

Learning Journey Map

Developing Science skills to become an informed citizen

Yr 12 Biology

Year 12 Survival Top Tips	
Tip 1	Learn and revise vocabulary weekly, use glossaries given and - Quizlet/Seneca
Tip 2	Use 'Youtube- e.g. revisionscience, MrExham to help review key skills and concepts
Tip 3	Use Kerboodle resources/past OCR questions
Tip 4	Use the Pixl Resources of Firefly & therapy questions
Tip 5	Read online science news, watch science documentaries



Move on to yr13
★★★★★
★★★★★
Next Level
★★★★★

Module 6: Genetics, evolution and ecosystems

- B6.1.3 ecosystems**
- Biotic & abiotic factors
 - Biomass transfers
 - Recycling nitrogen & carbon
 - Primary succession
 - Distribution & abundance

- B6.3.2 Populations & sustainability**
- Factors determining population size
 - Interactions between populations
 - Conservation & preservation
 - Management of resources
 - Environmental resources affecting human activities



B3: Exchange & transport

- B3.1.2 Transport in animals**
- Need for transport systems
 - Different circulatory systems
 - Tissue fluid from plasma
 - Structure of heart & blood vessels
 - Cardiac cycle
 - ECG, haemoglobin & O₂ disso.curve

- B3.1.3 Transport in plants**
- Need for transport systems
 - Vascular system
 - Transpiration
 - Adaptations of plants
 - Translocation

- B3.1.1 Exchange surfaces & breathing**
- Specialised exchange surfaces
 - Mammalian gaseous exchange
 - Ventilation in mammals, fish & insects
 - Vital capacity, tidal volume, breathing rate & oxygen uptake
 - Dissection & histology of gaseous exchange systems

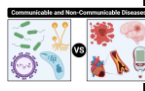


B4: Biodiversity, Evolution & Disease:

- B4.2.1 Biodiversity**
- Biodiversity at different levels
 - Sampling
 - Species richness & evenness
 - Simpson's Index of Biodiversity
 - Factors affecting & reasons to maintain biodiversity
 - Conservation

- B4.2.2 Classification & evolution**
- Classification of species
 - Five kingdom features
 - Phylogeny
 - Evolution by natural selection
 - Variation
 - Adaptation

- B4.1.1 Communicable diseases & immune system**
- Different types of pathogen
 - Transmission
 - Primary defences
 - Phagocytes, B & T lymphocytes
 - Immunity & autoimmune disease
 - Vaccinations, sources of medicines & antibiotics



- B2.1.4 Enzymes**
- Enzyme structure & function
 - Factors effecting enzyme activity
 - Coenzymes, cofactors & prosthetic groups
 - Enzyme inhibitors

- B2.1.3 Nucleotides & nucleic acids**
- Structure of nucleotide, ADP, ATP, DNA & RNA
 - DNA replication
 - Nature of genetic code
 - Protein synthesis

- B2.1.2 Biological molecules**
- Water
 - Monomers & polymers
 - Carbohydrates, lipids & proteins
 - Tests for Biological molecules (PAG 9)



B2: Foundations in Biology:

- B2.1.1 Cell structure**
- Cell theory
 - Microscopy
 - Cell ultrastructure
 - TEM & SEM
 - Plant cells & Prokaryotes

- B2.1.5 Biological membranes**
- Active transport, diffusion & osmosis
 - Permeability
 - Structure

- B2.1.6 Cell division, diversity & organisation**
- Cell cycle & mitosis
 - Meiosis
 - Specialised cells
 - Stem cells

Summer learning – Transition to A level:
Head start to A level Biology/ PiXL Transition booklet

- Research articles/books /films
- Transition tasks/enhance GCSE knowledge
- Baseline assessment



CURRICULUM OVERVIEW

B1: Development of key scientific skills: planning valid experiments, carrying out practicals safely, displaying & processing data, as well as analysing & evaluating results (PAG)

- Possible careers
- Research scientist
 - Biologist
 - Doctor
 - Vet
 - Marine biologist
 - Nurse
 - Forensic scientist
 - Ecologist
 - Farmer
 - Athlete
 - Nutritionist
 - Sports scientist
 - Personal trainer
 - Biochemical engineer
 - Civil Engineer
 - Paramedic
 - CSI
 - Police officer
 - and many more!!

CURRICULUM OVERVIEW