

Biology Topics from GCSE That Are Needed for A-Level Biology

Topic Area	GCSE Combined	Triple Only
1 Cell Biology		
Cell structure (prokaryotic & eukaryotic)	✓	
Microscopy	✓	
Cell differentiation and specialisation	✓	
Chromosomes	✓	
Mitosis and the cell cycle	✓	
Stem cells	✓	
Diffusion, osmosis, active transport	✓	
2 Organisation		
Digestive system and enzymes	✓	
Circulatory system (heart & vessels)	✓	
Blood components	✓	
Health and disease	✓	
Non-communicable diseases	✓	
Plant tissues and transport		✓

3 Infection and Response

Pathogens and disease



Bacterial, viral, fungal, protist diseases



Plant diseases



Human defence systems



Vaccination



Antibiotics and drug development



Monoclonal antibodies



4 Bioenergetics

Photosynthesis (reaction, limiting factors)



Aerobic and anaerobic respiration



Metabolism



Homeostasis and Response

Homeostasis definition



Nervous system & reflex arcs



Hormonal coordination
(menstrual cycle, glucose)



Diabetes	✓	
Contraception	✓	
Brain structure and function		✓
The eye		✓
Kidney, ADH, water balance		✓
Plant hormones (auxin, gibberellins)		✓

6 Inheritance, Variation & Evolution

Sexual and asexual reproduction	✓	
Meiosis	✓	
DNA structure and function	✓	
Genetic inheritance	✓	
Genetic disorders	✓	
Evolution and natural selection	✓	
Selective breeding	✓	
Genetic engineering	✓	✓
Cloning		✓

Ecology

Ecosystems and biodiversity	✓	
Food chains and webs	✓	
Competition	✓	
Adaptations	✓	
Human impact on the environment	✓	
Carbon and water cycles	✓	
Decomposition		✓

Chemistry Topics from GCSE That Are Needed for A-Level Biology

Topic area	Combined Science	Triple Science
Chemical bonding (ionic, covalent, metallic)	✓	✓
Carbon chemistry (organic chemistry)	✓ (basic)	✓ (detail)
Polymers	✗ (limited)	✓
Rates of reaction & energy changes	✓	✓
Water, solubility, and solutions	✓	✓