Computational thinking for digital technologies: Exemplar 6

PROGRESS OUTCOME 3

Dance moves

Annotation

Maia's response to the task demonstrates that she:

- can develop a basic computer program in a block-based programming environment
- understands the need to be precise because computers cannot infer
- understands the difference between an algorithm and a program
- can identify patterns in algorithms and programs where iteration can be applied.

Background

The students in Maia's learning environment have had some experience of working in a block-based programming environment (Scratch) and been introduced to the concept of iteration using repeat blocks as a way of simplifying algorithms and programs.

Task

Using their new knowledge of iteration, the students are asked to use a block-based programming environment (Scratch) to create an animated character that moves to music. The animation needs to repeat the same sequence of movements in the verse of the song and a different sequence in the chorus.

Mrs Anderson takes the opportunity to link iteration in digital technology to the way her students have been writing repeated patterns in their music activities. The task also enables her to reinforce the students' emerging mathematical understanding of the x and y axes.

Student response

After creating her program, Maia finds that every time she wants her character to dance for a verse and then a chorus, she has to press the green flag again.

Using the knowledge she has gained about iteration, she modifies her program using the repeat block so that her character dances to the verse and chorus five times.
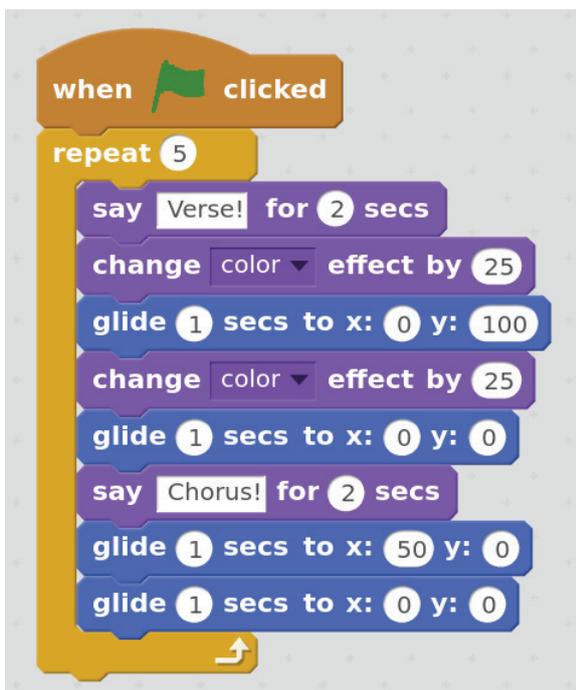
Mrs Anderson:	*Can you explain what your character does?*
Maia:	*In the verse, it jumps up and down and changes colour. Then for the chorus, it moves to the right and then to the left.*
Mrs Anderson:	*How many times does it happen?*
Maia:	*Five times!*

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