

Connecting two micro:bits with radio

40 minutes

Strand 2: Let's get connected

Built in micro:bit

Outcome 1.7

Outcome 1.4

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.

CURRICULUM OUTCOMES

Outcome	What the specification asks for
1.7	Discuss and implement core features of a structured programming language: variables, operators, loops, decisions, assignment and modules.
1.4	Discuss the ethical and legal issues computing raises.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Program two micro:bits to send and receive a value using radio (LO 1.7)
- Explain how the devices communicate and cooperate, and discuss one data-privacy issue with logging readings about people (LO 1.4)

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.

WHAT YOU NEED

Item	Qty	Per	If you do not have it
micro:bit (with USB lead)	1	pair	run the lesson on the IWB using the MakeCode simulator

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HOW THE LESSON RUNS

4 min	introduction	Start: what we're building
3 min	content	How two micro:bits find each other
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 LO 1.4 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.