

Studio: Voting System

40 minutes

Project studios (optional extension sessions)

Built in micro:bit

Outcome 1.7

Outcome 1.4

WHAT THIS LESSON DOES

Students build a micro:bit class voting system with separate voting and central devices linked by radio, then discuss one privacy question raised by collecting votes.

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

- Build a class voting system using radio (LO 1.7)
- Discuss one privacy question raised by collecting votes (LO 1.4)

BEFORE THE BELL

- Have micro:bits charged and ready, with USB cables or a working simulator plan if hardware is short.
- Students logged in to the Coding Ireland platform and the MakeCode micro:bit editor open in the browser.
- Decide in advance which device (or pair) will be the central receiver and which will be voting units; label them if helpful.
- Check that radio will work in the room, or plan to demo receive and reset in the simulator if devices cannot pair.

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
5 min	content	Create a Project
6 min	content	Set up the Voting Buttons
5 min	content	Set up the Vote Receiver and Reset
3 min	content	Receive the Reset Signal
3 min	content	Display the Vote Results
4 min	content	Test Your Enhanced Voting System
4 min	content	Enhance your project
3 min	content	Make sense: what worked, what broke
2 min	content	Reflect
1 min	summary	What you covered

TEACHING MOVES

- Model creating the two separate projects on the board first so pairs do not mix voting and central code on one device.
- Keep the whole class on the same radio group number and write it clearly where everyone can see it.
- Run one short live vote once both roles are downloaded so students see tally and reset in action before the enhance step.
- Park the privacy prompt for the reflect discussion; do not let the security enhance step turn into a long build if time is tight.

WHAT TO WATCH FOR

- Voting and central projects use different radio groups, so messages never arrive. Align the group number on every device and re-download.
- The voted flag is never cleared on reset, so a unit stays locked after one vote. Check the reset receive path on the voting project and test A/B again after reset.
- Results string is missing or not in a forever loop on the central device, so counts change but nothing shows. Confirm the display loop is on the central project only.

DIFFERENTIATION

- Support: Provide a pair with a pre-named two-project setup and sit them near a finished central device so they can focus on the voting side first.
- Extension: Challenge pairs who finish early to add one simple security idea from the enhance step, such as a short confirm flash when a vote is accepted.
- Extension: Ask a confident pair to manage the live class vote and reset while others watch the tally update.