Curriculum Map: AQA A level Biology; Cell Biology and Physiology

THE KING'S ACADEMY
Emmanuel Schools Foundation

A Level Biology provides students with a solid foundation in biological concepts, critical thinking skills, and scientific inquiry. Understanding topics like genetics, ecology, and physiology prepares students for further studies in fields such as medicine, environmental science, and biotechnology. Moreover, A Level Biology fosters an appreciation for the natural world and encourages curiosity about life processes.

PAG
Academy Rehearsal Exams
Other Assessment Points
Unit Link

Year 13

Autumn

How do plants and animals respond to stimuli?

6a Response to Stimuli

How is the cardiac cycle controlled?

How do our visual receptors allow us to see?

AP5

How do neurones generate and transmit action potentials?

How do neurones communicate with each other?

How do our muscles contract?

6b Nervous Coordination and Muscles

Spring

How does the pancreas control blood sugar levels?

AP6 - Year 13 Rehearsal Exams

6c Homeostasis

How does the kidney control water potential?

7a Inherited Change, Populations & Evolution

AP7

How does inheritance of alleles occur? How do new species form?

How can we modify organisms with DNA?

How can we amplify, separate and analyse DNA fragments?

8b Recombinant DNA

Exams

Summer

How does haemoglobin transport oxygen?

What is the cardiac cycle?

What are the structure and function of our blood vessels?

3b Mass Transport in Animals & Plants

5a, 5b, 6a

How do sugar substances move around the plant?

How does water move from the root to the leaf?

3c Transport in Plants

Progression Week

AP 4 - Year 12 Rehearsal Exams

6a, 6b, 6c

2c Cell Recognition & Immunity

Year 12

Autumn

How are biomolecules digested and absorbed?

AP3

How do mammals, insects and fish exchange oxygen and carbon dioxide with the atmosphere??

How can we use the immune system to combat and detect pathogens?

How do antibodies function in the body?

3a Gas Exchange & Digestion

3b, 3c, 5a, 5b

2b, 2c 3a, 3b, 3c 6a, 6b

2a Cell Structure & Division

Spring

What are the structures of eukaryotic cells, prokaryotic cells and viruses?

How can we study cells?

How do cells divide?

AP1

What is the structure of the cell membrane?

How does the cell membrane allow substances in and out of the cell?

AP2

How do the cells of the immune system interact with other?

2b Transport Across Membranes

2c, 3a,3b, 3c, 6b, 6c

Curriculum Map: AQA A level Biology; Biochemistry and Ecology

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PAG

Academy Rehearsal Exams

Other Assessment Points

Unit Link

Exams

Year 13

Autumn

How does our body produce ATP from Glucose??

5a Respiration

How do plants use light energy in the light dependent reaction?

How do plants use carbon dioxide and the products of the light-dependent reaction to make biomolecules??

5b Photosynthesis

5c, 6b, 6c

AP5

How can we measure the efficiency of ecosystems?

How are nitrogen and phosphorus cycled in the environment?

5c Energy & Ecosystems

AP6 - Year 13 Rehearsal Exams

How do mutations and transcriptional factors affect protein production?

Spring

7c Populations in Ecosystems

How can we measure the size of a population?

How do populations change over time?

AP7

How can changes in gene expression lead to cancer?

8a Control of Gene Expression

5c, 7a, 7c

4c Biodiversity

Summer

How are organisms classified?

What is the concept of a species?

How can we measure biodiversity?

Why are there conflicts between conservation and modern farming?

Why are statistics important in Biology?

Progression Week

AP 4 - Year 12 Rehearsal Exams

Links to all units

4a DNA, Genes & Chromosomes

How does DNA copy itself?

How does DNA code for proteins?

How do mutations lead to variation in a population?

How does meiosis lead to variation in a population?

Why are particular alleles selected for?

AP3

4b Genetic Diversity & Adaptation

4c, 7a, 8a, 8b

2b, 3a, 5a, 5b, 5c

1a Biomolecules

Year 12

Spring

What is the structure of DNA in prokaryotes and eukaryotes?

AP2

How can the actions of enzymes be inhibited?

AP1

What is the induced fit model of enzyme action?

What determines the structure and shape of a protein?

How does the structure of lipids/phospholipids link to their function?

How does the structure of carbohydrates link to their function?

Autumn