energy-forces

# Energy in our school: using less, going clean

## Lesson at a glance

Open by spotting energy use and waste in the classroom, then frame use versus waste before groups predict the school's biggest waste hotspot. Pupils audit a short supervised loop (classroom model stop plus three doorway/corridor stops), recording place, use, waste and tallies in the Investigation Journal. Back in class the data-recorder interactive pools waste-sign counts into a bar chart; groups then read one Irish renewable card (wind, solar or hydro) and design one practical saving action tied to the tallest bar, ending with one named class action for the week.

## Learning objectives

- Audit where energy is used and wasted around the school
- Research at least one renewable energy source relevant to Ireland
- Design and present one practical energy-saving action for the class or school

## Before the bell — prep

Print one Investigation Journal audit/action page per pupil and one set of renewable cards A–C (wind, solar, hydro) per group. Agree a tight four-stop loop with the principal or caretaker if needed. Clipboards help; otherwise journals rest on books. Have one adult helper ready for corridor work if your school expects it.

## Materials

| Item | Qty | Per | Source | Low-cost substitute |
|---|---|---|---|---|
| Investigation Journal page | 1 | pupil | provided printable | plain paper for audit notes (place, energy use, waste, tally) plus a short renewable note |
| Saving action card | 1 | group | provided printable | one sticky note or index card per group with the five headings written by the teacher before the lesson: Waste we target / Our one action / Who / When / How we will know it worked |
| clipboard | 1 | pupil | classroom | journal resting on a hardback book |
| renewable energy research cards (wind, solar, hydroelectric) | 1 | group | provided printable | teacher reads each renewable card aloud from the notes while groups listen and note key words |
| pencil | 1 | pupil | classroom | any writing implement |

Lesson 22

### Safety watch-point

One supervised body on a fixed loop: walking feet, clear boundaries, doorway views only. Do not open plant or boiler rooms; pupils must not touch switches, plugs or heating controls.

### Teaching moves

- **What are we looking for?:** Put use and waste on the board as one paired idea only. Say the spoken lines; hold renewables and the saving action to a single preview line each. Head off 'saving means sitting in the dark' before you leave — saving is using energy when and where it is needed.
- **Predict before we walk:** Run think–pair–share: one place and one reason. Capture two or three predictions on the board to revisit after the chart. Do not correct them yet.
- **Energy walk audit:** Hand out journals before the model stop. Model the classroom stop aloud with the I wonder / I predict / I check / I observed script, counting only powered systems. Each group quietly picks one waste-sign type to prioritise. Walk as one supervised body; at each stop, front spotters name what they see, you re-voice the class notes, and every pupil writes the same short row. About two minutes per stop; skip blocked stops and use doorway observation only. No one touches switches, plugs or heating.
- **Pool our audit on the board:** Drive the data-recorder interactive: Place and Waste signs found, one row per stop actually visited. Agree a class figure per place (show of hands or sensible middle). Gloss that a tall bar is more waste signs spotted — useful evidence, not blame. Leave the finished chart up for the design steps.
- **Meet Irish clean energy:** Keep the chart visible. Give each group one renewable card (rotate A–C). Ninety seconds to read; take three full ~15-second shares (one wind, one solar, one hydro) then 5-second headlines only. Add one spoken demand-reduction point: the cleanest energy is energy you do not need to make. Pupils jot their card's source plus one other renewable named in the shares.
- **Design one saving action:** Point at the tallest bar. Each group designs one realistic action for this week — not a wind farm — and records action, who, when, and how they will know it worked on the journal action-plan block. Offer board sentence starters if needed.
- **Share our saving actions:** Protect the final 90 seconds with a visible timer for one named class action and one named owner on the board. Full shares ~30–40 seconds from up to four groups (or a silent gallery then two or three spoken); remaining groups give a 10-second headline. Praise evidence-linked routines over dramatic inventions.

### What it should show

Expect clear waste signs such as empty-room or corridor lights left on, doors open onto heated spaces, and idle chargers; classroom model stop often shows normal use plus at least one forgettable waste. Tallest bar is usually lights or heating-with-open-door on this walk, not a lone charger. Successful plans name one action tied to that evidence, a real owner, a when, and a re-check success measure. A group with zero tallies likely rushed past empty spaces — revisit one doorway stop if time allows.

### Misconceptions & interventions

- **'Using less energy means we have to sit in the dark or be cold.'** — Reframe before the walk: saving is using energy when and where it is needed, and choosing cleaner sources — not going without. Point to lights on in an empty room as the waste you can cut without spoiling work.
- **Pupils tally free daylight from a window as school energy use, or treat one idle charger as equal to a lit empty hall.** — At the model stop, say aloud: only powered systems count; daylight is free. Still note small waste, but weight lights and heat waste higher when pooling tallies.
- **Groups invent dramatic fixes ('build a wind farm') instead of a habit change linked to the audit.** — Point at the tallest bar and ask: does your action cut waste we actually saw this week, and who has to remember it? Praise a switch-off or closed-door routine over an impossible build.

### Differentiation

| Emerging | Developing | Proficient |
|---|---|---|
| • Less confident writers tally and add two or three words per stop; offer board sentence starters for the action plan ('We will…', 'The person who does it is…', 'We will know it worked when…'). | • More confident groups note time of day and whether the waste would change after lunch, then defend why their priority waste-sign type matched the tallest bar. | • Stretch: critique whether the class action is fair and checkable, or suggest how a re-audit after school might change the tallest bar — still using only today's evidence and journal. |

### Cross-curricular hook

Tie to Maths Data: pool waste-sign counts on the bar chart and read which place is the mode (tallest bar).