

LESSON 4

Conditionals and events in Scratch

40 minutes

Strand 1: Introducing computer science

Built in Scratch

Outcome 1.7

WHAT THIS LESSON DOES

Students use PRIMM to build Attack of the Dots in Scratch, adding if decisions and key events so a spinning disc reacts differently when matching and non-matching coloured dots hit it, and they treat cloned ball scripts as reusable modules.

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

WHAT STUDENTS SHOULD BE ABLE TO DO

- Use an if or if-else to make decisions and respond to events (LO 1.7)
- Recognise how a named block or section of a program acts as a module, an independent building block inserted into a larger program (LO 1.7)

BEFORE THE BELL

- Devices ready, browsers open, students logged in to Scratch (scratch.mit.edu) with class accounts
- Starter project link ready to share; check remix works on school network
- Optional: remix the starter yourself beforehand and finish it, so you can show the target game once before they build. No finished version ships with the course.

WHAT YOU NEED

Item	Qty	Per	If you do not have it
tablet or laptop with Scratch	1	pair	run the lesson on the IWB with students taking turns

Conditionals and events in Scratch

HOW THE LESSON RUNS

4 min	introduction	Start: what we're building
3 min	content	The plan: three parts to build
2 min	content	Remix the starter project
4 min	content	Make the disc spin
3 min	content	Clone the ball
3 min	content	Not too close!
3 min	content	Make them move
5 min	content	Detect the colour
2 min	content	Create purple and orange balls
3 min	content	Change the code for the purple and orange balls
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 left/right arrow spin and the first clone script on the board before pairs continue; keep the start short so time stays on the build
- Stress where the touching check sits: inside the forever, above move, or balls sail through the wheel
- When duplicating Sprite1, pause so students see the full script copy as a module, then only the touching-colour block changes per colour
- Name debugging when a pair fixes a miss-placed if or wrong colour: ask what they expected, what they saw, and which block they changed
- If you are running short: build one coloured ball well rather than three. Steps 9 and 10 duplicate a working script, so a class that gets green working has met the if-decision outcome; the duplication is what demonstrates the module idea, so name it on the board even if pairs do not get to do it.

WHAT TO WATCH FOR

- Touching or if block outside the forever or below move: balls pass through; drag the if above move inside forever and retest
- Distance check missing or threshold wrong: balls spawn on the wheel; keep delete-this-clone when distance to wheel is under 100
- Purple/orange still testing green or a near-miss hex: use the eye-dropper on the wheel costume so touching colour matches exactly

DIFFERENTIATION

- Support: pair weaker readers with a partner and read the block list on the step aloud with them, since every block they need is written out on the step itself; allow one colour working before duplicating
- Extension: add a score or lives when colours match or miss; vary wait range or move steps for harder play
- Extension: add a third decision (for example edge bounce or a power-up colour) using another if inside the forever