

# Plan and start the build

## Lesson at a glance

Open with a short robin-and-berries MakeCode Arcade demo on the IWB and capture pupil answers under Goal, Sprite, Movement and Scoring. Pairs complete one shared Design Brief page, then watch a tight IWB model: new project, Player sprite, move mySprite with buttons, run-checks and save. They build only sprite and basic movement on one device per pair, save with the class naming routine, and log on the Investigation Journal what the sprite does so far plus one feature for next time.

## Learning objectives

- Create a MakeCode Arcade project and add a character sprite
- Program movement and keep the character inside the play area
- Run the game as it is built and say what each block does

## Before the bell – prep

Before the lesson, confirm tablets/laptops load MakeCode Arcade and set the class save method (folder, Download or share link). Open the robin-and-berries demo on the IWB. Print one Design Brief page per pair and one Investigation Journal log page per pupil.

## Materials

| Item                                  | Qty | Per  | Source         | Low-cost substitute                                |
|---------------------------------------|-----|------|----------------|----------------------------------------------------|
| tablet or laptop with MakeCode Arcade | 1   | pair | school devices | run the lesson on the IWB with pupils taking turns |

## Safety watch-point

Manage device leads and posture; agree save locations so work is not lost. No physical hazard beyond normal classroom screen and cable care.

**Teaching moves**

- **Getting Started:** Run the robin-and-berries demo for about thirty seconds with devices still away. Ask for goal, sprite, movement and scoring, and write three or four answers on the board under those exact four labels so they match the Design Brief page.
- **What makes a game plan?:** Point back at the demo and name the bird as the sprite and the four board headings as the design brief. Leave Goal, Sprite, Movement and Scoring visible; hold algorithm until the first movement block in the model.
- **Plan the game:** Form pairs, hand out one shared Design Brief page, and circulate for one clear goal, one sprite, plain-word movement and an observable score. Push simple plans buildable today; offer the robin-and-berries example only if a pair is stuck.
- **Model the first steps:** Drive the six-point checklist on the IWB in under seven minutes: new named project, Player sprite, run-check, move mySprite with buttons, second run-check, then the class save routine. Invite predictions before each run; mark background colour skip-if-short and ban scoring today.
- **Build sprite and movement:** Leave the checklist on the board and coach pairs through the same steps on one device. If nothing moves, check the move block is present and they pressed run. Confirm every pair has saved with initials plus game word before journals come out.
- **Record the build so far:** Each pupil writes two notes on the Investigation Journal page: what the sprite does now, and one next feature. Prompt fact versus wish, and finish the pair-by-pair save check while journals are open.
- **Reflect and save:** Partner talk for one minute on the trickiest part and how run-after-each-change helped, then take three or four shares. Revoice debugging as changing one block and testing; rescue any missing save quietly without reopening a whole-class save round.

**What it should show**

Success is a readable four-part Design Brief, a saved Arcade project with a visible Player sprite that moves with the arrow keys, and a journal note naming one next feature. A still sprite usually means the move block is missing or they have not pressed run; up/down working when the brief said left/right is fine today.

**Misconceptions & interventions**

- **Pupils treat the Design Brief as the finished game and try to code every rule today.** — Point at the board finish line: sprite on screen plus basic movement only. Say the brief is a starting map they will change as they build and debug.
- **Pupils think a vague wish like 'make it fun' is enough of a plan or score.** — Ask what a player can see or finish in under a minute. Push scoring that is observable, such as one point per berry, before they touch blocks.
- **Pupils pile on blocks then wonder why nothing works, instead of testing after each change.** — Replay the model cycle: add one block, predict, run, observe. If stuck, check move mySprite with buttons is in on start and they pressed play.



**Differentiation**

| Emerging                                                                                                                                                                                              | Developing                                                                                                                                                                        | Proficient                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Allow the pair to copy the robin-and-berries class example and change only the sprite look, still following the board checklist one step at a time.</li></ul> | <ul style="list-style-type: none"><li>• After movement works and the project is saved, polish the sprite image or try one small speed tweak still inside today's scope.</li></ul> | <ul style="list-style-type: none"><li>• Add one extra rule on the Design Brief they will not code until a later session, and note why it waits.</li></ul> |

**Cross-curricular hook**

Link to English procedural writing: the Design Brief is a short, ordered plan others could follow.