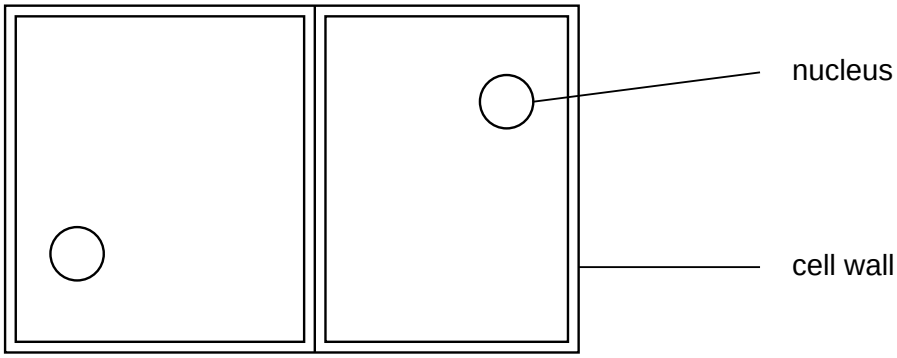
Drawing cells

A biological drawing is a record of observable evidence. Draw what the specimen shows, not a textbook cell filled with expected organelles.

CLEAR OUTLINES, PROPORTIONS AND LABELS

Schematic example: adjacent plant cells with visible walls and nuclei. This is a drawing guide, not a record from a particular slide.



1. OBSERVE BEFORE DRAWING

Find the required region and inspect several cells. Identify their outlines, relative sizes and visible contents. Follow the task: draw the requested number of cells and preserve their arrangement.

2. USE CLEAN, UNBROKEN LINES

Use a sharp pencil. Make a large drawing that uses most of the available space, with room for labels. Avoid shading, colour, sketchy repeated strokes and heavy outlines.

3. INCLUDE ONLY VISIBLE DETAIL

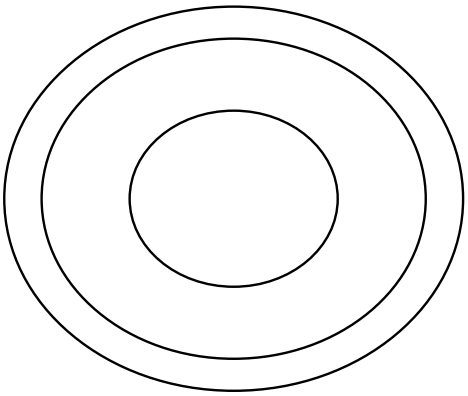
Keep the position and shape of each visible structure accurate. Do not add a nucleus to every cell automatically or invent chloroplasts, mitochondria or other structures that the image does not show.

Cambridge Biology 9700 syllabus: outcome 1.1.2; practical drawing guidance, pp. 53-55.

Choose the right level of detail

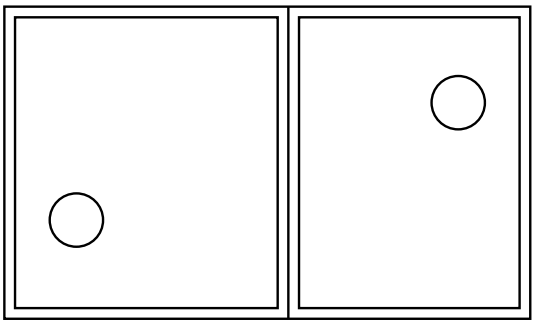
A plan diagram shows where tissues are. A cell drawing shows the shapes and observable contents of selected cells. They answer different questions.

PLAN DIAGRAM



Schematic tissue layout. Show boundaries and the relative thickness of each region; do not draw individual cells.

CELL DRAWING



Schematic selected cells. Show their relative sizes, wall thickness where visible, and observable contents.

1. MATCH THE TASK

For a plan diagram, observe the overall tissue pattern, usually at low power. For a detailed drawing, inspect the specified cells at suitable higher power. Do not substitute one type of drawing for the other.

2. PRESERVE PROPORTIONS

Compare height with width, one cell with its neighbour, and each structure with the whole cell. Enlarge everything consistently. A large nucleus in a small cell is only correct if the image shows that relationship.

3. SHOW WALL THICKNESS ACCURATELY

Where applicable, use two lines to show a cell wall's thickness and three lines where two cells touch. This is structural detail, not sketchy retracing.

Cambridge Biology 9700 syllabus: Paper 3, collection of observations, p. 53.

Label, compare, refine

Return to the specimen or photomicrograph repeatedly. A neat drawing is only useful if it represents the observed structures accurately.

1. LABEL PRECISELY

Use straight, ruled label lines that touch the named structure. Keep labels outside the drawing and lines separate, without crossing. Use clear biological terms. A label names a structure; an annotation adds a short relevant explanation.

CHECK YOUR DRAWING

Selection	Correct region and number of cells; neighbouring cells retain their observed positions.
Shape and size	Outlines and relative proportions match the image; cells are not made artificially identical.
Visible contents	Only observed features are included, in their actual positions; no guessed organelles.
Line quality	Fine, clear, unbroken lines; no shading, colouring or untidy retracing.
Labels and context	Labels touch the correct structures. Add the specimen title and any information requested by the task.

2. RECORD SCALE HONESTLY

Include magnification or a scale bar when requested and supported by measurements. Microscope magnification is not automatically the magnification of your drawing: changing drawing size changes its magnification. Never invent a value.

Cambridge Biology 9700 syllabus: recording and presentation of observations, pp. 54-55.