



SB8 Exchange and transport in animals

Personal learning checklist | 1 of 2

GCSE Edexcel Separate Sciences | Biology Paper 2

Name _____ Class _____ Date _____

Tick one box for each statement. Red: need help. Amber: partly confident.
Green: can do independently.

I can	Red	Amber	Green
Exchange surfaces and scale			
Explain why large multicellular organisms need exchange surfaces and transport systems.	☐	☐	☐
Calculate surface area-to-volume ratios and explain how size changes exchange demands.	☐	☐	☐
Explain alveolar adaptations and oxygen and carbon dioxide diffusion between air and blood.	☐	☐	☐
Explain how ventilation and blood flow maintain exchange gradients, distinguishing breathing from respiration.	☐	☐	☐
Blood and vessels			
Link plasma, red blood cell and haemoglobin properties to substance transport.	☐	☐	☐
Explain white blood cell defence and platelet roles in clotting.	☐	☐	☐
Compare artery, capillary and vein structures with their pressure, flow and exchange functions.	☐	☐	☐
Explain why artery and vein names describe direction rather than oxygen content.	☐	☐	☐
Heart and circulation			
Trace blood through double circulation, naming heart chambers and major vessels.	☐	☐	☐
Explain heart valves, the septum and differences in ventricular wall thickness.	☐	☐	☐
Explain coronary blood supply and the effect of an arterial blockage on heart muscle.	☐	☐	☐
Calculate and rearrange cardiac output, stroke volume and heart rate, converting units where needed.	☐	☐	☐
Measure pulse and interpret exercise, recovery and longer-term training effects.	☐	☐	☐

My next revision priority _____



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Respiration			
Describe aerobic respiration equations, continuous energy transfer and uses in living cells.	☐	☐	☐
Compare aerobic respiration with anaerobic respiration in muscle and yeast.	☐	☐	☐
Explain post-exercise recovery and oxygen debt, including lactate transport and breakdown.	☐	☐	☐
Respiration investigations			
Explain respirometer measurements and the role of carbon dioxide absorbent.	☐	☐	☐
Plan fair respiration comparisons using temperature equilibration, controls, repeats and organism welfare.	☐	☐	☐
Calculate gas uptake and mass-normalised respiration rates from capillary measurements.	☐	☐	☐
Compare oxygen uptake with yeast carbon dioxide measurements and interpret experimental limitations.	☐	☐	☐
Diffusion and Fick's law			
Explain diffusion-rate changes using surface area, concentration gradient and membrane thickness.	☐	☐	☐
Use Fick's proportionality to calculate relative rates and explain when a constant is needed.	☐	☐	☐

My next revision priority _____