

Biology



1. Key Concepts in biology

[No additional videos]

2. Cells and control

The brain

The eye

3. Genetics

Protein synthesis

Mendel

Sex linkage and multiple alleles

4. Natural Selection and genetic modification

Theories of evolution: Darwin and Wallace

Tissue culture

GMO's and feeding the world

5. Health, disease and the development of medicines

Plant defences and diagnosis

The lifecycle of a virus

Culturing microorganisms

Monoclonal antibodies

6. Plant Structures and their functions

Plant adaptations

Plant hormones

Controlling water: the excretory system

7. Animal coordination, control and homeostasis

[No additional videos]

8. Exchange and transport in animals

[No additional videos]

9. Ecosystems and material cycles

Pyramids of biomass and biomass transfer

Decay

Food security

Monitoring pollution and biodiversity

Chemistry



1. Key concepts in chemistry

[No additional videos]

2. States of matter and mixtures

[No additional videos]

3. Chemical changes

[No additional videos]

4. Extracting metals and equilibria

[No additional videos]

5. Separate chemistry 1

The Haber process

Titrations

Chemical cells and fuel cells

Corrosion and rusting

Making Fertilisers

Yield and atom economy

Concentration in mol/dm³

Gas volumes

Alloys and the properties of metals

Transition metals

Nanoparticles

Addition Polymerisation

Biological Polymers

Condensation Polymerisation

Using materials

Tests for positive ions

Tests for negative ions

Instrumental analysis

Alkenes

Alcohols

Carboxylic acids

6. Groups in the periodic table

[No additional videos]

7. Rates of reaction and energy changes

[No additional videos]

8. Fuels and Earth science

[No additional videos]

Physics



1. Key concepts of physics

[No additional videos]

2. Motion and forces

Forces and braking

3. Conservation of energy

[No additional videos]

4. Waves

Properties of waves

Waves meeting boundaries

Sound waves

Uses of sound waves

5. Light and the electromagnetic spectrum

Reflection and Total Internal Reflection

Lenses

Visible light

Thermal radiation

6. Radioactivity

Irradiation and radioactive contamination

Uses of ionising radiation

Nuclear fission and fusion

7. Astronomy

The solar system

The life cycle of a star

Orbital motion

Red-shift and the origin of the Universe

8. Energy - forces doing work

[No additional videos]

9. Forces and their effects

Moments, levers and gears

10. Electricity and circuits

[No additional videos]

11. Static electricity

Static electricity

Electric fields

12. Magnetism and the motor effect

The motor effect

13. Electromagnetic induction

Electromagnetic induction

Transformers

Transformers and power transmission

14. Particle model

Pressure in gases

15. Forces and matter

Pressure and pressure differences in fluids