Subject: **COMPUTING** 2023-2024

Coit makes use of the Sheffield Primary Computing Scheme and Teach Computing https://teachcomputing.org/

2023-2024	A1	A2	SP1	SP2	SU1	SU2
F2	**A1 - What is a Computer?** **Uses ICT hardware to interact with age-appropriate computer software** - Explore technology. - 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.	**A1 - What is a Computer?** **Develops digital literacy skills by being able to access, understand and interact with a range of technologies** - 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	**A2 - We Control Technology** **Completes a simple program on electronic devices** **Can use the internet with adult supervision to find and retrieve information of interest to them (link to e-safety)** - Explore technology. - Use different digital devices. - Repeat an action with technology to trigger a specific outcome.	**A2 - We Control Technology** **Can create content such as a video recording, stories and/or draw a picture on screen** - Recognise the success or failure of an action. - Follow simple instructions to control a digital device. - Recognise that we control computers	**A3 - Tinkering: Bee-Bots** **Develops digital literacy skills by being able to access, understand and interact with a range of technologies** **Completes a simple program on electronic devices** - 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. - Recognise that we control computers. - Input a short sequence of instructions to control a device.	

	Throughout the year, we use the Foundation Stage Computing Toolkit from the Sheffield Primary Computing Scheme to incorporate technology into lessons and provide a solid foundation for Computing in Key Stage 1. This covers: Communication and Language; Personal, Social and Emotional Development; Physical Development; Literacy; Mathematics; Understanding the World; and Expressive Arts and Design. 					
Y1	**Unit 0.1 Key Skills** In this unit the children will develop understanding that computer based devices need to be programmed with instructions (commands). This process will help children to begin to write and test simple sequences of instructions. - log on and off - open up word - type on the keyboard to input symbols on the screen Machines Algorithms Program	**Strand 1 – Communicating: Text and images** **Technology Around Us (Teach Computing unit)** In this unit, children will develop their understanding of technology and how it can help them in their everyday lives. They will start to become familiar with the different components of a computer by developing their keyboard and mouse skills. The children will also consider how to use technology responsibly.	**Strand 2 – Communicating: Multimedia** **Digital Painting (Teach Computing unit)** In this unit, children will develop their understanding of a range of tools used for digital painting. They will then use these tools to create their own digital paintings, while gaining inspiration from a range of artists' work. Children will also consider their preferences when painting with and without the use of digital devices.	**Strand 4 – Computational thinking: programming A** **4.1 Simple Bee-Bot Programs** In this unit, children will recognise that a program is a sequence of instructions that a computer can follow. They will predict the outcome of simple programs and start to plan out simple programs to move a floor robot. Computer Program Debugging	**Strand 3 – Understanding and sharing data** **3.1 How do I present data using pictures?** (Link to Online Safety) In this unit children learn that data can be presented graphically. They will explore a graphing package and answer simple questions on the information shown. They will enter data and explain their own work. Computer	**Strand 4 – computational thinking: programming B** **5.1 What is an algorithm?** In this unit, children will recognise that an algorithm is a sequence of instructions that a human or computer can follow to complete a task. They will create simple programs using floor robots by planning out an algorithm first. They will debug and predict the outcome of simple programs and algorithms. Computer Algorithm

		Computer Software Copyright	Computer Software Copyright		Copyright Data	Program Debugging
	Strand 0 – What is a computer? **0.1 – Key skills: What is a computer?**					
Y2	**Strand 1 – Communicating: Text and images** **1.2 How do I use a computer as a writer?** In this unit children identify some different forms information can take (text, images) and learn that information can be personal e.g. school, address. They should also learn about responsible use of technology and come up with their own guidelines for acceptable use in school. Children will explore how to create content using two forms of media (text	**Strand 3 – Understanding and sharing data** **3.2 What is a branching database?** In this unit children understand that data can exist in a variety of forms, including in databases. They will explore a branching database and answer simple questions. They will focus on sorting and grouping data using yes/no questions. Children will create a simple branching database, and test, review and debug content. They will continue to learn about	**Strand 2 – Communicating: Multimedia** **2.2 How do I create a multimedia story?** In this unit, children will plan out digital content and present ideas and information by combining media including images and sound. They will identify the common features of digital content, such as photostories, and evaluate their own digital content. The children will recognise that digital content belongs to the person that created it and the need to keep personal information private. Computer Software Copyright	**Strand 4 – Computational thinking: programming A** **4.2 Extending Bee-Bot programs** In this unit, children explain that an algorithm is a sequence of instructions that a human or computer can follow to complete a task. They will create and debug more complex programs for floor robots, planning out an algorithm first. Computer Algorithm Program	**Strand 4 – Computational thinking: programming B** **5.2 Simple drawing programs** In this unit, children recognise that an algorithm is a sequence of precise instructions that a human or computer can follow to complete a task. They will create simple programs using online programming applications by planning out an algorithm first. They will debug and predict the outcome of

	and images) with increasing independence. They will edit, organise and store content for a given purpose, and learn to give and act on feedback. Logic Machines Program	personal data and keeping it safe. Computer Software Data Debugging		Sequence Debugging	programs in more than one application. Computer Algorithm Program Sequence Debugging
	Strand 0 – What is a computer? **0.2 – Key skills: Using a computer**				
Y3	**Strand 1 – Communicating: Text and images** **1.3 What makes a good poster?** In this unit children focus on combining information to improve communication. They will learn how to communicate by using a combination of graphics and text. Children will create, edit, organise and store content for a given purpose both as a led task and independently. **Concepts:** Logic	**Strand 2 – Communicating: Multimedia** **Making Digital Music (Teach Computing unit)** In this unit, children will be using a computer to create music. They will listen to a variety of pieces of music and consider how music can make them think and feel. The children will	**Strand 4 – computational thinking: programming A** **4.3 Sequence and events in programs** In this unit, children will recognise that changing the sequence of code in a program affects the outcome. They will use a range of inputs in a program to make things happen and create an	**Strand 3 – Understanding and sharing data** **Flat-file databases (Teach Computing unit)** In this unit, children will look at how a flat-file database can be used to organise data in records. They will use tools within a database to order and answer questions about data. The children will	**Strand 4 – computational thinking: programming B** **5.3 Count-controlled loops in Scratch** In this unit, children recognise that an algorithm is a sequence of instructions to fulfil a task and that when inputted on a computer, it is called a program. Children will use a range of events to start part of

	Machines Data	compare creating music digitally and non-digitally as well as looking at patterns and purposefully creating music. **Concepts:** Logic Machines Program Sequence	algorithm to plan out a program. **Concepts:** Algorithm Program Sequence Debugging Input	create graphs and charts from their data to help solve problems. They will also use a real-life database to answer a question and present their work to others. **Concepts:** Logic Machines Program Data	a program and use count-controlled loops to make things happen a certain number of times. **Concepts:** Algorithm Program Sequence Debugging Input
	Strand 0 – What is a computer? **0.3 – Key skills: Using a School Computer**				
Y4	**Strand 1 – Communicating: Text and images** **1.4 How do I use a computer as an artist?** In this unit children learn how to create digital artwork in a	**Strand 2 – Communicating: Multimedia** **2.4 What makes an excellent multimedia story?**	**Strand 3 – Understanding and sharing data** **Connecting Computers (Teach Computing unit)** In this unit, children will develop their understanding of digital devices. They will be introduced to	**Strand 4 – Computational thinking: programming A** **4.4 Decomposition and infinite loops** In this unit, children will recognise that we can decompose	**Strand 4 – Computational thinking: programming B** **5.4 Simple selection in Scratch** In this unit, children will recognise that programs flow differently depending on whether events, loops and selection statements are used. The will use selection to change what happens in a program depending on if a condition is met. Algorithm

	paint package and by editing their own and other people's photos (considering copyright). Children will explore how to create, edit, organise and store images for a specific purpose/audience, and understand how the size of an image affects quality. This unit presents an opportunity to discuss image manipulation and body image.* Use art and photo-editing apps to create artwork. Add photos to create a montage. Logic Abstraction Machines Program	In this unit children will evaluate animations or photostories to consider what makes it good and collectively produce a quality checklist. They will discuss their ideas for stories with peers. Children will storyboard on a given theme, and create resources. They will review and discuss how they could improve their work by adding music, titles and effects, and according to checklist. Choose to do animation or photo story depending on resources. All films are rated according to the PEGI system – discuss appropriate content for their age. Machines Algorithms Program Data	computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches. The children will also discover the benefits of connecting devices in a network. Logic Machines Algorithms Program Data	programs into smaller parts to make them easier to solve and debug. They will use infinite (forever) loops in programs to keep something happening. Algorithm Program Input Decomposition Repetition	Sequence Repetition Selection

	Strand 0 – What is a computer? **0.4 – Key skills: Using School Computers and Networks Effectively**				
Y5	**Strand 2 – Communicating: Multimedia** **2.5 How do I create a radio advert/podcast?** In this unit children will evaluate a range of radio adverts or podcasts and identify their key features: purpose, audience, sound effects, music choice, layers, entertainment factor, clear audio. Children should apply these features to their own work. They will plan, rehearse and record their own script on a given theme. They will learn how to edit audio and add layers. Children will review and evaluate each other's work and suggest improvements. **Concepts:** Machines Program Data Copyright	**Strand 4 – Computational thinking: programming A** **4.5 Selection and variables** In this unit, children will recognise that we use selection to change what happens in a program, depending on whether a condition is met. They will design and create programs using selection and infinite loops. Children will also recognise and use simple variables to keep score. **Concepts:** Input Repetition Selection Variable	**Strand 3 – Understanding and sharing data** **3.5 How do I find data and share responsibly and safely?** In this unit children develop their understanding of internet search technologies and the World Wide Web. They explore the functions that are available to improve how searches are completed. They will also consider validity of information, copyright and responsible use. The children will learn about how they share their data with online sites and games, and what this means. **Concepts:** Logic	**Strand 1 – Communicating: Text and images** **1.5 How do we collaborate online?** In this unit children will learn about the World Wide Web, and explore and use online tools (internet services). They will consider personal safety issues in their use and work collaboratively online with others to refine and share ideas effectively. They will consider copyright and responsible use of information. This builds on knowledge gained in Unit 3.4 and links closely with Unit 3.5. * **Concepts:** Logic	**Strand 4 – Computational thinking: programming B** **5.5 Simulating physical systems** In this unit, children will recognise examples of physical systems controlled by computers. They will be able to name a range of inputs and outputs of physical systems. They will also use repetition, selection and variables to build or simulate a physical system in a suitable application. **Concepts:** Input Output Repetition Selection Variable

				Data Program	Abstraction Machines Program Data	Physical Systems
	Strand 0 – What is a computer? **0.5 – Key skills: Becoming and efficient computer user**					
Y6	**Strand 3 – Understanding and sharing data** **3.6 Why do we use spreadsheets?** In this unit children will learn to use a spreadsheet to develop and explore mathematical models. (A spreadsheet is a computer program which organises data into rows and columns which can be manipulated and used in calculations). Children will input data into a spreadsheet for a given purpose; make predictions and explore the effects of changing the data. They	**Strand 2 – Communicating: Multimedia** **2.6 What makes an excellent film?** Children will learn about the features of a good film. They will identify different camera angles used in filmmaking and discuss their effect. They will apply this knowledge in their own planning and filming. They will learn the basics of editing video clips and adding effects. Children will review and evaluate their film and edit their work to improve it. All films in	**Strand 4 – Computational thinking: programming A** **4.6 Writing complex programs** In this unit, children will recognise and use sequence, repetition, selection and variables to create complex programs. They will combine variables with operators to determine when a program changes. Concepts: Input Repetition Selection Variable	**Strand 1 – Communicating: Text and images** **1.6 How do I use a computer as a designer?** In this unit children will use a vector (object) based graphics package to produce images and visual models. Children will develop an understanding of the difference between raster (paint) packages and vector based packages. Many art software packages are raster/pixel based and the images they produce are called 'bitmaps' –	**Strand 4 – Computational thinking: programming B** **5.6 Real world applications** In this unit, children will recognise examples of real-world applications controlled by computers. They will use sequence, repetition, selection and variables to design and create a real-world physical system or application. Concepts:

	will also explore how formulae are used. Concepts: Logic Algorithms Program Data	the UK have a PEGI rating – discuss what kind of content affects the rating Concepts: Program Data		these create images using pixels. Vector / Object based graphics can be constructed from geometric shapes, circles, squares and lines. These shapes are called objects and can be enlarged without losing quality. Concepts: Logic Abstraction Machines Program	Input Output Repetition Selection Variable Physical Systems
	Strand 0 – What is a computer? **0.6 – Key skills: Understanding the computer**				