

technology

Floor robot to a target

Lesson at a glance

Hold up the floor robot (or child robot) and the star on the taped mat and ask what we must tell it first. Model a short path with arrow cards that deliberately includes one wrong turn, then name the miss as a bug and fix it live. The class plans a three-to-five-step path on the algorithm-sequencer interactive before small groups take turns at one shared mat while watchers predict and spot wrong steps. Close with a carpet talk on a wrong step found and how it was fixed.

Learning objectives

- Plan a short sequence of moves toward a target on a floor mat
- Run the floor robot (or child robot) and watch where it stops
- Fix one wrong step if the robot misses the target

Before the bell – prep

Tape one simple 4×4 floor grid and place a star card three to five steps from start. Charge the floor robot (or choose a child robot). Cut several arrow cards beforehand — at least 5 forward, 2 left, 2 right. Clear bags and chairs off the mat space.

Materials

Item	Qty	Per	Source	Low-cost substitute
floor robot (Bee-Bot or similar)	1	class	school kit	one child acts as the robot and only moves when shown an arrow card
masking tape for one floor grid	1	class	classroom	chalk squares on a hard floor, or large paper squares laid in a grid
target marker (star card or small toy)	1	class	classroom	a sticky note or a book as the target square
arrow cards (forward, turn left, turn right)	1	class	classroom	point with a finger and say the step aloud if cards are not ready

Safety watch-point

Bags and chairs clear of the mat; robot stays on the floor; gentle feet around any moving robot or child robot.



Teaching moves

- **Moves in order:** Pin one idea only: robots follow the moves we give, in order. Point at the star when you say 'got it right'. Hold back the words bug and fix until the class has seen a real miss on the mat.
- **Watch the robot go:** Lay arrow cards aloud with one deliberate wrong turn (e.g. left instead of right). Tally guesses, run, then name target and wrong step before introducing 'bug'. Swap the card, re-run, and celebrate the fix.
- **Plan the steps together:** Open the algorithm-sequencer interactive. Invite two or three children to drag forward / turn-left / turn-right while the class calls out. Ask where it will stop before Run; if it misses, change one step and run again. Keep it quick — the floor mat is next.
- **Send your robot to the target:** Say aloud that carpet groups still plan by guessing and spotting wrong steps. Pace each active turn: lay cards → one run → name one change. Aim for three to four calm turns in about ten minutes; a named fix counts even without a second run.
- **Wrong steps we fixed:** Carpet circle only — no writing. Invite watchers as well as active groups to name one concrete wrong step and the one change. Revoice with steps in order, target, bug and fix so the whole class hears the language.

What it should show

Most short paths will miss first time — often a wrong turn, one forward too many, or the robot facing the wrong way at the start. Success is naming that wrong step and changing one card so a re-run lands on (or nearer) the star. If the robot leaves the mat, treat it as another wrong step to fix, not a failure.

Misconceptions & interventions

- **The robot 'knows' where the star is and will find it by itself.** — After a miss, trace the cards with a finger: it only did what we pressed. Stress that people plan every step before a delivery robot rolls off.
- **Missing the target means we failed, so we should start a whole new path.** — Hold up the one wrong card and swap only that step. Re-run and cheer the fix so children see one change is enough.
- **'Bug' means an insect on the mat, not a wrong step.** — Use plain talk first (wrong step, oops step). Only after the class has seen the miss say: in robot talk we call that wrong step a bug.



Differentiation

Emerging	Developing	Proficient
• Sit emerging pupils at the teacher edge of the mat and let them place or point to the first forward card while you hold the rest of the short path. • Offer only forward and one turn type for their turn so the sequence stays to three cards.	• After a hit, ask which way the robot is facing now and what the next step would be if the star moved one square. • Prompt watchers to whisper ‘short, on the star, or past it’ before each run.	• Ask them to name the wrong step before anyone else and justify the one-card fix. • If time allows a second run, challenge them to reach the same star in fewer steps.

Cross-curricular hook

Links to Maths shape and space — left, right, forward and facing on a simple grid.