Blockly Challenge 4

What is Blockly?

Blockly is a block-based visual programming tool. It is written in JavaScript, which is a popular programming language. We will be using Blockly to complete a series of maze challenges – this will introduce you to some programming fundamentals such as loops and conditionals!

The Fourth Maze

Do this challenge after completing maze 1-3. This challenge uses While Loops – an explanation of these can be found in the programming concepts box.

Step 1 – As before, navigate https://blockly.games to and select "maze" – you can skip straight to challenge 4. If you're doing this straight after the second challenge, you'll probably have automatically been moved on to the third maze.
Step 2 – Complete the maze by choosing blocks and putting them into the correct sequence (creating an algorithm).
Step 3 – Click "Run Program" to test your program and if you're wrong, try again!

You could use a blank piece of paper or the back of this sheet to write down your workings out if you need to.

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Why Are we Doing This?

Blockly is a great introduction into the fundamentals of programming, and uses problem solving skills. The challenges are fun and can be quite challenging – this encourages computational thinking, and you'll start using loops and conditionals.

What You'll Need

Access to the internet and this handout. There is a video tutorial covering While Loops and If Statements and also another video covering how to use the website.

Programming Concepts

This maze introduces while loops, which are one of the main types of loops used in programming. A while loop is a "control flow statement" – it runs code depending on whether a statement is true or false. In this case, it will run the code inside the loop until the figure reaches the checkpoint.

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Solution

The solution for this is one loop and 4 movement blocks.

```
repeat until 📍
do   move forward
     turn left ↺ ▾
     move forward
     turn right ↺ ▾
```