Smoking and biological harm

Teacher / technician

YEAR 10 / LESSON 57 / BIOLOGY + SCIENCE (DOUBLE AWARD)

Staff preparation and answer guidance. Keep separate from student sheets. Original learning tasks; no supplied numerical example represents class measurements.

Coverage and delivery

Shared Biology / Double Award: 2.49. Smoking and health.

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
Student booklets	1 per learner	30
Airway/alveolus diagram sets / rulers	1 set and 1 ruler per pair	15 of each

Immediate safety

Paper, modelling and written reasoning only. No chemicals or biological samples are handled.

Preparation and delivery

Read alongside the student method

YEAR 10 / LESSON 57 / BIOLOGY + SCIENCE (DOUBLE AWARD)

1. Provide 30 booklets and 15 labelled airway/alveolus diagram sets with pencils and rulers. Use the linked NHS summary as published background evidence.

2. Keep answers separate until learners have attempted the tasks. The final task plans study appraisal; no numerical study findings are supplied or invented.

Close of lesson

• Return models and keep the corrected work.

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 57 / BIOLOGY + SCIENCE (DOUBLE AWARD)

- Mucus and trapped material are cleared less effectively.
- Exchange area and elastic recoil decrease.
- It binds haemoglobin and reduces oxygen-carrying capacity.
- It is addictive.
- No; risk describes probability across groups.
- Other differences between groups can influence the observed association.

References and provenance

Pearson Biology specification

NHS inform: tobacco

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.