Biology Learning Journey

Biology at Moseley has a strong emphasis on the applying knowledge to the real world and how science works. The applications and implications of what we learn permeate throughout the course content.

Year 7 – Understanding and Applying Scientific Skills – Year 11

- Understanding variables
- Drawing graphs and analysing graphical data
- Writing methods
- Analysis of secondary data
- Assessing impact of scientific concepts
- Modelling scientific concepts
- Understanding relationships between science and society
- Drawing conclusions
- IDEAL Identify, describe, explain, apply, link
- Applying maths to the scientific concepts
- Risk Assessment
- Describe patterns

Exam & Post – 16 Destination

Ecology | Inheritance, variation and evolution | Homeostasis | Infection and response | Bioenergetics | Organisation | Cell Biology

YEAR 11

Biodiversity and ecological relationships

- Carbon and water cycle
- *Decomposition*
- *RP decay*
- RP Sampling
- Adaptations
- *Biomass and trophic levels*
- Feeding relationships
- Organisation of an ecosystem

Human impact on nature

- Land use and deforestation
- Peat bog destruction
- Global warming
- *Factors affecting food security*
- *Sustainable food production*
- Biodiversity
- Land, water and air pollution
- Maintaining biodiversity
- *Intensive farming*

YEAR 10

Evolution

- Classification
- Fossils and extinction
- Antibiotic resistant bacteria
- Genetic engineering
- *Speciation*
- Evolution by natural selection
- *Cloning*
- *Theories of evolution*
- Selective breeding

Inheritance

- Screening for genetic disorders
- Inheritance
- *DNA structure and protein synthesis*
- DNA and the genome
- Meiosis
- Types of reproduction
- Variation
- Inherited disorders

Infection and response

- Plant diseases and deficiencies
- Monoclonal antibodies
- Discovery and development of drugs
- Vaccinations
- Antibiotics and Painkillers
- Human defence systems
- Types of diseases
- Communicable disease

Nervous system

- Homeostasis
- RP Reflex actions
- *The eye*
- *The brain*
- Structure and function of nervous system
- Reflex actions
- *How the eye works*
- *Controlling body temperature*

Endocrine system

- Endocrine system
- *The kidneys*
- *Kidney treatments*
- Role of negative feedback
- *Using plant hormones*
- *Plant hormones and responses*
- IVF
- Control of blood glucose
- Treating diabetes
- Reproduction hormones and the menstrual cycle
- Contraception

Plant organisation

- Tissues and organs in plants
- Transport systems in plants

Animal organisation

- Breathing and gas exchange
- Blood and blood vessels
- The heart
- Tissues and organs
- Health and risk factors
- Cancer
- CHD
- RP Amylase
- Enzymes
- The digestive system

Bioenergetics

- RP light intensity
- Metabolism and exercise
- Uses of Glucose
- Photosynthesis
- Respiration

Cell Biology

- RP osmosis
- Osmosis
- Mitosis
- Microscopy
- RP Microscopy
- Stem cells
- Specialised cells
- Active transport
- Diffusion
- RP Culturing microorganisms
- Eukaryotes and Prokaryotes

YEAR 9

Ecology

- Food chains and webs
- Adaptations
- Competition and interdependence
- Predator-prey relationships

Plant organisation and reproduction

- Plant cells
- Photosynthesis
- Plant minerals
- Flowers and pollination
- Plant organisation
- Uses of glucose
- Respiration
- Seed dispersal and germination
- Reproductive systems

Ecology

- Food chains and webs
- Bioaccumulation
- Pyramids of biomass
- Food security
- Gas exchange

Human impact on nature

- Biodiversity
- Ecosystems
- Carbon and water cycle
- Land use
- Deforestation
- Global warming

YEAR 8

Genetics and reproduction

- Health and drugs
- Inheritance
- DNA and genetics
- Variation
- Fertilisation and foetus development
- Adolescence and the menstrual cycle

Animal organisation

- Movement: Muscles
- Organisation
- Specialised cells
- Breathing and respiration
- Nutrition and digestion
- Skeleton and joints
- Movement of substances
- Plant and animal cells

YEAR 7