



# Queen Elizabeth's Girls' School

*Educating Women of the Future*

## Combined Science - Biology Key Stage 4 Curriculum 2023/24

	Topic/Big Question	Focus
Year 10	<b>Ecosystems: Ecosystems recycle resources</b>	<b>Photosynthesis</b> Students will learn about photosynthesis, factors affecting the rate of photosynthesis, how plants use glucose and making the most of photosynthesis.
	<b>Ecosystems: Ecosystems recycle resources</b>	<b>Respiration</b> Students will learn about aerobic respiration, anaerobic respiration, the response to exercise, metabolism and the liver.
	<b>Ecosystems: Organisms are interdependent</b>	<b>Communicable Diseases</b> Students will learn about health and disease, pathogens and disease, preventing infections, viral diseases, bacterial diseases, diseases caused by fungi and protists and human defense responses.
	<b>Ecosystems: Organisms are interdependent</b>	<b>Preventing and treating disease</b> Students will learn about vaccination, antibiotics and painkillers, discovering drugs and developing drugs.
	<b>Organisms: Cells are Alive</b>	<b>Cell division</b> Students will learn the three overall stages of the cell cycle, mitosis, cell differentiation, stem cells and stem cell dilemmas.
	<b>Organisms: Bodys are systems</b>	<b>The Human Nervous System</b> Students will learn about the principles of homeostasis, the structure and function of the human nervous system and reflex actions.
	<b>Ecosystems: Ecosystems recycle resources</b>	<b>Biodiversity and Ecosystems</b> Students will learn about the human population explosion, land and water pollution, air pollution, deforestation and peat destruction, global warming and maintaining biodiversity.

	Topic/Big Question	Focus
Year 11	<b>Organisms: Bodys are systems</b>	<b>Hormonal Coordination</b> Students will learn the principles of hormonal control, the control of blood glucose levels, treating diabetes, the role of negative feedback, human reproduction, hormones and the menstrual cycle, the artificial control of fertility and infertility treatments.
	<b>Genes: Characteristics are inherited</b>	<b>Reproduction</b> Students will learn about the types of reproduction, DNA and the genome, inheritance, genetics, inherited disorders and screening for genetic disorders.
	<b>Genes: Species show variation</b>	<b>Variation and Evolution</b> Students will learn about variation, evolution by natural selection, selective breeding, genetic engineering and the ethics of genetic technologies.
	<b>Genes: Species show variation</b>	<b>Genetics and Evolution</b> Students will learn about the evidence for evolution, fossils and extinction, antibiotic-resistant bacteria, classification and new systems of classification.
	<b>Genes: Species show variation</b>	<b>Adaptations, Interdependence and Competition</b> Students will learn about the importance of communities, organisms and their environment, distribution and abundance, competition in animals, competition in plants, adapt and survive, adaptations in animals and adaptations in plants.
	<b>Ecosystems: Organisms are interdependent</b>	<b>Organisation of an ecosystem</b> Students will learn about feeding relationships, materials cycling and the carbon cycle.
	<b>Ecosystems: Ecosystems recycle resources</b>	<b>Biodiversity and Ecosystems recap</b> Students will learn about the human population explosion, land and water pollution, air pollution, deforestation and peat destruction, global warming and maintaining biodiversity.