

Science at Norbury High

Overview

The Science Faculty is committed to ensuring that all students reach their full potential through a rigorous, broad, challenging, enjoyable, adaptable and culturally diverse curriculum. We aspire to nurture students who are skilled critical thinkers, open-minded problem solvers, innovators and team players as well as being kind, caring, resilient and tenacious. We develop students' minds by providing access to a variety of courses that will support their curiosity, creativity, communication and critical thinking. We empower our students to become confident informed citizens who are capable of comprehending, analysing and making well-reasoned judgements about global issues. We work with parents, carers and other stakeholders to achieve the best outcomes for our students. At the conclusion of their secondary education, we expect our students to be capable of applying their scientific knowledge to current issues, making connections between scientific disciplines and pursuing post-secondary education or careers in the fields of science and engineering.

Key Stage 3

Our KS3 science curriculum is adapted from the Kerboodle package of resources matching AQA's KS3 Science Syllabus and Big Ideas principle. All resources have been designed to support our three-year KS3 programme and help prepare students for AQA GCSE 9-1. Complemented by online learning, this provides students with everything they need to introduce and explore the Big Ideas further. This includes access to Kerboodle Online Books, mathematics and literacy activities, and regular auto-marked assessments to help all students make progress.

Year 7 Science

Science in year 7 prepares all students for understanding scientific techniques and safe practice as well as helping them develop experimental skills which underpin the understanding of theoretical constructs.

BIOLOGY – Cells; Structure and function of body systems; Reproduction

CHEMISTRY – Particles and their behaviour; Elements, atoms and compounds; Reactions, Acids and alkalis

PHYSICS – Forces; Sound; Light; Space

Year 8 Science

In year 8 we build on students' knowledge from year 7 and focus on deeper understanding of key scientific ideas and analysis.

BIOLOGY – Health and lifestyle; Biological processes; Ecosystems and adaptation; Inheritance

CHEMISTRY – Periodic table; Separation techniques; Metals and other materials; The Earth

PHYSICS – Electricity and magnetism; Energy; Motion and pressure

Year 9 Science

In year 9 we further build on students' knowledge from years 7 and 8 to focus on deeper understanding of key scientific ideas and analysis.

BIOLOGY – Cells; Cell systems; Fertilisation and implantation; Variation and natural selection

CHEMISTRY – Particle model and state change; Atoms and the periodic table

PHYSICS – Forces and motion; Energy; Waves, sound and light; Electricity and magnetism

KS4 Science

There are three pathways in science. Some students will sit AQA GCSE Separate (Single) Science leading to the triple award and some will also sit AQA GCSE Combined (Trilogy) Science leading to a double award at the end of year 11.

Students who may not be able to access the contents of GCSE Science and/or find it challenging are not left out. They follow the Edexcel Entry Level Certificate in Science course leading to the award of Entry Level Certificates.

The GCSE courses provide students with the opportunity to explore the world around them through inquiry-based teaching and learning. Students are mandated to complete compulsory required practicals which constitute a huge component of the course. They are assessed on the knowledge of 'How Science Works' through required practicals during the GCSE.

AQA GCSE SINGLE (TRIPLE) SCIENCE CONTENTS

Year 10 Science

BIOLOGY PAPER 1 UNITS

Cell Biology

Organisation

Infections and Response

Bioenergetics

CHEMISTRY PAPER 1 UNITS

Atomic Structure and the Periodic Table

Bonding, Structure and the Properties of Matter

Quantitative Chemistry

Chemical Changes

Energy Changes

PHYSICS PAPER 1 UNITS

Energy

Electricity

Particle Model of Matter

Atomic Structure

Year 11 Science

BIOLOGY PAPER 2 UNITS

Homeostasis and Response

Inheritance, Variation and Evolution

Ecology

CHEMISTRY PAPER 2 UNITS

The Rate and Extent of Chemical Change

Organic Chemistry

Chemical Analysis

Chemistry of the Atmosphere

Using Resources

PHYSICS PAPER 2 UNITS

Forces

Waves

Magnetism and Electromagnetism

Space Physics

AQA GCSE SINGLE (TRIPLE) SCIENCE REQUIRED PRACTICAL

Students need to complete 28 required practical tests: 10 in biology, eight in chemistry and 10 in physics. Any aspect from the practical tests may be assessed in the final exams.

AQA GCSE COMBINED (TRILOGY) SCIENCE CONTENTS

YEAR 10

BIOLOGY PAPER 1 UNITS

Cell Biology
Organisation
Infections and Response
Bioenergetics

CHEMISTRY PAPER 1 UNITS

Atomic Structure and the Periodic Table
Bonding, Structure and the Properties of Matter
Quantitative Chemistry
Chemical Changes
Energy Changes

PHYSICS PAPER 1 UNITS

Energy
Electricity
Particle Model of Matter
Atomic Structure

YEAR 11

BIOLOGY PAPER 2 UNITS

Homeostasis and Response
Inheritance, Variation and Evolution
Ecology

CHEMISTRY PAPER 2 UNITS

The Rate and Extent of Chemical Change
Organic Chemistry
Chemical Analysis
Chemistry of the Atmosphere
Using Resources

PHYSICS PAPER 2 UNITS

Forces
Waves
Magnetism and Electromagnetism

AQA GCSE COMBINED (TRILOGY) SCIENCE REQUIRED PRACTICAL

Students need to complete 21 required practical tests: seven in biology, six in chemistry and eight in physics. Any aspect from the practical tests may be assessed in the final exams.

PEARSON EDEXCEL ENTRY LEVEL CERTIFICATE IN SCIENCE

Each qualification is broken into six manageable units; two biology, two chemistry and two physics. Below, you can see how the subject areas are broken up into units relating to each qualification. The method of assessment consists of short unit tests which students can sit when they are ready to and at any time during the course.

PEARSON EDEXCEL ENTRY LEVEL CERTIFICATE IN SCIENCE CONTENTS

YEAR 10

B1A – Cell genetics, inheritance and modification

C1A – Atoms, compounds and states of matter

P1A – Forces, movement and energy

YEAR 11

B1B – Health and disease and medicines

C1B – Separating mixtures, breaking down substances, acids and metals

P1B – Waves and radiation

USEFUL RESOURCES

There are excellent resources available to help your revision. Please visit and use the websites below and also download the apps.

WEBSITES

[Doddle Learn](#): Excellent resource the faculty has subscribed to. Students should know their login details but if you experience any difficulties logging in, please see your science teacher.

[AQA](#): For copies of the syllabuses, past paper questions and more information from AQA, go to: and follow the links to specific subjects.

[BBC Bitesize](#)

[Free Science Lessons](#)

[Pearson Edexcel](#)

APPS

There are several good apps available for you to download including:

Revision Buddies – Large selection of multiple choice questions to choose from

Gojimo – Excellent question-based activities

GCSE 9-1 Scholastic Revision – Excellent revision planning and questions, just choose your subject and you are good to go

Brainscape Smart Flashcards – Excellent revision flashcards