Animal and plant cells

Teacher / technician

YEAR 10 / LESSON 2 / BIOLOGY + SCIENCE (DOUBLE AWARD)

Staff preparation and answer guidance. Keep separate from student sheets. Paper and model activity. No live culture, specimen collection or clinical interpretation.

Coverage and delivery

Shared Biology / Double Award: 2.2–2.4. Cell structures and their functions.

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 copies
Paper / model sets	1 per pair	15 sets
Writing tools / rulers	1 per learner	30 sets

Immediate safety

Use paper or clean reusable models. No body samples, microbial cultures or unknown biological material are handled.

Preparation and delivery

Read alongside the student method

YEAR 10 / LESSON 2 / BIOLOGY + SCIENCE (DOUBLE AWARD)

1. Provide 30 student booklets and 15 sets of reusable models or blank paper cards. All examples needed are supplied in the task text.

2. Allow 10 minutes recall, 25 minutes pair reasoning, 15 minutes explanation and 10 minutes corrections. Keep answers separate until discussion.

3. Use typical cells; specialised exceptions do not invalidate the comparison.

4. Do not label a cell wall as selectively controlling exchange or claim ribosomes are visible with an ordinary school light microscope.

Close of lesson

• Return reusable materials and retain your corrected reasoning.

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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- Any three of nucleus, cytoplasm, membrane, mitochondria and ribosomes.
- At ribosomes.
- The cellulose wall supports; the membrane controls exchange of substances.
- Plants respire to transfer energy for cell processes, including when light is unavailable.
- Many plant cells, such as root hair cells, lack chloroplasts.
- Accept justified lack of scale, simplified shapes/numbers or unrealistic visibility.

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.