

LESSON 41

From blocks to text in MakeCode Arcade

40 minutes

Strand 3: Coding at the next level

Built in MakeCode Arcade

Outcome 3.1

Outcome 3.3

WHAT THIS LESSON DOES

Students build a simple pixel character in MakeCode Arcade, move it with the controller, and begin reading the same project in the JavaScript view so they can see how familiar blocks map to text.

CURRICULUM OUTCOMES

Outcome	What the specification asks for
3.1	Creatively design and write code for short programming tasks, demonstrating operators for assignment, arithmetic, comparison and Boolean combinations.
3.3	Use functions or procedures.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Work in the JavaScript view of a game project and read what each block became (LO 3.1)
- Refactor a repeated piece of game logic into a function (LO 3.3)

BEFORE THE BELL

- Students logged in at devices with browsers open to MakeCode Arcade (arcade.makecode.com).
- No saved project needed; this part starts with a new project.
- Have the board ready to model creating a project, adding a sprite, and switching briefly to the JavaScript view.
- Check that arrow keys or on-screen d-pad work in the simulator on class devices.

WHAT YOU NEED

Item	Qty	Per	If you do not have it
tablet or laptop with MakeCode Arcade	1	pair	run the lesson on the IWB with students taking turns

From blocks to text in MakeCode Arcade

HOW THE LESSON RUNS

4 min	introduction	Start: what we're building
4 min	content	Creating a New Project
7 min	content	Creating a Sprite
8 min	content	Animating the Sprite
6 min	content	Spot the repeat, then make it a function
5 min	content	Running the Game
3 min	content	Make sense: what worked, what broke
2 min	content	Reflect
1 min	summary	What you covered

TEACHING MOVES

- Model the first two steps on the board, then let pairs drive while you circulate.
- After the sprite moves, switch the board project to JavaScript once and read the matching lines aloud so students hear the blocks-to-text link before they try it.
- Keep the JavaScript look short: name the sprite line and the controller line, then flip back to blocks if anyone feels lost.
- If a pair finishes early, ask them to find one repeated idea in their text view and say whether a function could hold it (preview of LO 3.3).

WHAT TO WATCH FOR

- Sprite drawn but nothing moves: controller move was not added, or it points at the wrong sprite name. Check the name matches.
- Blank or tiny sprite: student closed the image editor without drawing. Reopen the image and add a few pixels.
- JavaScript view looks scary: students scroll past their own lines. Guide them to search for the sprite name they chose so they land on familiar code.

DIFFERENTIATION

- Support: Offer a simple 8×8 shape to copy for the sprite so drawing time does not block the move and run steps.
- Support: Stay in blocks until the character moves, then show JavaScript only on the board first.
- Extension: In the JavaScript view, highlight any repeated idea and ask how a function could group it for part 2.