Samuel Allsopp
Primary & Nursery School

MEDIUM TERM PLAN

TERM: Autumn 2		YEAR GROUP: Year 4		SUBJECT: Computers Further coding with scratch
WEEK 1 **DATE: 04.11.24** **Lesson 1: Scratch reminder**	**WEEK 2** **DATE: 11.11.24** **Lesson 2: Identifying what code does**	**WEEK 3** **DATE: 18.11.24** **Introduction to variables**	**WEEK 4** **DATE: 25.11.24** **Lesson 4: Making a variable**	**WEEK 5** **DATE: 02.12.24** **Lesson 5: Times tables project**
LO: To recall the key features of Scratch **Success Criteria:** I can name the main areas of Scratch. I can recognise how to adjust my sprite's orientation in Scratch. I can create a simple script for a new sprite to my stage **Main Event:** Slide 1 *Presentation: Sprite positioning and orientation* - what do the numbers next to the 'x' and 'y' mean. Slide 2, explain that the numbers represent coordinates and relate this to similar work in maths. Explain that in Scratch, 0, 0 is in the middle of the screen and coordinates can become negative numbers. Demonstrate, using Scratch, that when a sprite is moved to a different place on the stage, the coordinates change to represent its current position. Slide 5 look at the three icons underneath the direction dial. Discuss with a partner what they think the three icons represent. Display slide 6 to explain how they control a sprite within Scratch. Display code blocks slide 7 ask children to explain to a partner what the script does. **Creating a sprite controlled by the arrow keys** Slide 8 Remind them they have been given the script's start but will need to work with a partner to write the rest. Children to go to Scratch website, create a new	**LO:** Lesson 2: Identifying what code does **Success Criteria:** I can recognise that a sprite may contain more than one script. I can identify the parts of a Scratch game. I can explain the term 'decomposition **Main Event:** Slide 1 *Presentation: Identifying what code does* ask the children if they have heard of the word 'decomposition'. Slide 2 explain that for a game to work, the computer needs to be told to perform several different actions. Slide 3 explain that they will decompose the quiz game into its parts to determine what code blocks might have been used. *Activity: Scratch Ice kingdom* allow time for the children to complete the activity. **Support:** Investigate what happens when a user gets a correct answer compared to an incorrect answer **Challenge:** Open a blank Scratch project and try out different blocks to see if they can get a similar response.	LO: Lesson 3: Introduction to variables **Success Criteria:** I can use the 'ask' block in Scratch. I can understand what variable means. I can create a variable in Scratch to store an answer **Main Event:** Display the *Presentation: Code inspection*. Look at the Scratch code on the board and discuss what it might do. Make links between how the answer block is used and the children's work with variables on whiteboards during the Attention grabber. Either download the file *Download: Variables part one .sb3 file* to your school network and upload it to Scratch or use the link: Scratch - Variables part one (see *Teacher video: Sb3 files and creating Scratch projects*). Play the game to demonstrate how the code works. Hand out the devices (one between two) and share the link: Scratch. The children can access Scratch as guests rather than setting up an account (see Teacher knowledge). Ask the children to go to the Scratch website and create a new project. Show the *Pupil video: Conditional statements*, which demonstrates the lesson activity.	LO: Lesson 4: Making a variable **Success Criteria:** I can create a variable and use it to store information. I can 'call' a variable within my program. I can recognise that variables can be words or numbers **Main Event:** Hand out the devices (one between two). Explain that the children will adapt their Scratch project from the last lesson to create a simple maths quiz. Inform them that to make the quiz interesting, they will use variables to remember the player's name and to keep the score. Demonstrate how to open a downloaded project in Scratch. Ensure all the children can find their saved file from the last lesson and open it in Scratch. Go to File > Load from your computer and select the .sb3 file (see *Teacher video: Sb3 files and creating Scratch projects*). Show the *Pupil video: Making a variable*, which demonstrates the lesson activity. Allow the children to explore the variables panel and create a variable to track the score. They could also create a variable called 'name' to repeat the user's name back to them. Explain that they should tinker to add more questions to their quiz and ensure Scratch tracks the user's score. Explain to the children that if they want to change their sprite, they will need to copy their code from one sprite to another before deleting the old sprite to ensure they do not lose their code.	LO: Lesson 5: Times tables project **Success Criteria:** I can create a range of questions. I can use the 'if/else' block to check whether an answer is correct. I can use the 'score' variable to calculate the total number of correct answers. I can make my quiz engaging and exciting **Main Event:** Explain that the children will continue their Scratch project from the last lesson. Inform them that to make the quiz more interactive, they will use a variable to allow the user to choose the times table they want to be tested on. Demonstrate how to open a downloaded project in Scratch. Ensure all the children can find their saved file from the last lesson and open it in Scratch. Go to File > Load from your computer and select the .sb3 file (see *Teacher video: Sb3 files and creating Scratch projects*). Show the *Pupil video: Times table project,* which demonstrates the lesson activity. Allow the children the remainder of the lesson to 'tinker' with their times tables project. Encourage them to be creative and imaginative within the parameters of the task. As the children are tinkering, you may need to remind them of the following points (as shown in the Pupil video): **Support:**

Samuel Allsopp
Primary & Nursery School

MEDIUM TERM PLAN

project Allow children to complete activity and play with the script they have created. Slide 9, challenge children who have created a sprite controlled by the keyboard's arrow keys to create a second sprite that follows the mouse pointer. Explain that they must utilise the 'forever' loop and the 'point towards' blocks. **Support:** Discuss what other directions the sprite will need to move in apart from down and right.. *H*elp them prevent a sprite from rotating. **Challenge:** Create a second sprite which follows the mouse; add another sprite controlled by different keys.		Allow time for the children to add code to ask the user their name and a simple maths question. Explain that they should evaluate whether or not the answer is correct by 'tinkering' – exploring and playing with something to discover its key functions. Rewatch the pupil video if necessary or use the *Presentation: Conditional statements* for further support. **Support:** Should watch the *Pupil video: Conditional statements* again; could be reminded where to find the 'ask' and 'answer' block; could view the step-by-step guide in the *Presentation: Conditional statements* for further support. **Challenge:** Should be encouraged to create different questions and think about ways to make sure responses are interesting for the player.	Rewatch the pupil video if necessary or use the *Presentation: Making a variable* for further support. **Support:** Could plan their questions in advance; could be provided with a printed sheet of useful blocks and be asked where they think they should go within the code; should discuss the program and explain what they think it does based on what blocks have been used; could rewatch the *Pupil video: Making a variable;* could view the step-by-step guide in the *Presentation: Making a variable* for further support. **Challenge:** Could try tinkering to tell the user their score at the end of the quiz using a 'say' block and a 'score' variable block.	Could use the *Presentation: Creating a variable to track the score* to create a working program that displays a player's score and has at least three questions. **Challenge:** Could try tinkering to change the costumes of their sprite depending on whether the user gives a correct or incorrect answer using the looks panel and selecting the 'switch costume to' block (see *Teacher video: Changing costumes*).