

A bigger push, a longer roll

Lesson at a glance

Open by miming a soft football kick then a strong one and ask which sends the ball further. Children predict whether a small or bigger push will send a toy car further, then work in short lane turns: one child pushes, a partner marks the stop, then they swap. A whole-class re-run on the front lane leaves two markers side by side. Close by drawing both stops on the Investigation Journal page and naming that the bigger push went further.

Learning objectives

- Give a small push and a bigger push to a car or ball along a lane
- Guess which push will send it further before trying
- Notice and draw that a bigger push made it go further

Before the bell – prep

Before the bell, clear 4–6 short floor lanes (2–3 m each) with a masking-tape start line on every lane. Ready one toy car or soft ball and two stop markers (cones, beanbags or sticky notes) per lane. Soft balls cover sticky floors. Plan pairs so every child pushes at least once.

Materials

Item	Qty	Per	Source	Low-cost substitute
toy car or soft ball	1	group	school kit	a tennis ball or a small cardboard tube roll
masking tape for floor start lines	1	class	classroom	chalk lines or ropes laid straight on the floor
stop markers (cones, beanbags or sticky notes)	2	group	classroom	two pieces of scrap paper or two building blocks
Investigation Journal page or blank A4 sheet	1	pupil	classroom	any blank A4 sheet for a lane drawing
crayons or pencils	1	pupil	classroom	any classroom drawing tools

Safety watch-point

Roll only along the taped lane, away from feet and faces. Gentle pushes only. Children kneel or sit at the side — nobody stands in the path.



Teaching moves

- **Getting Started:** Stand where all can see. Mime a soft kick, then a strong kick. Ask which sends the ball further and let children show with their hands. Accept every guess — no cars or tape out yet.
- **Look and wonder:** Show one car at a start line without rolling it. Say small push, bigger push, further, and slide your hand along an imaginary lane. Sticky notes near and far make further visible. Take thumbs-up or sideways guesses and hold them for the close.
- **Let's roll:** Model once at the front: small push, mark; bigger push, mark — think aloud that it went further. One pair per lane; pusher then marker, then swap. Keep turns to about a minute. Fold watchers in with Was that small or bigger? If both stops look the same, model a clearer contrast.
- **Mark how far:** Stay at the lanes. Ask children to point to the small-push stop and the bigger-push stop, not only say the answer. Watchers point from the side at the nearest lane.
- **Compare at the front:** Class sits; only you or one helper places markers. Loud guess, gentle push, first marker; loud guess, stronger push, second marker. Both stay visible. Voice same car, same start, only the push changed. Leave slope out of the talk.
- **Show and draw:** Hold the front markers in view so watchers can draw from the shared picture. Hand the Investigation Journal page or blank A4. Sketch only a start line and arrow on the board — not the answer. Accept two cars or one car with two marks.
- **What we noticed:** Carpet talk. Hold up two clear drawings. Draw out: bigger push, further travel. One familiar picture only — swing, door or football kick. Celebrate surprised guesses; looking is how we find out.

What it should show

Almost every pair will see the bigger push stop further from the start line. If stops look the same, the second push was still too gentle or the start line shifted — re-model a clear soft-then-strong contrast from the same taped start. Drawings should show a start and two stops with the bigger-push mark further along.

Misconceptions & interventions

- **Children say the car went further because it is faster or heavier, not because of the push.** — Hold up the same car at the same start line and re-voice: same car, same lane — only the push changed. Point to the two markers as the proof.
- **A child gives two gentle pushes so both markers land in nearly the same spot.** — Stop and model a truly soft push beside a clearly stronger one on the front lane so the class sees a real gap before they try again.

Differentiation

Emerging	Developing	Proficient
• Offer a soft ball if the car sticks. • Accept a very simple sketch from a child who mainly watched, as long as one stop is clearly further; scribe small/big if asked.	• Prompt watchers with Was that small or bigger? and Where will it stop? so every turn stays oral and focused.	• Pairs who finish early may try one more bigger push and add a third marker if time allows — still no centimetre measuring.

Cross-curricular hook

Link to PE kicking and playground swings: choosing a little push or a bigger push to send something just far enough.