

# WJEC Wales Biology GCSE

## SP1.1A: Microscopy

### Practical notes



## Microscopy

### Aim

Examination of animal and plant cells using a light microscope and production of labelled scientific diagrams from observation.

### Equipment

- Light microscope
- Microscope slide
- Cover slip
- Onion
- Forceps
- Mounted needle
- 0.1% methylene blue solution
- Iodine solution
- Cotton wool bud
- Scalpel

### Method for onion cells

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.
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 the mounted needle. Make sure no air bubbles are trapped.
5. Place the slide on the stage of the microscope. View using a low power objective (10X).
6. Turn the nosepiece to select a high power objective (40X) to identify some cell structures.
7. Make a labelled drawing of a few of the cells you can see, including the features: cytoplasm, cell membrane, nucleus, cell wall.

### Method for cheek cells

1. Place a drop of methylene blue on a glass slide.
2. Gently rub the inside of your cheek with a cotton bud.
3. Wipe the cotton bud in the drop of methylene blue on the glass slide.
4. Place the cotton bud in a beaker of disinfectant after use.
5. 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 the mounted needle. Make sure no air bubbles are trapped.
6. Place the slide on the stage of the microscope. View using a low power objective (10X).
7. Turn the nosepiece to select a high power objective (40X) to identify some cell structures.
8. Make a labelled drawing of a few of the cells you can see, including the features: cytoplasm, cell membrane, nucleus.



### **Safety precautions**

Methylene blue is harmful and an irritant - avoid contact with skin and wear safety goggles.

Cheek cells are a potential biohazard - dispose of cotton buds and slides in disinfectant and only handle your own cell samples.

Coverslips and mounted needles are sharp - hold coverslip by sides and hold mounted needle by the handle.

