

LESSON 2

Variables and Input in Scratch

40 minutes

Start Coding in Scratch

WHAT THIS LESSON DOES

Students build a Paddle Ball game in Scratch, using a speed variable with assignment and arithmetic, and mouse input to control the paddle.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Students store and change a value in a variable using assignment and arithmetic operators, and use input so the paddle follows the mouse.

BEFORE THE BELL

- Students logged in to the Coding Ireland platform on their devices, with Scratch ready to open in the browser
- Data projector or board ready so you can model the first blocks before pairs work independently
- Check that students can create a new Scratch project and find the sprite library

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HOW THE LESSON RUNS

4 min	introduction	Start: What We're Building
2 min	content	Introduction
2 min	content	Create a New Scratch Project
2 min	content	Add the Paddle Sprite
2 min	content	Add the Football Sprite
3 min	content	Position the Ball
3 min	content	Make the Ball Bounce Around
3 min	content	Create a Speed Variable
3 min	content	Control the Paddle
3 min	content	Make the Ball Bounce Off the Paddle
2 min	content	Add a Backdrop
2 min	content	Add the Game Over Line
3 min	content	Program Game Over
3 min	content	Make Sense: What Worked, What Broke
2 min	content	Reflect
1 min	summary	What You Covered

TEACHING MOVES

- Model creating the speed variable and dropping the round speed reporter into the move block's number slot on the board before students try it
- Ask pairs to predict what happens if they change the set speed value from 10 to 20 before they run it
- When the ball first moves, expect questions about it passing through the paddle; park that until the bounce step
- For independent practice, invite students who finish early to add a second variable (for example a score that increases on each paddle hit)

WHAT TO WATCH FOR

- Speed reporter dropped beside the move block instead of into its number slot: show the white highlight on the slot and have them drag again
- Code added to the wrong sprite (paddle blocks on the ball or the reverse): check the sprite list highlight before adding blocks
- Touching-colour sensor not matching the red line: use the eyedropper so the block samples the exact line colour on the backdrop

DIFFERENTIATION

- Support: Pair students and model the variable create-and-insert steps once more on the board; leave a working set-speed example visible
- Extension: Add a second variable such as score that increases when the ball hits the paddle, or make speed increase by a different amount
- Extension: Change the starting direction or add a second ball that also uses the speed variable