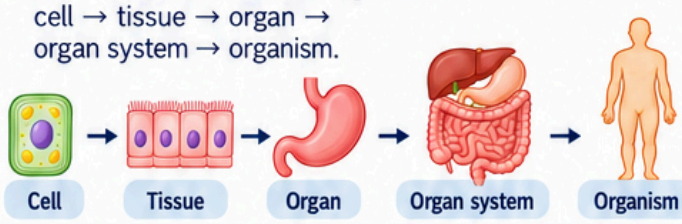
BALLYMENA ACADEMY

Year 9 Biology Revision

Cells and Microscopes

Living things and organisation — LO 1–4

- **LO 1** Define Biology.
- **LO 2** List and explain the seven characteristics of life.
  MRS GREN: Movement, Respiration, Sensitivity, Growth, Reproduction, Excretion, Nutrition.
- **LO 3** State that all organisms are made of cells.
- **LO 4** Recall the levels of organisation:
  cell → tissue → organ → organ system → organism.



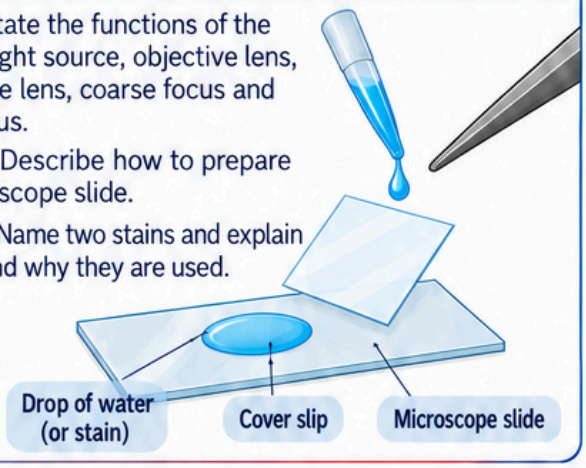
Microscopes — LO 5–8

- **LO 5** State two differences between monocular and binocular microscopes.
- **LO 6** Label a monocular microscope.
- **LO 7** Explain why the low-power objective is used first.
- **LO 8** Calculate total magnification: eyepiece magnification × objective magnification.



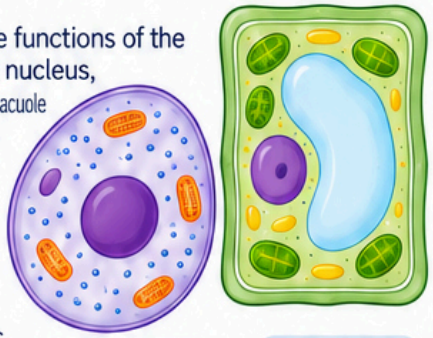
Microscope parts and slides — LO 9–11

- **LO 9** State the functions of the stage, light source, objective lens, eyepiece lens, coarse focus and fine focus.
- **LO 10** Describe how to prepare a microscope slide.
- **LO 11** Name two stains and explain when and why they are used.



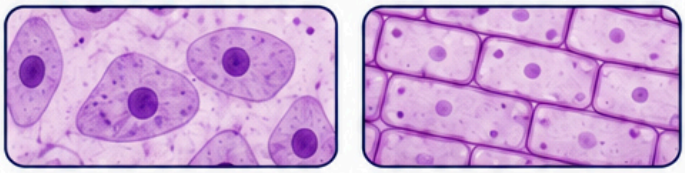
Plant and animal cells — LO 12–14

- **LO 12** Label typical plant and animal cells.
- **LO 13** State the functions of the cell membrane, nucleus, cytoplasm, cell wall, vacuole and chloroplasts.
- **LO 14** Compare the similarities and differences between plant and animal cells.



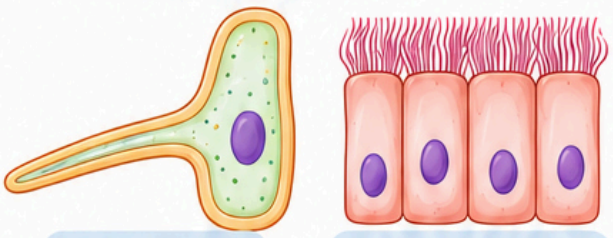
Practical cell observations — LO 15–18

- **LO 15** Describe how to prepare animal cells for viewing under a microscope.
- **LO 16** Draw and label an animal cell seen on a microscope slide.
- **LO 17** Describe how to prepare plant cells for viewing under a microscope.
- **LO 18** Draw and label a plant cell seen on a microscope slide.



Specialised cells — LO 19–21

- **LO 19** Explain that cells can be specialised for particular jobs.
- **LO 20** Describe the adaptations, function and location of a root hair cell.
- **LO 21** Describe the adaptations, function and location of a ciliated epithelial cell.



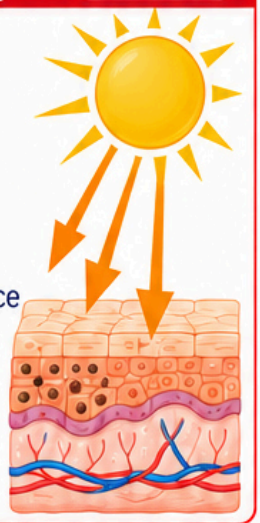
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Year 9 Biology Revision

Health and Plant Reproduction

Skin cancer and sunlight — LO 22–25

- **LO 22** Describe what cancer is.
- **LO 23** Name the harmful component of sunlight.
- **LO 24** State what our skin produces to protect us.
- **LO 25** Describe five ways to reduce damage caused by sunlight.



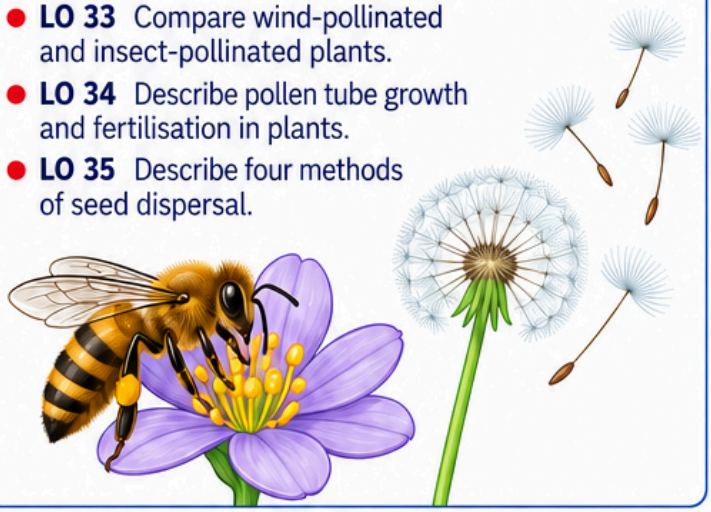
Fertilisation and flowers — LO 28–32

- **LO 28** Recall the structure and function of the human reproductive systems.
- **LO 29** Define fertilisation.
- **LO 30** Label the structure of a flower.
- **LO 31** Define pollination.
- **LO 32** Explain the difference between self-pollination and cross-pollination.



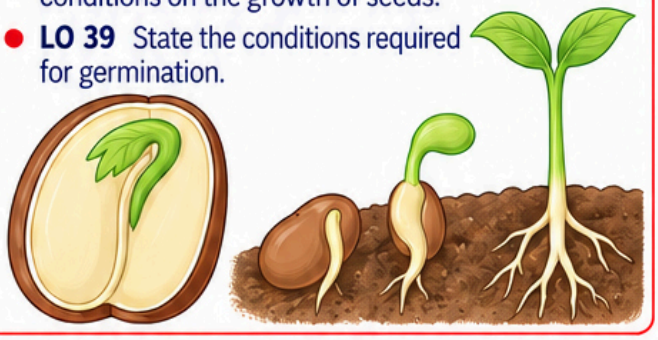
Pollination and seed dispersal — LO 33–35

- **LO 33** Compare wind-pollinated and insect-pollinated plants.
- **LO 34** Describe pollen tube growth and fertilisation in plants.
- **LO 35** Describe four methods of seed dispersal.



Seeds and germination — LO 36–39

- **LO 36** Label a seed and state the function of each part.
- **LO 37** Explain what germination means.
- **LO 38** Investigate the effect of varying conditions on the growth of seeds.
- **LO 39** State the conditions required for germination.



Drawing a graph

1. First column in the table → x-axis (horizontal).
2. Second column in the table → y-axis (vertical).
3. Label both axes with the quantity and units.
4. Choose an even scale that uses most of the grid.
5. Plot each point carefully with a small cross.
6. Draw an appropriate line or curve of best fit.
7. Add a clear title.

First column	Second column

x-axis (horizontal) **y-axis** (vertical)

