

Repeating Actions (Loops)

40 minutes

Hands-On Logic Challenges

WHAT THIS LESSON DOES

Hey there! In this lesson, you'll explore the power of loops to repeat actions efficiently. Using variable loops, you'll create a fun workout with exercises. Grab paper, coloured pencils, and a die to get started with exciting patterns!

WHAT STUDENTS SHOULD BE ABLE TO DO

- Understand the concept of loops as a method to repeat actions a specific number of times.
- Apply loops in practical activities to create and follow repeatable exercise patterns.
- Recognise the role of algorithms in defining a fixed sequence of actions.
- Develop teamwork skills by collaborating in groups to design and share exercise patterns.
- Demonstrate creativity in building unique movement sequences using loops.

BEFORE THE LESSON

- This is an unplugged lesson. You do not need a device per pupil, but you do need the screen interactives working: test that the Exercise Trio and the Exercise Pattern with Loops shuffle correctly on your board before class.
- Gather blank cards or sticky notes (six per group of three to four), markers and coloured pencils, and a six-sided die per group. If short of dice, prepare slips numbered 1 to 6.
- For the optional relay, book the hall or a clear outdoor space and set out cones.
- Have a seated version of each exercise in mind so everyone can take part.

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HOW THE LESSON RUNS

Introduction

Following a Fixed Algorithm

Loop It Up

Your Variable Loop Workout

Let's See Your Loops in Action

Game Time: The Loop Relay

TEACHING MOVES

- 2. Following a Fixed Algorithm. Shuffle the Exercise Trio and lead all three moves left to right, three slow counts each. Stress that the order is fixed, exactly like a computer following an algorithm, and offer the seated version openly.
- 3. Loop It Up. Point at a tile marked x3 and physically count the repeats out loud. Name it: a loop lets us write one instruction instead of three. Show a ringless tile is done just once.
- 4. Your Variable Loop Workout. Set groups to draw one small, classroom-safe move per card. When they roll the die for a card, that roll is the variable, the number of repeats. Circulate and check moves stay safe.
- 5. Let's See Your Loops in Action. Collect strong cards, build a sequence on the board, then draw a coloured ring and x2 on one move in front of them. Say the loop is a reusable part we can add to any instruction.
- 6. Game Time: The Loop Relay. Only run this if space and time allow. At each cone pairs flip the card and roll the die, then perform that move that many times before moving on. The roll is their variable.

WHAT TO WATCH FOR

- Pupils think a loop marked x3 means do the whole sequence three times, rather than repeating just that one move. Point to a single ringed tile and count only that move aloud three times, then move to the next tile once, so they see the loop wraps one instruction, not the set.
- Pupils treat a tile with no ring as needing repeats too, and keep going. Contrast a ringed and a ringless tile side by side. No ring means once, then straight on to the next move.
- Pupils miss that the die roll is what makes the loop variable, and repeat a fixed number instead. Roll the die yourself, hold up the number, and say this is why it is a variable loop: the number of repeats changes each time we run it.

DIFFERENTIATION

- **Emerging:** Give a pupil who is unsure of the order a printed or drawn arrow to follow left to right, and let them start with the fixed algorithm before any loops are added. Offer the seated version of every move so getting started is never blocked by the physical demand.
- **Developing:** Have the pupil call out the count aloud as they perform a loop, so they hear the repeats matching the number. Ask them to run one partner's card sequence back and explain what each ring means before their own group's turn.
- **Proficient:** Challenge them to combine two loops in one pattern and predict the total number of moves before running it. Ask them to write a sequence for another group and check whether the other group runs it exactly as intended.