Conservation and efficiency: accounting for energy

Teacher / technician

YEAR 10 / LESSON 24 / PHYSICS + SCIENCE (DOUBLE AWARD)

Staff preparation and answer guidance. Keep separate from student sheets. Record actual measurements separately from labelled practice examples.

Coverage and delivery

Shared Physics / Double Award: 4.3–4.4. Conservation and efficiency.

Allow about 60 minutes. Follow the student sequence and use the answers to check reasoning.

Requisition • class of 30, working in 15 pairs

Item	Per pair / setup	Class total
Booklets	1 per learner	30
Card sets/calculators	1 of each per pair	15 of each

Immediate safety

Paper and calculation activity only. No heaters, lamps or electrical supplies are operated in this lesson.

Preparation and delivery

Read alongside the student method

YEAR 10 / LESSON 24 / PHYSICS + SCIENCE (DOUBLE AWARD)

1. Prepare 15 card sets with the stated values and 30 booklets. Keep units and operating intervals consistent.

2. Use the greater-than-100% claim as an error-diagnosis task, including the possibility of an initially charged store.

Close of lesson

- Return cards and keep corrected calculations.

Check before teaching

Check the cards, reference data and quantities against this requisition. Keep the staff answer guide separate until the checking stage. Supplied numerical practice datasets are labelled examples; they are not class measurements.

Answers and teaching notes

Expected explanations • do not give as experimental observations

YEAR 10 / LESSON 24 / PHYSICS + SCIENCE (DOUBLE AWARD)

- 25%.
- 75 J.
- 75%.
- 60 J.
- No; it is transferred to less useful stores or pathways for the chosen purpose.
- Otherwise the ratio compares different amounts of operation.

References and provenance

Pearson Physics specification

Prepared 22 November 2026. Original wording, tables and questions. Sources inform the concepts and technique; the lesson scope and classroom quantities are explicitly described here. No laboratory trial or final school risk approval is claimed.