Energy stores and transfer pathways

Teacher / technician

YEAR 10 / LESSON 20 / 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: 4.1–4.3. Stores, transfers and conservation.

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

Requisition • class of 30, five groups of six

Item	Per pair / setup	Class total
Pendulum/toy/tray station sets	1 set per group	5 sets
Low-voltage lamp circuit	1 staff-checked set per group	5 sets
Energy diagram cards	1 set per group	5 sets
Booklets	1 per learner	30

Immediate safety

Keep clear of pendulum paths and use small low swings. Do not overwind toys. Use only staff-checked low-voltage battery circuits with matched lamps; avoid short circuits, switch off between observations and let warm lamps cool. No matches, mains heaters or high-voltage equipment are used.

Preparation and delivery

Read alongside the student method

YEAR 10 / LESSON 20 / PHYSICS + SCIENCE (DOUBLE AWARD)

1. Prepare five groups of six. Secure pendulum stands and bobs, check toy condition and match lamps to the battery voltage.

2. Pilot brief lamp operation and keep hot surfaces inaccessible. Use only the specified low-energy stations.

3. Use photographs for nuclear and electrostatic examples. Distinguish energy stores from transfer pathways, including sound as mechanical transfer.

Close of lesson

- Switch off circuits, allow lamps to cool, unwind toys safely and return cards.

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 20 / PHYSICS + SCIENCE (DOUBLE AWARD)

- Gravitational and kinetic, with transfers to thermal stores through dissipation.
- Elastic.
- The battery’s chemical store.
- No.
- Energy is transferred to surroundings through drag, friction and sound.
- No; it becomes less useful for the chosen task.

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.