



Science KS3 Learning Journey

YEAR
10

**GCSE
Circulation and
Health**

Blood and systems, non-communicable diseases and treatments.

**GCSE Earth's
Resources**

How chemists seek to minimise the use of limited resources such as energy and water, managing the environmental impact of human activity.

**GCSE Energy
Resources**

Energy usage and how it is affected by political, economic and scientific issues. Renewable and non-renewable energy sources and the advantages and disadvantages.

Practical Skills

Understanding decimals, SI units, Graph drawing, calculating means, variables, range and resolution.

**Separating
Mixtures**

Applying different physical methods to separate different types of mixtures including an in depth look at the chemicals obtained from separating crude oil.

**Biological
Processes**

Photosynthesis, respiration, limiting factors, diffusion.

YEAR
9

Sound, frequency, amplitude, how we hear, light, colour, reflection and refraction.

**Acids and
Metals**

Acids and alkalis: how we identify them, how they react and the patterns they show.

The Earth

How science and geography combine, how rocks and the atmosphere develop.

Forces

Types of forces, weight, mass, friction, resultant forces, how planes fly, magnets and making electromagnets.

Waves

Keeping a balanced diet, health impacts, the digestive system, and enzymes.

**Chemical
Reactions**

Different types of reactions and how we write them as equations.

**DNA and
Evolution**

Genetics, inheritance, mutations, natural selection, evolution, evidence and fossils.

Reproduction

Pollination, fertilisation, seed dispersal, female and male human reproduction.

Nutrition

YEAR
8

**Particles and
Matter**

What is everything made of and how it behaves. How dissolving works.

**Elements,
Compounds and
Mixtures**

Materials and the periodic table, element symbols. How we separate mixtures

**Energy and
Electricity**

Types of energy stores and how its transferred. Making electrical circuits, light bulbs and lighthouse challenge.

**Temperature
and Energy**

How to use a thermometer, state changes, expansion, heat, conduction, convection and radiation.

**Interdependence
and Variation**

Organism interactions, and human impacts, genetics introduction.

**Cells and
Organisation**

Animals and plants, cells and organisms, viewing structures and functions.

**Working Like a
Scientist**

Working safely, using a Bunsen, choosing variables, drawing graphs, completing experiments

YEAR
7





Separate Biology KS4 Learning Journey

YEAR
12

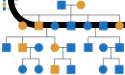
GCSE Ecology

Ecosystems, materials and cycling, animal and plant interactions, abiotic and biotic factors. Sustainability, and threats to biodiversity.



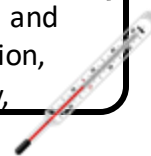
GCSE Genetics and Inheritance

Meiosis and mitosis, cellular DNA and its function, genetic inheritance and disorders, evolution and speciation, gene technologies.



GCSE Homeostasis

Interpreting stimulus and co-ordinating responses within the nervous and endocrine system, reproduction, contraception and fertility,



YEAR
11

GCSE Bioenergetics and Plants

Pathogens are microorganisms causing infectious disease, treatment and prevention, vaccinations and drug trials. In humans and plants.



Plant tissues, organs and systems, photosynthesis and respiration, rates, exercise and metabolism. Transpiration and translocation.



GCSE Infection and Response

GCSE Organisation of Animals

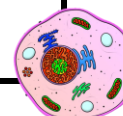
Principles of organisation of the human body, digestion using enzymes and nutrition.



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10

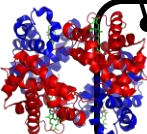
GCSE Cell Biology

Exploring structural differences and functionality of cells within organisms. Cell division by mitosis and then specialisation and differentiation.



GCSE Circulation and Health

Blood and circulatory system, the respiratory system, CHD, cancer and non-communicable diseases and medical treatments.



YEAR
9

YEAR
9





Trilogy Biology KS4 Learning Journey

YEAR
12

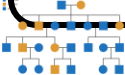
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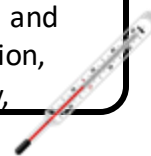
GCSE Genetics and Inheritance

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GCSE Homeostasis

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Plant tissues, organs and systems, photosynthesis and respiration, rates, exercise and metabolism. Transpiration and translocation.



GCSE Infection and Response

GCSE Organisation of Animals

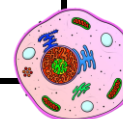
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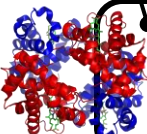
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YEAR
9





A Level Biology KS5 Learning Journey

On to
Post
18

Organisms
Respond to
Change

Homeostasis, survivability, taxes and kineses, heart rate, nervous coordination, negative feedback systems, blood glucose and water.

Gene
Expression

Regulation of transcription and translation, cancer, stem cells, genome projects and gene technologies.

Energy
Transfers

Photosynthesis, Respiration, nutrient cycles, energy transfers and efficiency.

Populations and
Ecosystems

Evolution, inheritance, speciation and natural selection, allele frequency, Hardy-Weinberg calculations, communities.

YEAR
13

Organisms
Exchange

Mass transport systems, internal and external environments exchange surfaces, particle movement.

Genetic
Information

Biodiversity, variation, natural selection, evolution, mutations, Index of Diversity,

YEAR
12

Biological
Molecules

Biochemistry, organic compounds for biological structures and functions.

Cell
Biology

Life exists as cells, features, eukaryotes, prokaryotes, cell division, immunity and cell recognition.

Separate
Higher Biology
GCSE

Trilogy Higher
Science GCSE