GCSE BIOLOGY LEARNING JOURNEY

UTC SWINDON

Understanding and Applying Scientific Skills

Year 10 → Year 11

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

Ecosystems and material cycles

- Making food production efficient
- Biomass transfers
- Maintaining biodiversity
- Global warming
- Air pollution
- The human population explosion
- Sustainable food production
- Factors affecting food security
- Trophic levels and biomass
- The impact of change
- Deforestation and peat destruction
- Land and water pollution

Final GCSE exams

Revision

Organising an ecosystem

- Feeding relationships
- The carbon cycle
- Materials cycling
- Competition in animals

Adaptations

- Adaptations in plants
- Adaptations in animals
- Adapt and survive
- Competition in Plants
- Competition in animals
- Distribution and abundance
- The importance of communities
- Organisms in their environment

Natural Selection

- Variation
- Evidence for evolution
- Genetic engineering
- Selective breeding
- Theories of evolution- Darwin

Genetics

- Sex inheritance
- Genetic inheritance
- Human genome project
- Variation - mutations
- DNA structure

The Human nervous system

- Eye
- Brain
- Homeostasis
- Eye problems
- Reflex actions
- The nervous system

Exchange & transport

- Investigating respiration
- Anaerobic respiration
- Aerobic respiration
- The blood and blood vessels
- The heart
- The alveoli and gas exchange
- Exchange of Substances

Health and Lifestyle

- Food tests
- Healthy diet
- Digestive system
- Alcohol
- Nutrients
- Bacteria and enzymes in digestion
- Drugs & Smoking

Health and Disease

- Vaccinations
- Discovery and development of drugs
- Health and disease
- The immune system
- Discovery and development of drugs
- Non-communicable disease
- Cardiovascular disease
- Physical and chemical barriers
- Communicable disease
- Antibiotics and Painkillers

Plants

- Photosynthesis
- Transpiration
- Factors affecting photosynthesis
- Absorbing minerals

Body systems

- Gas exchange
- Movement: Muscles
- Skeleton
- Movement: joints
- Levels of organisation
- Breathing

Cells and Control

- Enzyme activity
- Cell transport
- Osmosis
- Percentage and rate change
- Reflex arc
- Stem cells
- Cell cycle
- Prokaryotes and Eukaryotes
- Enzymes
- Enzymes in digestion
- Specialised cells
- Microscopy
- Meiosis
- Growth
- Mitosis

Cells

- Movement of substances
- Specialised cells
- Observing cells
- Cell division
- Unicellular organisms
- Plant and animal cells

YEAR 10

CROSS-CURRICULAR LINKS

Body systems	PE	Health and disease	History
Reproduction	PSHE	Data analysis	Mathematics
Health & Lifestyle	PSHE	Photosynthesis	Chemistry
C, N and H_2O cycle	Geography	Diffusion & Osmosis	Chemistry

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