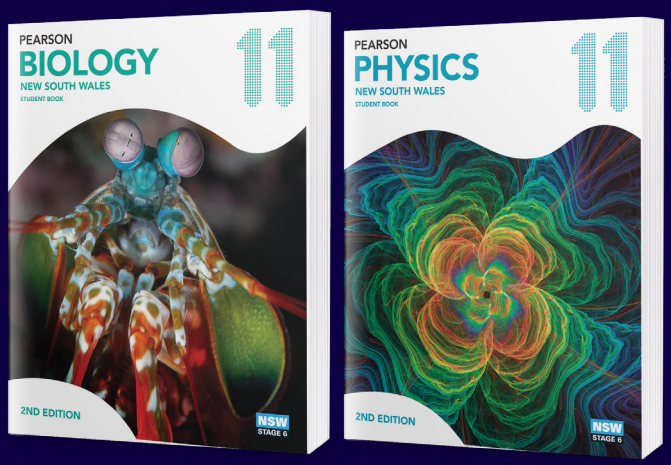
Pearson

NEW

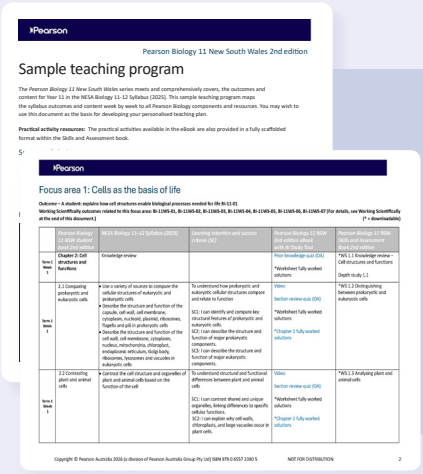
Pearson Senior Science NSW 2nd Edition

- Fully aligned to the NESA Biology, Physics and Chemistry 11–12 syllabuses (2025).
- Bold new editions built on what you already trust, strengthened by insights from practising NSW educators.
- Everything you need to move to the new curriculum and prepare your students for exam success.



The leading science series in NSW is back for the new syllabus!

The science series NSW teachers trust, updated for the new 11–12 (2025) syllabuses

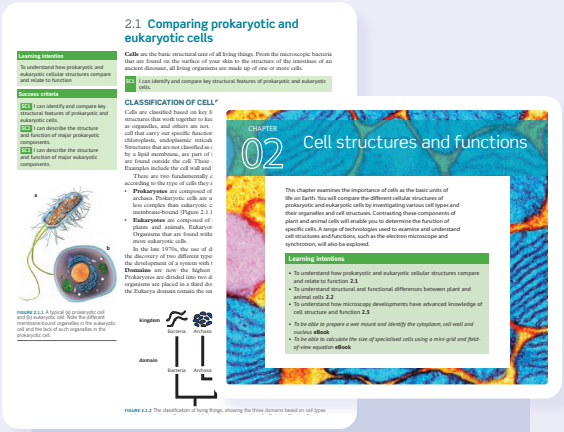

Pearson

Pearson Biology 11 New South Wales 2nd edition

Sample teaching program

Focus area 1: Cells as the basis of life

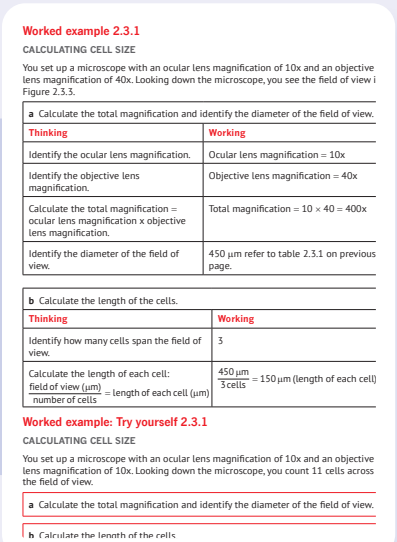
Teacher support provides a reliable foundation, with syllabus grids, teaching guidance, worked solutions, ready-made tests and digital reporting to support confident planning and delivery.


2.1 Comparing prokaryotic and eukaryotic cells

CLASSIFICATION OF CELL

CHAPTER 02 Cell structures and functions

Learning intentions and success criteria clearly show students what they are learning, why it matters and how success is measured, with topics sequenced to meet NSW syllabus requirements.


Worked example 2.3.1

CALCULATING CELL SIZE

You set up a microscope with an ocular lens magnification of 10x and an objective lens magnification of 40x. Looking down the microscope, you see the field of view i Figure 2.3.3.

a Calculate the total magnification and identify the diameter of the field of view.

Thinking	Working
Identify the ocular lens magnification.	Ocular lens magnification = 10x
Identify the objective lens magnification.	Objective lens magnification = 40x
Calculate the total magnification = ocular lens magnification x objective lens magnification.	Total magnification = 10 × 40 = 400x
Identify the diameter of the field of view.	450 µm refer to table 2.3.1 on previous page.

b Calculate the length of the cells.

Thinking	Working
Identify how many cells span the field of view.	3
Calculate the length of each cell: field of view (µm) / number of cells = length of each cell (µm)	450 µm / 3 cells = 150 µm (length of each cell)

Worked example: Try yourself 2.3.1

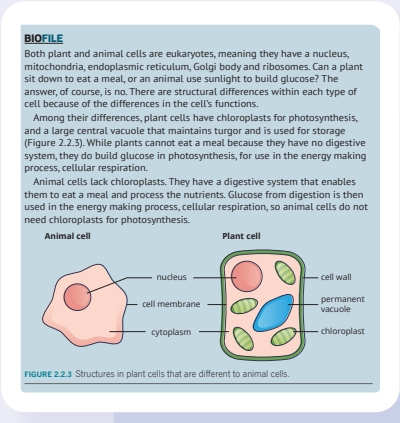
CALCULATING CELL SIZE

You set up a microscope with an ocular lens magnification of 10x and an objective lens magnification of 10x. Looking down the microscope, you count 11 cells across the field of view.

a Calculate the total magnification and identify the diameter of the field of view.

b Calculate the length of the cells.

Worked examples break complex concepts into manageable steps, helping students build understanding before applying their learning in practice and exam-style questions.


BIOFILE

Both plant and animal cells are eukaryotes, meaning they have a nucleus, mitochondria, endoplasmic reticulum, Golgi body and ribosomes. Can a plant sit down to eat a meal, or an animal use sunlight to build glucose? The answer, of course, is no. There are structural differences within each type of cell because of the differences in the cell's functions.

Among their differences, plant cells have chloroplasts for photosynthesis, and a large central vacuole that maintains turgor and is used for storage (Figure 2.2.3). While plants cannot eat a meal because they have no digestive system, they do build glucose in photosynthesis, for use in the energy making process, cellular respiration.

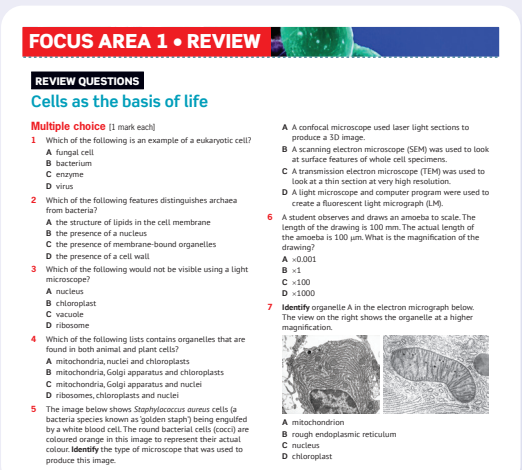
Animal cells lack chloroplasts. They have a digestive system that enables them to eat a meal and process the nutrients. Glucose from digestion is then used in the energy making process, cellular respiration, so animal cells do not need chloroplasts for photosynthesis.

Animal cell — Plant cell

nucleus
cell membrane
cytoplasm
cell wall
permanent vacuole
chloroplast

FIGURE 2.2.3 Structures in plant cells that are different to animal cells.

Applied examples encourage students to connect scientific concepts to the real-world, building relevance and curiosity while supporting deeper understanding.


FOCUS AREA 1 • REVIEW

REVIEW QUESTIONS

Cells as the basis of life

Multiple choice [1 mark each]

1 Which of the following is an example of a eukaryotic cell?
A fungal cell
B bacterium
C enzyme
D virus

2 Which of the following features distinguishes archaea from bacteria?
A the structure of lipids in the cell membrane
B the presence of a nucleus
C the presence of membrane-bound organelles
D the presence of a cell wall

3 Which of the following would not be visible using a light microscope?
A nucleus
B chloroplast
C vacuole
D ribosome

4 Which of the following lists contains organelles that are found in both animal and plant cells?
A mitochondria, nuclei and chloroplasts
B mitochondria, Golgi apparatus and chloroplasts
C mitochondria, Golgi apparatus and nuclei
D ribosomes, chloroplasts and nuclei

5 The image below shows *Staphylococcus aureus* cells (a bacteria species known as 'golden staph') being engulfed by a white blood cell. The round bacterial cells (cocci) are coloured orange in this image to represent their actual colour. **Identify** the type of microscope that was used to produce this image.
A A confocal microscope used laser light sections to produce a 3D image.
B A scanning electron microscope (SEM) was used to look at surface features of whole cell specimens.
C A transmission electron microscope (TEM) was used to look at a thin section at very high resolution.
D A light microscope and computer program were used to create a fluorescent light micrograph (LM).

6 A student observes and draws an amoeba to scale. The length of the drawing is 100 mm. The actual length of the amoeba is 100 µm. What is the magnification of the drawing?
A ×0.001
B ×1
C ×100
D ×1000

7 **Identify** organelle A in the electron micrograph below. The view on the right shows the organelle at a higher magnification.
A mitochondrion
B rough endoplasmic reticulum
C nucleus
D chloroplast

Review and practice sections provide differentiated questions, alongside exam-style focus area questions to deepen understanding and higher-order thinking.

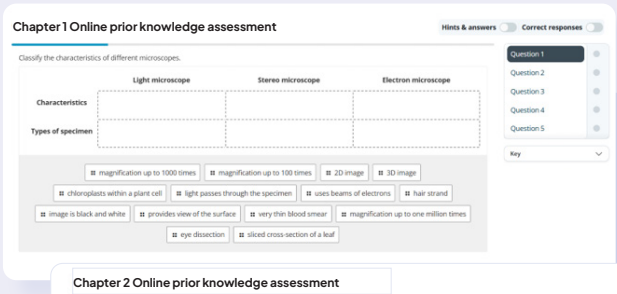
We've kept what you said works and strengthened what matters most:

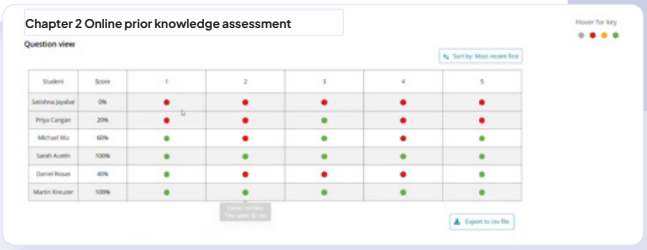
Clear structure from first lesson to final assessment: A clear learning sequence, so teachers always know what comes next and how each lesson aligns to the syllabus. Lessons prioritise understanding before moving into practice and application.

Built for explicit teaching: Our approach simplifies complex concepts into manageable, intuitive building blocks, setting learners up for confident, rigorous application.

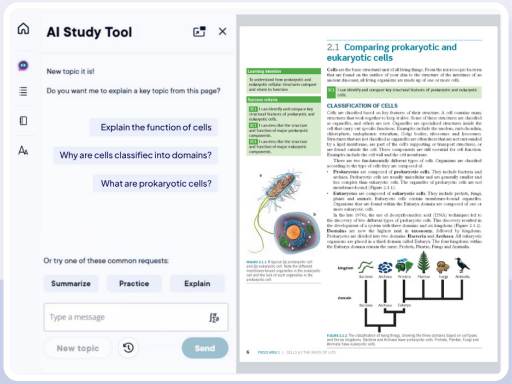
Understanding before exam practice: Students build knowledge and skills before tackling exam-style questions. Assessment preparation is introduced gradually, helping students develop confidence without unnecessary pressure.

Designed for real NSW classrooms: Developed with Prime Minister's Prize-winning educator Matt Dodds and expert NSW teachers, this series provides a trusted, ready-to-use foundation that reduces planning time and empowers confident teaching.



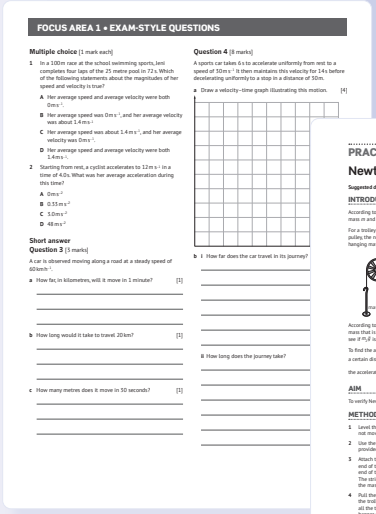


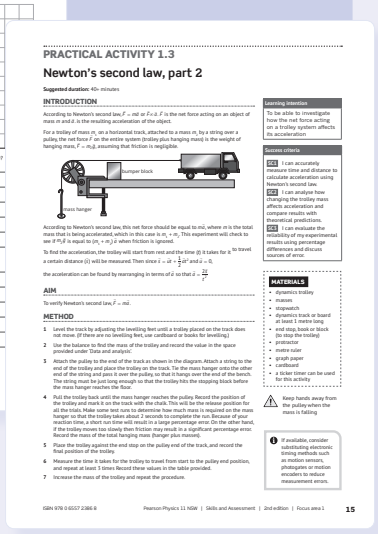
Digital assessments within the eBook with clear reporting give teachers insight into student progress, supporting informed teaching decisions without adding to workload.



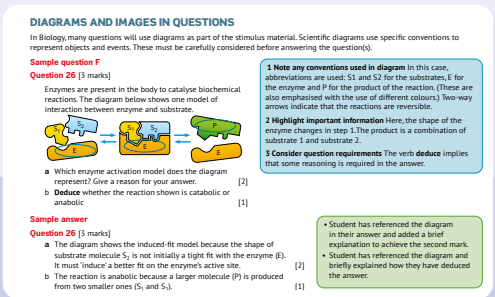
AI study tools support independent practice and revision within the eBook, offering instant feedback and explanations from safe curriculum-aligned Pearson content.

Write-in workbooks include scaffolded practicals, depth study guidance, concept summaries and exam-style questions to support revision, practice, application and exam preparation.





Building Exam Skills sections guide students through different question types, with advice and annotations that build assessment-confidence over time.



A connected print and digital program

All components work together to keep teaching learning and assessment aligned across the course.

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Pearson Biology 11 New South Wales 2nd edition		*Available from August 2026*
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Coming in 2027: Year 12 Biology and Physics; Year 11 and 12 Chemistry.		

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The eBook is valid for a maximum period of 27 months from the date of activation.

Meet series consultant, Matt Dodds

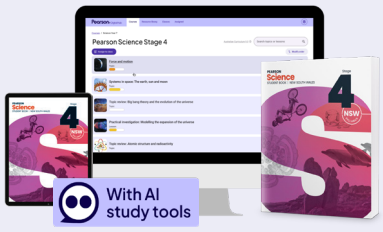
Physics and Biology teacher at Glen Innes High School
2025 Prime Minister's Prizefor Excellence in Science Teaching in Secondary Schools.

@sciencewithmat

"A well-constructed teacher resource is like having someone in your corner to support you."

Working with a trusted author team of leading Australian educators, practising NSW teachers and assessment experts, Matt's insight strengthens the real-world practicality of the resources, ensuring lessons are intuitive to teach, inspire curiosity and support better learning outcomes.

Also teaching Years 7–10?



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