

'Biology's Journey'



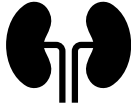
Succeeding Together

Aims of the subject: To enable all students to have a greater understanding of how their bodies work, how we interact with our surroundings and what the future may hold.

POST 16 DESTINATIONS

Homeostasis and response

- What is homeostasis?
- Endocrine and nervous system
- Glucose control and diabetes
- Contraception and fertility
- Osmoregulation and the kidney*
- The brain and the eye*
- Tropisms and plant hormones*



Inheritance, variation and evolution

- Asexual and sexual reproduction
- Meiosis and inheritance
- Inheritance and genetic crosses
- Mutation and evolution
- Genetic engineering and selective breeding
- Human genome and protein synthesis*
- Evolution theories and cloning*



* Triple science only

Ecology

- Competition and organization
- Sampling and field work
- Adaptation and cycles
- Maintaining biodiversity
- Waste management and pollution
- Food security and farming*
- Decomposition and biotechnology*



Bioenergetics

- Aerobic and anaerobic respiration
- Anaerobic respiration in yeast
- Leaf adaptations
- Factors affecting photosynthesis
- Metabolism



Infection and response

- Communicable diseases
- Human defence systems
- Vaccination
- Drugs and their development
- Plant diseases
- Plant defence responses*
- Monoclonal antibodies*



GCSE Transition: Cell biology

- Animal and plant structure
- Prokaryotes and eukaryotes
- Microscopy
- Cell specialisation



Cell biology cont.

- DNA and mitosis
- Stem cells
- Diffusion and active transport
- SA:Vol and osmosis
- Culturing microorganisms*



Organisation

- Digestive system and enzymes
- Heart anatomy and blood vessels
- Heart and lung dissections
- CHD and risk factors
- Transpiration and translocation
- Plant organs



Farming

- Fertilisers
- Investigating plant food
- Competition and weed killers
- Pesticides in food chains
- Estimating populations



Photosynthesis

- Leaf adaptations
- Testing a leaf for starch
- Respiration v photosynthesis
- Investigating transpiration
- Root adaptations



Health and fitness

- Testing fitness
- Effect of diet on the body
- Smoking and E-cigs
- Alcohol and drugs
- Skeletal muscles



Inheritance and selection

- Variation and DNA structure
- Watson and Crick
- Natural selection
- Species and selective breeding
- Maintaining biodiversity



YEAR 8

Digestion

- Balanced diet and food tests
- Food and disease
- Digestive system and enzymes
- Absorption and villi
- Evaluation of the model gut



Respiration

- What is respiration?
- Aerobic and anaerobic
- Respiratory system
- Circulatory system
- Theories of circulation

Microbes and disease

- Types of microbes
- Pathogen transmission
- Antibiotics and antiseptics
- Prevention of disease
- Issues with antibiotics



Environment

- Types of plants
- Feeding relationships
- Populations
- Estimating population size



Populations

Classification

- How to classify living things
- Vertebrates and invertebrates
- Constructing keys
- Investigation of pond water
- Species and variation



Reproduction

- Reproductive systems
- Sexual and asexual
- Foetal development and birth
- Puberty and menstruation
- Investigating seed dispersal



Cells

- What is life?
- Cell jobs and specialised cells
- Scaling
- Using a microscope
- Making model cells

Introduction to Science

- Laboratory Safety
- Identifying lab equipment
- Making measurements
- Using a Bunsen burner
- Introducing the scientific method



YEAR 7

"Whatever you do, work at it with your whole heart, as though you were working for the Lord." Colossians 3:23