B3.1 Gas exchange

Checklist

What you should know

After studying this subtopic you should be able to:

- Outline the need for gas exchange in living organisms.
- Describe properties of gas-exchange surfaces.
- Explain how concentration gradients are maintained at exchange surfaces in animals.
- Describe the adaptations of mammalian lungs for gas exchange.
- Explain the process of ventilation.
- Determine measurements of lung volumes.
- Outline the adaptations of leaves for gas exchange.
- Draw and label a plan diagram to show the distribution of tissues in a transverse section of a dicotyledonous leaf.
- Outline the process of transpiration and the factors that affect the rate of transpiration.
- Determine stomatal density.

Higher level (HL)

- Outline the adaptations of foetal and adult haemoglobin for the transport of oxygen.
- Explain the Bohr shift and the benefits for respiring tissues.
- Analyse and explain oxygen dissociation curves.

Practical skills

Once you have completed this subtopic, go to Practical 1: Using microscopes and calculating magnification (/study/app/bio/sid-422-cid-755105/book/using-microscopes-and-calculating-magnification-id-46529/) in which you examine leaf stomata.