

Biology Syllabus

1. The Cell

- viruses
- prokaryotic and eukaryotic cell
- cell membranes
- cell divisions and cell cycles
- cellular transport
- energy in a cell
- microbes and biotechnology

2. The chemistry of life

- chemical elements and water
- carbohydrates, lipids and proteins
- DNA structure and replication
- Transcription and translation
- Enzymes
- Cell respiration
- Photosynthesis

3. Genetics

- chromosomes, genes, alleles and mutations
- Mendel's genetics and meiosis
- theoretical genetics
- patterns of heredity
- genetic engineering and biotechnology
- population genetics

4. Ecology and evolution

- communities and ecosystems
- the green house effect
- ecology and conservation
- community ecology
- ecosystems and biomes
- impact of humans on ecosystems
- conservation of biodiversity
- population ecology
- origin of life
- species and speciation
- human evolution
- phylogeny and systematics
- classification of organisms

5. Human health and physiology

- digestion and transport of digested food
- human nutrition and health
- circulation system
- defenses against infectious diseases and immunity
- gas exchange

- nerves hormones and homeostasis
- endocrine system and hormonal control
- stimulus and response
- perception of stimuli
- innate and learned behaviour
- the nervous system and human brain
- neurotransmitters and synapses
- support and locomotion
- muscles and movement
- reproduction
- urinary system

6. Plant science

- the biology of the plant cell
- plant structure and growth
- plant physiology
- reproduction in plants
- Seedless plants
- Seed-producing plants

7. Zoology

- animal tissues
- Invertebrates
- Chordates
- parasitology