Ravens Wood School

KS3 Curriculum Plan

Subject: Year 8 Respiration

Overarching Topic: Respiration			
Why is this topic being studied at this time? How does it fit into the wider subject curriculum?	• The importance of the respiratory system is critical; organisms can endure many days without food and sometimes a few without water, but cannot survive for more than a few minutes if respiration ceases. • In year 7 students would have briefly learnt about the human body and some of its systems enabling them to be familiar with breathing and the lungs. The questions set out in this chapter should help with understanding what respiration is and where and why it occurs. KS3 – Students will be familiar with the movement of materials around the body in order for respiration to take place. KS4 – In KS4 respiration is taught how energy is released through aerobic, anaerobic respiration as well as respiration in fermentation.		
	Critical	**Core**	**Pinnacle**
The Big Questions (What questions will students be able to answer upon mastery of the topic?)	What is the respiration equation? What is aerobic respiration? What is anaerobic respiration? What is the main product of respiration? What is produced as a waste product is anaerobic respiration? I can label a diagram of the lungs?	What is the name the organelle that carries out respiration? And what properties does it have that helps it with its job? Using word equations, can I describe and compare aerobic and anaerobic respiration? What activities involve aerobic or anaerobic respiration?	What are the similarities and differences between aerobic and anaerobic respiration? How do organisms living in different conditions use respiration to get their energy? Compare the differences between respiration and photosynthesis. What is the benefit of anaerobic respiration? How could we use this knowledge to improve athletic stamina? What events in the modern pentathlon use aerobic respiration? Explain this judgement.
The Key Skills/ Technique	**The sophistication and application of skills will become more advanced as students' progress through the critical, core and pinnacle knowledge.**		
	Skill/Technique	**How will this skill be developed?**	
	1. Graphing & Drawing	Draw graphs with suitable scales, axes and units. Correct line of best fit. Appreciation of anomalies and processed data. Scientific drawing of cells, concepts and scientific equipment.	
	2. Variables	Identify independent, dependent and control variables and devise experiments to include these to ensure valid results. Appreciation of uncertainty.	
	3. Data Analysis	Describe, explain and predict trends. Graph and table data interpretation. Identify links and patters within and between topics. Statistical analysis of data to include mode/median/mean/range determination. Drawing justified conclusions from presented data.	
	4. Application	Apply known and taught theory in unfamiliar contexts. Making links to taught theory and extracting key ideas. Communicating using correct scientific terminology.	

	5. Working Scientifically	Identify hazards and planning to limit risk. Describe how to improve accuracy/precision/repeatability/reproducibility/validity. Evaluate reliability of methods and investigations, taking in to account data analysis.