Loreto sixth form college

Ofsted Outstanding Provider

Science, Sport & Mathematics

- Applied Science
- Biology
- Chemistry
- Computer Science
- Computing
- Further Mathematics
- Health and Social Care
- IT
- Mathematics
- Physics
- Sport

Science, Sport & Mathematics

Our purpose built science labs, up-to-date computer suites and well-resourced teaching rooms enable all subjects to deliver impactful lessons. Our dedicated, motivating teachers ensure students make fantastic progress, inspiring a large percentage of students to study our subjects at university.

Mrs Knowles, Head of Faculty – Health and Science
Rev Petticrew, Head of Faculty – Computing, Maths and Physics

Applied Science

Applied Science is an excellent starting point for any student who sees their future career in science. The course covers a wide range of exciting topics across Biology, Chemistry and Physics including discovering how you control your movements, looking at how much energy is contained in food and fuels, and finding out how Bluetooth works.

Throughout the course you will have the opportunity to perform a variety of biology, chemistry and physics experimental work. With this you will learn how to work safely and confidently within a laboratory environment and to use maths and statistics to analyse experimental data.

FUTURE CAREER OPPORTUNITIES

Applied Science students go on to study degree courses such as: nursing, midwifery, speech & language therapy, sports therapy, paramedic science, pharmaceutical science, physiotherapy, forensic science and engineering related courses.

COURSE

Pearson BTEC National Level 3 Alternative Academic Qualification in Applied Science

ASSESSMENT

Coursework and exams

Biology

In A level Biology we study a wide range of topics. These topics are often similar to GCSE topics but we go into much deeper understanding. Some topics include: enzymes, cells, transport in plants and animals, gas exchange, nervous system, immunology, microbiology, inheritance, cell division, populations and reproduction.

We undertake a large number of practical experiments alongside teaching. Some of these experiments include microscope work, dissections, sampling field work and the use of a colorimeter. Practical work will be assessed in your exams and so we will practice practical based exam questions throughout the year. There are lots of great extracurricular opportunities in Biology including the Biology photography competition, the Biology Olympiad and a range of national and international field trips.

FUTURE CAREER OPPORTUNITIES

Biology students go on to pursue a wide variety of related destinations. These include degree courses in medicine, dentistry, veterinary science, biomedical science, biochemistry, zoology, animal behaviour, marine biology, environmental science, physiotherapy and sports science. Many careers within research, healthcare and conservation are accessible through studying biology.

COURSE

Eduqas A level Biology

ASSESSMENT

Exams and practical endorsement

Chemistry

A level Chemistry builds on ideas that you have studied in school. In the first year of study you will develop your knowledge and understanding of atomic structure and ideas on which numerical work and inorganic chemistry are based.

It will give you a foundation for studying the functional groups of molecules and their reactions and raise issues about applying organic chemistry to everyday life. We also cover some fundamental physical chemistry involving energy calculations, rates of reactions and equilibria. In the second year you will study more organic, physical and inorganic chemistry with a strong emphasis on analysis and problem solving.

Practical skills are developed throughout the two years with a wide range of practicals being carried out, and are assessed as part of the written examinations and also via a separate standalone assessment completed in the second year of study.

FUTURE CAREER OPPORTUNITIES

An A level in Chemistry will allow you to pursue any number of avenues such as medical and veterinary courses or other science careers/ courses like forensics and geology. You may even decide to change tack completely and go on to study law or accountancy among other options.

COURSE

OCR A level Chemistry

ASSESSMENT

Exams and practical endorsement

Computer Science

A level Computer Science focuses on the fundamental concepts of computer architecture and the developments of software. The theory component of the course investigates topics such as hardware, networking, algorithms, data structures and computational mathematics. The coursework component is weighted at 20% and students are required to undertake an in depth programming project to solve a realistic problem.

You will develop analytical and problem solving skills in addition to; analysis, design, software development, documentation, testing and evaluation of a system leading to a solution to the given problem.

Our state of the art computing suites provide great opportunities for your development and we have tailor made resources for the delivery of the course, with excellent support from the staff and through the intranet.

FUTURE CAREER OPPORTUNITIES

Many of our students go on to university or degree apprenticeships in engineering, computer science and software engineering.

COURSE

OCR A level Computer Science

ASSESSMENT

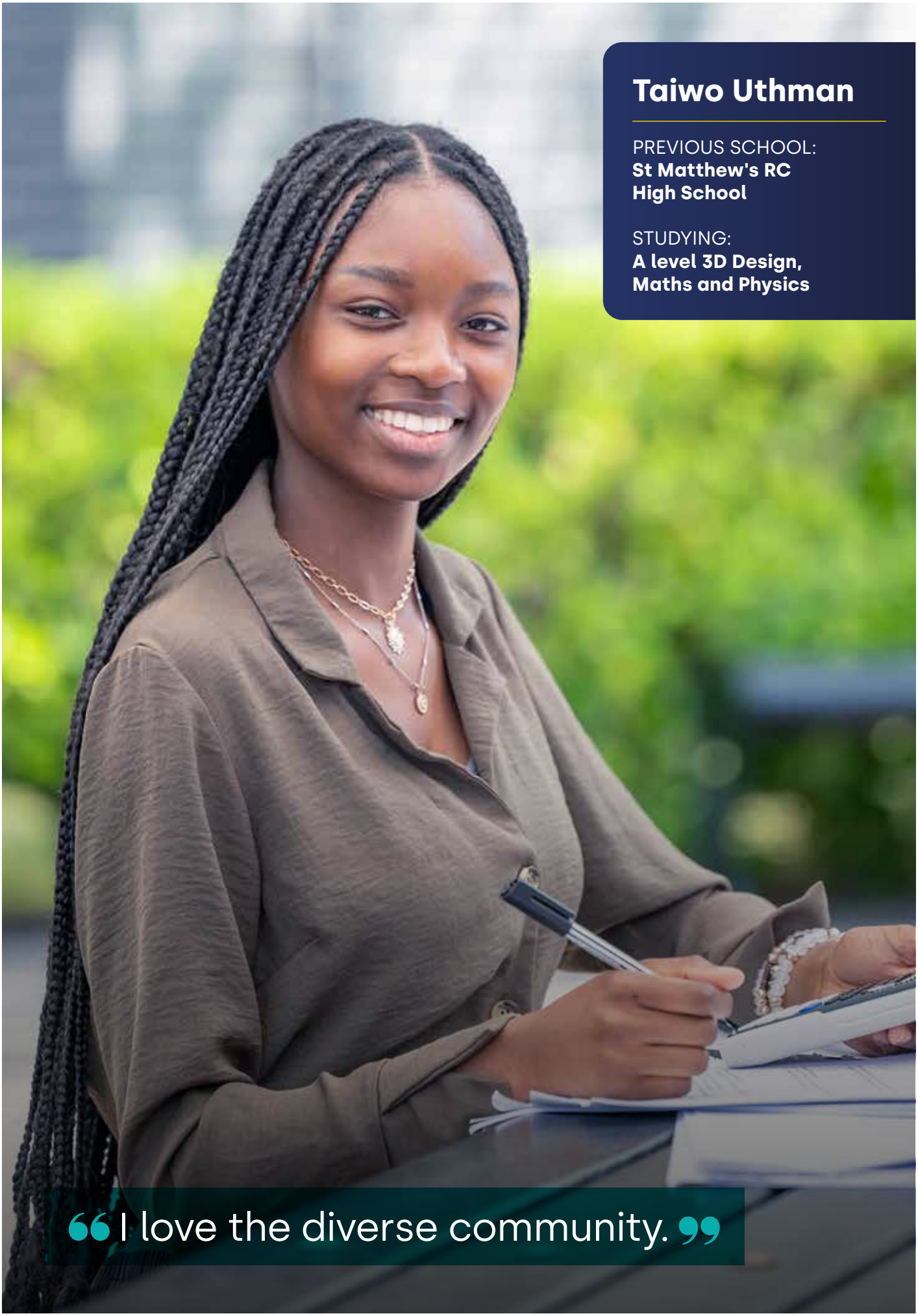
Coursework and exams

Harriet Megson

PREVIOUS SCHOOL:
Priestnall School

STUDYING:
A level Biology, Chemistry and Maths

“Loreto has such a friendly environment, where I’m encouraged to succeed in all areas.”



Taiwo Uthman

PREVIOUS SCHOOL:
St Matthew's RC High School

STUDYING:
A level 3D Design, Maths and Physics

"I love the diverse community."

Computing

BTEC Extended Diploma in Computing is a two year course that is equivalent in size to 3 A levels. This computing course requires students to learn problem solving skills and to practice coding to solve ICT related problems that people as well as organisations face in today's society. You will develop skills in project management, IT security, systems analysis, databases and graphics to mention but a few topics. You will also learn fundamentals of Computer Science and develop coding skills using Python, HTML, CSS and PHP languages.

There are a total of 13 units to be studied, 4 of which are externally assessed (worth 42% of your final grade). Units 1 and 2 are formal written exams; Units 3 and 4 are assessed using a controlled/timed practical task that is set and marked by the exam board. 9 units are internally assessed via course work and practical tasks (worth 58% of your final grade). Students are expected to be organised as this course combines external exams plus a lot of coursework, so it will be demanding.

FUTURE CAREER OPPORTUNITIES

On successful completion of your BTEC Extended Diploma you can progress to higher education and study a degree in a Computing area. You could also study a related vocational area such as Business Studies, Accountancy or Creative Media. Some students will go straight into employment or an apprenticeship.

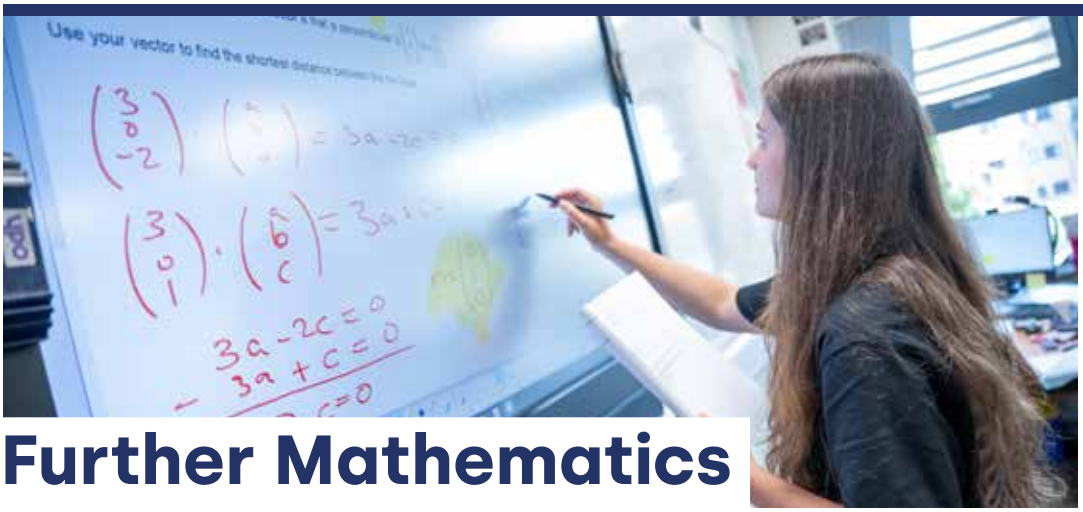
COURSE

Pearson BTEC Level 2 Extended Certificate in ICT

Pearson BTEC Level 3 Extended Diploma in Computing

ASSESSMENT

Coursework and exams



Further Mathematics

A level Further Maths continues to build on the maths learnt in A level Maths, exploring more complex algebra and calculus as well as building on the applied maths. The two A levels are taught together so the students get to experience some further maths topics early in the course like complex numbers and roots of polynomials. Students will experience new topics such as De Moivre's Theorem and matrices that they have not met before in GCSE, as well as building on their prior knowledge of topics like trigonometry into the calculus of inverse trigonometry and hyperbolics. In addition, students get to develop their use of pure mathematics in a more applied setting such as the use of differential equations in mechanics.

Students will develop excellent problem-solving skills and be able to apply their gained knowledge in various scenarios. In addition, students will be able to represent their work in a logical and well thought out manner.

FUTURE CAREER OPPORTUNITIES

The careers students can go in to with Further Maths and Maths A level are wide ranging, as it is a strongly facilitating subject that is desirable in many fields. These include engineering, computing, physics, accountancy, banking, law, chemistry and economics.

COURSE

Edexcel A level Further Maths

ASSESSMENT

Exams

Health and Social Care

This subject combines elements of a range of interesting topics that explore both Health and Social Care in private and public sectors. Examples of the modules you will study for the AAQ course include; Human Lifespan and Development, Human Biology and Health, Principles of Health and Social Care Practice and Safe Environments in Health and Social Care. For the Extended Diploma you will study more units such as Anatomy and Physiology, Sociological and Psychological Perspectives as well as undertaking 100 hours of work experience.

You will gain a nationally recognised, vocationally specific qualification, preparing you for employment in the health or social care sector or for progression to university-level study. It equips you with a variety of skills, personal qualities and attributes essential for success in the workplace and beyond.

FUTURE CAREER OPPORTUNITIES

This subject is ideal for students interested in careers within the caring professions. It opens pathways to a wide range of degree programmes and careers such as nursing, midwifery, social work, paramedics, speech and language therapy, psychology and health and social care management.

COURSE

Pearson BTEC Level 2 Extended Certificate

Pearson BTEC Level 3 National Alternative Academic Qualification

Pearson BTEC Level 3 National Extended Diploma

ASSESSMENT

Coursework and exams

IT

The Cambridge Advanced Level 3 Alternative Academic Qualification in IT is suitable for students who are interested in how data and information are changing the modern world. It's also a great choice for those who are interested in computers, but do not want to learn to code. The course is assessed by exam and coursework components. The three coursework assignments focus on spreadsheets, data visualisation and databases. For each one, you'll learn practical skills and then tackle a scenario set by the exam board.

You'll work independently and present your assignment in an extended report. In the theory units you will firstly learn about the basics of data analytics. In year two, you'll learn about 'big data' and machine learning, concepts which are transforming business, science, government and entertainment. This makes CTEC IT an excellent companion for a wide range of other A level and vocational subjects.

FUTURE CAREER OPPORTUNITIES

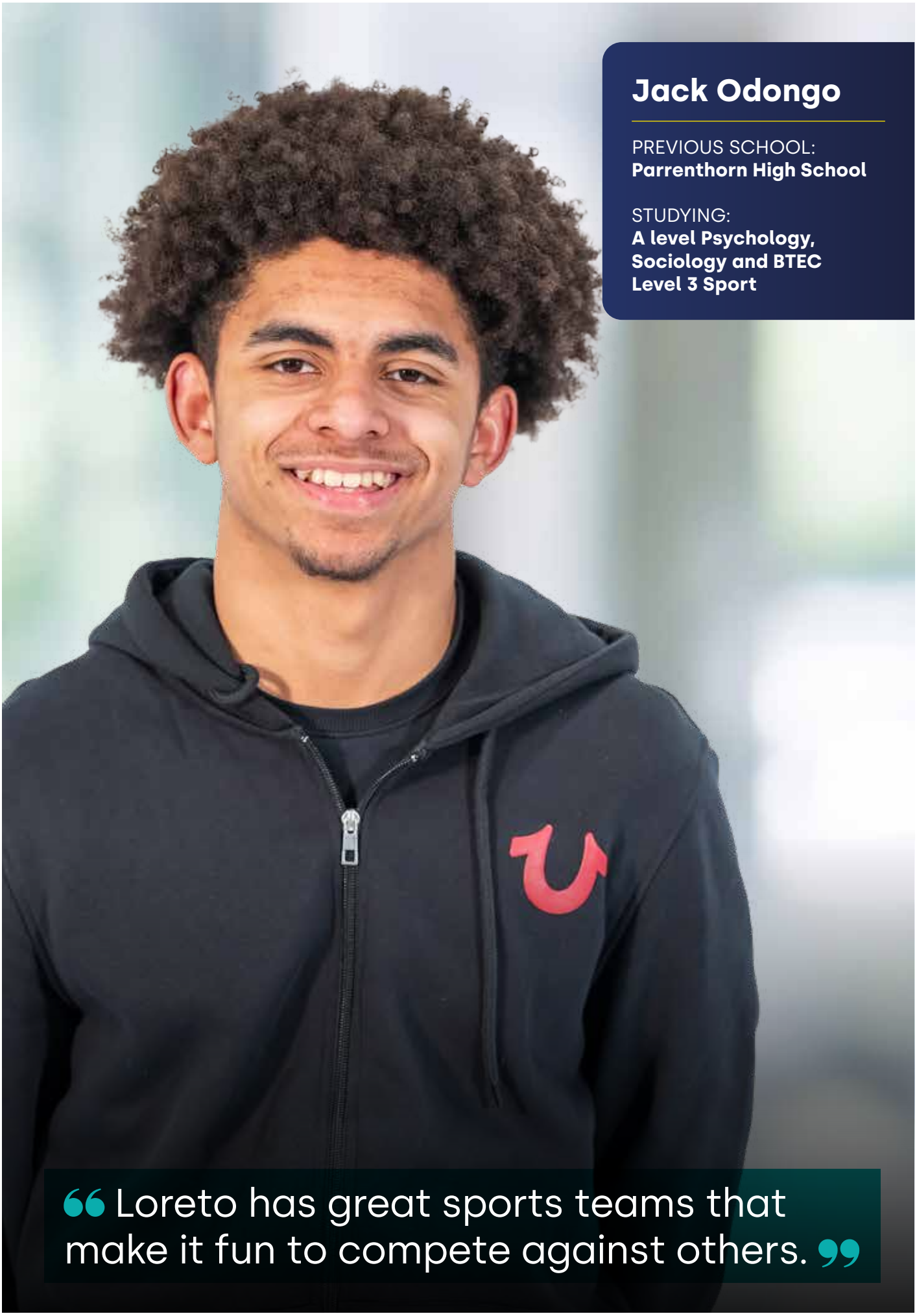
Some students go on to study information systems or other computer related courses at university, whilst many IT students choose the course to complement their other subjects. IT is useful for business, accounting, law, science, teaching and humanities.

COURSE

Cambridge Advanced Level 3 Alternative Academic Qualification in IT

ASSESSMENT

Coursework and exams

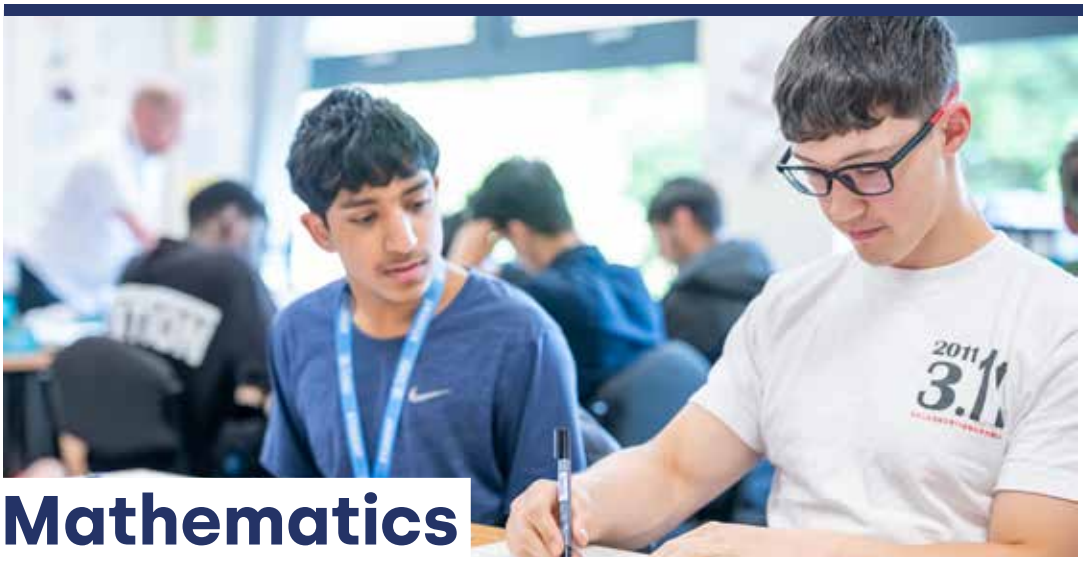


Jack Odongo

PREVIOUS SCHOOL:
Parrenthorn High School

STUDYING:
A level Psychology, Sociology and BTEC Level 3 Sport

“Loreto has great sports teams that make it fun to compete against others.”



Mathematics

A level Maths is a versatile, facilitating A level for those students who really enjoy solving equations, drawing graphs and working with algebra. Pure mathematics contributes two-thirds of the course and involves primarily mathematical proof, geometry and algebra. The remaining third of the course is split evenly between statistics and mechanics (the study of how objects move).

You will develop your logical, analytical, interpretative and problem-solving skills to gain technical knowledge and highly transferable employability skills. Through group work, you will also improve your social and communication skills.

Maths goes well with a high number of other subject qualifications. It is a pre-requisite of most Engineering and Computer Science based university courses. Maths also goes extremely well with most Social Science courses such as Geography, Psychology, Accounting, Economics and Business Studies.

FUTURE CAREER OPPORTUNITIES

Degree choices where A level Mathematics is an essential requirement include actuarial science, engineering, economics, mathematics, physics and statistics. There are many well-paid careers which follow on from A level Mathematics: engineer, actuary, quantitative analyst, economics/ financial adviser, accountant, cryptographer (decoding and encoding information), computer animator, and many more.

COURSE

AQA A level Maths

ASSESSMENT

Exams

Physics

A level Physics is an exciting course which can offer you huge opportunities for your future. Physics will inspire you to see the world around you in a totally new way. An A level in Physics shows you are confident with both problem solving and scientific thinking, and are good at working with numbers. Physics will challenge you to think about the world you live in and explain why and how things happen.

In Physics you'll study topics you may be familiar with, such as mechanics, materials and waves, but in more detail and more focus on the maths behind them. You'll also study new topics such as particle physics, quantum mechanics, radioactivity, gravitational fields, astronomy and engineering.

Students have taken part in a range of extracurricular opportunities including the British Physics Olympiad competitions, the Institute of Physics Poster competition and attended IoP Manchester lectures.

FUTURE CAREER OPPORTUNITIES

The vast majority of students pursue a science or engineering based courses such as Mechanical Engineering or Aeronautical Engineering, with some as varied as Robotics or Aviation Technology.

COURSE

AQA A level Physics

ASSESSMENT

Exams and practical endorsement

Sport

At Loreto we offer three qualifications from the BTEC Level 3 Nationals in Sport suite. The Extended Diploma (equivalent to 3 A levels), Diploma (2 A levels) and Extended Certificate (1 A level). All three qualifications offer a wide range of assessment methods including written reports, presentations, scenario tasks and written exams.

You'll study a wide range of different topics including anatomy and physiology, and fitness training and programming for health, sport and wellbeing.

Students will be required to be motivated to work consistently and independently to achieve the requirements of the qualification. With a range of assessment methods being used, students will develop their organisation, presentation and revision skills. Students will be required to interact with a variety of people whilst completing the qualification and will therefore develop their communication and customer service skills while working with clients.

Football is one of the many sport Enrichments available at Loreto

FUTURE CAREER OPPORTUNITIES

Many students progress onto university courses such as: Physical Education, Coaching and Sports Development, Leisure Management, Sport and Exercise Science, Sports Rehabilitation and many others. Students also chose to pursue careers in a range of areas including: health and lifestyle services, sports development, sports rehabilitation, sports coaching or as a sports performer.

COURSE

Pearson BTEC Level 3 Extended Certificate

Pearson BTEC Level 3 Diploma

Pearson BTEC Level 3 Extended Diploma

ASSESSMENT

Coursework and exams

Loreto sixth form college

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The Quality in Careers Standard

Manchester Catholic Partnership

disability confident COMMITTED