Induction and generation: review

Teacher / technician

YEAR 11 / LESSON 89 / 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: Shared 6.15–6.16; Physics-only transformer extension 6.17P–6.20P.

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
Ruler and calculator	1 set per pair	15 sets

Immediate safety

Desk-based review only. No powered coils, generators, transformers or strong magnets are required.

Preparation and delivery

Read alongside the student method

YEAR 11 / LESSON 89 / PHYSICS + SCIENCE (DOUBLE AWARD)

1. Provide a shared generator alternative wherever the transformer extension appears.

2. Use fully labelled original diagrams and identify which field changes link the coil.

Close of lesson

• Keep corrections for revision.

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 11 / LESSON 89 / PHYSICS + SCIENCE (DOUBLE AWARD)

- No, if field linkage is unchanged.
- Voltage sign reverses.
- Peak magnitude generally increases.
- Mechanical to electrical.
- Its useful transfer is electrical to mechanical.
- 2.0 V; shared alternative: faster rotation or stronger field increases induced voltage.

References and provenance

Pearson Physics specification

IOP: electromagnetism

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.