

LESSON 57

Studio: Bat Battle

40 minutes

Project studios (optional extension sessions)

Built in MakeCode Arcade

Outcome 1.7

Outcome 1.8

WHAT THIS LESSON DOES

Students build Bat Battle in MakeCode Arcade through a PRIMM code-along, adding a player, falling enemies, projectiles, scoring and game-over events while debugging as they go.

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.
1.8	Test code to find and manage errors.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Build a battle game with enemies and events (LO 1.7)
- Debug as you go with the named routine (LO 1.8)

BEFORE THE BELL

- Students logged in at devices with MakeCode Arcade open (arcade.makecode.com)
- Demo project ready on the board so you can model the first blocks
- Remind students how the class saves and reopens Arcade projects

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

Studio: Bat Battle

HOW THE LESSON RUNS

4 min	introduction	Start: what we're building
2 min	content	The plan: five parts to build
2 min	content	Start a New Project
2 min	content	Create your player
3 min	content	Move left and right
3 min	content	Create the targets
3 min	content	Random position at the top
3 min	content	Make them fall
4 min	content	Fire!
2 min	content	Hit the target
2 min	content	Score a point
2 min	content	Game over
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

- Model the first two or three steps on the board, then let pairs continue while you circulate
- Stress sprite kinds early: Player, Enemy and Projectile must match in every overlap block or collisions will silently fail
- When a pair is stuck, ask them to name the symptom first (what they see) before changing any blocks
- Keep the optional predict light: one quick idea about what will happen when bats fall, then return to it in Make sense

WHAT TO WATCH FOR

- Destroying the wrong sprite in an overlap (mySprite instead of otherSprite): point them at the parameter names in the block
- Overlap kinds set to the wrong pair (e.g. Player and Projectile): open the kind menus and check both sides match the design
- Forgetting vy or auto destroy on enemies so bats pile up or never fall: re-add velocity and auto destroy on the create path

DIFFERENTIATION

- Support: stay with the pair on the player-move and first-enemy steps; have them run after every small change
- Extension: change spawn interval, bat speed or projectile look once the core game works
- Extension: add a second projectile type or a lives counter if time allows