Ravens Wood School

KS3 Curriculum Plan

Subject: Year 7 Variation

Overarching Topic: Variation			
Why is this topic being studied at this time? How does it fit into the wider subject curriculum?	• Imagine a world full of clones…what happens when a new disease comes along? Ever wondered why no two snails look the same? Without genetic variation, some of the basic mechanisms of evolutionary change cannot operate. It is the bedrock of evolution by means of natural selection, driven by random mutation and chance. • In this unit pupils explore variation within and between species, consider why classification is important and are introduced to scientific classification of animals and investigate patterns of variation in living things and ways of representing and explaining the occurrence of variations.In scientific enquiry pupils make qualitative observations and record these in a variety of ways, drawing conclusions from observations and explain this using scientific knowledge. They will investigate variation between individuals of the same species using an appropriate sample size. Much of this work involves the interpretation and analysis of visual information gathered from a variety of sources. This unit draws on ideas developed in the key stage 2 programme of study. It builds on unit 5B 'Life cycles' and Interdependence and adaptation in the key stage 2 schemes of work, and on unit Environment and feeding relationships'. It provides a foundation for unit 8D 'Ecological relationships' and unit 9A 'Inheritance and selection'.		
	Critical	**Core**	**Pinnacle**
The Big Questions (What questions will students be able to answer upon mastery of the topic?)	Can you plot bar charts or line graphs to show discontinuous or continuous variation data? Can you explain whether characteristics are inherited, environmental or both?	Can you explain how variation helps a particular species in a changing environment? Can you explain how characteristics of a species are adapted to particular environmental conditions?	How do identical twins occur? Can you predict implications of a change in the environment on a population? Are we defined by our genetics or our environment? Justify your answer. How could evolution improve the human species? Discuss what would happen to wildlife in the UK if we had a freak, year-long winter.
The Key Skills/ Techniques	**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.	