

Department: Science

Curriculum Intent

Riverside School's Science department inspires students to explore the world they live in and the scientific principles that govern it. At the heart of our curriculum, we seek to ensure that all students, regardless of their starting point, are able to master threshold concepts and thus allow them to develop a deeper understanding of the central ideas of science. The curriculum is designed to build upon key skills and knowledge over time that culminate in a well-rounded scientist. Our essential wider curriculum, including trips, workshops, competitions and access to careers advice, serves to provide our students with an appreciation of the application of science beyond the classroom. Our clubs allow our students to innovate ideas, think critically and hone their research skills. By relating their knowledge to research and developments, our students understand the importance of scientific inquiry and leave us as scientifically-literate young adults. Our students are therefore equipped for personal decision making, participation in civic and cultural affairs and so can be active members of society.

Year 7 Topics

- Scientific Skills
- Solids, Liquids and Gases
- Cells
- Forces
- Atoms, Elements and Compounds
- Respiration
- Energy
- Chemical Reactions
- Digestion
- Plants
- Muscles and Movement

Year 8 Topics

- Heat Transfer and Particle Theory
- Separating Techniques
- Reproduction
- Ecology
- Waves
- Chemical Reactions II
- Electricity
- Inheritance and Variation
- Magnetism and Generating Electricity
- Earth

Year 9 Topics

- Atomic Structure
- Cell Biology
- Energy
- Bonding and Structure
- Organisation
- Particle Model
- Quantitative Chemistry
- Particle Model
- Organisation II

Year 10 Topics

- Infection and Response
- Chemical Changes
- Electricity
- Bioenergetics
- Energy Changes
- Forces
- Homeostasis
- Rates of Reaction

Year 11 Topics

- Inheritance
- Forces II
- Organic Chemistry
- Chemical Analysis
- Ecology
- Waves
- Chemistry of the Atmosphere
- Using resources
- Electromagnetism
- Space Physics (triple science only)

GCSE Specification Details and Assessment:

AQA GCSE Combined Science: Trilogy (8464)

<https://cdn.sanity.io/files/p28bar15/green/0d8783204c71dd54f340ece220707095e49b6dea.pdf> or

AQA GCSE Biology (8464), GCSE Chemistry (8462) and GCSE Physics (8463)

<https://cdn.sanity.io/files/p28bar15/green/510eb7c76df13be23292df4392de95eb32b0d30f.pdf>

<https://cdn.sanity.io/files/p28bar15/green/9e1579c8cdada254bf7726b794379cf4c1a56036.pdf>

<https://cdn.sanity.io/files/p28bar15/green/e96b2cef624c0970b0f90d9678a438580aed0f65.pdf>

A-Level

Subject: Biology

Course Content

Students will follow AQA Biology (7402). There are eight core units of content studied over two years:

1. Biological molecules
2. Cells
3. Organisms exchange substances with their environment
4. Genetic information, variation and relationships between organisms
5. Energy transfers in and between organisms
6. Organisms respond to changes in their internal and external environments
7. Genetics, populations, evolution and ecosystems
8. The control of gene expression

Specification Details and Assessment:

<https://cdn.sanity.io/files/p28bar15/green/98cdb01fb651d63df2ab345a2547774092b43bbc.pdf>

Subject: Chemistry

Course Content

Students will follow AQA Chemistry (7405). There are three core units of content studied over two years:

1. Physical chemistry
2. Inorganic chemistry
3. Organic chemistry

Specification Details and Assessment:

<https://cdn.sanity.io/files/p28bar15/green/9bc48d822ce0f2a5b8a6ce62de590a4c06281535.pdf>

Subject: Physics

Course Content

Students will follow AQA Physics (7408). There are nine core units of content studied over two years:

1. Measurements and their errors
2. Particles and radiation
3. Waves
4. Mechanics and materials
5. Electricity
6. Further mechanics and thermal physics
7. Fields and their consequences
8. Nuclear physics
9. Astrophysics

Specification Details and Assessment:

<https://cdn.sanity.io/files/p28bar15/green/c84fb691cf808ff97ba17ffce6f458f837016dc9.pdf>