

Animation

60 minutes (2 periods)

Microbit Basics

WHAT THIS LESSON DOES

Embark on a journey to create your own animation using a Microbit. Start by setting up a new project, then add an event handler. You'll then create the first and second frames of your animation using 'show leds' blocks. Finally, test your animation by pressing the A button.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Understand and apply the process of creating a new project for animation.
- Learn to add and utilise an event handler in an animation project.
- Develop skills to create the first frame of an animation using code.
- Gain proficiency in creating subsequent frames for a complex animation.
- Test and evaluate the created animation for functionality and effectiveness.

BEFORE THE LESSON

- Devices for each pupil or pair, with the Microbit simulator working and sound or display visible enough to check the LED patterns.
- Optional: physical Microbits and the usual download method if you want pupils to test on hardware as well as the simulator.

Animation

HOW THE LESSON RUNS

- Create a New Project
- Add an Event Handler
- Create the First Frame of Your Animation
- Create the Second Frame of Your Animation
- Test Your Animation

TEACHING MOVES

- 1. Create a New Project. Get every pupil or pair onto a fresh project before any code is added so the animation has a clean workspace.
- 2. Add an Event Handler. Have them add the `onButtonPressed A` handler and stress that everything for the animation must sit inside this empty function.
- 3. Create the First Frame of Your Animation. Guide them to place the first show leds pattern inside the handler so the face design is frame one of the sequence.
- 4. Create the Second Frame of Your Animation. Check the second show leds sits directly under the first inside the same handler, not in a new one, so the frames play in order.
- 5. Test Your Animation. Ask them to press A on the simulator and watch both frames. Physical Microbit download is optional if devices are available.

WHAT TO WATCH FOR

- Pupils put the second show leds in a separate button handler or outside the A handler, so only one frame runs. Show the handler braces or block body and ask them to nest both show leds inside the same A-button function.
- Pupils expect both LED patterns to appear at once rather than one after the other. Replay the simulator press and name frame one then frame two so they see sequence, not a single combined image.
- Pupils build the LED patterns but leave them outside the event handler, so pressing A does nothing. Trace from the A press to the handler and have them move the show leds blocks inside before testing again.

DIFFERENTIATION

- Emerging: Pair them with a partner and aim for a working first show leds frame inside the A handler before adding a second. Stay with them while they press A on the simulator so they see that the handler must contain the LED code.
- Developing: Prompt them to read their handler top to bottom and confirm the two show leds blocks are stacked in the order they want. Have them explain what each frame should look like before they press A to test.
- Proficient: Challenge them to add a third show leds frame in the same handler and re-test the full sequence. Ask them to tweak the LED patterns for a clearer change between frames, then evaluate which version reads better.