



The National
**Mathematics
and Science**
College



ASIA 2025





WHAT THE EXPERTS HAVE SAID

WHAT IS OUR MISSION?

“ TO EMPOWER EXCEPTIONAL YOUNG PEOPLE TO PUSH THE BOUNDARIES OF MATHEMATICS AND SCIENCE SO THAT THEY CAN CHANGE THE WORLD.”



TOP TEN UK AND TOP OXBRIDGE 2024



FOURTEEN OXFORD & CAMBRIDGE OFFERS IN 2024
OVER 25% OF OUR COHORT...

The National Mathematics and Science College

THE ONLY IN SCHOOL IN THE UK **DEDICATED ENTIRELY TO STEM**

- > We prepare our students for academic life at top universities
- > We score, per capita, more highly than any other school in the UK in Mathematics and Science Olympiads
- > Focus on 'Practicals', much to the joy of our students
- > We set no limit on how fast you can progress, we go beyond the A level curriculum



OUTSTANDING RESULTS



The National
**Mathematics
and Science**
College

RECORD A LEVEL RESULTS-

83.4% A*/A

**WITH 55% OF ALL RESULTS A*
2024**



INDEPENDENT SCHOOLS OF THE YEAR 2023

- > *NatMatSci wins 'Best New Initiative' award*
- > *STEM Communication Programme*



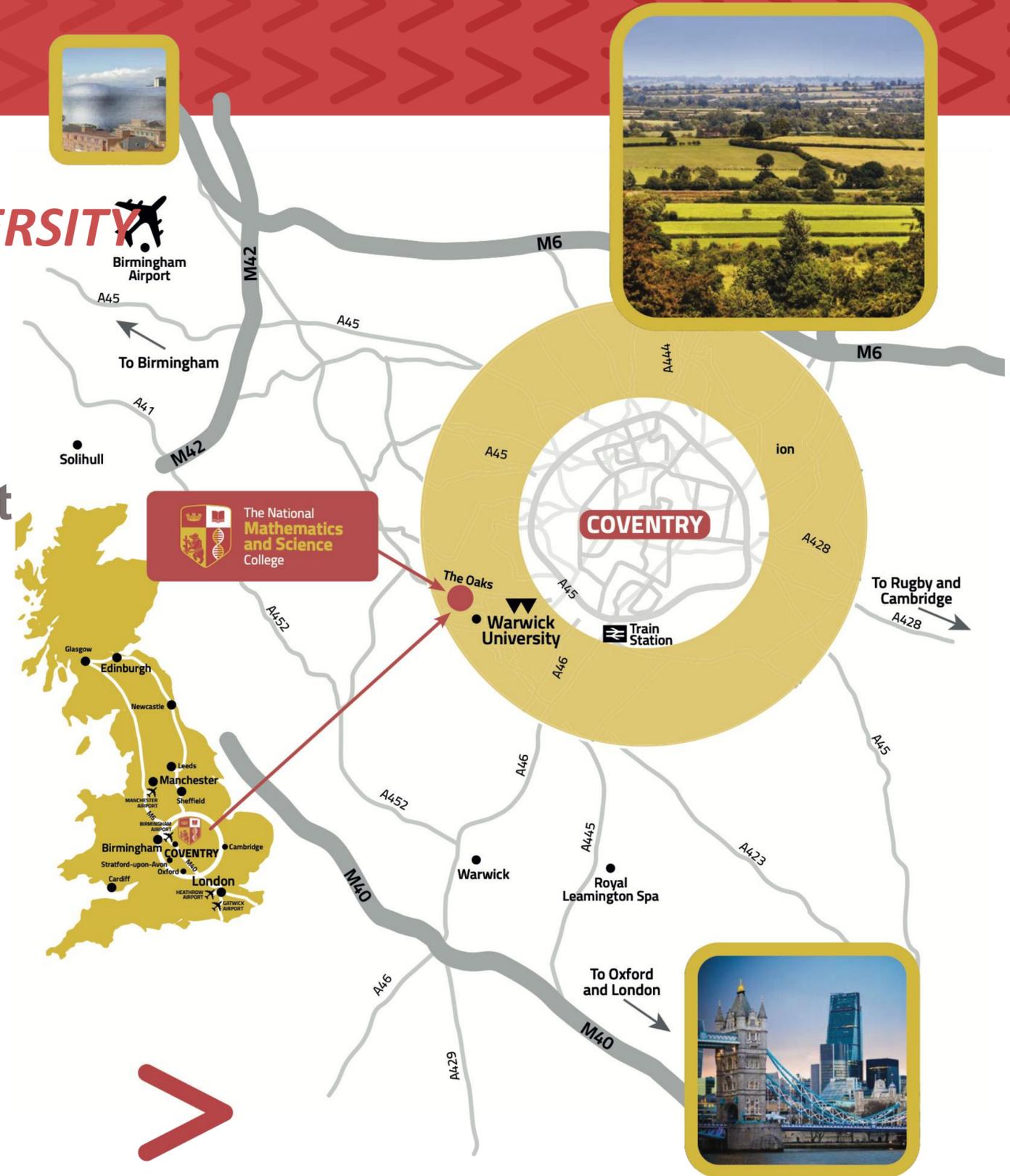


NATMATSCI THE COLLEGE

OUR LOCATION

**SITUATED ON THE EDGE OF WARWICK UNIVERSITY
IN THE LEAFY AND PICTURESQUE AREA OF
WESTWOOD HEATH IN WARWICKSHIRE.**

- > 15-20 minutes from Birmingham Int Airport
- > 90 minutes by taxi from London Heathrow Airport
- > 2 Hours from Gatwick Airport
- > Easy access to London, 1 Hour by train



LOCATED IN LEAFY WARWICKSHIRE

NEXT TO
WARWICK UNIVERSITY



THE NATIONAL
MATHEMATICS AND SCIENCE
COLLEGE

2 THE OAKS

29 DIFFERENT NATIONALITIES



YEAR TWO
2022

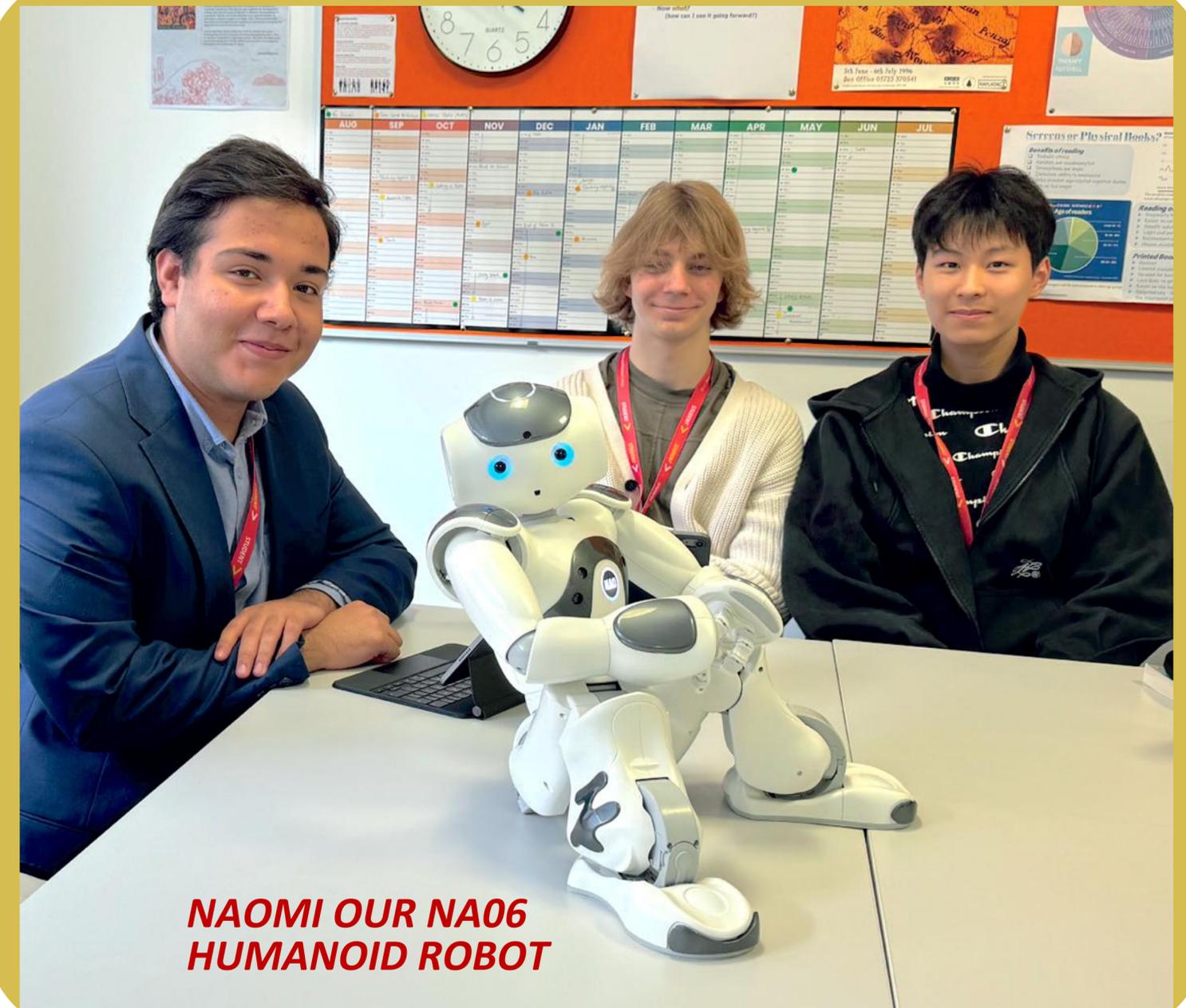
DESIGN AND INNOVATION

*OUR STUNNING
'SUN' RECEPTION
IS BASED ON THE
PRINCIPLES OF
MATHEMATICAL
SYMMETRY*



MODERN, STATE-OF-THE-ART FACILITIES

- > High specification equipment including Motic Microscopes
- > Digital e-learning classrooms with interactive boards and iPads
- > Access to Warwick University facilities on our doorstep



**NAOMI OUR NA06
HUMANOID ROBOT**

STUDENTS LEARN COLLABORATIVELY

*BRINGING
SCIENCE
TO LIFE*



OUTSTANDING TEACHERS

- > All first class degrees from Top Russell Group Universities
- > Experience and training in teaching Gifted and Talented students
- > Proven track records for Oxbridge preparation
- > Available to answer questions and provide individual support after class



WE DO LOTS OF PRACTICALS

LUNG DISSECTION





Downstairs there is a large glass window which broke whilst the College was empty. It is suggested that this was because of heat during the summer. Is this reasonable? Calculate an answer and sign your name!

However, I think you're adding unnecessary complexity by writing it this way. Thermal expansion of solids is often considered to be linear over 'normal' temperature scales.

Good idea! I like this approach

As this window is constrained, it would experience the same amount of internal stress as the external stress required to 'squish' the expanded body to fit the frame.

Height h
 (Internal stress) = $\frac{E \Delta L}{L}$
 E (Young's modulus of glass) $\approx 7 \times 10^{10} \text{ Pa}$

This is less than the compressive strength of glass, $1.0 \times 10^9 \text{ Pa}$, so the glass wouldn't break. **Big difference!**

Excellent stuff!

So I conclude that the heat didn't cause the window to break although there are more factors that someone else may try to incorporate in their calculation!

- Ideas:
- Instability in molecular structure caused by heat
 - Sunlight
 - Use of actual measured dimensions
 - Find out the way the window's

(Is the window really a single sheet of glass 2cm thick?)

Let's talk about anything that seems wrong or things you disagree with (Point out mistakes if you can)

This expan

suppose uniform sheet of glass confined within a container that constrains its height and width. Normal glass has a coefficient of thermal expansion $\alpha_g \approx 10^{-5} \text{ /}^\circ\text{C}$. A block of glass will expand by a volume ΔV in temperature ΔT . The

$$\alpha_g = \frac{1}{V} \frac{dV}{dT} \Rightarrow V \alpha_g = \frac{dV}{dT}$$

a differential equation with this yields $V(T) = e^{\alpha_g T}$

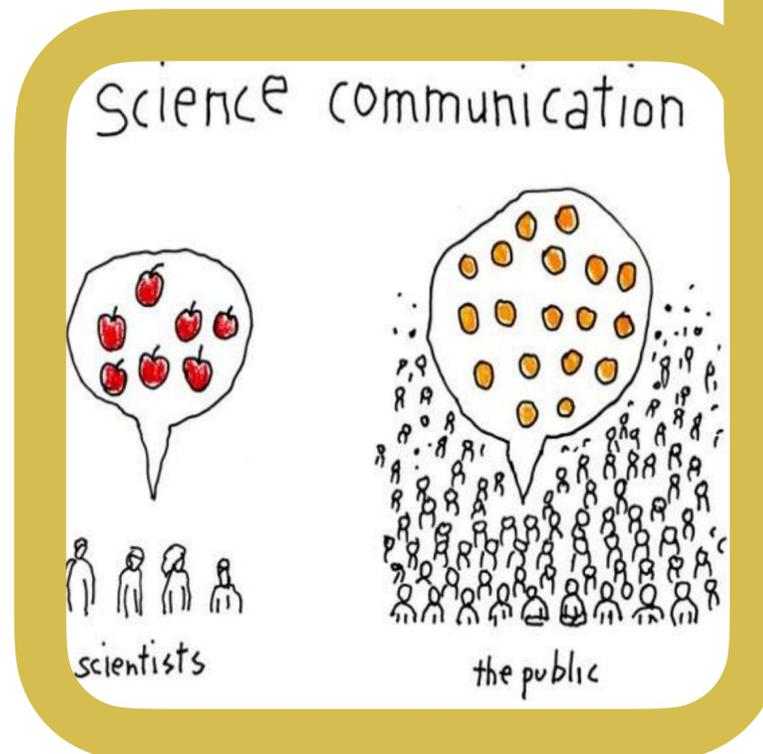
Coming back to the glass window, has the dimensions specified above (spring temperature in Coventry). Then $\Delta V \approx 0.04 \text{ m}^3$, $C = 0.04 \text{ m}^3$. The hottest day in Coventry this summer (31.07.2020) was 34°C , and then the volume of the glass sheet would've extended by $\Delta V(34^\circ\text{C}) \approx 0.04002052526 \text{ m}^3$. Then, as temperature changed from 10°C to 34°C , the glass sheet would've extended by $\Delta V(24^\circ\text{C}) \approx 0.00096 \text{ m}^3$ which translates to a percent

THE NATMATSCI PROBLEM BOARDS

AWARD WINNING STEM COMMUNICATION PROGRAMME

HELPING STUDENTS DEVELOP THE KEY SKILLS THEY NEED NOT ONLY TO BECOME GREAT SCIENTISTS AND MATHEMATICIANS, BUT ALSO TO EFFECTIVELY LEAD OTHERS

- > Individual and paired research projects
- > Series of lectures from visiting universities
- > Formal research paper written in LaTeX
- > Peer review of original research paper
- > TikTok style video on STEM

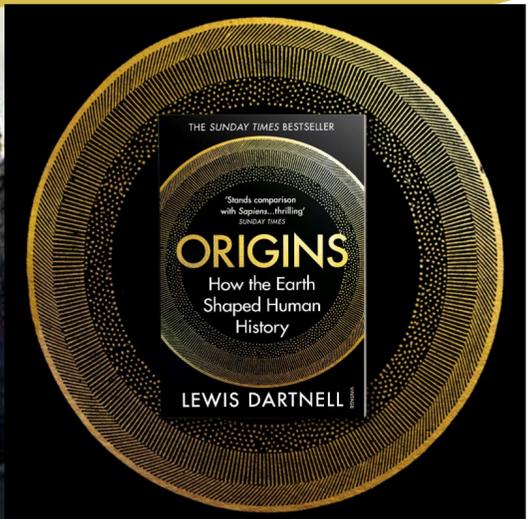
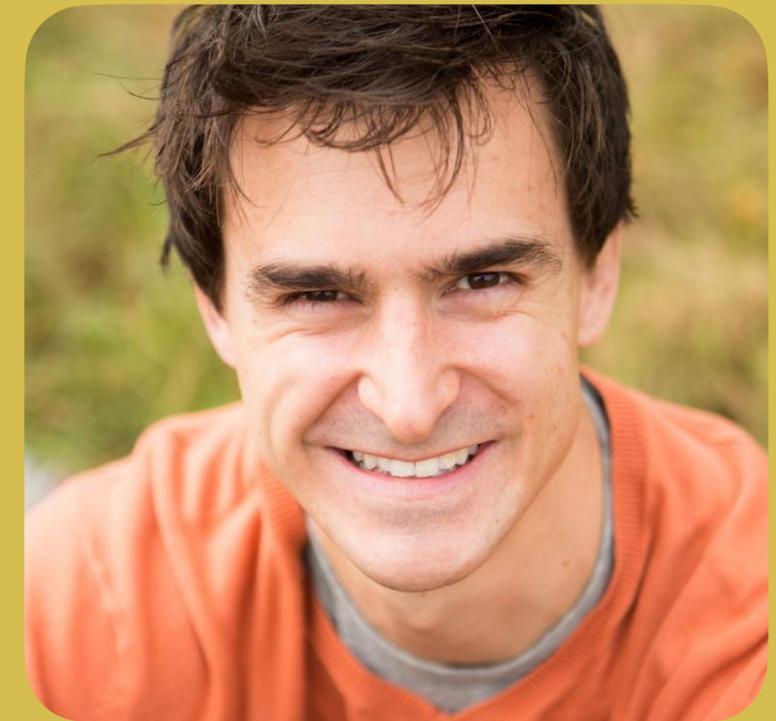


STEM COMMUNICATION PROGRAMME -YEAR ONE

PROFESSOR LEWIS DARTEL - ASTROBIOLOGIST AND AUTHOR

ONE DAY WORKSHOP BASED ON HIS BOOK 'ORIGINS'

- > He explained what we can learn from how the brain processes visual and auditory experiences from the use of visual and auditory illusions.
- > Students designed experiments that can be done on planets to prove the existence of life
- > Lewis discussed how the development of the human race is linked to geological and atmospheric process processes.



SPECIALIST EDUCATION

- > A vibrant scientific community of like-minded individuals all pushing each other to achieve their best.
- > Students can find their tribe, people who are as passionate about maths and science as they are
- > We go beyond the curriculum, students can pursue their specialist interests
- > Stimulating, interactive lessons, hands on minds on approach
- > Close relationship with teachers
- > Tailor-made support for your academic goals



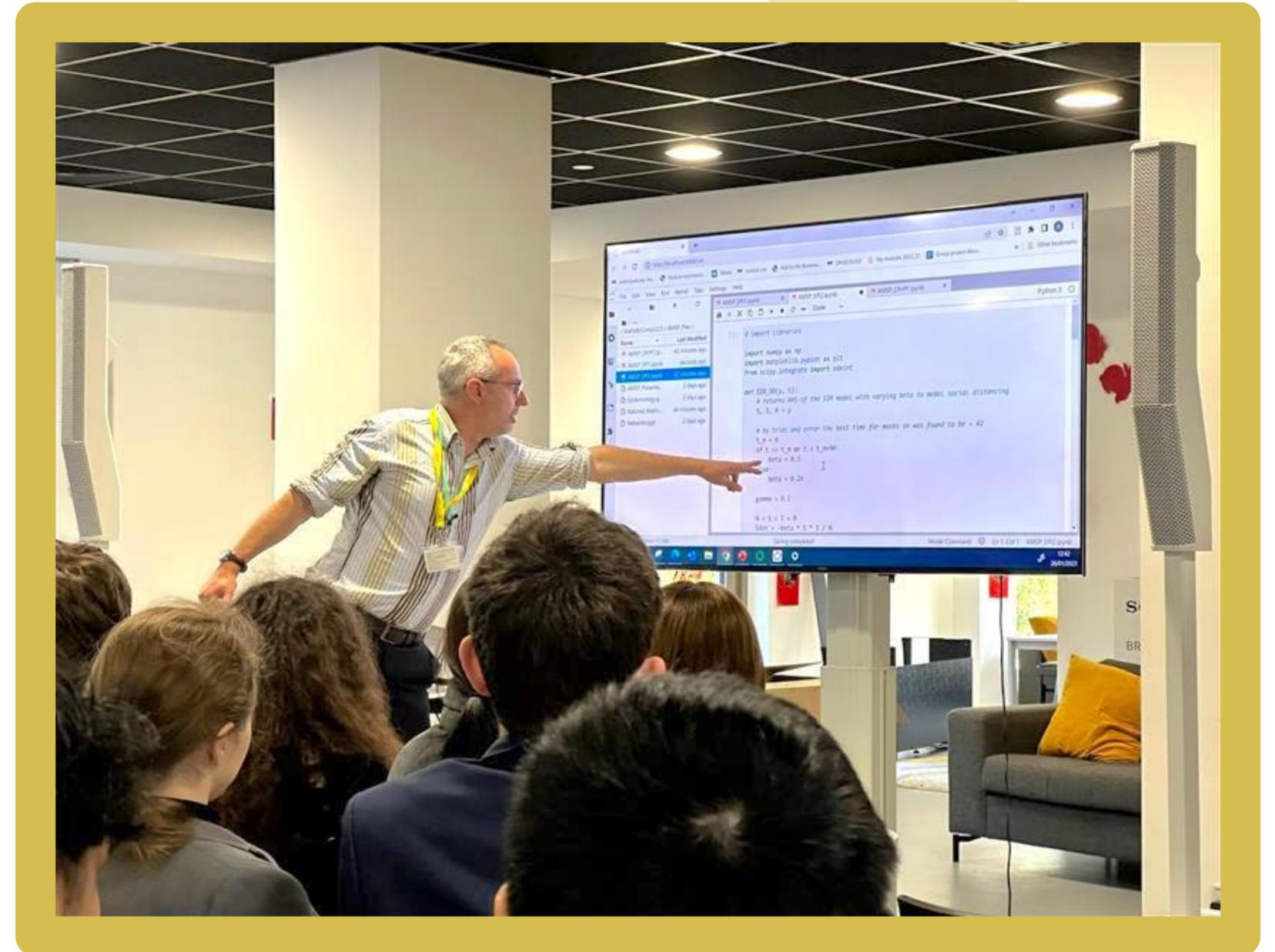
***HANNAH
PUBLISHES
PAPER
ON BIORXIV***

***“CAN HARVESTING FLOWERS REDUCE THE
AMOUNT OF ATMOSPHERIC CARBON DIOXIDE?
THE CASE OF CHERRY BLOSSOMS”
CO AUTHOR DR STEVE APPLEYARD***

STEM COMMUNICATION PROGRAMME - YEAR ONE

**PROFESSOR RICHARD LISSAMAN -
UNIVERSITY OF WARWICK MATHS
DEPARTMENT**

**"HOW A-LEVEL MATHEMATICS DEVELOPS AT
DEGREE LEVEL" EXPLORING MODELLING
EPIDEMICS, COMPLEX SYSTEMS AND**

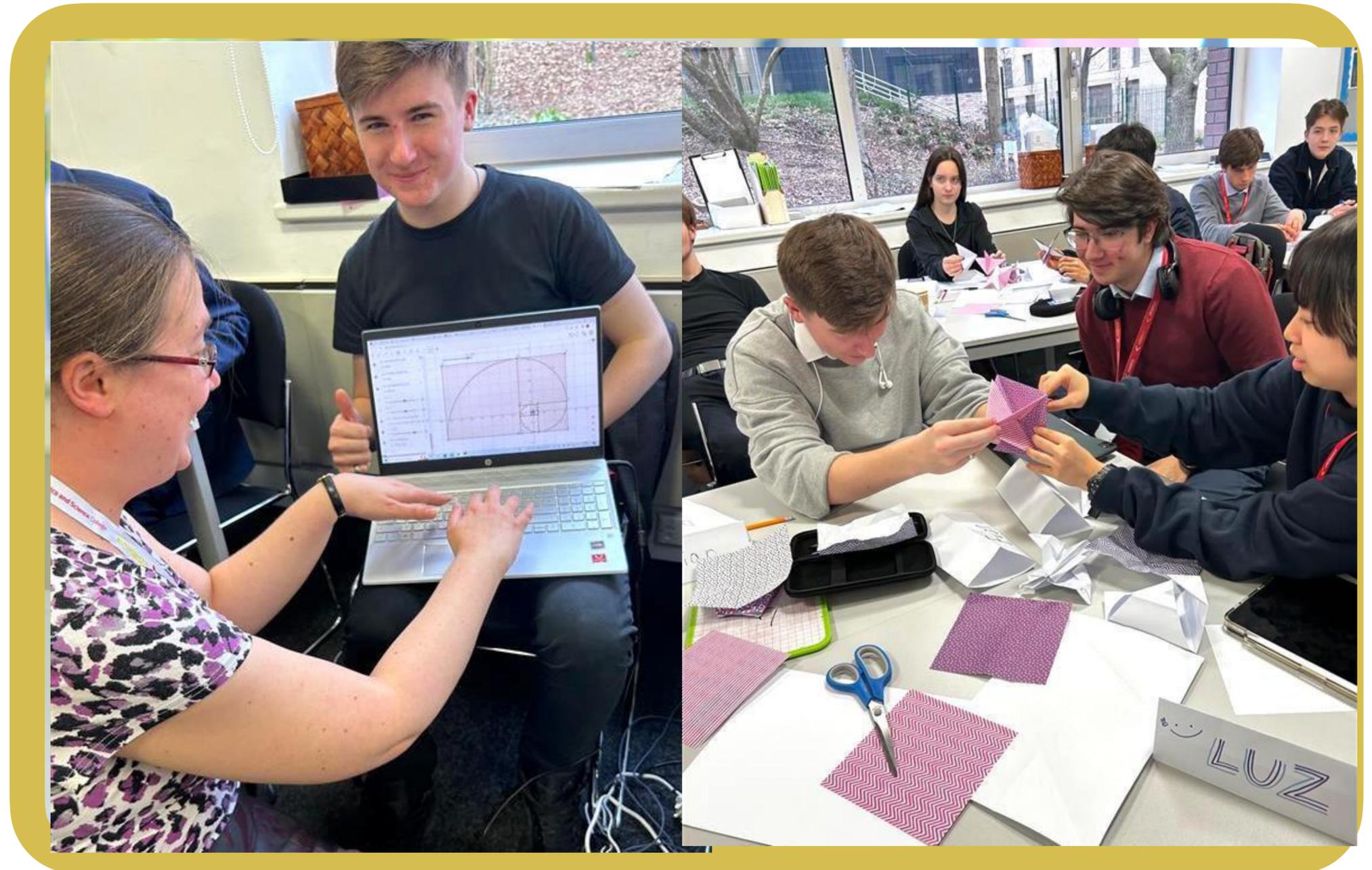


STEM COMMUNICATION PROGRAMME PRE A

GEOMETRY WEEK WITH CAMBRIDGE MATHEMATICIAN ALISON KIDDLE

WORKSHOPS INCLUDED:

- > finding out how good ancient approximations for π and $\sqrt{2}$ were
- > discovering the hidden maths in everyday images
- > GeoGebra
- > making a good math video (with Singingbanana James Grimes f) and some origami!



GEOMETRY PROJECT - MINECRAFT



π

=

Herobrines present



5

FINDING n

using spheres in minecraft



MATHS FEST 2022, THE ROYAL INSTITUTE OF SCIENCE

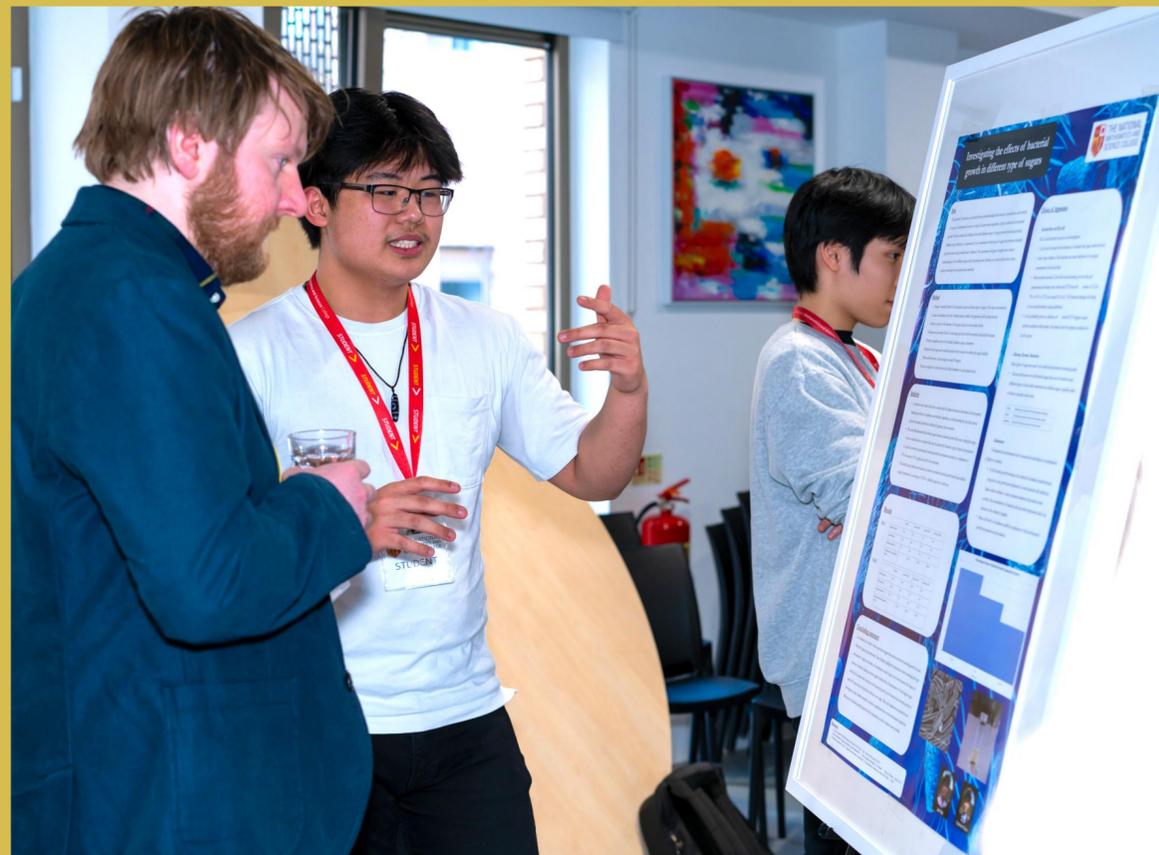
***YEAR 1, RIO
TAKES A BOW
AFTER HIS
PRESENTATION***



ACADEMIC POSTER CONFERENCE - YEAR ONE



STUDENTS PRESENTED THEIR RESEARCH



Topics included:

How effective is Fluoride in toothpaste at killing bacteria

Investigating the antibacterial activity of spices against E. coli

Does information failure affect our perception of food



***INTERNATIONAL COMPETITONS
AND OLYMPIADS***

AWARDS AND COMPETITIONS

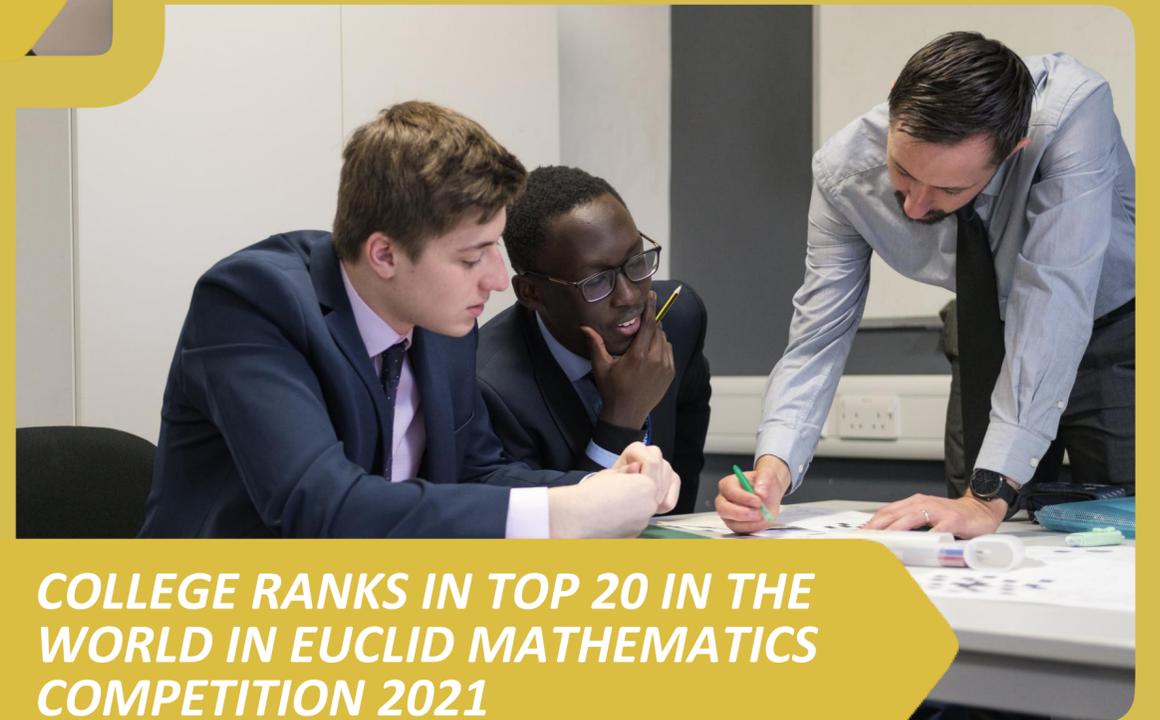
**MOST AWARDED SCHOOL IN THE UK
FOR OLYMPIADS**



**STUDENT IN TOP 16 IN
BIOLOGY OLYMPIAD 2022**



**AATP PHYSICS BOWL
2ND IN THE WORLD! 2022**



**COLLEGE RANKS IN TOP 20 IN THE
WORLD IN EUCLID MATHEMATICS
COMPETITION 2021**

GB CHEMISTRY OLYMPIAD TEAM 2022

*HALF OF THE TEAM WERE
FROM NATMATSCI*



GB OLYMPIAD TEAMS

PHOL AND BOL, GB CHEMISTRY OLYMPIAD TEAM 2019 AND 2020
YUNG JUN, GB BIOLOGY OLYMPIAD TEAM 2021, PERTH 2024
ALL PROGRESSED TO OXFORD OR CAMBRIDGE



WOMEN IN STEM



The National
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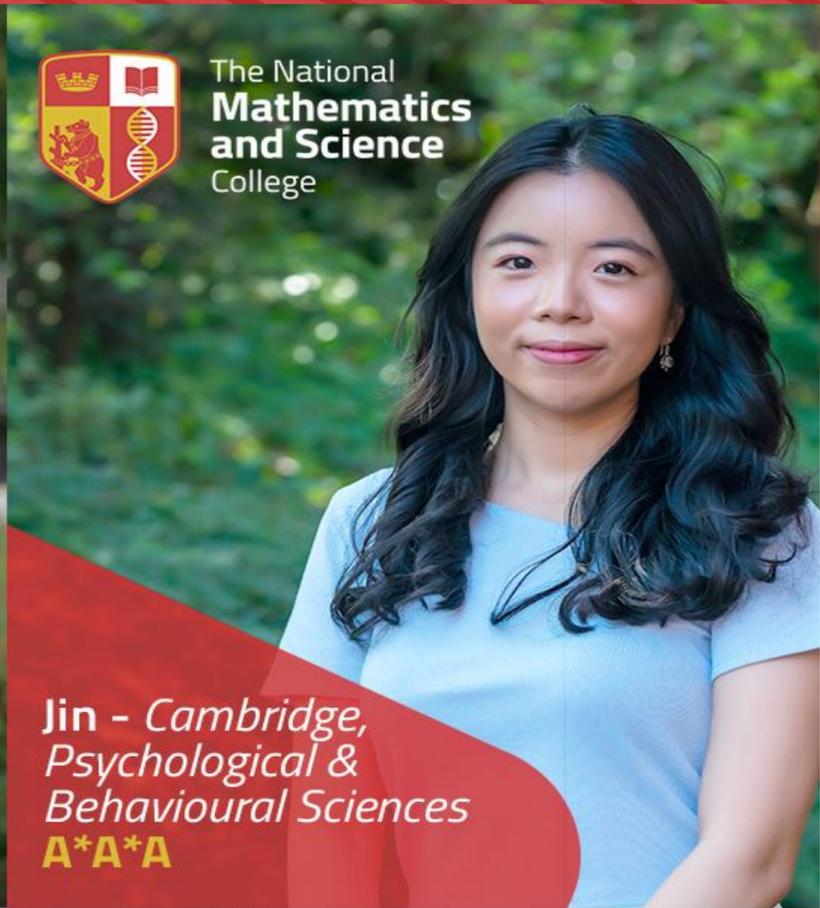
Diana - Medicine,
St George's University
of London
A*A*A*A*A*
A Levels



Cassie - Oxford,
Mathematics & Statistics
A*A*A A



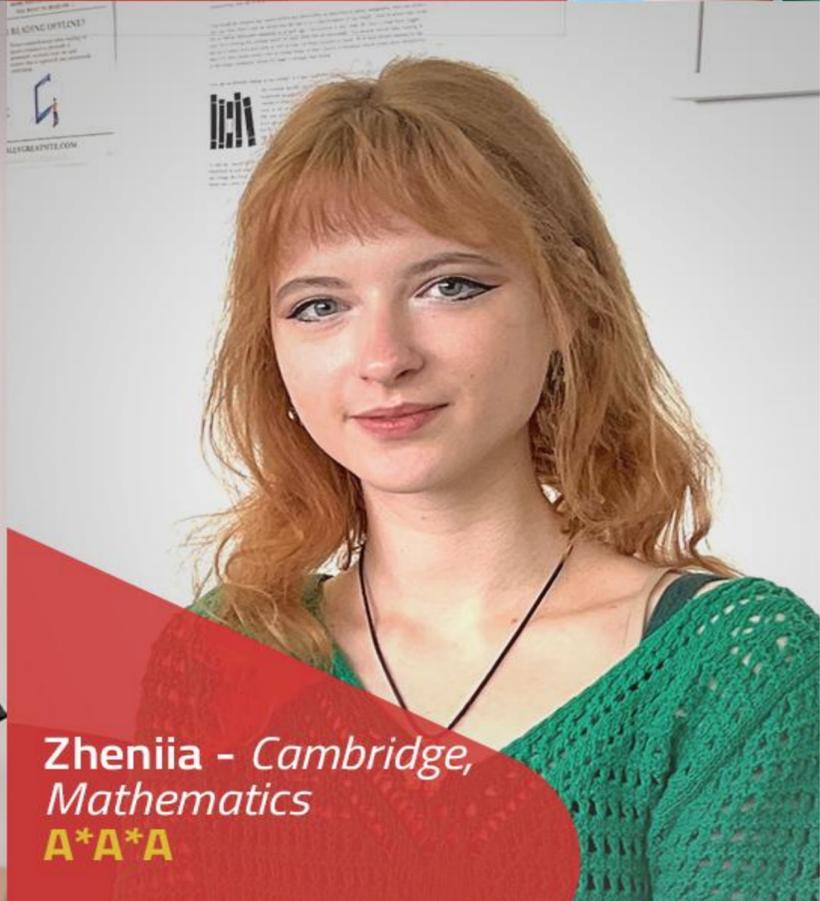
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Jin - Cambridge,
Psychological &
Behavioural Sciences
A*A*A



Perth - Cambridge,
Natural Sciences
A*A*A*A*



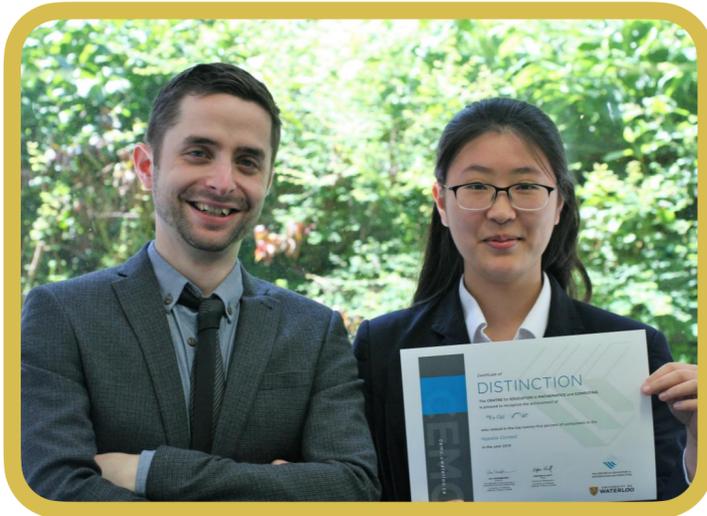
Zheniia - Cambridge,
Mathematics
A*A*A

MATHEMATICAL OLYMPIAD FOR GIRLS 2022



***6 DISTINCTIONS
3 MERITS
1 FULL MARK
SCORE***

WOMEN IN STEM



**HYPATIA
CHAMPION**



**FIRST PRIZE
RUSSIAN MEDICAL STUDENT**



**DR ROBOTHAM, VICE PRINCIPAL
OLYMPIAD COMMITTEE MEMBER**



**FERMAT MEDAL
WINNER 2019**



**ELUCID MATHMATICS CONTEST
3 GOLD MEDALS AND 10 CERTIFICATES**



UCAS AND OXBRIDGE SUPPORT

OXFORD AND CAMBRIDGE OFFERS



The National
**Mathematics
and Science**
College

OXFORD AND CAMBRIDGE SUCCESS
ALMOST 20% OF OUR STUDENTS ACCEPTED
OVER LAST 3 YEARS

CAMBRIDGE AND OXFORD PLACES 2024

- ★ **ANH TON: MATHEMATICS AND COMPUTER SCIENCE AT BALLIOL COLLEGE, OXFORD**
- ★ **ASHISH: MEDICINE AT BALLIOL COLLEGE, OXFORD**
- ★ **CAI: ENGINEERING AT PETERHOUSE COLLEGE, CAMBRIDGE**
- ★ **CASSIE: MATHEMATICS AND STATISTICS AT QUEEN'S COLLEGE, OXFORD**
- ★ **HARRY: PHYSICS AT ST. HILDA'S COLLEGE, OXFORD**
- ★ **JIN: PSYCHOLOGY AND BEHAVIOURAL SCIENCES AT TRINITY COLLEGE, CAMBRIDGE**
- ★ **MISHA: ENGINEERING AT EMMANUEL COLLEGE, CAMBRIDGE**
- ★ **OLEKSIY: MATHEMATICS AND COMPUTER SCIENCE AT WADHAM COLLEGE, OXFORD**
- ★ **PAUL: NATURAL SCIENCES AT TRINITY COLLEGE, CAMBRIDGE**
- ★ **PERTH: NATURAL SCIENCES AT DOWNING COLLEGE, CAMBRIDGE**
- ★ **STANISLAV: ENGINEERING AT HOMERTON COLLEGE, *CAMBRIDGE***
- ★ **VANYA: MATHEMATICS AT CHURCHILL COLLEGE, CAMBRIDGE**

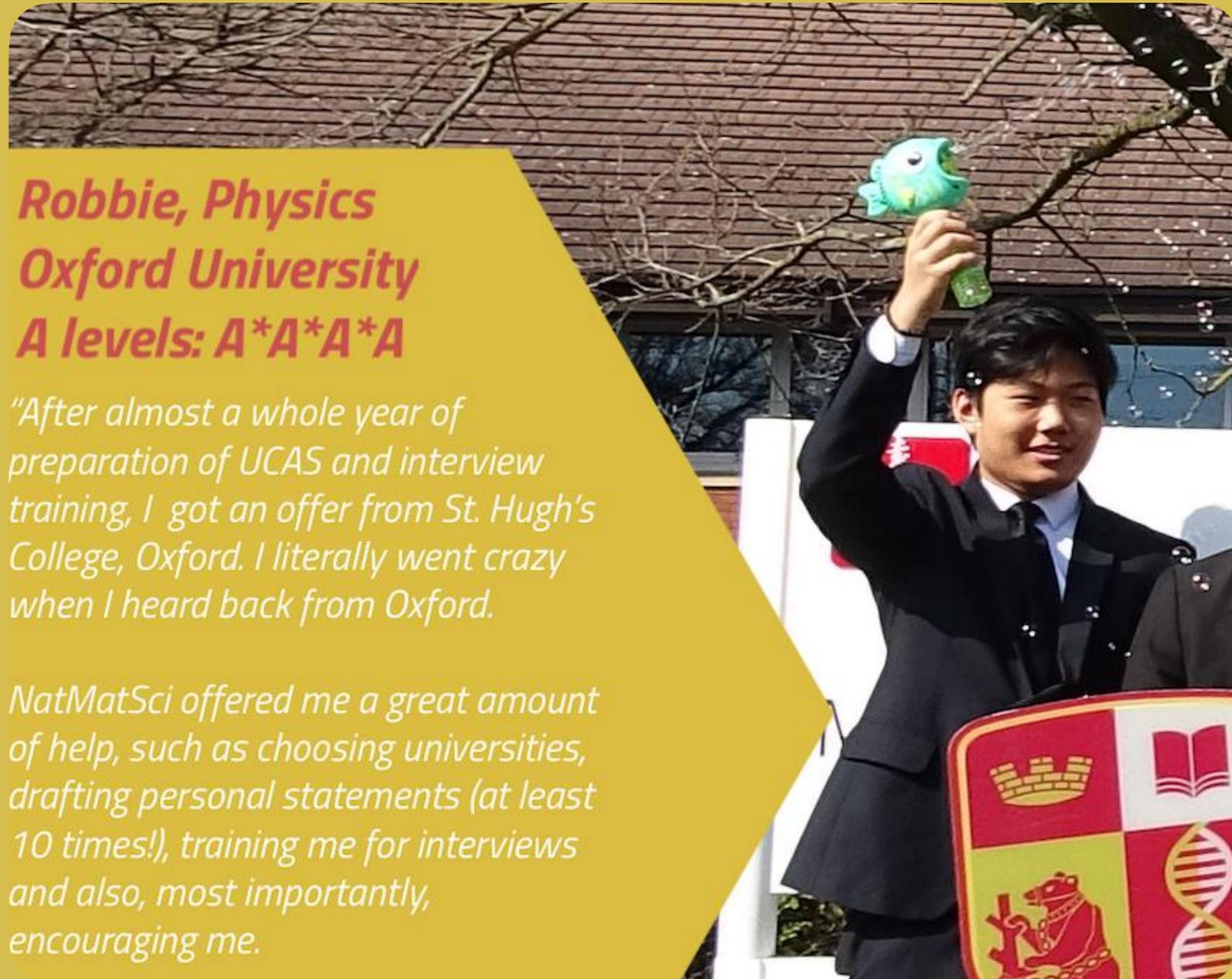
TAILORED UNIVERSITY PREPARATION PROGRAMME

EXPERT KNOWLEDGE

- > We give our students the best chance to enter the top universities worldwide**
- > Support from a range of internal and external advisors**
- > Specialist support for all applications - Oxbridge, Medicine/Health Care degrees, US Applications and other international universities**
- > Tailored support personal statement or application essays**
- > Interview practice sessions for all our students**



OXBRIDGE APPLICATION SUPPORT



**Robbie, Physics
Oxford University
A levels: A*A*A*A**

"After almost a whole year of preparation of UCAS and interview training, I got an offer from St. Hugh's College, Oxford. I literally went crazy when I heard back from Oxford.

NatMatSci offered me a great amount of help, such as choosing universities, drafting personal statements (at least 10 times!), training me for interviews and also, most importantly, encouraging me.



**DR PENNY ROBOTHAM
VICE PRINCIPAL,
HEAD OF SCIENCE AND
UNIVERSITY
APPLICATIONS**

UNIVERSITY DESTINATIONS

100% OF OUR STUDENTS RECEIVED OFFERS FROM OXBRIDGE AND RUSSELL GROUP UNIVERSITIES

- > Oxford, Cambridge, Bristol,
- > Durham, Edinburgh, Glasgow
- > Imperial College London, LSE
- > Kings College London, Leeds,
- > Nottingham, St Andrews, York
- > University College London
- > Warwick, Manchester, UCL



**COMPUTER SCIENCE
WARWICK A LEVELS : A*A*A*A*A**



**NATURAL SCIENCE UCL
A LEVELS: A*A*A*A**



**COMPUTER SCIENCE UCL
A LEVELS : A*A A A**



**AEROSPACE ENGINEERING
BRISTOL A LEVELS : A*A*A*A**

UNIVERSITY DESTINATIONS

Ivan - Cambridge,
Mathematics **A*A*A*A***

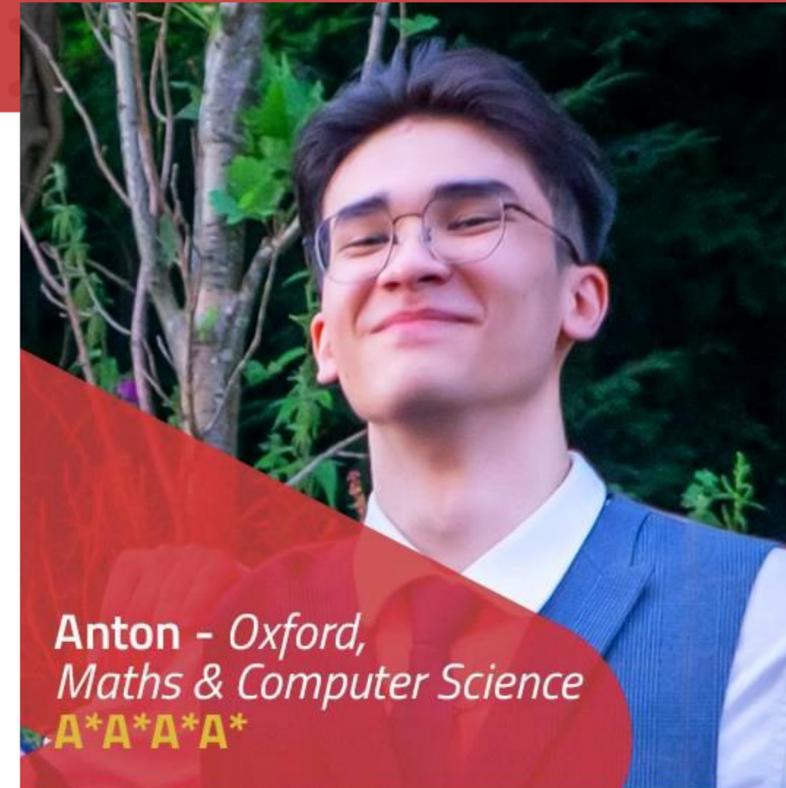
Canh Thai - Cambridge,
Engineering **A*A*A*A***

Triet - Imperial College,
Electrical & Electronic
Engineering **A*A*A*A**

Chub - Cambridge,
Mathematics
A*A*A*A*



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Anton - Oxford,
Maths & Computer Science
A*A*A*A*



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College



Sasha - Imperial
College London,
Chemistry
A*A*A*A*A*



Owen - King's College
London, Economics
A*A*A*A*



Polina - King's College
London, Economics
A*A*A*A*



ACADEMIC PROGRAMMES



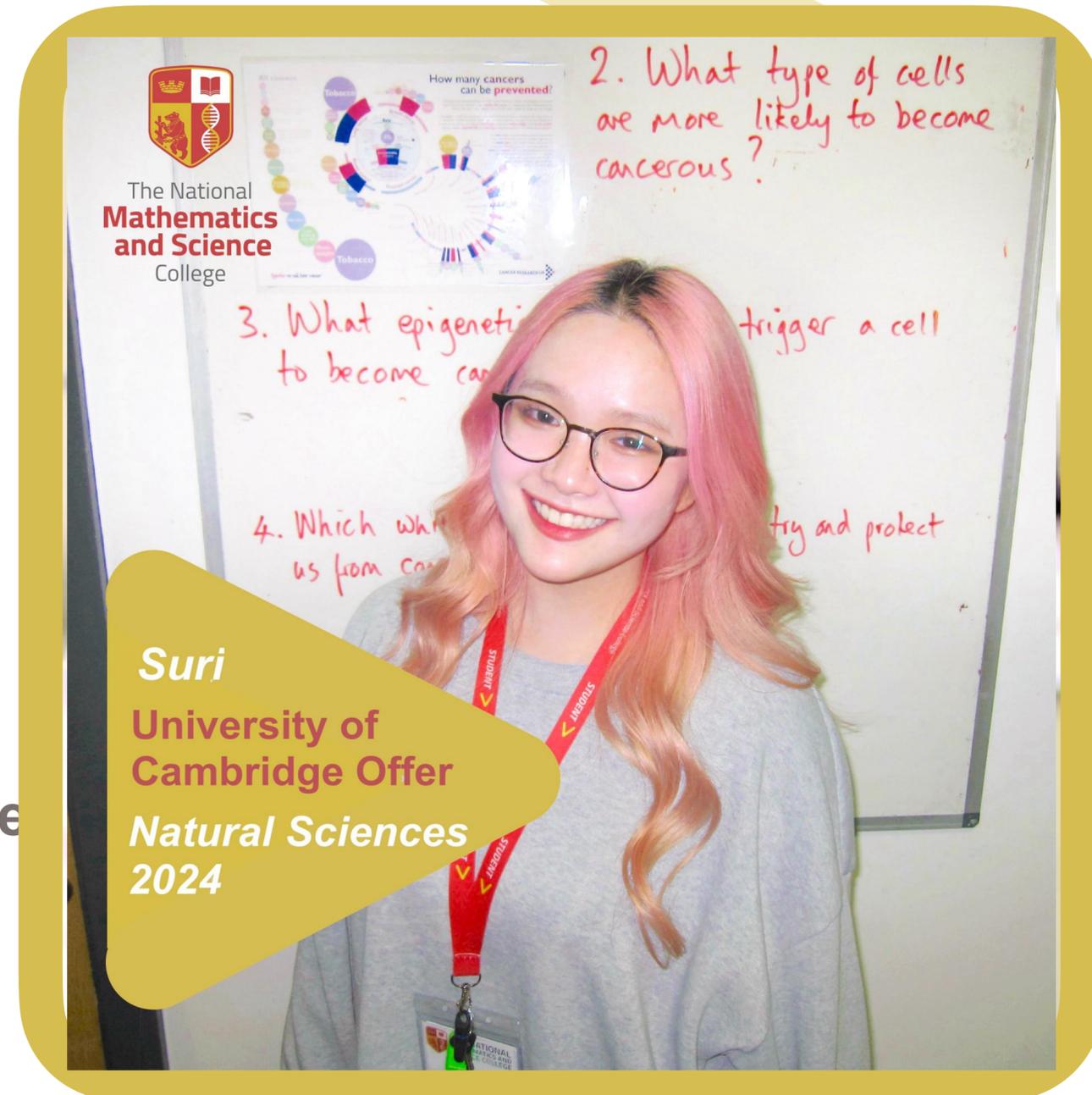
TWO YEAR A LEVEL PROGRAMME

A-LEVEL PROGRAMME

- > Student start with four A-level subjects
- > 5 hours of teaching a week per subject
- > Plus up to 5 hours of EAL per week
- > Olympiad preparation

SUBJECTS

- > Mathematics
- > Further Maths
- > Biology
- > Chemistry
- > Physics
- > Economics
- > Computer Science
- > EPQ



PRE A LEVEL PROGRAMME

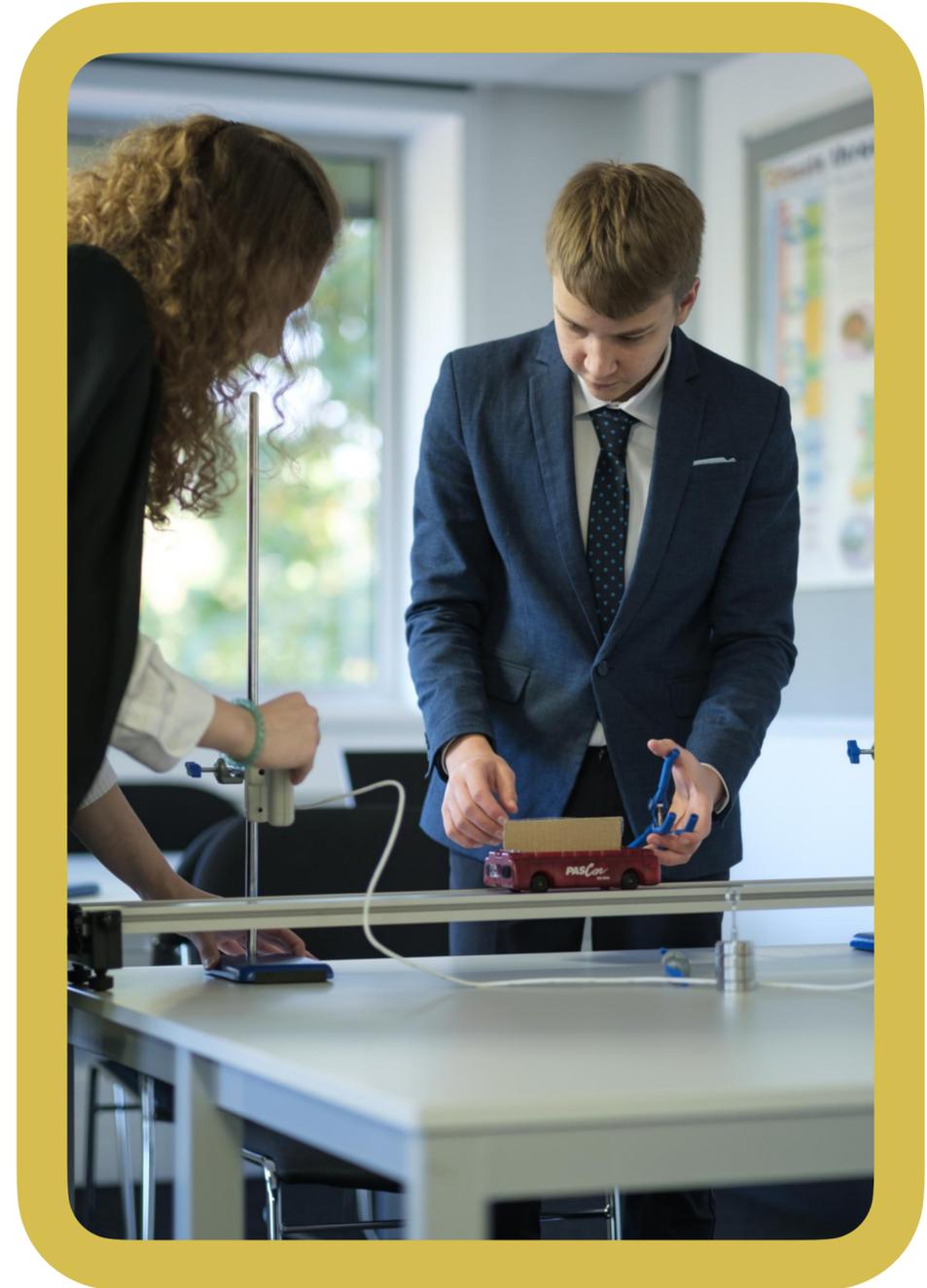
PRE A-LEVEL PROGRAMME

- > The three year approach is a fantastic solution for international students joining the UK system for Year 11.
- > Allowing them time to improve their English and practical science skills so they can excel in A Level studies.

AGE 15 +, JAN AND SEPT START DATES

SUBJECTS

- > Mathematics
- > Biology
- > Chemistry
- > Physics
- > Computer Science
- > Economics



PREPARATION FOR MEDICINE PROGRAMME

- > UCAS application , personal statements
- > UCAT and BMAT training
- > Mock interviews feed-back
- > Personal tutor
- > Voluntary work
- > Med Soc
- > Workshops - Warwick Med School

“ I’M REALLY GLAD THAT I WAS ABLE TO GET OVERWHELMING SUPPORT FROM TEACHERS AT THE COLLEGE. ESPECIALLY FOR PERSONAL STATEMENT.” DYLAN



**DYLAN,
YEAR 2 A LEVEL
PREPARATION
FOR MEDICINE**

MEDICAL WORK PLACEMENTS

WORK EXPERIENCE PLACEMENTS

- > Research based placements at UCL Zebrafish laboratory and the National Carter Institute research laboratory
- > Hospital based placements at large NHS hospital trusts
- > Voluntary work, which is essential experience to enhance personal statements



A*A*A*A* MEDICINE HKU 2024

• *“MANY THANKS FOR YOUR HELP SO THAT I COULD JOIN NATMATSCI AND HAVE A GOOD TIME THESE 2 YEARS.*

MY FAMILY ARE DELIGHTED WITH MY 4 A SO I COULD JOIN THE UNIVERSITY OF HONG KONG MBBS DEGREE.*

I AM STILL EXCITED BECAUSE MY DREAM TO READ MEDICINE HAS COME TRUE. THE 3RD YEAR OF THIS COURSE WILL BE AN ENRICHMENT YEAR.

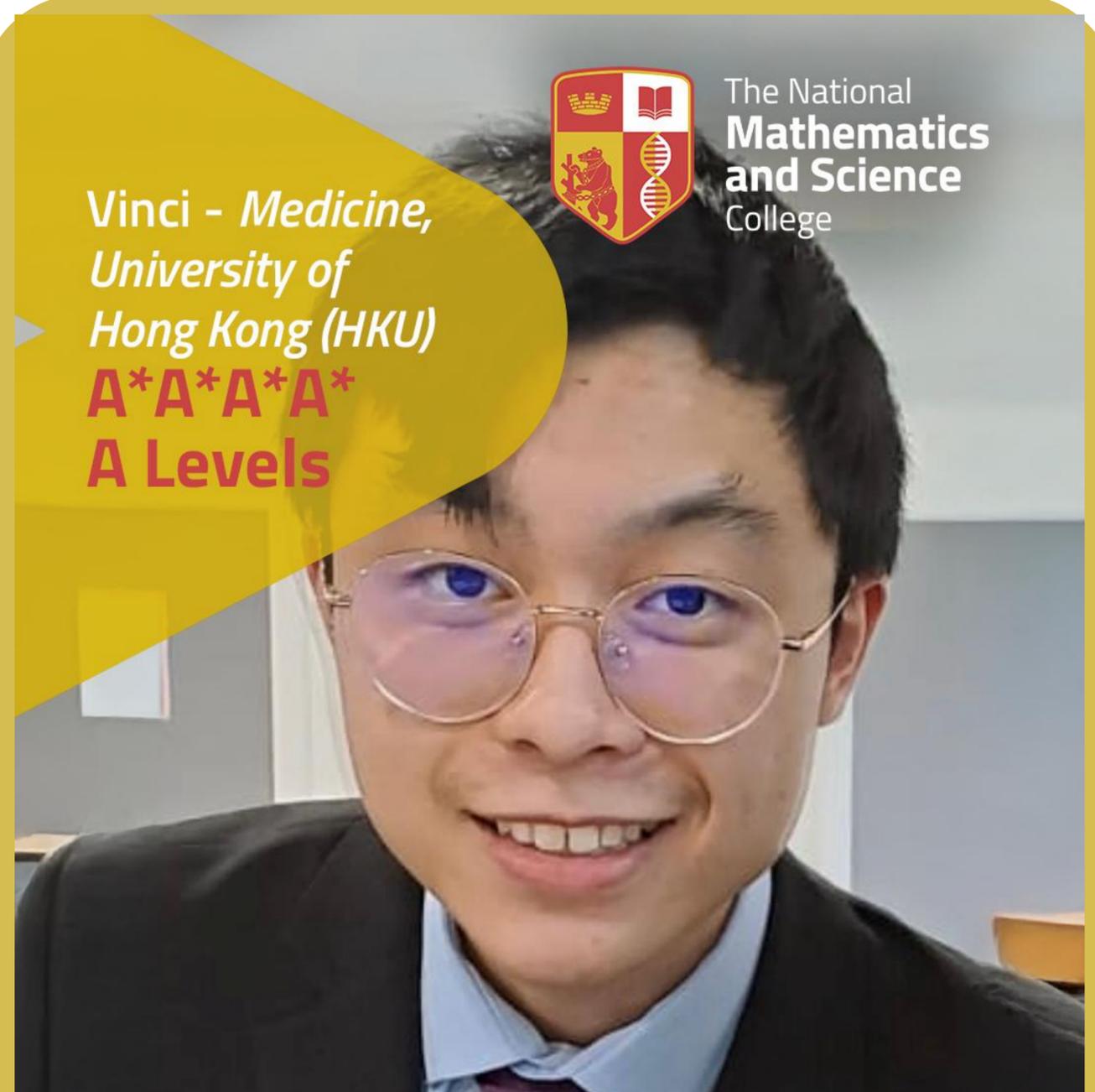
I HOPE I CAN TAKE THE CHANCE TO WORK AND LEARN IN AN UK HOSPITAL IN THAT YEAR.”

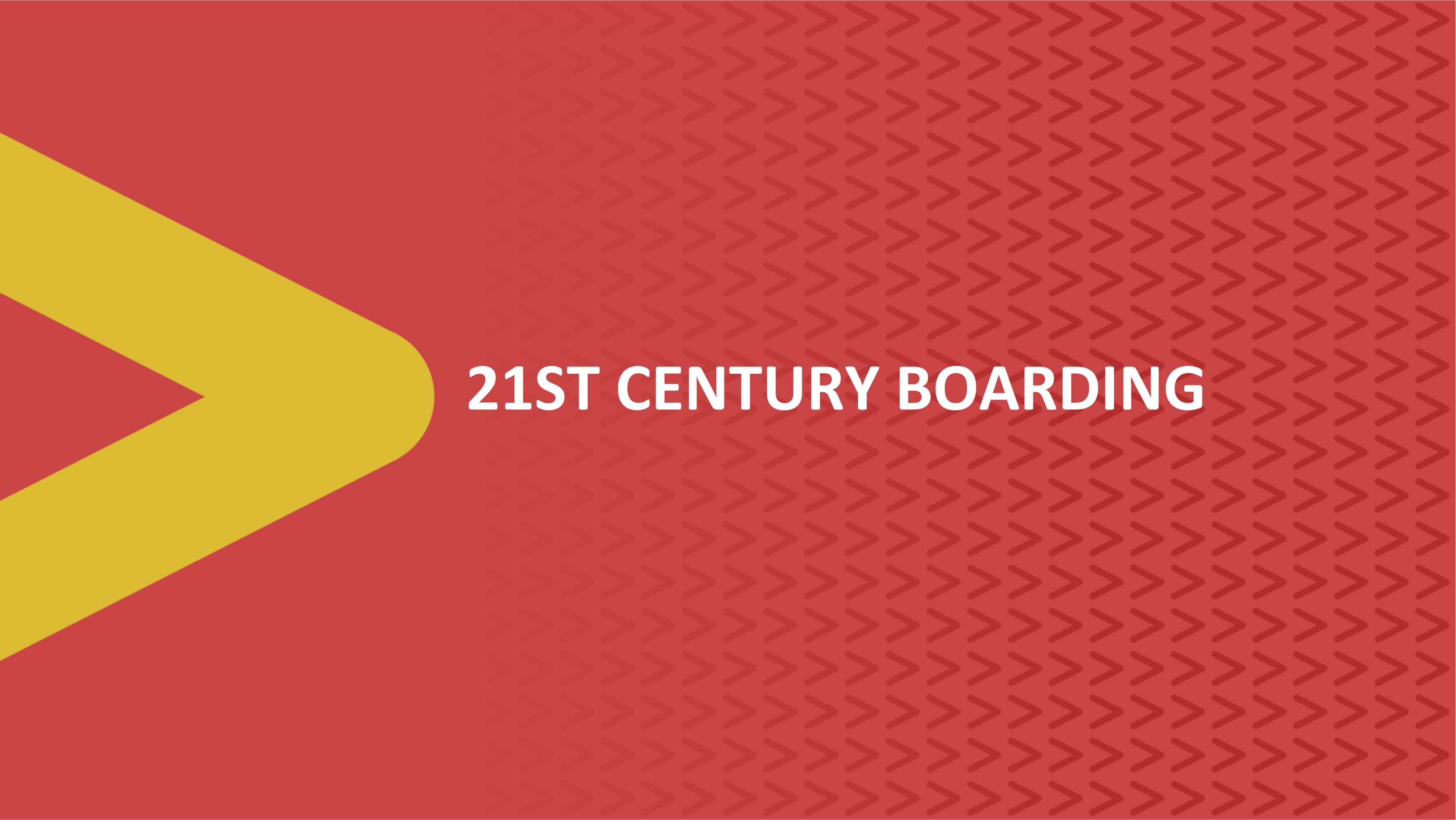
VINCY 2024



The National
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*Vinci - Medicine,
University of
Hong Kong (HKU)
A*A*A*A*
A Levels*





21ST CENTURY BOARDING

LUXURY BOARDING

OUR STUNNING NEW RESIDENCE NEXT TO THE COLLEGE

- > single occupancy en suite bedrooms
- > The Alchemist's Restaurant
- > barista coffee bar
- > gaming and chill out areas
- > study areas
- > gym
- > college nurse and counsellor



A HOME FROM HOME



COMMUNAL AREAS - GAMING, RELAXATION

COMMON
ROOM



SINGLE OCCUPANCY ENSUITE BEDROOMS

***“PARENTS
ENTHUSE ABOUT
A DISTINCT
FAMILY FEEL”***

Good School Guide

***STUDENTS ARE LOOKED
AFTER, AND SUPPORTED
24 HOURS A DAY, 7 DAYS
A WEEK BY OUR CARING
BOARDING TEAM***



COMFORTABLE ROOMS



PRIVATE BATHROOMS



“THE BOARDING STAFF ARE EXCELLENT,’ A PARENT TOLD US – THE STUDENTS ARE VERY WELL CARED FOR IN A WARM AND FRIENDLY ATMOSPHERE”



Good Schools Guide 2021



***THE ALCHEMIST'S
RESTAURANT***



NATMATSCI STEM FOOD

A RANGE OF CUISINES AND HEALTHY OPTIONS





**EXTRACURRICULAR -
SPORTS, SOCS, TRIPS AND ACTIVITIES**

SPORTS AND FITNESS

- > **Basketball Club, Football Club, Running Club, Ultimate Frisbee Club, Dance Society, Climbing Society**
- > **Students have use of the Xcel Leisure Centre , a few minutes walk from the College, gym, swimming pool, sports halls, and outdoor pitches for a variety of sports**
- > **Trips, ice skating, skiing, Go Ape, archery etc**





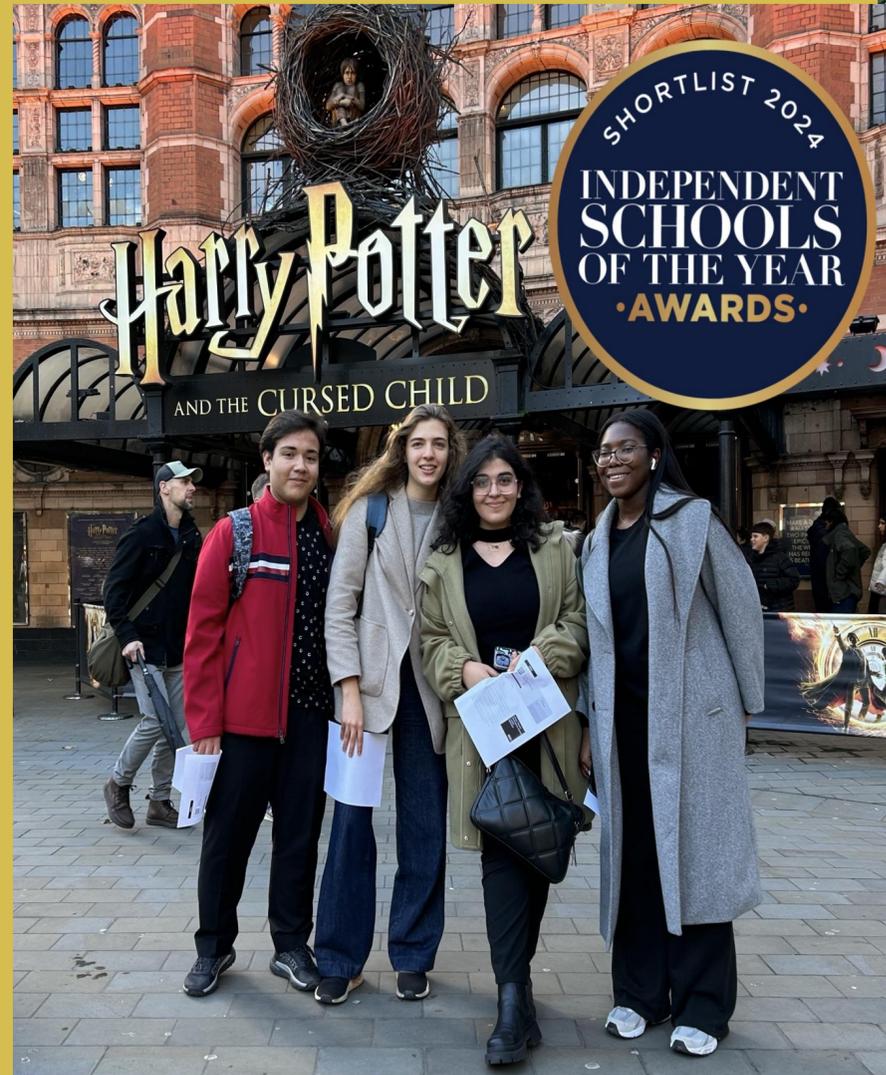
SUMMER ACTIVITY DAY AND PROM



ACTIVITIES AND TRIPS

RANGE OF ACTIVITIES

- > Weekend trips
- > Clubs and societies
- > NatMatSci Bakeoff
- > Debating
- > Choir
- > Student Magazine
- > Music and Theatre Appreciation Club,
- > Instrumental Lessons
- > Karaoke, talent and gaming nights



HALLOWEEN AND CHRISTMAS PARTIES



Save the Children
**CHRISTMAS
JUMPER DAY**



CHARITIES



ADMISSIONS PROCESS

APPLY

- > complete online application on Open Apply
- > upload copy of passport, latest school report, photo, birth cert.
- > pay registration fee 200 GBP by Flywire or bank transfer

ENTRANCE ASSESSMENTS (ONLINE OR IN PERSON)

- > One Hour Maths, 25 questions
- > English Grammar 30 minutes
- > English Essay 30 minutes

INTERVIEW (ONLINE OR IN PERSON)

- > Successful students are invited to interview with our Principal
- > 30 minutes (maths questions plus academic goals, hobbies and interests)

OFFER A PLACE

- > Confirmation of place - pay Deposit 5,000 GBP and sign Acceptance Form



SCHOLARSHIPS

ACADEMIC AWARDS

- > Students who achieve high marks on the entrance assessments may be invited to take the scholarship assessment.
- > Awards are typically worth 10-30% of tuition fees.





The National
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The NatMatSci Podcast



So one of the really exciting

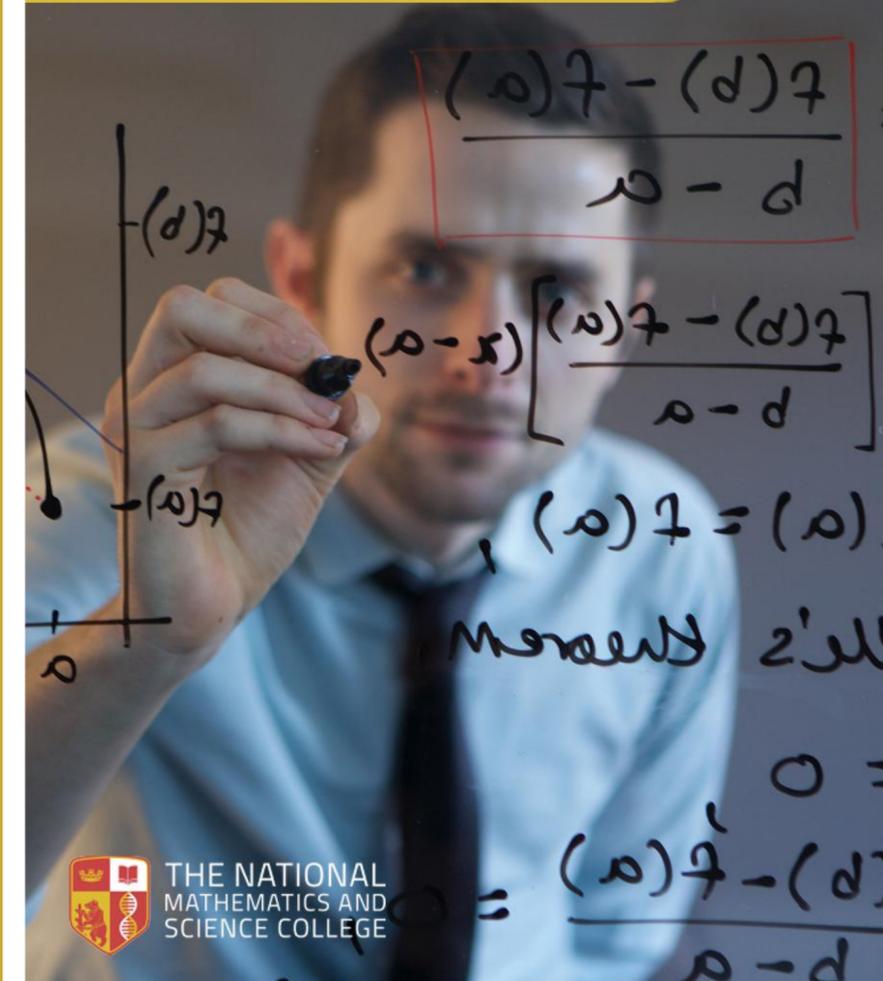
What's happening at NatMatSci
and what's coming in the future

with Principal, Dr Andy Kemp



Are you ready for Oxbridge?

Try our maths test!



NATMATSCI PODCAST AND MATHS QUIZ



The National
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and Science**
College



@NATMATSCI



@NATMATSCI



@NATMATSCI



**NatMatSci Pi Cake
Competition**

Wishing all our staff and
students a great mid
term break!



**Celebrating Eid at the
residence**

*Eid
Mubarak*



**Nature walk
#mentalhealthawareness**



FOLLOW US ON SOCIAL MEDIA



The National
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**GO FURTHER,
COME RUN WITH
THE SWIFT**