

Module 1 - Activity 3:

The Red Robots

Overview

In this lesson students create a program to move the pink robot around using the motion and looks blocks. They use multiple blocks to run the programme.

Computing PoS Reference

- Write and debug programs that accomplish specific goals.

Learning Objective

- To learn how to change the values of motion blocks and how to create code using multiple blocks.

Success Criteria

All: I can change the values of motion blocks and write code with more than one line.

Most: I can explain how to change and choose the values of motion blocks and write code with more than one line.

Some: I can explain how to change and choose the values of motion blocks and plan code with multiple lines.

Key Words

direction, angle, debugging, key pressed, event, single block, multiple blocks, distance, values, looks.

Computer Science Concepts

- Programming.
- Multiple coding blocks.
- Debugging.
- Control.
- Events.
- Motion.
- Looks

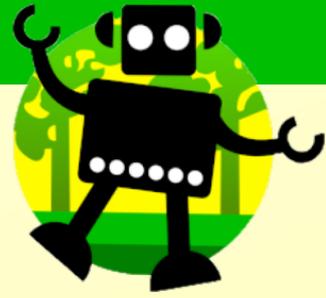
Cross Curricular Concepts

- Mathematics: turning, angles, degrees, distance.

Introduction

Ask students to discuss the adventure so far, what they have learnt and the coding blocks that they have used. Q: Which type of blocks did we use, what colour were they and what did they do? (CONTROL - Orange - when flag clicked / MOTION - Blue- move and turn).

Share the learning objective and success criteria.

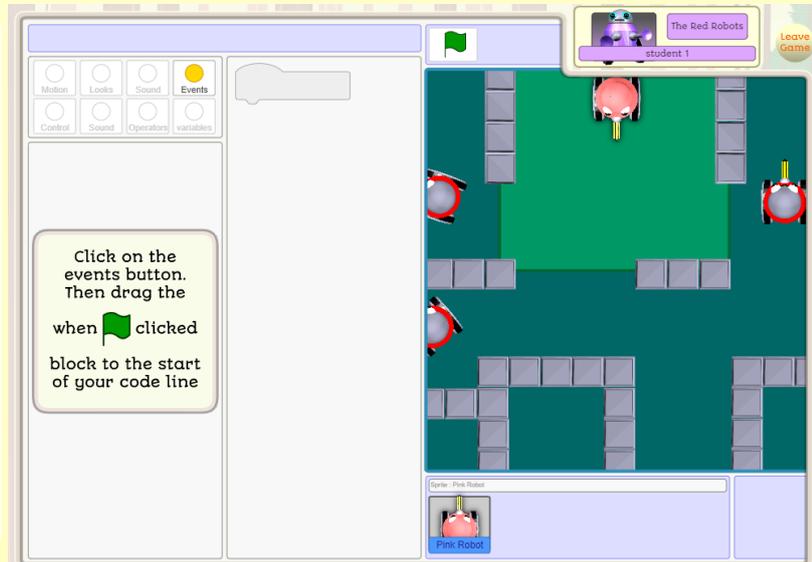


Activity 3: The Red Robots

EXPLORE: Introduce the activity by playing **The Three Doors** until you reach the temple rooms and the programming area appears.

[N.B. You can also jump straight to here from **The Red Robots** if you have already introduced The Three Doors].

Recap the activity and point out that the students can use multiple lines of code and different values to move and turn. Discuss which values will be most useful.



DISCUSS: In pairs, ask students to use the Record Sheet to write the coding blocks they think they will need to zap one of the red robots. Demonstrate one idea with the entire class and discuss any debugging that is needed.

OFFLINE ACTIVITY: Use the classroom to set up a similar scenario, with students acting as robots to test distance and turns.

CHALLENGE: Ask students to work through **The Red Robots**, focusing on using multiple coding blocks at a time and debugging where necessary. Ask the students to use the Record Sheet to record each block of coding they use.

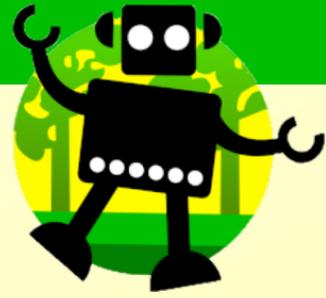
EVALUATE: Ask students how they completed the activity.

Q: Which blocks did you put together before you ran the program?

Q: How did you work out which values to use for the turns and steps?

Q: Did you make any mistakes that you had to debug? Was there more than one way to fix a problem?

when  clicked



Activity 3: The Red Robots

SEN Support

- Use a Record Sheet (see below) to keep track of the correct steps.
- Work in mixed ability pairs.

Resources

- Whiteboard or record sheet

Extension Activity

If the green flag could only be clicked once to defeat all of the robots, what would the block coding need to be? Use the extension sheet to write the list.

Possible Key Questions For Assessment

What did you learn about coding today?

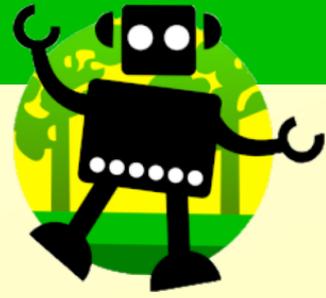
Which coding blocks did you use?

What is the difference between single and multiple block coding?

Was it important to organise the coding blocks in a certain order?

When using turn blocks, are there some angles that are easier to use than others?

What did you do when you made a mistake?



Activity 3: Record/Extension Sheet

Record Sheet: Keep track of the coding blocks that you use and any changes that you make (debugging).

when  clicked

Extension Activity

If the green flag could only be clicked once to defeat all of the robots, what would the block coding need to be? Use the extension sheet to write the list.