

LESSON 7

Connecting Two Micro:bits with Radio

40 minutes

Code That Reaches the Real World

WHAT THIS LESSON DOES

Students program two micro:bits to send and receive string, number and name-value messages over radio, then discuss how the devices cooperate and one data-privacy issue with logging readings about people.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Program two micro:bits to send and receive values using radio; explain how the devices communicate and cooperate; discuss one data-privacy issue when logging readings about people.

BEFORE THE BELL

- Students logged in to the Coding Ireland platform and MakeCode micro:bit editor open in the browser.
- At least two micro:bits per pair, with USB cables or battery packs so both can be powered at once.
- Optional: board or projector ready to model the first radio blocks before pairs work independently.

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HOW THE LESSON RUNS

4 min	introduction	Start: What We're Building
3 min	content	Introduction
2 min	content	Create a New Project
4 min	content	Choose a Radio Group
3 min	content	Send a Message
4 min	content	Receive the Message
5 min	content	Send a Number Message
7 min	content	Send a Name Value Message
2 min	content	Explore
3 min	content	Make Sense: What Worked, What Broke
2 min	content	Reflect
1 min	summary	What You Covered

TEACHING MOVES

- Model setting the same radio group on both devices first; mismatched groups are the most common reason nothing appears.
- Use the simulator's second micro:bit to check send/receive before downloading, then test on real hardware with both powered.
- For name-value messages, stress that the receiving side must match the name string exactly before it acts on the value.
- In the reflect discussion, link cooperation between devices to data privacy and ask who should be able to see logged readings about people.

WHAT TO WATCH FOR

- Different radio groups on the two micro:bits: nothing is received. Set both to the same group and re-download.
- Only one micro:bit powered or code only on one device: the pair cannot see a reply. Power both and flash the same program to both.
- Receive handler missing or name string mistyped in a name-value check: the display never updates. Check the on-received block and the exact name spelling.

DIFFERENTIATION

- Support: Stay with string send on button A and receive-and-show until that works on both devices before adding number or name-value.
- Extension: Have pairs send a sensor reading (for example light or temperature) to a “base station” micro:bit that only displays values.
- Extension: Ask pairs to invent one extra gesture or button that sends a different name-value pair and handles it on receive.