

LESSON 10

Designing a Microbits Weather Station

60 minutes (2 periods)

Robotics & Engineering Basics

WHAT THIS LESSON DOES

Follow this guide to build your own weather station using Microbit. Start by creating a new project on MakeCode, initialise variables, configure buttons and sound detection, create a forever loop, test your program, and reflect on your learning.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Understand how to create a new project on MakeCode for Microbit.
- Learn to declare and initialise variables in a Microbit project.
- Gain skills in configuring Microbit buttons and sound detection.
- Develop the ability to create a 'forever' loop and display sensor data.
- Reflect on the learning process and consider potential applications of Microbit sensors.

BEFORE THE BELL

- To spark student curiosity, begin by linking the project to real-world weather monitoring, encouraging them to think about how sensors impact daily life. Prepare by ensuring access to the MakeCode platform and familiarising yourself with the coding steps, from project creation to sensor configuration. Facilitate by guiding students through each coding block, pausing to explain variables and loops clearly. Engage them with hands-on testing using simulators or devices, addressing challenges like syntax errors with peer debugging. Differentiate by offering advanced sensor project ideas for faster learners, ensuring all grasp the practical application of technology.

Designing a Microbits Weather Station

HOW THE LESSON RUNS

Create a New Project

Initialize Variables

Configure Button A

Configure Button B

Configure Buttons A and B

Configure Loud Sound Detection

Create a Forever Loop

Test Your Program

Reflect on Your Learning