Lesson 36 · engineering

Engineer of the Year: Reflect and Showcase

Lesson at a glance

Open with the year's prototypes and journals out on tables, inviting pupils to pick one build they're proud of. Teach three big ideas (iteration, showcase, reflection), then the four parts every showcase says aloud. Model a full showcase yourself with one real prototype, thinking aloud through each beat. Groups then plan their four parts on a printed reflection page, deciding who says what, before giving one-minute showcases to the class with peer feedback. Close with an Irish-engineering talk and a display-only year reflection.

Learning objectives

- Pupils will reflect on their design journey across the year, naming the user, the problem and the improvements they made
- Pupils will present a build or investigation clearly to an audience
- Pupils will evaluate what worked well and say one thing they would change next time

Before the bell — prep

The night before, lay out the year's prototypes and Investigation Journals so every group can find one build to talk about. Print one ReflectionSheet per group. Have the concepts table and four-parts list ready on the IWB. Pick one real prototype from the room to model your own showcase with, and choose a local landmark (bridge, greenway, wind farm) your pupils actually know for the Ireland talk.

Materials

Item	Qty	Per	Source	Low-cost substitute
pupils' prototypes and builds from the year	1	group	classroom	if a build was recycled, groups showcase using their journal drawings instead
pupils' Investigation Journals from the year	1	pupil	classroom	none needed
poster paper	1	group	classroom	the back of any large scrap paper

Safety watch-point

No hazards beyond normal classroom care. If a group re-handles a build with pointed parts (split pins, skewers), remind them to hold it carefully.

Lesson 36

Teaching moves

- **What Makes a Good Showcase:** Read each row of the concepts table on the IWB and point to a real prototype on a table as an example. Head off the common miss: pupils describe only the finished object — stress that the iteration, the moment it didn't work and how they fixed it, is the best part of the story. Keep this to the three ideas only; don't merge in the four parts.
- **The Four Parts of Your Showcase:** Read the four parts aloud and point back to the concepts table so pupils see iteration lives in part 3 and reflection in part 4. Say clearly: three big ideas, four parts to say aloud. Ask one pupil to repeat the four parts back so everyone holds the same list.
- **Model the Showcase:** Model a full showcase yourself with one real prototype, thinking aloud through user-and-problem, what you made, one change, one thing you'd change next. Then ask the class to spot the four parts in what you said. One worked example only, so every pupil sees the pattern before planning their own.
- **Plan Your Showcase:** Hand each group a ReflectionSheet and their chosen prototype and journal. Circulate and prompt the reflective beat: 'What did you have to fix? What did the feedback change?' Nudge groups to decide who says each part so everyone speaks.
- **The Showcase:** Keep each showcase to about a minute so every group presents. After each, take one 'thing I liked' and one question from listeners. Fold in the audience by asking 'What did this group change and why? Would you have solved it the same way?' Watching and questioning is real participation — set no separate desk task.
- **Engineers in Ireland:** Lead a short display-only discussion. Name one landmark your pupils know — the Samuel Beckett Bridge, the Waterford Greenway, or a footbridge or wind farm near your school — and ask who might have designed and improved it. Draw out that engineers work in teams, present ideas and improve from feedback, just as the class did.

What it should show

A successful showcase covers all four parts: who the build was for and their problem, what the group made, one change they made when it didn't work, and one thing they'd change next. The strongest groups foreground the iteration — the fix — rather than just describing the finished object. Groups who list only features have missed the point; prompt them with 'What did you have to fix?' to surface the change they made.

Misconceptions & interventions

- **Pupils think the showcase is about how good the finished build looks, so they only describe the object.** — Point back to the iteration row on the concepts table and re-voice that engineers' best story is the moment it didn't work. Ask 'What did you have to fix?' and have them name that change as part 3.
- **Pupils think 'one thing you would change next' means the build failed or was bad.** — Use your modelled example — a working pencil holder that would still be better in stronger card. Stress that even good designs get improved; reflection is what engineers always do, not an admission of failure.

Differentiation

Emerging	Developing	Proficient
• Group tells their four parts aloud to you first, then jots key words on the ReflectionSheet rather than full sentences. • Give a sentence stem for each of the four parts so pupils fill the gap.	• Group adds why they chose their materials to part 2, and names one piece of feedback that changed the design.	• Group explains what they learned about their user, and as listeners offer a well-framed question to each presenting group rather than just 'I liked it'.

Cross-curricular hook

Links to Oral Language in English — pupils plan, sequence and deliver a short spoken presentation to an audience and field questions.