

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 structured programming languages, including variables, operators, loops, decisions, assignment and modules
1.8	test the code to determine its functionality and to identify 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