

KS3 Biology – Respiration – Learning Objectives

	Beginning	Developing	Secure	Embedding	Extending	Excelling
Types Of Respiration	Explain what happens during respiration, and why it is necessary for living things to respire.		State the word equation (and balanced symbol equation) for aerobic respiration. Explain how anaerobic respiration is different from aerobic respiration, and discuss the conditions under which anaerobic respiration may occur. Discuss the practical applications of fermentation.		Give the word equations for anaerobic respiration.	-
Respiration In Plants	-	Recall that plants respire (as they are living things), but they do not need to respire constantly.	Describe the optimum conditions under which plants do respiration, with reference to a simple experiment.	State the word equation (and balanced symbol equation) for photosynthesis, and compare to the equation for respiration.	-	-
Breathing	Describe the role of the breathing system (as a whole).	Identify and locate some parts of the breathing system.	Explain the differences between respiration and breathing. Identify and locate all major parts of the breathing system, and describe their roles in the breathing process; this includes the action of the diaphragm, the construction and adaptations of the trachea and alveoli. Describe the gas exchange processes that take place in the alveoli, and compare and explain the compositions of inhaled and exhaled air.			-
Circulation	Describe the role of the circulatory system (as a whole).	Identify and locate some parts of the circulatory system.	Identify and locate all major parts of the circulatory system, and describe their roles in the circulatory process; this includes the chambers of the heart and the names of the main blood vessels. Name the components of blood, and describe their functions. Compare the construction and functions of arteries, veins and capillaries. Describe the journey of oxygenated and deoxygenated blood around the circulatory system.			Discuss medical issues relating to blood, including health problems and blood types and transfusions.
Pulse Rates	Demonstrate how to measure your pulse rate. Explain what happens to the pulse rate during exercise. Name some other variables that may affect pulse rate.		Plan and perform an investigation to how a person's pulse rate is affected by a given variable, including selection of apparatus, method, identifying variables, risk assessment, data presentation and conclusion.			-
Health Issues	Discuss the reasons why tobacco products are no longer advertised, and health warnings are shown on packaging.	Explain the risks associated with smoking, including the effects on the lungs, airways and circulatory system. Describe some of the dangerous chemicals found in cigarettes and how they affect the smoker's body. Discuss the hazards associated with passive smoking.		Discuss a range of respiratory problems, showing knowledge of the causes, symptoms and treatments (including asthma, emphysema). Discuss a range of circulatory problems, showing knowledge of the causes, symptoms and treatments (including heart disease, angina, cardiac arrest).		-

** Objectives covering more than one grade are assessed based on the level of scientific detail and language used by the learner.*