

Scratch Developing Games: Characters and Backdrops

<p>Aim: 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. Design a character and backdrop to fit the context of an existing game.</p>	<p>Success Criteria: I can draw a background using blocks to make a more complex maze. I can use tools to draw my own character (sprite). I can program commands that change the backdrop. I can test and debug a program after making changes.</p>	<p>Resources: Lesson Pack Desktop computer, laptop or tablet. (This lesson is intended for use in conjunction with Scratch 3 software installed.) Whiteboards and pens.</p>
<p>I can design my own characters and backdrops.</p>	<p>Key/New Words: Algorithm, sprite, backdrop, script, blocks events, sequence, gradient, fill.</p>	<p>Preparation: Launch Scratch application and load 'Maze Game' program in advance. Differentiated Characters and Backdrops Activity Sheet – as required.</p>

Prior Learning: Children will have made a basic maze game in lesson 1.

Learning Sequence

	<p>Aim of the Game: What was the aim of the Maze Game created last lesson? What could be done to make the game more interesting or exciting? Allow a short time for discussion of ideas and then feedback. Keep ideas for future extension work.</p>	
	<p>The Next Level: We can design a more complex backdrop to become Level 2 of the Maze Game. Click on Paint New Backdrop. Choose a background colour to use. Can you use a Gradient Fill? Can you create a more challenging maze backdrop than the last one? Edit the titles to label the two backdrops Level 1 and Level 2.</p>	
	<p>Level Progress: How could the code be adapted to make progress from Level 1 to Level 2? What does a Player do to complete the first level and what action does this trigger in order to move to the second level? Guide children to understanding that the sprite must reach the green exit and that this triggers the new event of changing to the next backdrop. The sprite will need to be reset to the starting position and the 'Well done' message given a time limit. This process can be repeated for any number of gradually more complex levels for more able children.</p>	
	<p>Develop Your Game: Children use the differentiated Characters and Backdrops Activity Sheets as required.</p> <div style="display: flex; justify-content: space-around;"> <div> <p> Children edit the script making choices to edit particular values. This could be their script from the previous lesson if successful, or the Maze Game Scratch file.</p> </div> <div> <p> Children must follow the instructions to edit their script, while making some of their own coding decisions.</p> </div> <div> <p> Children use the open-ended prompts to write and develop their code. Individual solutions to editing the script may vary but trial and error should be encouraged.</p> </div> </div>	
	<p>Character Design: Click on Paint New Sprite to open a similar canvas to the backdrop editor. This time create a simple new character - it could be an enemy for the first sprite. Can you use the tools for brush, line, ellipse, select (resize) and be able to change the line width? (This will be useful for future lessons.)</p>	
	<p>Play the Game: Choose children to show the design of their game. Play and evaluate, then look at the code. Test and debug. Appraise each other's games and suggest next steps. What improvements could be made? Save for future editing.</p>	

Taskit

- Createit:** After creating your levels, add a final backdrop of your choice. When reached, display the message 'Game Completed!'
- Exploreit:** Save your Scratch project with 'Version 2, 3 or 4' as the filename then explore some new blocks in your game code. This will preserve the working code you have and allow you to experiment with some new ideas to improve your game. Don't worry - you can always go back to a previous version whenever you like.