

Studio: Prison Break

40 minutes

Project studios (optional extension sessions)

Built in MakeCode Arcade

Outcome 1.7

Outcome 1.5

WHAT THIS LESSON DOES

Students plan a maze layout, then build a Prison Break escape game in MakeCode Arcade with walls, player movement, a win tile and a countdown timer.

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.
1.5	Develop algorithms using pseudo-code and flow charts.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Build a maze escape with walls, movement and win conditions (LO 1.7)
- Plan the level before building it (LO 1.5)

BEFORE THE BELL

- Devices ready, students logged in and able to open <https://arcade.makecode.com>
- Open MakeCode Arcade on the board so you can model the first steps
- Students will need headphones only if sound is distracting; otherwise speakers off is fine

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

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HOW THE LESSON RUNS

4 min	introduction	Start: what we're building
2 min	content	The plan: five parts to build
2 min	content	Create a new Arcade project
3 min	content	Create a sprite
3 min	content	Move with the buttons
4 min	content	Draw your maze
3 min	content	Set the walls of your map
3 min	content	Camera follow the sprite
2 min	content	Add a goal tile
2 min	content	Win the game
4 min	content	Set a timer
2 min	content	Wrap up
3 min	content	Make sense: what worked, what broke
2 min	content	Reflect
1 min	summary	What you covered

TEACHING MOVES

- Ask students to sketch the maze path and goal on paper before they open the tilemap editor so planning (LO 1.5) is real, not rushed
- Model opening the tilemap editor and the Draw Walls tool on the board; walls are the step where most pairs stall
- Run the game after walls, then after the goal overlap, so students see each change before adding the timer
- Keep pairs on one shared project where possible so debate about maze design stays visible

WHAT TO WATCH FOR

- Walls drawn as tiles but not set with the Draw Walls tool, so the player walks through: reopen the tilemap, select Draw Walls, click each solid tile again
- Goal overlap set to the wrong tile image: check the tile chosen in the overlap block matches the single goal tile on the map
- Camera follow missing or sprite kind wrong, so the player vanishes off screen: confirm the follow block targets the player sprite

DIFFERENTIATION

- Support: Provide a simple corridor sketch and let pairs copy wall placement first, then redesign one dead end
- Extension: Tighten the timer, add a second goal route, or restyle the maze tiles for a clearer difficulty curve
- Extension: Ask what change would make the maze fun rather than frustrating and try one edit if time allows