

LESSON 4

Functions in Python

40 minutes

Python from the Start

WHAT THIS LESSON DOES

Students write and call procedures and functions in Python on the micro:bit, then build a simple weather station that chooses a cold, moderate or hot symbol from a temperature value.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Write and call procedures and functions with parameters in Python. Explain how functions help reuse and organise code.

BEFORE THE BELL

- Students logged in to the platform on devices with the Python micro:bit editor ready
- micro:bit hardware connected where available, or the on-screen simulator open
- Have a short example of a named block of code ready to show on the board before students start

Functions in Python

HOW THE LESSON RUNS

4 min	introduction	Start: What We're Building
4 min	content	Introduction
4 min	content	Procedures
4 min	content	Functions
4 min	content	Functions with Parameters
3 min	content	Project - Micro:bit Weather Station
3 min	content	Temperature Display Procedures
3 min	content	Weather Function
3 min	content	Test Your Weather Station
2 min	content	Wrap up
3 min	content	Make Sense: What Worked, What Broke
2 min	content	Reflect
1 min	summary	What You Covered

TEACHING MOVES

- Model the first `def` on the board and say the name aloud before students type, so the idea of a reusable block is clear
- Keep the PRIMM beat tight: predict what a call will do, run it, then investigate the return value or display
- When the weather station appears, name debugging as a skill: if the wrong symbol shows, check the temperature thresholds and the order of the conditions
- Link reuse to organisation: three small display procedures plus one decision function is easier to read than one long script

WHAT TO WATCH FOR

- Forgetting the colon after the function header or mismatching indentation under `def`: fix on the spot by lining up the body one indent in
- Calling the function without brackets, or with the wrong number of arguments: point at the call line and match it to the parameter list
- Mixing up the temperature ranges so the wrong symbol appears: walk through one test value against each condition in order

DIFFERENTIATION

- Support: Provide the procedure names and have students fill only the display lines, then call each one once
- Extension: Add another temperature range and symbol, or ask for a second parameter such as a wind flag
- Extension: Refactor repeated display code from an earlier program into a named function