Science Key information

‘Attitude determines altitude’ – NASA

Introduction

The Science department enhance students’ lives in the study of science by fulfilling the St Joseph’s Mission statement: Living, loving, learning through Christ. We strive to make learning fun, inspire a love of practical work and a thirst for knowledge in our students, developing them as independent and enquiring learners.

To achieve our aim, we endeavour to:

* Ensure all students make outstanding progress, regardless of their starting point.
* Ensure all Science lessons include relevant challenges, pupil engagement and a focus on celebrating success.
* Provide students opportunities to participate in a wide range of learning experiences, developing them as effective communicators and active learners.
* Help all students develop into creative, analytical, and independent thinkers.
* Encourage all pupils to develop skills to enable them to communicate their scientific ideas fluently and accurately.
* Provide a supportive, engaging, and challenging learning environment to help students achieve their very best.
* To provide students with the knowledge and skillset, which enables them to be scientific in their thinking.
* To ensure students understand scientific language, enabling them to describe and manipulate real world scenarios and make informed decisions.
* To provide students with knowledge and a solid foundation of skills in Key Stage 3 and 4, so they are able to achieve the best grade possible at GCSE, which will enable them to go on to their chosen route after St. Joseph’s.

The department is led by the Head of Science, Mr Jonathan Anson BSc Chemistry (Hons) (Education), an experienced subject leader with twenty-six years’ teaching experience. He is supported by:

* Teacher of Science – Mrs Rebecca Moody, BSc Biology (Hons), PGCE Secondary Science an experienced classroom teacher who is also an examiner for AQA.
* Teacher of Science – Mr Nicholas Edmondson
* Teacher of Science – Mr Tom Hewitson
* Teacher of Science – Miss Isabel Postlethwaite
* Senior Science Technician – Ms Kaitlin Eilbeck, BSc Biology (Hons)
* Senior Science Technician – Mr Lewis McGrady

Courses followed/Exam board

The department follows a five-year Science syllabus which extends on scientific methods, processes and skills learnt at KS2 and develops students’ knowledge and application. The five-year curriculum helps to inspire by linking science to everyday life. We have a Science curriculum at St. Joseph’s that is packed naturally with SMSC, this allows us to teach it within the specifications we deliver. However, as we believe in its value, not just on an exam side of education but in a developmental way, we also promote it exclusively during a student’s time with us.

KS3 Activate Science – [Kerboodle](https://www.kerboodle.com/users/login)

KS4 courses:

AQA GCSE Biology (8461)

Careers using Biology

Where can Biology take you?

* Medicine • Nursing • Dentist • Vet • Science Teacher • University Lecturer • Soil Scientist
* Pharmacist • Laboratory Technician • Science Writer • Chiropractor • Conservationist • Ecologist

Lead to degrees in:

* Animal Behaviour • Anthropology • Archaeology • Biochemistry • Biomedical Sciences • Biophysics • Brewing and Distilling • Chemistry • Clinical Exercise • Conservation Biology • Counselling • Dentistry • Ecology • Environmental Health • Environmental Science • Exercise Science • Forensic Science
* Genetics • Health and Social Care • Health Sciences • Human Biology • Life Sciences • Marine Biology • Medicine • Microbiology • Midwifery • Natural Sciences • Nursing • Occupational Therapy
* Oceanography • Operating Department Practice • Pharmacy • Paramedic Science • Psychology
* Public and Community Health • Speech Therapy • Sports Science • Teaching • Veterinary Science
* Zoology

Careers where Biology is useful

* Dental Nurse • Dental Hygienist • Optometrist • Botanist • Working with plants
* Working with animals • Podiatrist • Countryside Ranger • Medical Laboratory Assistant
* Veterinary Nurse • Acupuncturist • P.E. Teacher • Paramedic

Skills you’ll develop through studying Biology:

* Problem solving
* Research skills
* Accurate record keeping
* Team work
* Handling data and information effectively

AQA GCSE Chemistry (8462)

Careers using Chemistry:

* Pharmacist • Pharmacy Technician • Chemical Engineer • Science Teacher • University Lecturer
* Medicine • Medical Research • Medical Engineer
* Laboratory Technician • Forensic Scientist • Toxicologist • Dentist • Vet

Lead to degrees in:

* Astronomy • Biochemistry • Biology • Biomedical Sciences • Biotechnology
* Chemical Engineering • Criminology • Dentistry • Dietetics • Environmental Science
* Food Science • Forensic Science • Genetics • Human Biology • Life Sciences • Marine Biology
* Materials Science • Medicine • Midwifery • Natural Sciences • Nursing
* Occupational Therapy • Oceanography • Paramedic Sciences • Pharmacy • Physiotherapy
* Speech Therapy • Veterinary Science • Waste Management

Careers where Chemistry is useful:

* Dental Nurse • Nursing • Physiotherapy • Occupational Therapy • Midwife • Agricultural Science
* Horticulture • Working with Animals • Oceanography • Geology • Dietician • Accountant
* Materials Scientist • Conservationist

Skills you’ll develop through studying Chemistry:

* Problem solving
* Research techniques
* Collecting, analysing and interpreting data
* Practical skills – using technical equipment
* Team work
* Communication skills – explaining complicated ideas in understandable ways

AQA GCSE Physics (8463)

Careers in Physics:

* Physics Teacher • University Lecturer • Medicine • Medical Research • Medical Engineer
* Dentist • Vet • Laboratory Technician • Electrical Engineer • Civil Engineer • Geophysicist
* Astronomer • Prosthetist • Acoustics • Aeronautical Engineering • Astronomy • Astrophysics
* Biology • Building Services • Chemistry • Civil Engineering • Computer Science • Cosmology
* Dentistry • Electrical Engineering • Electronics • Engineering • Geology • Health Sciences
* Mathematics

Lead to degrees in:

* Medicine • Meteorology • Nanotechnology • Natural Sciences • Nuclear Science
* Oceanography • Pharmacology • Physical Sciences • Space Physics • Surveying • Veterinary Science • Zoology

Careers where Physics is useful:

* Electrician • Nursing
* Allied Health Professions – including Physiotherapy and Speech Therapy • Surveying
* Geologist • Meteorologist • Technical Author • Research Scientist
* Product Development • Computer Games Programmer • Computer Scientist
* Motor Mechanic

Skills you’ll develop through studying Physics:

* Use of mathematics
* Solving complicated technical problems
* Logical thinking
* Communication skills – explaining complicated ideas using technical language
* Practical skills – using technical equipment
* Computer programming

or

AQA GCSE Combined Science Trilogy (8464)

Contacts

* Salter’s Institute
* REACT Engineering/REACT Foundation
* EDT
* IoP
* Royal Society of Chemistry
* Royal Academy of Engineering
* Sixth forms, College and apprenticeship providers
* Local employers – Sellafield, FORTH Engineering

Links

Online resources

* [Kerboodle](https://www.kerboodle.com/users/login)
* [AQA | Science | GCSE | Biology](https://www.aqa.org.uk/subjects/science/gcse/biology-8461)
* [GCSE Biology (Single Science) – BBC Bitesize](https://www.bbc.co.uk/bitesize/subjects/z9ddmp3)
* [AQA | Science | GCSE | Chemistry](https://www.aqa.org.uk/subjects/science/gcse/chemistry-8462)
* [GCSE Chemistry (Single Science) – AQA – BBC Bitesize](https://www.bbc.co.uk/bitesize/examspecs/z8xtmnb)
* [AQA | Science | GCSE | Physics](https://www.aqa.org.uk/subjects/science/gcse/physics-8463)
* [GCSE Physics (Single Science) – AQA – BBC Bitesize](https://www.bbc.co.uk/bitesize/examspecs/zsc9rdm)

or

* [AQA | Science | GCSE | Combined Science: Trilogy](https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464)
* [GCSE Combined Science – AQA Trilogy – BBC Bitesize](https://www.bbc.co.uk/bitesize/examspecs/z8r997h)

Enrichment

Extra-Curricular Clubs

* STEM: STEM Cadet training in Electronics, Coding and Sensors

Mars Day

Guest speakers

* REACT Engineering/REACT Foundation – Science show – inspiring next generation; Year 11 bursaries.
* RSC Spectroscopy in a Suitcase Newcastle University – building on analytical techniques and skills.
* Salter’s Institute – aspirin assay
* EDT
* IoP
* Royal Society of Chemistry
* Royal Academy of Engineering
* Sixth forms, College and apprenticeship providers
* Local employers – Sellafield, FORTH Engineering
* University of Newcastle – Spectroscopy in a suitcase

Reading

Reading for pleasure

* The Selfish Gene – Richard Dawkins
* A Brief History of Time – Stephen Hawking
* The Hitchhiker’s Guide to the Galaxy – Douglas Adams

Academic Reading

* Oxford KS3 Activate Biology
* Oxford KS3 Activate Chemistry
* Oxford KS3 Activate Physics
* Oxford KS4 GCSE Biology
* Oxford KS4 GCSE Chemistry
* Oxford KS4 GCSE Physics
* Digital copies of the above textbooks are available on [Kerboodle](https://www.kerboodle.com/users/login)
* [education in Chemistry](https://edu.rsc.org/eic)
* [New Scientist](https://www.newscientist.com/)

Reading for parents

* [AQA | Science | GCSE | Biology](https://www.aqa.org.uk/subjects/biology/gcse/biology-8461/specification)
* [AQA | Science | GCSE | Chemistry](https://www.aqa.org.uk/subjects/chemistry/gcse/chemistry-8462/specification)
* [AQA | Science | GCSE | Physics](https://www.aqa.org.uk/subjects/physics/gcse/physics-8463/specification)
* [AQA | Science | GCSE | Combined Science: Trilogy](https://www.aqa.org.uk/subjects/science/gcse/science-8464/specification)

Resources

Please Click the following links to view the Learning Journey Roadmaps:

[Science Learning Journey](https://sjchs.uk/wp-content/uploads/Science_Learning-Journey.pdf)

[Y11 Science Revision](https://stjosephscatholichigh.sharepoint.com/sites/science/Year%2011/Forms/AllItems.aspx)

[Y10 Science Revision](https://stjosephscatholichigh.sharepoint.com/sites/science/Year%2010/Forms/AllItems.aspx)

[Y9 Science Revision](https://stjosephscatholichigh.sharepoint.com/sites/science/Year%209/Forms/AllItems.aspx)

[Y8 Science Revision](https://stjosephscatholichigh.sharepoint.com/sites/science/Year%208/Forms/AllItems.aspx)

[Y7 Science Revision](https://stjosephscatholichigh.sharepoint.com/sites/science/Year%207/Forms/AllItems.aspx)