

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 structured programming languages, including variables, operators, loops, decisions, assignment and modules
1.5	develop appropriate algorithms using pseudo-code and/or 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 the planning is done properly rather than rushed in the editor
- 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