

END OF KEY STAGE 4

Practical Scientific skills, Scientific terms and keywords. Mathematical skills for Science.

- Biology – Cell Biology, Organisation, Infection and Response, Bioenergetics, Homeostasis and Response, Inheritance, Variation and Evolution, Ecology

- Unit 1 Biological Molecules - Monomers and Polymers, Carbohydrates, Lipids, Proteins, DNA, RNA and ATP, inorganic ions and water
- Unit 2 Cells - Eucaryotic and Procaryotic Cells, Cell Recognition and the Immune System

YEAR 12 AUTUMN

- Complete Unit 2 Cells – Diffusion, osmosis, active transport, cell cycle, cancer, viruses, immunity and disease
- Unit 3 Organisms Exchange Substances with their Environment, Gas Exchange, Digestion and Absorption, Mass Transport

YEAR 12 SPRING

- Unit 4 Genetic Information, Variation and Relationships Between Organisms – DNA, Genes and Chromosomes, Protein Synthesis, Mutation and Adaptation, Species and Taxonomy, Biodiversity

YEAR 12 SUMMER

- Unit 8 The Control of Gene Expression, Alteration to the Sequences of bases in DNA, Gene Expression, Transcription and Translation, Cancer, Using Genome Projects, Recombinant DNA Technology, Identification and Diagnosis of Heritable Conditions, Genetic Fingerprinting
- Exam preparation and revision

YEAR 13 SUMMER

- Complete Unit 6 Organisms respond to changes in their internal and external environments – Stimuli and Response, Receptors, Control of Heart Rate, Nerve Impulses, Synaptic Transmission, Stimulation of Skeletal Muscles, Homeostasis.
- Unit 7 Genetics, Populations, Evolution and Ecosystems – Inheritance, Populations, Speciation, Populations in Ecosystems.

YEAR 13 SPRING

- Unit 5 Energy Transfers Between Organisms – Photosynthesis, Respiration, Energy and Ecosystems, Nutrient Cycles.
- Unit 6 Organisms respond to changes in their internal and external environments - Stimuli and Response, Receptors, Control of Heart Rate, Nerve Impulses, Synaptic Transmission, Stimulation of Skeletal Muscles, Homeostasis

YEAR 13 AUTUMN

BEYOND YEAR 13

- University Degrees in biological (or other) sciences or a related degree such as psychology, sports science, pharmacy or medicine
- Careers such as doctor, vet, dentist, research scientist, teacher, nature conservation office

Practical skills developed during year 12, knowledge of fundamental biological ideas – biological molecules etc...

KNOWLEDGE TRANSFER



CURRICULUM ROAD MAP

A LEVEL BIOLOGY

- Food scientist
- Geneticist
- Zoologist
- Molecular/Cell Biologist
- Botanist
- Doctor/Medical Professional
- Immunologist
- Pharmacologist

YEAR 12 AUTUMN

- Oncologist
- Virologist
- Immunologist
- Doctor/Medical Professional
- Respiratory Physiologist
- Botanist

YEAR 12 SPRING

- Clinical laboratory scientist.
- Genetic councillor.
- Clinical research associate.
- Research scientist.
- Pharmacologist.
- Forensic scientist.
- Epidemiologist

YEAR 12 SUMMER

- Clinical laboratory scientist.
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YEAR 13 SUMMER

- Clinical laboratory scientist.
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- Research scientist.
- Pharmacologist.
- Forensic scientist.
- Epidemiologist
- Ecologist
- Environmental Scientist
- Botanist
- Zoologist
- Research Biologist
- Neuroscientist

YEAR 13 SPRING

- Ecologist
- Environmental Scientist
- Botanist
- Zoologist
- Research Biologist
- Neuroscientist

YEAR 13 AUTUMN

Q. What are the industry application(s) for this knowledge/concept(s)?



Showbie
Socrative
Explain Everything
Focus Education

YEAR 12 AUTUMN

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YEAR 12 SPRING

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YEAR 12 SUMMER

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YEAR 13 AUTUMN

DIGITAL ACTIVITY LINKS

AQA A-Level Biology 7402

<https://www.aqa.org.uk/subjects/science/as-and-a-level/biology-7401-7402/>

3.1 Biological molecules

3.2 Cells (3.2.1 – 3.2.2, 3.2.4)

CPAC is also assessed throughout the course

YEAR 12 AUTUMN

3.2 Cells (3.2.2 - 3.2.3, 3.2.4)

3.3 Organisms exchange substances with their environment.

YEAR 12 SPRING

3.4 Genetic information, variation and relationships between organisms

YEAR 12 SUMMER

3.8 The Control of Gene Expression

YEAR 13 SUMMER

3.6 Organisms respond to changes in their internal external environments

3.7 Genetics, populations, evolution and ecosystems

YEAR 13 SPRING

3.5 Energy transfers in and between organisms

3.6 Organisms respond to changes in their internal external environments

YEAR 13 AUTUMN

SPECIFICATION REFERENCES