools.	**Information Technology: Creating Media** Developing their research, word processing, and collaborative working skills whilst learning how web pages and web sites are created, exploring how to change layouts, embed images and videos and link between pages.
Key Objectives: **Lesson 1: Online Safety: Health and Wellbeing:** • I can explain how using technology can be a distraction from other things, in both a positive and negative way. **Lesson 2: To Recall the Key Features of Scratch: Scratch Reminder** • I know what the main parts of Scratch are called • I can recognise how to adjust my sprite in Scratch • I can add a new sprite to my stage write a simple script **Lesson 3: To Understand How a Scratch Game Works by Using Decomposition to Identify Key Features: Identifying What Code Does** • I can recognise that a sprite may contain more than one script • I can identify the parts of a Scratch game • I can understand what we mean by decomposition **Lesson 4: To Understand What a Variable is and How to Make One: Introduction to Variables** • I can use the 'ask' block in Scratch • I know what a variable means • I can make a variable • I can store an answer to a question as a variable **Lesson 5: To Understand How to Make a Variable in Scratch: Making a Variable** • I can create a variable and use it to store information • I can 'call' a variable within my program • I can identify that variables can be words or numbers **Lesson 6: To use knowledge of how variables work to create a quiz: Times Table Project** • I can create a range of questions and use an 'if/else' block to check whether the answer is correct • I can use a variable called 'score' to calculate the total number of correct answers for those completing my quiz • I can make sure my quiz is engaging and exciting for the people playing it	**Key Objectives:** **Lesson 1: Online Safety: Online Bullying** • I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). **Lesson 2: To Understand that Software Can be Used to Work Online Collaboratively: Teamwork** • I understand that I can work with a partner without being in the same room • I can contribute to teamwork sensibly and responsibly • I recognise what behaviour is appropriate when collaborating online **Lesson 3: To Understand How to Contribute to Someone Else's Work Effectively: Sharing a Document** • I can share my work with other people and access documents shared with me • I understand that it is important to be positive and supportive of my classmates • I can use collaborative word processing software to make suggestions or comments on someone else's work **Lesson 4: To Understand How to Create a Digital Survey: Microsoft Forms 1** • I understand how to create a Microsoft Form • I understand why a survey might be useful • I can plan my survey **Lesson 5: To Create and Share a Microsoft Form: Microsoft Forms 2** • I can create a Microsoft Form • I can share a form with my class **Lesson 6: To Analyse Data** • I can export data to a spreadsheet • I can highlight data using conditional formatting • I can use a spreadsheet to calculate averages and sums of numbers	**Key Objectives:** **Lesson 1: Online Safety: Online Reputation** • I can explain ways that some of the information about anyone online could have been created, copied or shared by others. **Lesson 2: To Explore the Features of Google Sits to Explore How to Create Content for a Webpage: Google Sites Skills** • I can create a web page using Google Sites • I can add content to a web page • I can use a range of features in Google Sites and record my progress **Lesson 3: To Plan Content for a Webpage as a Collaborative Online Piece of Work: Book Review Webpage** • I can plan the content for my web page • I understand the features of Google Sites • I can use the features of Google Sites to build a web page **Lesson 4: To Create a Webpage as Part of a Collaborative Class Website: Creating a Webpage** • I can build a web page • I can include many of the features of Google Sites • I can make my page informative and interactive **Lesson 5: To Plan and Create a Website: Planning my Website** • I can plan a website in detail, considering the Google Sites features that I will include • I can start to build a website based on my designs • I can consider information that other people would find useful and interesting **Lesson 6: To Create a Website and Evaluate its Success: Creating my Website** • I can build a website with four web pages about a specific topic • I can use a range of features on Google Sites • I can evaluate a website
Key Vocabulary: • **Code (Computer)** – A set of instructions written in programming language, to tell a computer what to do. • **Code Block** – A visual representation for a section of code that preforms a certain job. They can be snapped together to build a program. • **Conditional Statement** – A rule which states that something cannot happen until certain requirements are met. • **Decompose** – To break something down into smaller chunks. • **Direction** – A way in which something moves such as up, down, left and right • **Feature** – The individual parts that make up something. • **Icon** – A small image which represents something or someone. • **Orientation** – Positioning to a particular place or direction. • **Position** – The location of where something or someone is. • **Program (verb)** – To write code-based instructions for a computer to process. • **Project (Scratch)** – A creation developed within the Scratch program. • **Scratch** – A coding program in which you can develop interactive games and animations. • **Sprite** – Visual objects that can be manipulated through code, for example to move, respond, appear or disappear. • **Stage (Scratch)** – The background of the Scratch project to suit your game, animation or project.	**Key Vocabulary:** • **Collaborative** – Working with others to achieve a specific goal. • **Comment** – Verbal feedback/notes to express an opinion. • **E-Document** – Electronic file which can contain text, images, tables and charts. • **Edit** – To change and amend something. • **Email** – Electronic-mail which allows us to send messages and files from one account to another over a network. • **Icon** – A small image which represents something/someone. • **Insert (file)** – To attach a file into an email/document. • **Link** – A line of text that, when clicked, directs you to another website or document. • **Presentation Software** – A program that allows you to insert information into slides ready to share with others. • **Presentation** – A slide slow that is used to display information. • **Reply** – To say/write a message in response to something that has been said to you. • **Reviewing Comments** – Looking at comments written by others on a document to help the collaborative process. • **Share** – To show or give a part of something to someone else. • **Spreadsheet** – A file where you can input, sort and analyse data across a series of cells. Formula can be written to output mathematical solutions from the data. • **Transition** – Effects that can be applied to occur between slides, images or video clips.	**Key Vocabulary:** • **Collaboration** - Working with others to achieve a specific goal. • **Content** – All information and media contained in something. • **Create** – To make something. • **Design** – To make, draw or write plans for something. • **Edit** – To change and amend something. • **Embed** – Media files which can be stored and viewed within a webpage. • **Feature** – Individual parts that make up something. • **Header** – Text at the top of the page. • **Hyperlink** – Link commonly used in a web page/document to direct you to another website/file. • **Insert (file)** – Place a file into a webpage or piece of software. • **Online** – When a person is accessing the Internet through an electronic device. • **Plan** – An idea about how to do something. • **Tab** – A way of opening and organising multiple websites in a single window on a browser. • **Web Page** – A hypertext page that can be viewed through an internet browser. • **Website** – A series of webpages and other content which can be discovered on the internet browser. They all belong to a single domain name. • **WWW (World Wide Web)** – Beginning of website address.

Cross-Curricular Links:

Autumn: Maths: Times Tables
Spring: RSHE: Respectful Relationships
Maths: Data Analysis
Summer: RSHE: Online Relationships
Literacy: Reading/Writing for a Purpose

Enrichment:

Autumn: Pupil's to code a times table game and use as part of a 'Times Table' afternoon to boost engagement and progress ready for MTC.
Spring: Collect and analyse class data regarding pupils' experiences at Sandon.
Summer: Build Sandon's new website using Google Sites.

Key Computing Skills which can be revisited throughout other Subject Areas:

- Information Technology: logging in and out, using a mouse/mouse pad, developing touch typing skills and keyboard shortcuts, navigating popular websites/programs with confidence, typing for a purpose, saving and retrieving files, creating a range of digital content (posters, slideshow).
- Digital Literacy: e-safety, collaboration, creativity, critical thinking and evaluation, functional skills, effective communication.

Online Safety:

- **Autumn**: Health and Wellbeing
- **Spring**: Online Bullying
- **Summer**: Online Reputation

Key Computing Days:

- National Coding Week - September
- Safer Internet Day – February

• **Tinker** – To explore and play with something to discover key functions. • **Variable** – This could be a number or text, that can change each time the program is run and often in combination with selection to change the end result of the program.			
Resources (IT): • Online Safety: https://projectevolve.co.uk/sign-in/ Username: lcolclough@sandonprimary.org.uk Password: Sandon123456! (Lesson 1) • iPads (Lesson 2-6) • Website: https://scratch.mit.edu/ (Lesson 2-6) • Website: Microsoft Forms Scratch Quiz (Lesson 2) • Website: https://scratch.mit.edu/projects/430767671/ (Lesson 3) • Website: https://scratch.mit.edu/projects/375853808/ (Lesson 4) • Website: https://scratch.mit.edu/projects/375854753/ (Lesson 4) • Website: https://scratch.mit.edu/projects/420125305/ (Lesson 4-5) • Website: https://scratch.mit.edu/projects/214948951/ (Lesson 5) • Website: https://scratch.mit.edu/projects/410141638/editor/ (Lesson 6)	**Resources (IT):** • Online Safety: https://projectevolve.co.uk/sign-in/ Username: lcolclough@sandonprimary.org.uk Password: Sandon123456! (Lesson 1) • Laptops (Lesson 3-6) • Website: https://www.microsoft.com/en-gb/microsoft-365/free-office-online-for-the-web (Lesson 3) • Website: https://forms.microsoft.com/ (Lesson 4-6)	**Resources (IT):** • Online Safety: https://projectevolve.co.uk/sign-in/ Username: lcolclough@sandonprimary.org.uk Password: Sandon123456! (Lesson 1) • Laptops (Lesson 1-5) • Website: https://sites.google.com/new (Lesson 1-5) • Class Email Addresses (Y4A, Y4B, Y4C)	

National Curriculum: By the end of KS2, pupils will be able 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.
- Use search technologies effectively
- 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
- Understand the opportunities [networks] offer for communication and collaboration
- 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