

LESSON 3

Loops in Scratch

40 minutes

Start Coding in Scratch

WHAT THIS LESSON DOES

Students use PRIMM to build a Pattern Creator in Scratch, replacing repeated move and turn blocks with a loop and explaining why a loop is the better approach.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Students use a loop to repeat move and turn actions, compare that approach with copying blocks, and practise debugging when the pattern does not match what they expected.

BEFORE THE BELL

- Students logged in to Scratch at scratch.mit.edu with a new project ready (or the class account open).
- Open the Scratch editor on the board so you can model the first blocks before pairs work independently.
- Check that students can add extensions and create variables; have a sample Pattern Creator project ready to show if the room stalls.

Loops in Scratch

HOW THE LESSON RUNS

4 min	introduction	Start: What We're Building
2 min	content	Introduction to Pattern Creation
2 min	content	Create a New Scratch Project
2 min	content	Add the Ball Sprite
3 min	content	Add the Pen Extension
3 min	content	Draw a Circle
2 min	content	Create Some Variables
3 min	content	Use the Steps and Degrees
2 min	content	Change the Degrees
3 min	content	Add Some Colour
4 min	content	Change the Pen Size
2 min	content	Play Around
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 green-flag stack on the board, then pause so pairs finish each step before you move on.
- When the repeat until loop appears, ask why one loop is better than stacking the same move and turn blocks many times.
- Have students try the degrees slider only after the straight-line version works, so they see the spiral as a change in the loop values.
- Circulate during Play around and name pattern recognition aloud: same loop, different slider values, new drawings.

WHAT TO WATCH FOR

- Pen stays up or erase all is missing, so nothing appears: check pen down is after erase all and before the loop.
- Steps variable never changes, so the sprite sits still or draws a tiny mark: confirm change steps by 1 is inside the repeat until block.
- Degrees or size slider not visible on the stage: right-click the variable and choose slider, then set a sensible starting value such as 20 for degrees.

DIFFERENTIATION

- Support: Provide a printed block order for the green-flag stack and sit with pairs while they place only the loop first.
- Extension: Challenge students to try more degree and size combinations, or to restart from the centre with a new colour each run.
- Extension: Ask stronger pairs to explain to the class where else a loop would save repeated blocks in a game or animation they already know.