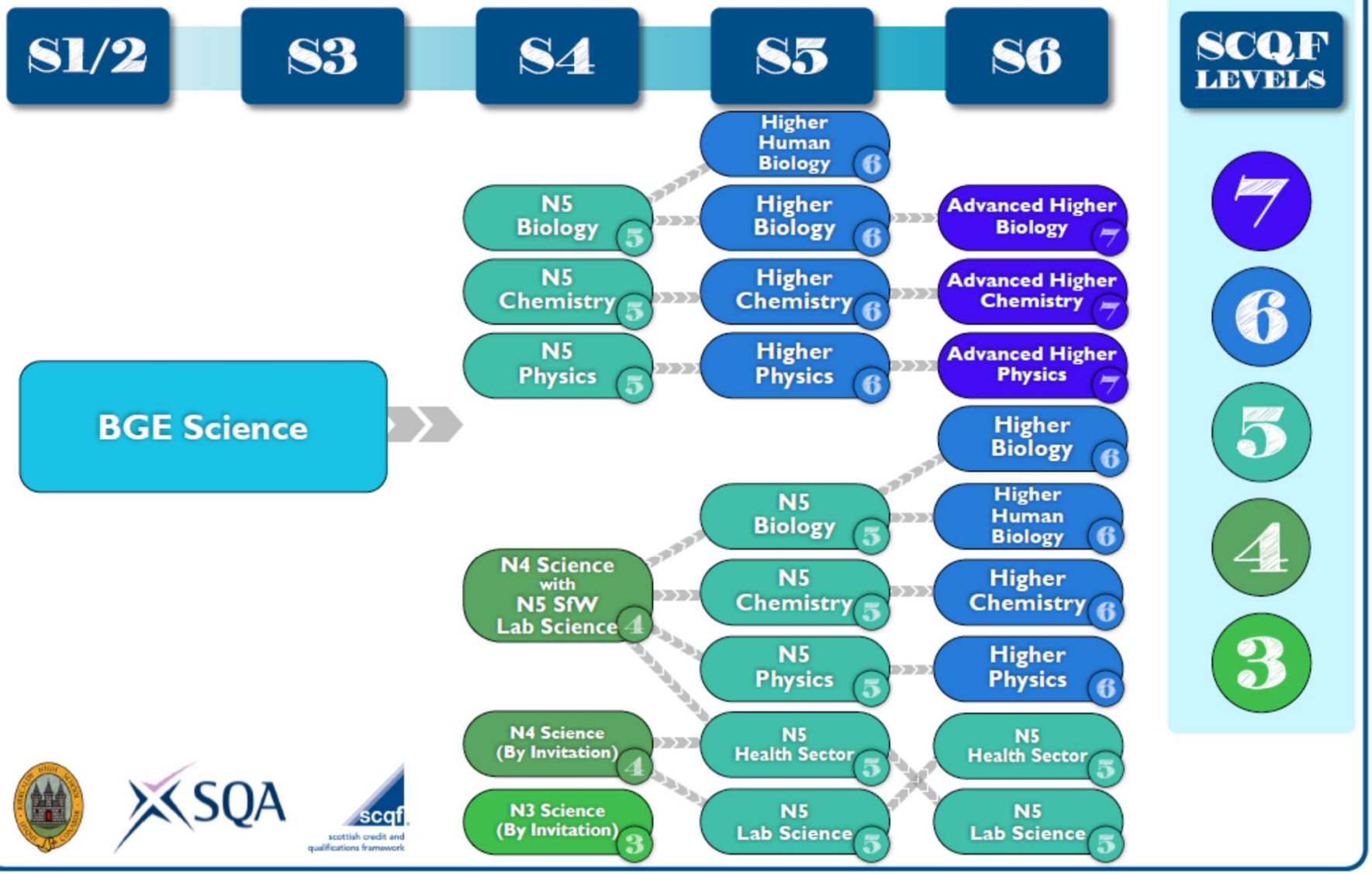
S2 Subject Choices

Science

Science


S1/2
S3
S4
S5
S6
SCQF LEVELS
7
6
5
4
3
BGE Science
N5 Biology 5
N5 Chemistry 5
N5 Physics 5
Higher Human Biology 6
Higher Biology 6
Higher Chemistry 6
Higher Physics 6
Advanced Higher Biology 7
Advanced Higher Chemistry 7
Advanced Higher Physics 7
N4 Science with N5 SfW Lab Science 4
N4 Science (By Invitation) 4
N3 Science (By Invitation) 3
N5 Biology 5
N5 Chemistry 5
N5 Physics 5
N5 Health Sector 5
N5 Lab Science 5
Higher Biology 6
Higher Human Biology 6
Higher Chemistry 6
Higher Physics 6
N5 Health Sector 5
N5 Lab Science 5
SQA
scqf
scottish credit and qualifications framework

Biology – National 4 and National 5

Entry Requirements - Preferred Skills and Knowledge

You should have an interest in studying the sciences, in particular the study of living organisms, want to know how Biology affects everyone and be interested in finding solutions to many of the world's problems such as health and food supply.

Course Content

The course covers three main areas of Biology:

Cell biology : including cell structure, transport, DNA, proteins, genetic engineering, respiration.
Multicellular organisms : including control and communication, reproduction, variation and inheritance.
Life on Earth : including ecosystems, photosynthesis, food production, evolution of species.

Biology – National 4 and National 5

Course Assessments

- 3 x National 4 Unit Assessments throughout S3 for all pupils
- National 4 Experimental Report (Outcome 1) completed in S3 by all pupils
- National 4 Added Value Unit Assessment completed in S3 by all pupils
- National 5 : 2 hour prelim examination in December 2026
- National 5 : Practical Assignment in January 2027
- National 5 : 2 ½ hour final examination in May 2027

Learning Activities & Homework

You will apply Biology knowledge to evaluate biological issues, make informed decisions and develop an ethical view of complex issues.
You will carry out experimental work and fieldwork investigations to develop collection and analysis of data and problem solving skills.

Homework is issued regularly throughout the session.

Biology – National 4 and National 5

Wider Skills Development

Experimental, inquiry and investigative skills
Group work
Research skills
Problem solving

Progression & Career Opportunities

- Further study: Biology at the next level or study in a related science subject
- Further education: HNC/D: Community, Food Science and Technology, Health & Social Care, Medical Technology/Pharmacology, Life Sciences. Degree Level: Medicine based degree courses, Ecology, Anthropology, Environmental Science.
- Career Opportunities: Medicine, Nursing, Pharmaceuticals, Physiotherapy etc

Chemistry – National 4 and National 5

Entry Requirements - Preferred Skills and Knowledge

You should have an interest in studying the sciences, in particular the application of Chemistry in everyday contexts, be interested in the role chemists have in the production of everyday materials and be keen to take part in practical work to help explain the theory behind the work.

Course Content

The course covers three main areas of Chemistry:

Chemical changes and structure including rates of reaction; atomic structure and bonding, formulae and reacting quantities; acids and bases.
Nature's chemistry including homologous series; everyday consumer products; energy from fuels.
Chemistry in society including metals; plastics; fertilisers; nuclear chemistry; chemical analysis.

Chemistry – National 4 and National 5

Course Assessments

- 3 x National 4 Unit Assessments throughout S3 for all pupils
- National 4 Experimental Report (Outcome 1) completed in S3 by all pupils
- National 4 Added Value Unit Assessment completed in S3 by all pupils
- National 5 : 2 hour prelim examination in December 2026
- National 5 : Practical Assignment in January 2027
- National 5 : 2 ½ hour final examination in May 2027

Learning Activities & Homework

You will carry out experimental work to test a given idea, to illustrate particular effects, and to develop collection and analysis of data and problem solving skills. You will understand that the advances in Chemistry are constantly having an effect on our everyday lives.

Homework is issued regularly throughout the session.

Chemistry – National 4 and National 5

Wider Skills Development

Experimental, inquiry and investigative skills
Group work
Research skills
Problem solving

Progression & Career Opportunities

- Further study: Chemistry at the next level or study in a related science subject
- Further education: HNC/D: Chemical and Petroleum Engineering, Energy and Utilities etc. Degree Level: Medicine based degree courses, Biochemistry, Chemical Engineering, Materials Science etc.
- Career Opportunities: Medicine, Brewing, Chemical Engineering, Forensic Science, Environmental Health, Materials Science, Oil & Gas Production, Laboratory Tech etc.

Physics – National 4 and National 5

Entry Requirements - Preferred Skills and Knowledge

You should have an interest in studying the sciences, in particular the study of applications of Physics in everyday contexts and be inquisitive and be willing to ask questions to explain the world around you, from the "very big" to the "very small".

Course Content

The course covers six main areas of Physics:

Dynamics including speed, distance, time; acceleration; Newton's laws; energy; projectile motion.
Space including space exploration; cosmology.
Electricity including current; voltage; resistance; practical electrical and electronic circuits; electrical power.
Waves including wave behaviours; sound; electromagnetic spectrum; refraction of light.
Radiation including atomic structure; nuclear radiation.
Properties of matter (National 5 only) including heat; gas laws and the kinetic model.

Physics – National 4 and National 5

Course Assessments

- 3 x National 4 Unit Assessments throughout S3 for all pupils
- National 4 Experimental Report (Outcome 1) completed in S3 by all pupils
- National 4 Added Value Unit Assessment completed in S3 by all pupils
- National 5 : 2 hour prelim examination in December 2026
- National 5 : Practical Assignment in January 2027
- National 5 : 2 ½ hour final examination in May 2027

Learning Activities & Homework

You will carry out experimental work to test a given idea, to illustrate particular effects, and to develop collection and analysis of data and problem solving skills.
You will develop logical thinking skills to solve problems in unfamiliar contexts.
Understand that the advances in Physics mean that our view of what is possible is continually being updated.

Homework is issued regularly throughout the session.

Physics – National 4 and National 5

Wider Skills Development

Experimental, inquiry and investigative skills
Group work
Research skills
Problem solving

Progression & Career Opportunities

- Further study: Physics at the next level or study in a related science subject
- Further education: HNC/D: Construction, Energy & Utilities, Engineering, Medical Etc. Degree Level: Medicine based degree courses, Astrophysics, Laser Physics, Engineering Based Courses, Environmental Science.
- Career Opportunities: Engineering, Medicine, Medical Physics, Electronics, Renewable Energies, etc.

Laboratory Science – National 5 (SfW)

Entry Requirements - Preferred Skills and Knowledge

You should have an interest in practical science and be curious about exploring science careers and industries. You should be willing to develop practical and investigation skills, working in groups or working independently where required.

Course Content

The course covers four main areas of **Laboratory Science**:

Careers Using Laboratory Science including investigating a range of career opportunities in industries and services that use laboratory science.

Working in a Laboratory including the opportunity to learn basic laboratory skills such as handling chemicals and preparing solutions; following safety procedures; carrying out risk assessments.

Practical Skills including working safely with microorganisms; measuring radioactivity; performing a titration, chromatography and distillation.

Practical Investigation including producing a plan, including practical procedures, to investigate a scientific topic.

Laboratory Science – National 5 (SfW)

Course Assessments

- This course is practical based and is assessed throughout the course – there is no final examination.

Learning Activities & Homework

You will develop knowledge, problem solving skills and investigation skills in a science context and also develop the use of technology, equipment and materials safely in practical scientific activities.

Homework is issued regularly throughout the session.

Laboratory Science – National 5 (SfW)

Wider Skills Development

Experimental, inquiry and investigative skills
Group work
Research skills
Problem solving

Progression & Career Opportunities

As this is a vocational course, this specifically leads to:

- Further study: Other qualifications in sciences, or related areas, at Level 5 in S5.
- Further education: level 6 Foundation Apprenticeship in Scientific Technologies, HND: Applied Sciences, HND: Applied Biological Sciences
- Career Opportunities: modern apprenticeships or direct employment in areas such as sciences, hospital laboratories, forensics, water purification, land and environment, schools, food and drink production, manufacturing and production, engineering.

Science – National 3 and National 4

Entry Requirements - Preferred Skills and Knowledge

You should have an interest in science and be curious about its relevance in everyday life. You should be willing to develop practical and investigation skills, working in groups or working independently where required.

Course Content

The course covers three main areas of Science:

Fragile Earth including two choices from energy, metals, water, and food. You will investigate these resources e.g. their source, origin, production and/or extraction, their uses and benefits, their environmental impact.
Human Health including factors which contribute to a healthy lifestyle, procedures to measure physical fitness, investigate mental/social health issues and research media reports of national and international health areas.
Applications of Science including communication technologies, production and use of new materials, how science helps the understanding of risk and how it can be reduced in modern life.

Science – National 3 and National 4

Course Assessments

- 3 x Unit Assessments
- National 4 Added Value Unit Assessment
- On completion, the opportunity to achieve NPA in Science and Technology or NPA Science and Health in S4

Learning Activities & Homework

You will develop knowledge, problem solving skills and investigation skills in a science context and also develop the use of technology, equipment and materials safely in practical scientific activities.

Homework is issued regularly throughout the session.

Science – National 3 and National 4

Wider Skills Development

Experimental, inquiry and investigative skills
Group work
Research skills
Problem solving

Progression & Career Opportunities

As this is a vocational course, this specifically leads to:

- Other qualifications in sciences, or related areas, at Level 5 in S5.
- Help to achieve entry to employment, training, or further education.