Review: nutrition and gas exchange

Teacher / technician

YEAR 10 / LESSON 58 / 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 nutrition, digestion and human gas exchange; Biology-only food-energy extension marked.

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
Drawing paper / rulers	1 set per pair	15 sets
Earlier investigation records	learner records or anonymised class copies	30 accessible sets
Calculators: Biology extension	1 per pair	15

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 58 / BIOLOGY + SCIENCE (DOUBLE AWARD)

1. Provide 30 booklets, drawing paper and 15 rulers. Ask learners to bring their model-gut and breathing records; provide anonymised class records for absentees. For the Biology-only extension, provide the earlier calorimetry measurements and 15 calculators.

2. Keep answers separate until learners have attempted the tasks; discuss the reasons for corrections.

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 58 / BIOLOGY + SCIENCE (DOUBLE AWARD)

- Maltase.
- Lipids.
- Large area, thin barrier and transport supply.
- No; breathing ventilates lungs, while respiration transfers energy through cellular reactions.
- It lacks living cells and transport processes and begins with supplied glucose.
- The mass of water.

References and provenance

Pearson Biology 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.