

Co-teaching GCSE Biology and GCSE Combined Science: Trilogy

This high level co-teaching guide will help you plan your route through the course. You'll be able to see what common themes and topics span across both GCSE Biology (8461) and GCSE Combined Science: Trilogy (8464).

Once the specifications are accredited we'll be able to publish the extra content for each topic to support your more detailed lesson planning.

4.1 Cell Biology

4.1.1 Cell Structure

Subject content ref	Both specifications	Biology (8463) only
4.1.1.1	Eukaryotes and prokaryotes	
4.1.1.2	Animal cells and plant cells	
4.1.1.3	Cell specialisation	
4.1.1.4	Cell differentiation	
4.1.1.5	Microscopy	
4.1.1.6		Culturing microorganisms

4.1.2 Cell division

Subject content ref	Both specifications	Biology (8463) only
4.1.2.1	Chromosomes	
4.1.2.2	Mitosis and the cell cycle	
4.1.2.3	Stem cells	

4.1.3 Transport in cells

Subject content ref	Both specifications	Biology (8463) only
4.1.3.1	Diffusion	
4.1.3.2	Osmosis	
4.1.3.3	Active transport	

4.2 Organisation

4.2.1 Principles of organisation

Subject content ref	Both specifications	Biology (8463) only
4.2.1.1	Organisational hierarchy	

4.2.2 Animal tissue, organs and organ system

Subject content ref	Both specifications	Biology (8463) only
4.2.2.1	The human digestive system	
4.2.2.2	The heart and blood vessels	
4.2.2.3	Blood	
4.2.2.4	Coronary heart disease: a non-communicable disease	
4.2.2.5	Health issues	
4.2.2.6	The effect of lifestyle on some non-communicable diseases	
4.2.2.7	Cancer	

4.2.3 Plant tissue, organs and systems

Subject content ref	Both specifications	Biology (8463) only
4.2.3.1	Plant tissues	
4.2.3.2	Plant organ system	

4.3 Infection and response

4.3.1 Communicable diseases

Subject content ref	Both specifications	Biology (8463) only
4.3.1.1	Communicable (infectious) disease	
4.3.1.2	Plant organ system	
4.3.1.2	Viral diseases	
4.3.1.3	Bacterial diseases	
4.3.1.4	Fungal diseases	
4.3.1.5	Protist diseases	
4.3.1.6	Human defence systems	
4.3.1.7	Vaccination	
4.3.1.8	Antibiotics and painkillers	
4.3.1.9	Discovery and development of drugs	

4.3.2 Monoclonal antibodies

Subject content ref	Both specifications	Biology (8463) only
4.3.2.1		Producing monoclonal antibodies (HT)
4.3.2.2		Use of monoclonal antibodies (HT)

4.3.3 Plant disease

Subject content ref	Both specifications	Biology (8463) only
4.3.3.1		Detection and identification of plant diseases
4.3.3.2		Plant defence responses

4.4 Bioenergetics

4.4.1 Photosynthesis

Subject content ref	Both specifications	Biology (8463) only
4.4.1.1	Photosynthetic reaction	
4.4.1.2	Rate of Photosynthesis	
4.4.1.3	Uses of glucose from photosynthesis	

4.4.2 Respiration

Subject content ref	Both specifications	Biology (8463) only
4.4.2.1	Aerobic and anaerobic respiration	
4.4.2.2	Response to exercise	
4.4.2.3	Metabolism	

4.5 Homeostasis and response

4.5.1 Homeostasis

Subject content ref	Both specifications	Biology (8463) only
4.5.1.1.	Importance of homeostasis	

4.5.2 The human nervous system

Subject content ref	Both specifications	Biology (8463) only
4.5.2.1	Structure and function	
4.5.2.2		The brain
4.5.2.3		The eye
4.5.2.4		Control of body temperature

4.5.3 Hormonal coordination in humans

Subject content ref	Both specifications	Biology (8463) only
4.5.3.1	Human endocrine system	
4.5.3.2	Control of blood glucose concentration	
4.5.3.3		Maintaining water and nitrogen balance in the body
4.5.3.4	Hormones in human reproduction	
4.5.3.5	Contraception	
4.5.3.6	The use of hormones to treat infertility (HT only)	
4.5.3.7	Negative feedback (HT only)	

4.5.4 Plant hormones

Subject content ref	Both specifications	Biology (8463) only
4.5.4.1		Control and coordination
4.5.4.2		Use of plant hormones (HT only)

4.6 Inheritance, variation and evolution

4.6.1 Reproduction

Subject content ref	Both specifications	Biology (8463) only
4.6.1.1	Sexual and asexual reproduction	
4.6.1.2	Meiosis	
4.6.1.3		Advantages and disadvantages of sexual and asexual reproduction
4.6.1.4	DNA and the genome	
4.6.1.5		DNA structure
4.6.1.6	Genetic inheritance	
4.6.1.7	Inherited disorders	
4.6.1.8	Sex determination	

4.6.2 Variation and evolution

Subject content ref	Both specifications	Biology (8463) only
4.6.2.1	Variation	
4.6.2.2	Evolution	
4.6.2.3	Selective breeding	
4.6.2.4	Genetic engineering	
4.6.2.5		Cloning

4.6.3 The development of understanding of genetics and evolution

Subject content ref	Both specifications	Biology (8463) only
4.6.3.1		Theory of evolution
4.6.3.2		Speciation
4.6.3.3		The understanding of genetics
4.6.3.4	Evidence for evolution	
4.6.3.5	Fossils	
4.6.3.6	Extinction	
4.6.3.7	Resistant bacteria	

4.6.4 Classification of living organisms

Subject content ref	Both specifications	Biology (8463) only
4.6.4.1	Classification	

4.7 Ecology

4.7.1 Adaptions, interdependence and competition

Subject content ref	Both specifications	Biology (8463) only
4.7.1.1	Communities	
4.7.1.2	Abiotic factors	
4.7.1.3	Biotic factors	
4.7.1.4	Adaptations	

4.7.2 Organisation of an ecosystem

Subject content ref	Both specifications	Biology (8463) only
4.7.2.1	Levels of organisation	
4.7.2.2	How materials are cycled	
4.7.2.3		Decomposition
4.7.2.4		Impact of the environmental change (HT only)

4.7.3 Biodiversity and the effect of human interaction on ecosystems

Subject content ref	Both specifications	Biology (8463) only
4.7.3.1	Biodiversity	
4.7.3.2	Waste management	
4.7.3.3	Land use	
4.7.3.4	Deforestation	

4.7.3.5	Global warming	
4.7.3.6	Maintaining biodiversity	

4.7.4 Trophic levels in an ecosystem

Subject content ref	Both specifications	Biology (8463) only
4.7.4.1		Trophic levels
4.7.4.2		Pyramids of biomass
4.7.4.3		Transfer of biomass

4.7.5 Food production

Subject content ref	Both specifications	Biology (8463) only
4.7.5.1		Factors affecting food security
4.7.5.2		Farming techniques
4.7.5.3		Sustainable fisheries
4.7.5.4		Role of biotechnology