Biology

Key Stage 2 Curriculum includes

	Year 9	Year 10	Year 11	Year 12	Year 13
Autumn 1	**Cells** • A typical animal cell • Plant cells • Prokaryotic and Eukaryotic cells • A typical Bacteria cell • The size of cells • Using microscopes to look at cells • Calculating magnification • Chromosomes • Mitosis and the cell cycle • Stem cells • Use of stem cells • Diffusion • Factors affecting diffusion • Osmosis • Active transport • Comparing processes	**Bioenergetics** • Photosynthesis • Factors affecting Photosynthesis • Converting glucose • The importance of respiration • Aerobic respiration • Anaerobic respiration • Exercise and respiration • Metabolism	**Evolution** • Selective breeding • Genetic engineering • Principles of classification • Extinction • Evolution trees	**Lifestyle, health and risk** • Cardiovascular system • Risk factors for cardiovascular diseases • Reducing the risk of cardiovascular diseases **Genes and Health** • The effects of CF in the lungs • How does cystic fibrosis affect other body systems? • Functioning of the CFTR protein • Inheritance of CF. • Testing for CF	**On the wild side** • Role of ecosystems and energy transfer • Climate change • Predicting future climates • Coping with climate change • Adaptations **Infection, immunity and forensics** • Forensic biology • Cause of death • Immune response • TB • HIV and AIDS • Prevention and treatment of diseases
Autumn 2			**Ecology** • Relationships between organisms • Adaptations • Studying ecosystems • Recycling materials • Feeding relationships • Biodiversity • Pollution • Overexploitation • Conservation biodiversity		
Spring 1	**Organisation** • Specialised cells	**Homeostasis** • The importance of			
Spring 2				**Voice of the genome**	**Run for your life**

	• Tissues, organs and systems • Enzymes • Enzymes in digestion • Bile and digestion • Blood • Blood vessels • The heart • Gaseous exchange • Health and disease • Risk factors • Diseases of the heart • Cancer • Plant tissues • Water transport • Translocation	hormones • Control systems • The nervous system • Endocrine system • Control of blood glucose • The sex hormones • Control of the menstrual cycles • Reducing fertility • Increasing fertility		• Cell cycle • Control of development • Genes and the environment **Biodiversity and natural resources** • Species on Earth • Evolution and speciation • Quantifying biodiversity • Extinction and conservation	Energy for action – respiration Peak performance Homeostasis Improving on performance **Grey matter** • The nervous system • Reception of stimuli • The brain • Visual development • Making sense of what we see • Learning and memory • Problems with synapses
Summer 1	**Infection** • Pathogens and disease • Viral diseases • Bacterial diseases • Protists and diseases • Fungal diseases • Preventing entry of pathogens • The immune system • Boosting immunity • Antibiotics • Developing new drugs				
Summer2		**Evolution** • Asexual reproduction • Sexual reproduction and meiosis • The genome • Genetic inheritance • Genetic crosses • Inherited disorders • Sex determination • Variation • Evolution • Evidence for evolution			