Plane mirrors: locating a virtual image

Teacher / technician

YEAR 10 / LESSON 54 / PHYSICS + SCIENCE (DOUBLE AWARD)

Staff preparation and answer guidance. Keep separate from student sheets. This uses a weak acrylic reflection to locate the image. It is a measurement with finite alignment uncertainty, not a claim of exact equality.

Coverage and delivery

Shared Physics / Double Award: 3.15, 3.16. Reflection and ray diagrams.

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
Acrylic reflector and stable holder	1 per group	10 sets
Matching small coloured objects	2 per group	20
Paper and rulers	1 set per group	10 sets
Booklets	1 per learner	30

Immediate safety

Use smooth-edged acrylic, not loose glass. Staff check the holders are stable and edges undamaged. Keep objects away from bench edges. Use unlit objects only; no candle, flame or laser is used.

Preparation and delivery

Read alongside the student method

YEAR 10 / LESSON 54 / PHYSICS + SCIENCE (DOUBLE AWARD)

1. Pilot visibility with the available acrylic and lighting; use contrasting objects and backgrounds without darkening access routes.

2. Prepare ten stable stations and explain parallax using a demonstration before measurements.

Close of lesson

- Return objects, wipe acrylic with a suitable soft cloth and store panels in their holders.

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 54 / PHYSICS + SCIENCE (DOUBLE AWARD)

- Relative apparent motion of the rear object and reflected image as the viewpoint changes.
- Adjust the rear object until their relative motion is minimised.
- Perpendicular distance from the reflecting face.
- Virtual.
- Light does not actually follow those backward paths.
- 10 cm behind the reflecting face.

References and provenance

Pearson Physics specification

IOP: reflection and refraction

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.