Jeavons Wood Primary School

Knowledge Organiser for Year 2

Big question: How do I control a sprite on Scratch Jr.?

British Values Link: Tolerance

(Respecting differences, working together and learning about others, being kind to everyone)

National curriculum specification (KS1)
• 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 • Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

In this unit, the children will:
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.

Key vocabulary:
Programming
Scratch Jr.
Sprite
Quiz
Command
Block
Debugging
Sequence
Algorithm
Outcome

Scratch Jr.	Creating Quizzes
Scratch: A website/app that lets us code our own stories, games and animations. **Sprites**: Scratch Jr. uses characters called sprites. The main sprite is a cat called Scratch (see above picture). **Home**: Clicking on the house takes you 'home' to your project screen. **Blocks**: These are programming blocks. You drag them into 	**Outcomes**: An outcome is something that happens as a result of us doing something. E.g. in cookery, we can mix and cook ingredients to make an outcome of food! In Scratch Jr. a sequence of commands is followed and this results in an outcome. **Quizzes in Scratch**: We can create simple quizzes in Scratch jr. where the user can select an answer by clicking on a sprite. An

the programming area and link them together to create an algorithm. **Background**: Backgrounds are added by clicking the landscape icon.  **Running the Code**: Run your animation by tapping the full screen icon, and then the green flag. **Sequences**: A sequence is a pattern or process in which one thing follows another. In Scratch Jr. you can stack blocks together side by side in order to create sequences. **Start Blocks**: Start blocks are yellow & are used to start/run programs. **End Blocks**: End blocks are red. These are used to end your program.	outcome occurs when the sprite is clicked. - **Adding and Programming Sprites**: We need multiple sprites for the user to select from. To add new sprites, we choose the + option (see right). We can program multiple sprites. The sprite we are programming is the picture in the programming area. -Programming **Sequences**: Consider what question to ask your users, e.g. Who lives here? Program each sprite with a command sequence, so that they know if they are right or not when clicking on the sprite.
Algorithms and Programming	**Debugging**
An algorithm is a set of instructions for performing a task. Designing an algorithm can help us to make the quiz work in the way that we want it to. Programming is when we move the blocks into the position (based on our algorithm design). Programming uses a code that the computer can understand. In Scratch Jr. this makes our quiz animation do the things we want it to.	Somethings, things don't work exactly how we want them to the first time. This may be a problem with our algorithm, or we could have made a mistake in our programming. If the animation does not work correctly the first time, remember to debug it. This means finding and fixing the problem.

Subject Knowledge	This unit focuses on developing learners' understanding of computer programming. It highlights that algorithms are a set of clear, precise, and ordered instructions, and that a computer program is the implementation of an algorithm on a digital device. The unit also introduces reading 'code' to predict what a program will do. Learners will engage in aspects of program design, including outlining the project task and creating algorithms. When programming, there are four levels that can help describe a project, known as Levels of abstraction. Research suggests that this structure can support learners in understanding how to create a program and how it works: Task – what is needed Design – what it should do Code – how it is done Running the code – what it does

Prior Learning	This unit initially recaps on learning from the Year 1 ScratchJr unit 'Programming B – Programming animations'. Learners begin to understand that sequences of commands have an outcome, and make predictions based on their learning. They use and modify designs to create their own quiz questions in ScratchJr, and realise these designs in ScratchJr using blocks of code. Finally, learners evaluate their work and make improvements to their programming projects. There are two Year 2 programming units: • Programming A – Robot algorithms • Programming B – Programming quizzes This is unit B, which should be delivered after unit A.
Progression	This unit progresses learners' knowledge and understanding of instructions in sequences and the use of logical reasoning to predict outcomes.