Ravens Wood School

KS3 Curriculum Plan

Subject: Year 7 levels of organisation

Overarching Topic: **Levels of Organisation**			
Why is this topic being studied at this time?	• The life that exists on Earth is complex and varied in its forms. Living beings have evolved from single-celled or unicellular forms, into complex and giant multicellular bodies. In this process of development, their body systems and mechanisms have become specialized in nature. Thus, in the course of evolution, different stages of increasing complexity were formed. The scientific study of the different levels of organization of living beings, helps us gain an insight into the complexities of their structure and functioning. Every organism on Earth, from the smallest to the largest one, follows this establishment. This topic is of great importance in the field of environmental science, as it helps in establishing the significance of every living being on this planet. Environmentalists devise ways to preserve the ecosystem through knowledge of these levels of organization.		
How does it fit into the wider subject curriculum?	• This unit builds on knowledge learnt in cells, and helps to build an understanding for a variety of topics taught at both key stage 3 and 4. From photosynthesis, respiration, digestion to communicable and non-communicable diseases.		
	Critical	**Core**	**Pinnacle**
The Big Questions (What questions will students be able to answer upon mastery of the topic?)	What are the differences between uni-cellular and multicellular organisms? What are the differences between cells, tissues, organs, organ systems and organisms? What are the roles of the following organ systems: reproductive system, digestive system, circulatory system, respiratory system, muscular skeletal system? What is a pathogen?	Why do multi-cellular organisms need organ systems to keep their cells alive? What are four ways the body prevents pathogens entering the body? Is muscle an organ, tissue or cell? What is the job of the xylem and phloem cells? What is the job of the palisade cells? How do muscles work to move the skeleton? How does the body defend itself?	If a sick classmate sneezes on you, why don't you always get sick too? How can damage to, or failure of, an organ affect other body systems? Compare a human to a gorilla. How do their muscular systems differ and why? How are organ systems adapted for function? How has our skeleton changed over time (from ape to modern human)? Modern Warfare – who would win in a battle between unicellular and multicellular organisms?
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.	