Basic moments: a small lever

Teacher / technician

YEAR 10 / LESSON 10 / PHYSICS ONLY

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

Coverage and delivery

Physics only: 1.30P, 1.32P. Moment and simple balance.

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

Requisition • class of 30, ten groups of three

Item	Per pair / setup	Class total
Lever/pivot/tray set	1 per group	10 sets
10 g masses	4 per group	40
Rulers	1 per group	10
Booklets	1 per learner	30

Immediate safety

Keep the lever low over a tray and fingers clear of the pivot. Add small masses gently; do not use the lever as a launcher or exceed its marked load. Catch loose masses in the tray, not with your feet.

Preparation and delivery

Read alongside the student method

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1. Use ten groups of three. Check each lever balances unloaded and that 10 g masses are secure at the available positions.

2. Use measured perpendicular distances and include the lever's own weight if it does not act through the pivot. Keep pupil loading within the apparatus rating.

Close of lesson

• Remove masses before carrying the lever; count and return all small masses.

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

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- 0.0098 N m.
- The moment doubles.
- Yes, if the other moments remain unchanged.
- From the pivot to the force’s line of action, perpendicular to it.
- Otherwise the lever’s own weight contributes an unaccounted moment.
- Reading uncertainty, pivot friction and imperfect mass values.

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.