

technology

Spot the repeat and the bug

Lesson at a glance

Open by performing clap-clap-stamp twice and asking what keeps coming back, then name the board words repeat and bug. Model both on the algorithm-sequencer interactive: a clean path of forwards to the star, then one swapped turn that misses. Groups act ready action-card patterns, plant and fix one wrong card, and record the repeat and the bug on the Investigation Journal page before a short partner share of repeats in songs, games and classroom borders.

Learning objectives

- Spot a step that repeats in a short sequence
- Find a wrong step (a bug) and suggest a fix

Before the bell – prep

Clear floor space before the bell. Print action-card sets per group (4 clap, 2 stamp, 2 jump, 4 wave, 2 spin, 2 nod) plus a small spare pile for planting bugs; sticky notes with the same counts work. Pre-build one ready pattern and one bugged version per group. Open the algorithm-sequencer interactive on the IWB.

Materials

Item	Qty	Per	Source	Low-cost substitute
action step cards (clap, stamp, jump, wave, spin, nod)	1	group	provided printable	write the six action words on scrap paper or sticky notes using the same counts
spare action cards for planting bugs and fixes	1	group	classroom	blank sticky notes so groups can rewrite a wrong step
clear floor space for acting sequences	1	group	classroom	use the school hall or a corridor bay if the classroom is tight

Safety watch-point

Gentle on-the-spot moves only; keep clear space between bodies; no running spins across the room.



Teaching moves

- **Getting Started:** Stand where all can see and perform clap, clap, stamp twice without naming it. Pause and take hands for what keeps coming back. Hold back the cards and the words repeat and bug — keep these three minutes light and curious.
- **Today's words: repeat and bug:** Write only repeat on the board first with the clap-clap-stamp example. Quick-check with clap, clap, wave; then swap the second wave for a stamp and ask where the bug is. Only then write bug. Keep fix as a spoken action word, not a third board definition.
- **Spot the repeat on the board:** On the algorithm-sequencer, build forward $\times 4$ so the robot reaches the star and point to that repeat. Only then swap one middle forward for a turn, run it so it misses, and take hands for where the bug is. Drag the correct forward back for one clean fix run. If the interactive is down, walk large arrow cards on the floor mat yourself.
- **Act it out: find the repeat and the bug:** Part A: hand each group a ready pattern (e.g. clap, clap, stamp $\times 2$); they act it twice and finger-point the repeating chunk. Part B: swap in one wrong card (e.g. last stamp $\rightarrow$ wave); groups find it, swap from the spare pile, and re-act. One showcase at the front is enough if time is tight — fold watchers in with 'Where was their bug?'
- **Record what we found:** Protect these journal minutes in class. Prompt only two captures: the repeat spotted and the bug fixed (what it changed to). Circulate and scribe a word or two for anyone who needs it. Fast finishers can add which step repeated on the board robot path.
- **Patterns all around us:** Think-pair-share: 20 seconds think, 30 seconds partner, then three or four pairs feed back. Draw out choruses, clapping games, hopscotch, scarf stripes, brick walls. If ideas dry up, hum 'A sailor went to sea, sea, sea' or point to a classroom border pattern.



What it should show

Groups should name the repeating chunk (e.g. clap-clap-stamp) and locate the single wrong card as the bug, then swap it so the pattern runs cleanly again. On the board path, forward used four times is the repeat; a middle turn that sends the robot off-grid is the bug. A group that cannot find the bug often acted too fast — have them slow-act card by card while pointing.



Misconceptions & interventions

- **Pupils think a bug means the whole sequence is broken forever and cannot be fixed.** — Hold up the single wrong card and say 'just this one step is wrong'. Have them swap only that card and re-act so they see the rest of the pattern was fine all along.
- **Pupils treat a wrong guess or prediction as a bug.** — Revoice: a bug is a wrong instruction on a card or block, not a wrong idea in your head. Point back to the planted wrong card — that is the bug; a guess that missed is just a try.

Differentiation

Emerging	Developing	Proficient
• Give a three-card pattern (clap, stamp, clap, stamp) and sit with the group to finger-point the repeat before they act. • Scribe short labels on the Investigation Journal page while they name the bug aloud.	• After fixing the planted bug, ask 'why did that card break the pattern?' before they re-act.	• Invent their own four-card pattern with one clear repeat, plant a bug, and challenge a partner group to find and fix it. • Add the board-robot repeat (which step repeated on the IWB path) to their journal page.

Cross-curricular hook

Link to Music and PE clapping games and song choruses — the same 'bit that comes back' idea pupils already know from the yard.