# Identifying forces: objects and interactions

Teacher / technician

YEAR 10 / LESSON 3 / 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: 1.12–1.14, 1.16, 1.18. Force types, vectors and weight.

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 |
|---|---|---|
| Book/block/mat/force-meter station set | 1 set per group | 5 sets |
| Small bar magnets | 2 per group | 10 |
| Diagram cards | 1 set per group | 5 sets |
| Booklets and rulers | 1 per learner | 30 of each |

## Immediate safety

Use small classroom magnets, not strong neodymium magnets. Do not bring magnets near medical devices or electronics; use diagrams instead where required. Keep blocks on the bench, pull gently and stay within the force meter's range. Do not release stretched equipment.

# Preparation and delivery

Read alongside the student method

YEAR 10 / LESSON 3 / PHYSICS + SCIENCE (DOUBLE AWARD)

**1.** Prepare five station sets for groups of six. Check the meter rating, magnet condition and a clear bench surface.

**2.** Discuss magnet-related access needs privately; provide the diagram route without requiring anyone to disclose personal health details.

**3.** Use g = 9.8 N $kg^{-1}$ consistently in the calculation. Keep the diagram's chosen object explicit.

## Close of lesson

• Return magnets with their supplied keepers if applicable; put blocks and force meters away without stretching them.

## 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 3 / PHYSICS + SCIENCE (DOUBLE AWARD)

- For example gravity and magnetism; electrostatic force is also non-contact.
- The table.
- 4.9 N downward.
- No; its weight changes.
- Magnitude and direction are both required.
- No: both act on the book. Third-law partners act on different objects.

## 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.