

SB8: **Exchange and Transport in Animals (Paper 2)**

Lesson	Objectives Tracker Sheet	Date covered	I know this well	I need to do more work on this
SB8a Efficient transport and exchange	B8.1 Describe the need to transport substances into and out of a range of organisms, including oxygen, carbon dioxide, water, dissolved food molecules, mineral ions and urea.			
	B8.2 Explain the need for exchange surfaces and a transport system in multicellular organisms including the calculation of surface area : volume ratio.			
	B8.3 Explain how alveoli are adapted for gas exchange by diffusion between air in the lungs and blood in capillaries			
SB8b Factors affecting diffusion	B8.4B Describe the factors affecting the rate of diffusion, including surface area, concentration gradient and diffusion distance.			
	B8.5B Calculate the rate of diffusion using Fick's law: Shape rate of diffusion \propto surface area \times concentration difference / thickness of membrane			
SB8c The circulatory system	B8.6 Explain how the structure of the blood is related to its function: a red blood cells (erythrocytes) b white blood cells (phagocytes and lymphocytes) c plasma d platelets.			
	B8.7 Explain how the structure of the blood vessels is related to their function			
SB8d The heart	B8.8 Explain how the structure of the heart and circulatory system is related to its function, including the role of the major blood vessels, the valves and the relative thickness of chamber walls.			

	B8.12 Calculate heart rate, stroke volume and cardiac output, using the equation $\text{cardiac output} = \text{stroke volume} \times \text{heart rate}$.			
SB8e Cellular respiration	B8.9 Describe cellular respiration as an exothermic reaction which occurs continuously in living cells to release energy for metabolic processes, including aerobic and anaerobic respiration			
	B8.10 Compare the process of aerobic respiration with the process of anaerobic respiration.			
SB8e Respiration rates – Core Practical	B8.11 Core Practical: Investigate the rate of respiration in living organisms.			