

STEM all around us: the story of figuring things out

Lesson at a glance

Open by spotting everyday classroom inventions and naming STEM as people working out how the world works and making things better. Reveal science, technology and engineering one object at a time, then lead a short STEM-eyes walk of classroom, corridor and yard while pairs list finds on clipboards. Back inside, pairs sort finds under three category cards, transfer examples into the first Investigation Journal page, talk about what people used before, and pin genuine I wonder questions on the class board.

Learning objectives

- Recognise that STEM is people working out how the world works and making things better
- Sort everyday school and yard examples into science, technology and engineering
- Contribute at least one genuine I wonder question to the class board

Before the bell – prep

Print one STEM-eyes prompt-card set and one Science/Technology/Engineering category-card set per pair. Ready clipboards with blank list sheets, sticky notes, and a clear noticeboard space for the year's I wonder board. Walk the four-stop route yourself first and gather hold-up objects: thermometer or weather chart, torch or sharpener, ramp or hinge.

Materials

Item	Qty	Per	Source	Low-cost substitute
clipboard with blank list sheet (or lined paper)	1	pair	classroom	a piece of recycled paper folded over a hardback book as a writing surface
STEM eyes prompt cards (Look up high; Look down low; Tools and measures; Built to last; Science eyes)	1	pair	classroom	five spoken prompts on the board instead of cards
sorting category cards (Science; Technology; Engineering)	1	pair	classroom	three labelled trays or three large sticky notes as pile headers
Investigation Journal page	1	pupil	classroom	a blank A4 page with three handwritten headings: science, technology, engineering
sticky notes for I wonder questions	1	pupil	classroom	small scrap-paper rectangles and reusable putty or pins for the noticeboard
pencils	1	pupil	classroom	any classroom writing tool

Safety watch-point

Lead as one group on a short planned route. Set a clear yard boundary, mind wet surfaces and gates, and no climbing.

Teaching moves

- **Getting Started:** Stand by a door handle, tap or bin and take two or three quick calls only — no clipboards yet. Ask what would not be here if nobody had ever figured anything out, and steer phones and games toward school examples they can later sort.
- **What is STEM?:** Reveal one board line at a time with a real object: weather chart for science, torch or sharpener for technology, hinge or ramp for engineering. Name maths once with the clock or PE stopwatch, but keep three piles only. Run the quick gate check before anyone leaves the room.
- **STEM eyes walk:** Pair up, hand clipboard, pencil and prompt cards, show the worked line drain: carries rain away, then lead as one group. Pause at four rich spots and voice the STEM angle aloud so science is hunted equally. If the yard is wet or the line is slow, cut to indoor anchors plus one outdoor stop and return inside 14 minutes.
- **Sort what we found:** Model thermometer/weather chart, pencil sharpener and door ramp first. Pairs sort from written lists under the three category cards — no scrap objects needed. Circulate asking what job it does and whether it is mainly a tool, a built structure, or a way of finding something out; accept best-fit reasons on borderline items.
- **Record on your journal page:** Hold up one Investigation Journal page and show the three group areas before anyone writes. Success bar is light: at least one find per group, a short why beside any two items, school or yard examples. Scribe a word bank on the board — tool, measure, build, strong, opens, carries water, notices weather.
- **What did people use before?:** Display-only talk: harvest three or four then-and-now examples on the board. Prompt lights, pencils, drains and bikes if pairs stall. Revoice with the job stayed the same but the way people solved it changed. Shorten to two shares if the walk overran.
- **Start our I wonder board:** One sticky note each (or per pair if tight): a genuine question from today's walk, not one they already know. Pin up, read three aloud, do not answer them all. Cold-call a quick oral exit — one STEM word in their own words, one school thing someone once had to figure out — while notes go up.

What it should show

Expect school-yard finds across all three piles: thermometers, weather charts and drying patches under science; sharpeners, clocks and stopwatches under technology; hinges, ramps, drains and gates under engineering. Thin science lists are common — share class anchors. Phones-and-consoles-only lists need a gentle redirect to what is actually on the route. Borderline sorts (thermometer as tool or measure) are fine when the reason is sensible.



Lesson 1

Misconceptions & interventions

- **STEM is only computers, robots and phones.** — Hold up the spoon, ramp, weather chart or hinge from the reveal set and ask which pile each belongs in. Revoice: a careful puddle question and a playground gate both count.
- **A plant or minibeast in the garden is itself a science object to sort.** — Ask what question they have about it, or which tool helps them study it. Sort the question or the measuring tool, not the living thing alone.
- **Old things like a stone bridge or wooden cart are not STEM.** — During the before-talk, revoice that people have always figured things out — old solutions are still engineering and technology; the tools and materials change.



Differentiation

Emerging	Developing	Proficient
• Allow name-only walk lists and drawings with dictated labels on the journal page; scribe the reason word bank on the board. • A less mobile pupil can be class scribe at the front of the line, collecting shouted finds on one shared list.	• Prompt pairs to add the job each find does, not only its name, and to aim for a mix across the three piles.	• Star one journal item that could sit in two groups and write both reasons; push for two finds in each group where the list allows.



Cross-curricular hook

Link to English oral language — pupils justify sorts with because and frame I wonder why/how questions for the class board.

