Y10 BIOLOGY

Yardleys School
WORKING TOGETHER FOR A BETTER FUTURE

SCIENCE AT YARDLEYS

INTENT: Science helps students gain an understanding of the world around them, from the micro-level of particles and atoms to the macro-level of our expanding universe. It encourages students to question and enquire in order to learn more. We want our students to acquire the scientific knowledge and skills to meet their academic, practical and "real life" challenges of the future.

Y10 BIOLOGY

Year 10 will gain an in depth understanding of the hormonal and nervous system in the body. This will be followed by a topic on Health, disease and development of medicine where pupils will be introduced to the health topic where by pupils will come across a range of pathogens, the bodies defence against these pathogens and how drugs are developed. Year 10 will conclude with the topic on genetics where pupils will learn about the DNA code that produces our features and the processes that allow features to be passed on from parents to their offspring.

YEAR 10

	Ecosystems and Material cycles	Animal coordination, Control and homeostasis	Cells and Control	Health, disease and the Development of Medicines	Cells and Control	Genetics
SUBSTANTIVE KNOWLEDGE	• Ecosystems • Pollution • Feeding relationships. • Biodiversity • Food security • Cycles	• Hormones • Thermoregulation • Osmoregulation • The kidneys	• Nervous system • Brain • Brain and Spinal cord problems and treatments. • The eye	• Health and disease • Pathogens • Defence against pathogens • Immune system. • Antibiotics • Development of new drugs • Monoclonal antibodies.	• Stem cells • Growth in plants and animals • Mitosis	• Meiosis • Reproduction. • DNA • Protein synthesis. • Genetic variations. • Inheritance. • Gene mutation
DISCIPLINARY KNOWLEDGE	• Identify patterns and trends and draw conclusions • Interpreting data • To make predictions and draw hypothesis • Apply mathematical concepts • Apply sampling techniques	• Interpret observations and data from graphs. • Use mathematical concepts • Identify correlations • Evaluate the findings and suggest improvements to a method.	• Evaluate social and ethical issues. • Use appropriate techniques and equipment. • Record observations and evaluate the reliability of the method and suggest improvements. • Interpret ray diagrams	• Identify correlations and draw conclusions. • Evaluate risks and ethical issues • Apply mathematical concepts • Making inferences and draw conclusions.	• Use percentile growth charts to interpret growth in children. • Apply mathematical concepts • Evaluate the practical risks and benefits, as well as social and ethical issues.	• Use and apply mathematical concepts • Present observations and data using appropriate methods, including tables and graphs. • Extract and interpret information from genetic crosses and family trees.