Qualification: None KS3 Science

Exam Board: None

In KS3 we follow a standardised curriculum across the entire CLF. This is designed based on the national curriculum program of study

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/335174/SECONDARY_national_curriculum_-_Science_220714.pdf

A breakdown of the subjects studied are below:

Year 7 in Science the areas studied are:

Biology

Cells and Organisation
Reproduction
Nutrition and Digestion
Microbes

Chemistry

Pure and impure
Atoms and Elements
The Periodic table
Acids and Alkalis.

Physics

Particulate nature
Electricity
The particle Model
Forces
Magnetism
Energy changes and transfers
Changes in a system

Year 8 in Science the areas studied are:

Biology

Health
Gas Exchange
Cellular Respiration
Photosynthesis
Ecosystems

Chemistry

Chemical Reactions
Earth and Atmosphere
Energy in Chemical Reactions
Materials

Physics

Forces and Motion
Energy
Waves

How will I be assessed in the subject?

Assessment

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Students will be assessed termly with small content driven tests, which will allow us to monitor student ability to retain subjects content. Also within each module there are skills based assessments that will assess student ability to apply their knowledge and understanding and gain formative feedback on their progress in key skill areas. There are also longer exams at three points in the year that will act as Key performance indicators.

Independent Learning

For each unit students will be given a menu of independent learning tasks that they can complete at home. These tasks are designed to engage students with scientific concepts and make links with everyday interactions, products and phenomenon

Qualification: 2 GCSE's in Combined Science
Exam Board: Edexcel

What are the main topics I will study for the qualification?

In KS4 we follow a standardised curriculum across the entire CLF. This is designed based on the national curriculum program of study

From Edexcel:

"Science matters. That's why we've built the most inclusive GCSE (9–1) courses, so every student can enjoy science and succeed in their studies. Every student is different. With the same science and equal number of exams across our tiered qualifications, you can structure the courses in the ways that mean you can best support and stretch your students together.

Our specifications are straightforward, and our selection of core practicals are designed to help bring science learning to life. And when it comes to our assessments, they're shaped to encourage all students to best show what they know and can do."

The course covers the following areas:

Biology

● life processes depend on molecules whose structure is related to their function
● the fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems, enabling living processes to be performed effectively
● living organisms may form populations of single species, communities of many species and ecosystems, interacting with each other, with the environment and with humans in many different ways
● living organisms are interdependent and show adaptations to their environment
● life on earth is dependent on photosynthesis in which green plants and algae trap light from the sun to fix carbon dioxide and combine it with hydrogen from water to make organic compounds and oxygen
● organic compounds are used as fuels in cellular respiration to allow the other chemical reactions necessary for life
● the chemicals in ecosystems are continually cycling through the natural world
● the characteristics of a living organism are influenced by its genome and its interaction with the environment
● evolution occurs by a process of natural selection and accounts both for biodiversity and how organisms are all related to varying degrees.

Chemistry

● matter is composed of tiny particles called atoms and there are about 100 different naturally occurring types of atoms called elements
● elements show periodic relationships in their chemical and physical properties
● these periodic properties can be explained in terms of the atomic structure of the elements
● atoms bond by either transferring electrons from one atom to another or by sharing electrons
● the shapes of molecules (groups of atoms bonded together) and the way giant structures are arranged is of great importance in terms of the way they behave
● there are barriers to reaction so reactions occur at different rates
● chemical reactions take place in only three different ways:

- proton transfer
- electron transfer
- electron sharing

● energy is conserved in chemical reactions so can therefore be neither created nor destroyed.

Physics

● the use of models, as in the particle model of matter or the wave models of light and of sound
● the concept of cause and effect in explaining such links as those between force and acceleration, or between changes in atomic nuclei and radioactive emissions
● the phenomena of 'action at a distance' and the related concept of the field as the key to analysing electrical, magnetic and gravitational effects
● that differences, for example between pressures or temperatures or electrical potentials, are the drivers of change
● that proportionality, for example between weight and mass of an object or between force and extension in a spring, is an important aspect of many models in science
● that physical laws and models are expressed in mathematical form. All of these key ideas will be assessed as part of this qualification, through the subject content.

How will I be assessed in the subject?

Assessment in KS4 is based around a cycle of skills based tasks that will be assessed each module (these provide formative assessment of the application of understanding needed for the exam) and termly summative tests that assess how well students are recalling key content.

Alongside this there are longer exams which will punctuate key points in the year.

Am I suited to this qualification? (insert title)

Science is a core subject and so is compulsory: This is the minimum option for Science.

Qualification: 3 GCSE's in Biology, Chemistry and Physics
Exam Board: Edexcel

What are the main topics I will study for the qualification?

In KS4 we follow a standardised curriculum across the entire CLF. This is designed based on the national curriculum program of study

From Edexcel:

"Science matters. That's why we've built the most inclusive GCSE (9–1) courses, so every student can enjoy science and succeed in their studies. Every student is different. With the same science and equal number of exams across our tiered qualifications, you can structure the courses in the ways that mean you can best support and stretch your students together.

Our specifications are straightforward, and our selection of core practicals are designed to help bring science learning to life. And when it comes to our assessments, they're shaped to encourage all students to best show what they know and can do."

The course covers the following areas:

Biology

Topic 1 – Key concepts in biology

Topic 2 – Cells and control

Topic 3 – Genetics

Topic 4 – Natural selection and genetic modification

Topic 5 – Health, disease and the development of medicines

Topic 6 – Plant structures and their functions

Topic 7 – Animal coordination, control and homeostasis

Topic 8 – Exchange and transport in animals

Topic 9 – Ecosystems and material cycles

Chemistry

Topic 1 – Key concepts in chemistry

Topic 2 – States of matter and mixtures

Topic 3 – Chemical changes

Topic 4 – Extracting metals and equilibria

Topic 5 – Separate chemistry 1

Topic 6 – Groups in the periodic table

Topic 7 – Rates of reaction and energy changes

Topic 8 – Fuels and Earth science

Topic 9 – Separate chemistry 2

Physics

Topic 1 – Key concepts of physics

Topic 2 – Motion and forces

Topic 3 – Conservation of energy

Topic 4 – Waves

Topic 5 – Light and the electromagnetic spectrum

Topic 6 – Radioactivity

Topic 7 – Astronomy

Topic 8 – Energy - Forces doing work

Topic 9 – Forces and their effects

Topic 10 – Electricity and circuits

Topic 11 – Static electricity

Topic 12 – Magnetism and the motor effect

Topic 13 – Electromagnetic induction

Topic 14 – Particle model

Topic 15 – Forces and matter

How will I be assessed in the subject?

Assessment in KS4 is based around a cycle of skills based tasks that will be assessed each module (these provide formative assessment of the application of understanding needed for the exam) and termly summative tests that assess how well students are recalling key content.

Alongside this there are longer exams which will punctuate key points in the year.

Am I suited to this qualification? (insert title)

Science is a core subject and so is compulsory: However, the separate science option is best suited to those who are achieving high grades in the subject, are interested in the content and keen to study science further.