

Edexcel Biology GCSE

CP 01: Looking at Cells

Practical notes



Looking at Cells

Aim

Investigate biological specimens using microscopes, including magnification calculations and labelled scientific drawings from observations.

Equipment

- Light microscope
- Microscope slide
- Cover slip
- Onion
- Forceps
- Iodine solution
- White tile
- Scalpel
- Any other prepared plant and animal cell slides

Method

1. Peel off an epidermal layer on the onion using forceps.
2. Mount onto the microscope slide with a drop of water using a pipette, making sure the tissue lies flat.
3. Add 2 drops of iodine solution to stain the cells so that internal structures eg. nucleus becomes visible.
4. Place the cover slip on by first placing one edge down on the slide and slowly lowering the other side of the cover slip using forceps. Make sure no air bubbles are trapped.
5. Remove any excess stain by soaking it with paper towels.
6. Place the slide on the stage of the microscope.
7. Turn the nosepiece to select a low power objective.
8. Set up the microscope - don't look into the eyepiece yet. Instead, use the coarse adjustment knob to raise the stage until the cover slip just touches the objective.
9. Now look into the eyepiece and turn the coarse adjustment knob to move the stage away until the image comes into focus (doing this helps avoid you breaking the slide).
10. Turn the nosepiece to select a high power objective.
11. Repeat the same process as above and then look into the eyepiece and turn the fine adjustment knob until the image comes into focus.
12. Make a labelled drawing of a few of the cells you can see, including any features eg. cell wall, nucleus. Write down the magnification.
13. Repeat these steps using a prepared slide.

Safety precautions

Wear safety goggles when handling the iodine solution.

If a slide does break, be careful with the broken glass.

