

LESSON 7

Microbit Step Counter

60 minutes (2 periods)

Robotics & Engineering Basics

WHAT THIS LESSON DOES

Follow this guide to build a step counter using your Microbit. Start by creating a new project, set up a steps variable, detect shakes with the accelerometer, display step counts, and test it while walking.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Develop a basic understanding of Microbit programming and project creation.
- Learn to create and set up variables in Microbit.
- Understand the use of accelerometer sensor in Microbit for step detection.
- Gain skills to display data on Microbit using LEDs.
- Learn to modify and resend code to Microbit for improved functionality.

BEFORE THE BELL

- To spark student curiosity, begin by linking the project to real-world fitness trackers, encouraging them to explore coding through a practical lens. Prepare by ensuring access to the MakeCode website and Microbits, guiding students through creating variables and coding accelerometer inputs for step detection. Engage them with hands-on testing by walking around, while troubleshooting potential issues like miscounts by adjusting the code to count every second step. Differentiate by challenging advanced learners to customise the display. Emphasise safety when testing to prevent device damage, fostering a balance of creativity and caution. If you do not have microbit devices, you can still do the lesson using the virtual microbit in the project editor.

Microbit Step Counter

HOW THE LESSON RUNS

- Create a new Microbit project
- Create the 'steps' variable
- Setup the 'steps' variable
- Detect a step
- Display the number of steps
- Send the code to your Microbit
- Connect a power source
- Get walking!
- Every second step
- Resend the code to your Microbit

STEP BY STEP

Display the number of steps

Whatever is put inside the 'forever' block will happen over and over again forever. We want to constantly display the number of steps and this is why we put the code inside the 'forever' block.

Get walking!

Remind the children to be careful when they're placing the Microbit on their body so that they don't fall or get stepped on. There's still one more step to do so if you were going to bring them to the yard to give them space to walk, hold off until the next step is complete.