Ravens Wood School
KS4 Curriculum Plan

Subject: Year 9: B2: Cell division

Overarching Topic: B2: Cell division	
Why is this topic being studied at this time? How does it fit into the wider subject curriculum?	For an organism to grow, cells must divide by mitosis producing two new identical cells. If cells are isolated at an early stage of growth before they have become too specialised, they can retain their ability to grow into a range of different types of cells. This phenomenon has led to the development of stem cell technology. This is a new branch of medicine that allows doctors to repair damaged organs by growing new tissue from stem cells. Students will be able to research and consider both sides of the argument over if we should be using stem cell therapy or not, taking into consideration factual evidence and the views of other individuals, cultures and religions.

	Critical	Core	Pinnacle
The Big Questions (What questions will students be able to answer upon mastery of the topic?)	• What is DNA? • Why is cell division needed for maintenance of an organism? • What is a stem cell and where we could obtain them from?	• What is mitosis and meiosis and why and how do they give rise to different cell types? • Can I compare and contrast differentiation in animal and plant cells? • What is the vital importance of stem cells in their respective organisms and how we can use them in research and therapies?	• What is a balanced argument both for and against the use of stem cell therapies, taking into consideration both sides of the arguments, morals and different cultural and religious beliefs? • How might stem cells be used by Aileen King at Kings College London to treat diabetes in rats? How could I design my own experiment and identify and control relevant variables?
	TRIPLE ONLY QUESTIONS • N/A	**TRIPLE ONLY QUESTIONS** • N/A	**TRIPLE ONLY QUESTIONS** • N/A

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	
	2. Variables	
	3. Data Analysis	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	Describe how to improve accuracy/precision/repeatability/reproducibility/validity. Evaluate reliability of methods and investigations, taking into account data analysis.