LESSON 7

Monkey Mayhem

60 minutes | Advanced Game Development

WHAT THIS LESSON DOES

Get ready for a fun coding adventure! In this lesson, you'll build a game using MakeCode Arcade. Control a monkey to collect as many doughnuts as possible in 30 seconds. Start coding now and enjoy the challenge!

WHAT STUDENTS SHOULD BE ABLE TO DO

- Develop a game using MakeCode Arcade.
- Create and control a player sprite in the game.
- Generate food sprites at random positions on the screen.
- Collect food sprites for points and add effects and sounds.
- Implement a countdown timer to increase game difficulty.

BEFORE THE LESSON

- Open arcade.makecode.com yourself first and confirm the school filter does not block it and that a new project loads.
- One device per pupil, each able to reach the MakeCode Arcade site.
- Sound on, or headphones per pupil, so the collect sound in the later steps can be heard.
- Build the game once yourself so you know where the sprite gallery and the Food kind selection sit.

Monkey Mayhem

HOW THE LESSON RUNS

Introduction
Create a new project
Add your player
Move your player
Create the donuts
Random places
Collect the donuts
Get a point
Play a sound
Add a countdown
Wrap Up

TEACHING MOVES

- 2. Create a new project. Show pupils exactly where the new project button is and let them name it freely. Check everyone has a blank editor open before moving on.
- 3. Add your player. Point out that clicking the grey image box opens the sprite gallery. Everyone should pick the monkey so their screens match yours while learning.
- 4. Move your player. Have pupils test movement immediately with arrow keys or joystick. If the monkey does not move, check the controller block was added, not just edited.
- 5. Create the donuts. Stress that the sprite kind must be set to Food, not Player. This is the most common thing that breaks the later overlap and scoring code.
- 6. Random places. Explain that random placement means donuts appear anywhere on screen. Have pupils run it and watch a few donuts spawn before continuing.
- 7. Collect the donuts. Slow down here. Show clearly that Food must be selected in the overlap block and that otherSprite, not mySprite, goes into the destroy block.
- 8. Get a point. Have pupils play and confirm the score climbs by one per donut. A score that does not change usually means the overlap block was set up wrong.
- 9. Play a sound. Run it and listen. Remind pupils with headphones to check volume. If there is no sound, check the music block sits inside the overlap block.
- 10. Add a countdown. Explain the 30 second timer ends the game. Let pupils play a full round and compare scores, then invite them to tweak the timer or effects.

WHAT TO WATCH FOR

- Pupils set the donut sprite to Player kind instead of Food, so the overlap, score and sound code never fires. Have them check the kind on both create blocks. The monkey should be Player, the donut should be Food. Fix the kind and the collecting works.
- Pupils drag mySprite into the destroy block instead of otherSprite, so the wrong sprite is destroyed or nothing happens. Point back to step 7. The block that is overlapped, otherSprite, is the donut to remove. Swap it in and test again.
- Pupils add a new block by editing an existing one, so a step's code replaces rather than extends the previous code. Remind them each step adds to what is there. Compare their code to the on-screen example block by block before running.

DIFFERENTIATION

- Emerging: Pair them with a partner who is keeping pace, and check each block is added before the class moves to the next step. Do the first sprite creation on the board slowly and let them mirror it one action at a time.
- Developing: Prompt them to run and test after every step so a mistake is caught early rather than at the end. Ask them to explain back to you what the overlap block is doing before they add the score code.
- Proficient: Once their game works, challenge them to change the countdown length, the effect or the collect sound. Invite them to add a second food type or change how often donuts appear, then explain what they changed.