Year 1 Computing

Key Vocabulary

What's the big picture in IT and digital literacy?
To begin to prepare our children to have skill for life ensuring they are fully prepared for future work, opportunities within technology and the ability to be safe online.

Digital Literacy		
National Curriculum Principles	**Objectives**	**Knowledge and key Vocabulary**
Recognise common uses of information technology beyond school.	• To understand that information comes from a variety of sources; e.g. books, websites, TV… • To understand that technology allows you to quickly access information from a range of sources. • To understand how digital technology is used at home and school. • To be able to explore a range of electronic information as part of a topic.	• With increasing independence, allow children to navigate websites or information stored on a website, seesaw or other platform (paper or digital). Such as CBBC Newsround, National Geographic or sites linked to current projects. • With increasing independence, recognise that icons, menus, hyperlinks are used to organise information (Seesaw) • Have access to different types of information from a range of sources (books, websites, TV) • Recognise digital technologies in everyday life. To link to current projects e.g Great Fire of London. How is technology used in the Fire services? Difference in technology from then to now.
Use technology safely and respectfully, keeping personal information private.	• To understand that anyone, from anywhere, can access the internet. • To understand that personal information	• With increasing independence, understand that the internet is a network of servers that sends and receives information. • https://www.thinkuknow.co.uk • http://www.safetynetkids.org.uk/personal-safety/staying-safe

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	should not be shared online.	-online/ • https://www.bbc.co.uk/cbeebies/grownups/article-internet-use-and-safety
identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	• To understand what to do when worried about something and to recognise specific places to get help - CEOP.	Share the school child friendly online safety policy with children. Talk about trusted adults at home and who to share their concerns with.

Information Technology		
National Curriculum Principles	**Objectives**	**Knowledge and key Vocabulary**
To use, with support, technology purposefully to create , organise, store, manipulate and retrieve digital content. (Ongoing)	• Organise folders and documents on their iPads and to understand the importance. • To understand that files can be uploaded organised to help with retrieval of digital content. • To understand that digital content can come in a variety of forms: images, videos and audio.	• Show children how to add apps to a folder for a specific purpose. • Upload documents to Seesaw and add to a folder. • Use Clips/GarageBand/Camera to create to show a variety of digital content.

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Computer Science		
What's the big picture? To enable our children to have skill for life to ensure they are fully prepared for future work, opportunities		
National Curriculum Principles: - 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. These National Curriculum objectives are delivered through the use of Everyone Can Code (Get Started with Code 1). The lessons have been designed to develop and build on skills. The structure of each lesson should follow: introduction, activity, practice and reflection/ journal. Children in Year 1 will use the app CodeSpark.		
Lesson	**Objectives**	**Knowledge and key Vocabulary**
0	- Introduce the concept of coding. - Understand the goals of the sessions/ outcome. - Understand the purpose of a working wall. - Learn how to use Seesaw.	To be introduced to the terms coding, developer and apps (applications). Chn to begin to understand that Seesaw will be used to share their work. (P13)
1	**Sequence** - Using everyday examples, describe what sequences are. - Construct a sequence based on a familiar story. - Code using sequences.	As a class, identify and order steps in an everyday routine e.g. brushing your teeth using prompts. First, next, last. What would happen if the steps were out of order? Using goldilocks and the three bears or similar story chn to draw the story and then arrange themselves in order so the story is sequenced correctly. Class to reorder to ensure the story is correct.
2	**Sequence and command**	**Introduction**

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	- Build a step-by-step sequence. - Understand the importance of order when sequencing instructions. - Code using sequence.	Continue to develop understanding of the term sequence by creating a secret handshake. P22. Continuing from a secret handshake, chn to create a dance sequence and then teach other students how to perform it. P23 **Practise** Complete activity on codeSpark Academy P24. **Reflection** Add an image of the secret handshake to the working wall. Discuss the following: what does a sequence look like in the app? How could you tell if the sequence wasn't right? What happens if you tell the computer a sequence in the wrong order?
3	**Sequence and command - Flexible Sequencing** - Understand that some stephs within a sequence can be reordered and still achieve the same outcome. - Construct a flexible sequence and compare it with a partner's work. - Identify which parts of the sequence are step-by-step and which parts are flexible. - Code using different sequences to achieve the same outcome.	**Introduction** In the first two lessons chn looked at sequencing with only one correct order. Throughout this lesson chn will explore flexible sequencing which are sequences that can be completed in more than one way. Using the getting ready cards (P28), chn are to sequence how they get ready in the morning. First, next … last. Chn to use the cards to order how they get dressed in the morning. Discuss similarities and differences between chn's routines. Flexible sequencing - more than one way of completing a task. **Activity** Drawing is another way of showing flexible sequencing. Chn to draw a face on a whiteboard. As you demonstrate, explain that drawing a face is a flexible sequence. Some elements must be completed in a particular order, such as face shape, while others can be completed in any order such as ears and eyes. Use the video example on P29. **Practise** Chn are to replay the levels in Donut Detective on codeSpark to reinforce programming and sequencing logic. Encourage chn to try different sequences or achieve 3 stars in their already finished levels.

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		Reflection Complete the reflections element of p32.
4	**Loops** - Understand what a loop is. - Identify where a loop can make an instruction more efficient. - Understand why a loop is powerful. - Code with loops.	**Introduction** Complete the introduction section on P35. Chn to explore the term loop and how it is an instruction to repeat a set of commands a number of times. **Activity** Chn to use their bodies to make music and become a body percussion orchestra. Introduce the sounds one at a time using the keynote on P36. Copy and paste slides to increase the number of times an action is completed. **Practise** Chn to use levels 1- 16 on Tool trouble. Here they will be introduced to Woz the Construction Foo. Can they use a loop on every level? **Reflection** Add the word 'loop' to the working wall as well as screenshots of the coding activity. Following the discussion points on p38.
5	**Debugging.** - Describe what debugging is. - Demonstrate the use of debugging in an everyday situation. - Debug code.	**Introduction** Chn to explain how to complete an everyday task. Complete the task as the chn describes what to do. Follow their commands even if they make a mistake. Allow the chn time to self-correct to accomplish the task correctly. Discuss, every time they modified their instruction, they were debugging (errors). **Activity** Chn to use a grid marked out on the floor to guide. Using prompt cards: forward, turn left and turn right or arrow cards. Chn to take the role of either a robot, coder or debugger. The coder creates the sequence, the robot completes the sequence and the debugger ensures the robot completes the sequence correctly. **Practise** Working in pairs, chn to complete all levels on Kite Plight. They are to work together to ensure the code is correct and that they debug the code if there is an error.

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		Reflection Add the term 'bug' and 'debugging' to the working wall as well as an image of the robot game. Discuss the questions on p44.
6	**Events and actions.** - Understand that an event is an action that causes something to happen. - Recognise that events give us options in coding - they cause things to happen only when the event occurs. - Express an event in words and symbols. - Code using events and action.	**Introduction** Play the game stated on page 47. Discuss how the teacher turning around is an 'event' and the resulting 'action' was the students freezing. **Activity** Robot remote control. Discuss who uses a remote control at home and why. Give the children the remote control template via iPads and ask them to illustrate the blank buttons to show the actions their robot will perform. (page 48.) **Practise** Complete Chapter 4: Puppy Problems. This chapter introduces events, particularly the bump event. (Page 49.) **Reflection** Based on the word 'event'.
7	**IF statements.** - Understand that we can make actions occur only under certain conditions. - Use IF statements in everyday life and in coding. - Code using IF statements.	**Introduction** Discuss what is meant by conditional statements and how we use 'if' statements. (Page 44.) **Activity** Play Simon Says. (Page 55.) **Practise** Complete Lunch Crunch, level 1-10. The introduction to new event and conditional statements. **Reflection** Add 'IF statements' to the working wall. Complete questions on page 57.
8	**Algorithms.** - Write an algorithm to solve a problem.	**Introduction** Discuss the term algorithm with the children and focus on being precise in our instructions.

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	- Design a simple program.	Many of the activities already completed have required us to make algorithms. (Page 60.) **Activity** Hazards maze. Children are to create their own maze of hazards. Complete the activity on page 61. **Practise** Children are to create their own maze using codeSpark Academy. (Page 62). **Reflection** Add the word algorithm to the working wall and complete the reflection questions.

Glossary	
Algorithm	An algorithm is a set of steph-by-step rules or instructions.
Bug	A bug is an error in your code.
Coding	Coding is telling a computer what to do.
Command	A command is a specific action.
Conditional statement or action	Conditional statements or actions occur only under certain conditions.
Debugging	Debugging is the process of identifying and fixing errors.
Developer	Developers write code to build their own apps and games.
Event	An event is an action that causes something else to happen.
Loop	A loop is an instruction to repeat a set of commands for a specific number of times.
Sequence	A sequence is the order in which things happen, like patterns and events.