



Northolt High School

# Sixth Form

Curriculum Guide



2021 - 2023

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## Information about our courses

Our sixth form provides students with a personalised and holistic education. Our students have access to a full range of opportunities and our courses aim to equip students with the requisite skills and experience to thrive at university or in employment.

## Courses we offer

This year we are offering students a choice between A Level study, a Level 3 BTEC Extended Diploma in Science and a Level 2 BTEC Diploma in Science. These courses are academically demanding, rigorous and highly regarded by universities and employers. The level 2 BTEC Science course is a one year course that offers a pathway into Level 3 study or further education and employment.

These courses suit different students so it is important that both students and parents are aware of the demands of each qualification along with their assessment methods.

We are committed to ensuring that students are given the best support and guidance in order for them to make the right choices for their post 16 studies. The section below provides a brief outline of our courses. Students will have a further opportunity to discuss these and ask questions when they have an individual interview about their sixth form options.

The courses on offer have been selected based on initial student interest and student numbers will dictate which of these will be timetabled. We will keep students and families informed about timetabling decisions and expect to be in a position to confirm courses by February 2021. As with

all post-16 providers, offers are made on a conditional basis and are dependent on students achieving the entry requirement and sufficient numbers enrolling on each course.

## A Level study

Students will choose 3 or 4 A Levels depending on their GCSE grades. After a major change in A Levels in 2014, these courses are now linear - studied over two years with examination in the summer of the second year.

Our entry requirement for A Level study **is 5 GCSE grades at grade 5 or above and a 6 in the subject you wish to study.** Please see the individual course guidelines for specific entry requirements.

## BTEC Level 3 Extended Diploma

These qualifications are career-based and equip students with specialist knowledge and practical skills in specific areas, which are needed to move on to higher education or go straight into employment. Some of the BTEC courses offer work experience which adds a more vocational aspect to the qualification and this makes our students extremely employable due to this unique combination of skills, experience and knowledge.

All new National BTEC qualifications use external and internal assessment methods which are designed to give flexibility to students. Examinations are now a key part of the syllabus. The BTEC National Level 3 Extended Diploma is equivalent to 3 A-Levels and is widely recognised by universities and employers. Most of our students who have studied the BTEC Level 3 Extended Diploma progress onto university courses.

Our entry requirement for BTEC level 3 study **is 5 GCSE grades at grade 5 or above and a grade 5 in Science.**

## BTEC Level 2 Diploma

These qualifications cover the same scope as the level 3 Diploma above but are designed for students who need more time to gain the skills required for a level 3 qualification. Similar to the level 3 course this BTEC uses both internal and external assessment methods which are designed to give flexibility to students.

The BTEC Level 2 Diploma is equivalent to 4 GCSEs. Students following this course will be expected to study GCSE Maths and English language with the intention of securing a grade 4 during the academic year.

## Sixth Form Curriculum

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*Seizing opportunity*

*Instilling ambition*

*Realising potential*

At the heart of all students' Sixth Form curriculum is their studies; A Levels and BTEC. In order to ensure that our students' learning development is maintained and broadened, we have introduced a Sixth Form curriculum and this includes:

1. 3 A Levels or BTEC Level 3 Extended Diploma;
2. Volunteering – 2 hours a week (within school or externally);
3. Promotion of work experience for every student.
4. PSCH EE programme.

## Voluntary sessions

Sixth form students will be encouraged to give something back to their school and their local community. Students will be required to undertake between one and two hours of voluntary work per week. This could be arranged outside school time in different areas (for example charity shops) or within the school. There will be opportunities where students work as teaching assistants in classes, helping younger students through the 'Reading Budding' Scheme, help with open evenings or other school events.

## Enrichment and opportunities

Students will be taught independent learning skills, which the school espouses and will provide a further bridge to university study. Students will be encouraged to take part in activities such as Young Enterprise, Engineering Society, Reading University Scholars Programme, King's College University Plus Programme, amongst many others. The university sessions will give students a real taste of life as a university student and an insight into studying at degree level. It seeks to challenge students academically. In addition, students will also be given many opportunities to participate in educational visits throughout the two years at our school, sometimes to support specific elements of the curriculum or to encourage wider social, cultural and sporting interests.

Students will be required to participate in the co-curricular activities offered by different departments, for example The Debating Society. This will develop students' confidence, advocacy and interpersonal skills. A series of lectures/ assemblies will also be run with a wide range of speakers covering general interest topics as well as a number of talks from academics and ex students to give an insight into what their subject will involve at university.

During the PSCH EE sessions, students will be taught life skills, how to manage their finance, first aid training and independent study skills. We use the VESPA model (Vision, Effort, Systems, Practice, Attitude) to coach our students individually to develop effective study habits. Students will also be assigned mentors to assist with their UCAS personal statement and application to universities. In addition, we support our students with mock interviews and prepare them for admission tests.

## A Levels

The following subjects are currently being offered to students and will be on offer for students enrolling in September 2021.

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# Biology

## Why choose Biology?

Biology A Level is ideal for students who would like to pursue a career in medicine, engineering, technology, health care and pharmacy. All 3 scientific disciplines at A Level now require students to pass on-going practical assessments. All students have opportunities throughout the 2 years to complete these core practicals.

## What will you be learning?

You will be following the Salters-Nuffield in Biology syllabus.

### Year 12:

- Biological molecules
- Cells and viruses
- Classification and biodiversity
- Exchange and transport

### Year 13:

- Energy for biological processes
- Microbiology and pathogens
- Modern genetics
- Origins of genetic variation and speciation
- Control systems
- Ecosystems

## How will you be assessed?

A Level examination:

| Paper 1              | Paper 2              | Paper 3              |
|----------------------|----------------------|----------------------|
| 2 hours<br>100 marks | 2 hours<br>100 marks | 2 hours<br>100 marks |
| 30% of A levels      | 30% of A levels      | 40% of A levels      |

## Future Pathways

A Level Biology is well respected by all universities. Many who take it progress on to courses in Medicine, Dentistry, Veterinary Science, Physiotherapy and Pharmacy, Biology also offers access to courses and careers in Biochemistry, Marine Biology, Biomedical Engineering and Forensic Science.

## Entry Criteria

5 GCSEs at Grade 5 or above, including a grade 6 in Science.



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# Business Studies

## Why choose Business Studies?

Business Studies A-level is a great choice for anyone interested in the world of commerce and entrepreneurship. It's a great way to prepare for university courses in the fields of business and management, and to equip yourself with the know-how to start up your own business or follow a career in finance, accounting, marketing or management post university.

Through Business Studies A-level, you will engage with the world of business through the context of current business developments and real business situations. You'll learn how management, leadership and decision-making can improve performance in marketing, operational, financial and human resources. You will also explore the interrelated nature of business activities and how they affect businesses, be they large or small, UK or internationally focussed and in different sectors such as service or manufacturing.

## What will you be learning?

| Component  | Assessment                     |
|--|--------------------------------|
| Paper 1: Marketing, people and global businesses             | 35% of the total qualification |
| Paper 2: Business activities, decisions and strategy         | 35% of the total qualification |
| Paper 3: Investigating business in a competitive environment | 30% of the total qualification |

## Future Pathways

A-level Business Studies opens up many options for students at university, and there are many courses available with permutations of Business/Management/Administration/ Accounting and Finance.

Business and Management graduates typically progress to careers in areas such as business development, marketing, recruitment and banking, although plenty of other options are available.

## Entry Criteria

5 GCSEs at Grade 5 or above.

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# Chemistry

## Why choose Chemistry?

Chemistry is one of the most demanding and challenging A Level courses but one that offers many different degree and vocational pathways. Pharmaceuticals, engineering and medicine are areas that are vastly developing and chemistry is at the forefront of all of these. Both practical and theoretical skills are used and developed during the 2 year course and anyone who is confident in their mathematical skills and interested in how everything around us works should consider taking A Level Chemistry.

## What will you be learning?

You will be following the Edexcel Advanced GCE in Chemistry syllabus.

| <b>1<sup>st</sup> Year Course Overview:</b>   | <b>2<sup>nd</sup> Year Course Overview:</b>  |
|---|--|
| Atomic structure and Periodic Table<br>Bonding and structure<br>Formulae and equations<br>Redox I<br>Inorganic chemistry (Gp 2 & 7)<br>Organic chemistry I<br>Modern analytical techniques I<br>Energetics I<br>Kinetics I<br>Equilibrium I | Kinetics II<br>Equilibrium II<br>Acid-base equilibria<br>Energetics II<br>Organic chemistry II<br>Modern analytical techniques II<br>Redox II<br>Transition metals<br>Organic chemistry II |

## How will you be assessed?

### 1<sup>st</sup> Year examination:

| <b>Paper 1: 1h 30mins (80 marks)</b>   | <b>Paper 2: 1h 30mins (80 marks)</b>  |
|--|---|
| Inorganic and some physical chemistry, | Organic and some physical chemistry, with some questions on core practicals |

## A Level examination:

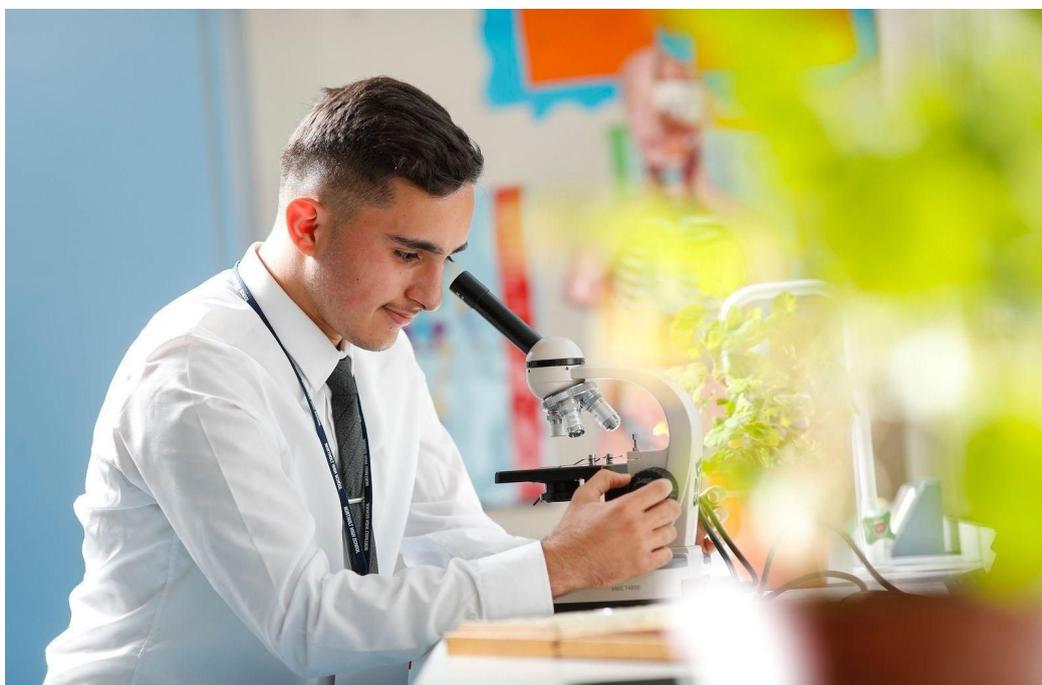
| Paper 1                                    | Paper 2                                  | Paper 3   |
|--|--|---|
| Inorganic and some physical plus AS topics | Organic and some physical plus AS topics | All topics – practical questions make up half the paper |
| 1h 45mins<br>90 marks                      | 1h 45mins<br>90 marks                    | 2h 30mins<br>120 marks                                  |
| 30% of A levels                            | 30% of A levels                          | 40% of A levels   |

## Future Pathways

Chemistry A Level is a must for Medicine, Dentistry and Veterinary Science. Due to its logical and practical aspects, it is a highly regarded subject and will be considered for all engineering and medical based degrees.

## Entry Criteria

5 GCSEs at Grade 5 or above, including a grade 6 in Science.



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# Computer Science

## Why choose Computer Science?

Computer Science is a practical subject where students can apply the academic principles learned in the classroom to real-world systems. It's an intensely creative subject that combines invention and excitement, looking at the natural world through a digital prism. Computer Science values computational thinking, helping students to develop the skills to solve problems, design systems and understand the power and limits of human and machine intelligence.

## What will you be learning?

The specification will:

- Focus on programming, building on our GCSE Computing and emphasise the importance of computational thinking as a discipline.
- Have an expanded maths focus, much of which will be embedded within the course.
- Allow students to apply the academic principles learned in the classroom to real world systems in an exciting and engaging manner.

## How will you be assessed?

| Paper  | Assessment   |
|--|--|
| <b>Paper 1</b> – this paper tests a student's ability to program, as well as their theoretical knowledge of Computer Science   | On Screen exam – 2 hours<br>30 minutes<br>40% of the total qualification |
| <b>Paper 2</b> – this paper tests students subject knowledge   | Written exam – 2 hours 30 mins<br>40% of the total qualification         |
| <b>Paper 3</b> – the non-exam assessment assesses a student's ability to use the knowledge and skills gained through the course to solve or investigate a practical problem. | Non-exam assessment<br>20% of the total qualification                    |

## Future Pathways

Computer Science A Level will give students a clear progression into higher education, as the course was designed after consultation with members of BCS, CAS and top universities.

## Entry Criteria

5 GCSEs at Grade 5 or above, including a grade 6 in Science and Mathematics.

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# Mathematics

## Why choose Mathematics?

Mathematics is the study of Quantity (Numbers), Structure (Algebra), Space (Geometry), and Change (Calculus). In mathematics we use patterns to formulate new conjectures (conclusions), and then prove the truth or falsity of these new conjectures using mathematical proof. In fact when mathematical structures are good models of real phenomena, then mathematical reasoning can provide insight or predictions about nature.

Pure Mathematics is the study of abstract entities with respect to their intrinsic nature. One central concept in pure mathematics is the idea of generality, where generality can facilitate connections between different branches of mathematics.

Mechanics is an area of science concerned with the behaviour of physical bodies when subjected to forces or displacements; it is a branch of classical physics that deals with particles that are either at rest or are moving with velocities significantly less than the speed of light.

Statistics is the study of the collection, analysis, interpretation, presentation, and organisation of data; it deals with all aspects of data including the planning of data collection in terms of the design of surveys and experiments.

## What will you be learning?

In year 12 students will study Pure Mathematics in Year 1 and Statistics and Mechanics Year 1. In year 13 students will study Pure Mathematics Year 2 and Statistics and Mechanics Year 2. Students will complete all assessments in May/June of year 13. Calculators can be used in the assessments.

## How will I be assessed?

| Paper                                 | Assessment  |
|---------------------------------------|---|
| <b>Paper 1:</b><br>Pure Mathematics 1 | Written exam – 2 hours<br>33.33% of the total qualification |
| <b>Paper 2:</b><br>Pure Mathematics 2 | Written exam – 2 hours<br>33.33% of the total qualification |

|   |   |
|---|---|
| <p><b>Paper 3:</b><br/>Statistics and<br/>Mechanics</p> | <p>Written exam – 2 hours<br/>33.33% of the total qualification<br/>Paper 3 will contain questions on topics from the Statistics content in Section A and Mechanics content in Section B.</p> |
|---|---|

## Future Careers and Pathways

A Level Mathematics is a versatile qualification that is well-respected by employers and higher education providers. A Level Mathematics is also essential or desirable for a wide range of degree courses including economics, computing, social sciences and business. It has on-going applications in Engineering, Financial Systems and Online Purchasing systems. It will be beneficial for the study of Chemistry, Biology, Geography and Psychology. Maths is the only A Level proven to increase earnings in later life - by an average of 10%.

## Entry requirements

5 GCSEs at Grade 5 or above, including a Grade 6 in GCSE Maths.



# Physics

## Why choose Physics?

A Level Physics allows students to study natural phenomena and appreciate how fundamental Science works. In the first year, students will explore in more depth: mechanics, optics, electricity, materials and waves. In the second year students are introduced to topics including fields, thermal energy, astrophysics and quantum phenomena.

Physics deals with profound questions about the nature of the universe and some of the most important practical, environmental and technological issues of our time. Students with a genuine desire for exploring these issues will find A Level Physics a challenging and rewarding experience involving experiments, mathematical theory and conceptual analysis. Most students who study Physics usually opt to study Mathematics as well.

## What will you be learning?

You will be following the Edexcel Advanced GCE in Physics syllabus.

|  |  |
|--|--|
| <b>AS Level Course Overview:</b> <ul style="list-style-type: none"><li>• Working as a Physicist</li><li>• Mechanics</li><li>• Electric circuits</li><li>• Materials</li><li>• Waves and the particle nature of light</li></ul> | <b>A Level Course Overview:</b> <ul style="list-style-type: none"><li>• Further mechanics</li><li>• Electric and magnetic fields</li><li>• Nuclear and particle physics</li><li>• Thermodynamics</li><li>• Space</li><li>• Nuclear radiation</li><li>• Gravitational Fields</li><li>• Oscillations</li></ul> |
|--|--|

## How will you be assessed?

### AS Level examination:

| Paper 1  | Paper 2  |
|--|--|
| Covers Mechanics and materials and includes questions on core practicals | Electrical circuit and Waves and the particles includes questions on core practicals |

|                      |                      |
|----------------------|----------------------|
| 1h 30mins = 80 marks | 1h 30mins = 80 marks |
|----------------------|----------------------|

### A Level examination:

| Paper 1  | Paper 2   | Paper 3   |
|--|---|---|
| Further mechanics<br>Fields<br>Nuclear and<br>particle physics<br>plus AS topics 1 and 2 | Thermodynamics and space<br>Nuclear radiation<br>Oscillations plus AS topics 3<br>and 4 | All topics – practical<br>questions make up half<br>the paper |
| 1h 45mins = 90 marks   | 1h 45mins = 90 marks  | 2h 30mins = 120 marks   |
| 30% of A levels  | 30% of A levels   | 40% of A levels   |

## Future Pathways

Physics gives you endless opportunities as it is widely recognised and is valuable for many careers such as: Astronomy Research, Engineering, Metrology, Finance, Medicine and Law, as well as being the basis of acceptance for any Physics degree. It is an essential requirement for many Engineering degrees, desirable for University finance courses and useful in medical applications.

There is a shortage of Physics graduates nationally and this is even more evident in London where there is a significant skills gap in this area. Therefore Physics graduates are well placed in any future job market.

## Entry Criteria

5 GCSEs at Grade 5 or above, including a grade 6 in Science.



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# BTEC Level 3 National Extended Diploma

# Applied Science

## Why choose Applied Science?

The BTEC level 3 National Diploma/Diploma in Applied Science is a 2-year well balanced practical and theoretical course which covers Science in applied settings such as laboratory work, legislation, research and scientific investigations.

## What will you be learning?

The course covers all three disciplines of Biology, Chemistry and Physics. You will develop knowledge of how theoretical science applies in a working environment and how it impacts the world around us.

## How will I be assessed?

### Written theory exams (2 Units):

**Paper 1** – structure and bonding in applications of science, production and uses of substances in relation to properties, cell structure and function, cell specialisation, tissue structure and function, working with waves, waves in communication and use of electromagnetic waves.

**Paper 2** - properties, uses and production of some inorganic compounds; structures, reactions and properties of commercially important organic compounds; enthalpy changes; the cardiovascular system; ventilation and gas exchange in the lungs; urinary system structure and function;

*Set and marked by Pearson*

### Practical task and case study (2 Units):

External exams – extended writing, graph drawing and analysis of practical tasks. *Set and marked by Pearson*

### Assessments (3 mandatory units and 5 optional units):

*In class assignments, marked by teachers, verified by Pearson*

**Overall external exams count for 42% of the course.**

## Future Pathways

A BTEC Level 3 National in Applied Science can take you into a variety of degree pathways including and not limited to Sport Science, Pharmaceutical Science, Biomedical Science, Clinical Science, Law, Nurse, Midwife, Research, Paramedic, Social Worker, Working with vulnerable adults or in Children's services and Teacher. You also can apply for internships, apprenticeships and joining the forces such as RAF.

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## Entry Criteria

5 GCSEs at Grade 5 or above, including a grade 5 in Science.

# BTEC Level 2 Diploma in Applied Science

## Applied Science

### Why choose Applied Science?

This level 2 course is designed to inspire and enthuse learners to consider a career in the science sector. It gives learners the opportunity to gain a broad understanding and knowledge of, and skills in, the science sector e.g. practical & investigative skills and knowledge of areas of biology, chemistry and physics. You will be supported in progression to a more specialised level 3 vocational or academic Science course or an apprenticeship. The course will give learners the potential opportunity, in due course, to enter employment within a wide range of job roles across the science sector.

### What will you be learning?

The course covers all three disciplines of Biology, Chemistry and Physics. You will develop knowledge of how theoretical science applies in a working environment and how it impacts the world around us.

### How will I be assessed?

This course is assessed by a mixture of internally and externally assessed coursework units completed by students in school.

### Future Pathways

A BTEC Level 2 Diploma in Applied Science can take you into a variety of career pathways including and not limited to Sport Science, Pharmaceutical Science, Biomedical Science, Clinical Science, Law, Nurse, Midwife, Research, Paramedic, Social Worker, Working with vulnerable adults or in Children's services and Teacher. You also can apply for internships, apprenticeships and joining the forces such as RAF.

### Entry Criteria and Maths and English resits

5 GCSEs at Grade 3 or above, including a grade 3/3 in Science.

Students who have not secured a grade 4 in English Language or Mathematics will be given the opportunity to resit these examinations following further study throughout the year.



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