UNIVERSITY OF LIVERPOOL MATHS SCHOOL
EDUCATION FOR 16-19 YEAR OLDS

Newsletter

Michaelmas Term, Issue 2 November 19th 2020

Headteachers Message

Dear Students, Parents and Friends,

In spite of the challenges of 2020, we have always been a pretty cheerful community in school, but as I write to you we are feeling even more cheerful than usual, and increasingly optimistic about the future. Rapid coronavirus testing is available 2 minutes' walk from school and it seems that an effective and safe vaccine may soon also be available. We're also pleased to see the USA elect a president who is a strong advocate of science and the urgency of tackling climate change: an objective that we hope many of our students will one day be able to support in their careers.

Developments in school continue at their usual exciting pace, with new outreach courses starting, new learning resources arriving in school every week and new opportunities for students to learn beyond the standard curriculum. The early-bird deadline for applications for a Year 12 place in 2021 is coming up on 9th December, so if you know of Year 11 students who are hoping to join us next year, please let them know that they need to put their online application in soon.

We believe that students are very happy with the education and the care they are receiving but if you ever have cause to be concerned about your child's welfare, or feedback that could help us, please call us on 0151 6400397 or email me or David Hemsley.

Damian Haigh

Inside this issue:

Holiday Dates

- Christmas Break December 21st - January 1st
- Half Term Break February 15th - 19th
- Easter Break March 29th - April 9th
- May Day - May 3rd
- Half Term Break May 31st - June 4th

City-Wide Rapid Coronavirus Testing

Several members of our staff have been to try out the rapid testing process at the University of Liverpool Sports Centre, Sport Liverpool. Whilst there was some queuing later in the day (it got busy from around 10am but is still socially distanced, and the queue is outdoors, although it has been quieter for most of the day since Monday), the process was well managed and results were received within about 40 minutes. If our students wish to get a test we'd recommend going before arriving at school in the morning - the earlier the better. There is no need to sign up beforehand, that is done on arrival so a device with access to the internet is needed. More details are available here: https://www.gov.uk/guidance/getting-tested-for-coronavirus-if-you-live-or-work-in-liverpool

How busy the sites are around Liverpool can be found here to ensure you do not wait for too long: https://liverpool.test-and-trace.nhs.uk/

As the Covid infection rate is considerably higher now, I'll repeat the request I made in my last letter. Please do your best to:

Stay as safe as you can and reduce your risk of exposure.

Self isolate (stay at home) as soon as symptoms appear for anyone in the household. The key symptoms are now very familiar to us all:

high temperature;

new continuous cough; and

loss of smell and taste.

Access to Coronavirus Testing

A reminder: we do have a stock of testing kits in school and the potential to access the University's testing programme. If students have symptoms but are unable to access a test easily through the NHS then please contact us and we will do our best to arrange a test as soon as possible.

Free Liverpool Mathematical Society Popular Lecture, suitable for Year 11—Year 13, university students,

On the topic of coronavirus, you may be interested to attend this free online lecture:
'Simulating crowds: before, during and after the pandemic'
Thursday 19th November, 5pm – 6pm, via Zoom

As the world's population has grown and our cities have filled with people, simulating the movement and behaviour of crowds became more essential than ever. Not only for our safety and security, but for our enjoyment and how we experience a space. Since the start of the current pandemic, the concept of risk in crowded places is changing. It is not just a question of how to keep people safe from congestion but how to keep people spaced apart to reduce risk of transmission.
Having been instrumental in the movement analysis of people in events across the world, Dr Aoife Hunt explores how maths, simulation and big data have improved our planning in the pre - and post - COVID world.

For further information and to register to attend, please visit https://www.eventbrite.co.uk/e/simulating-crowds-before-during-and-after-the-pandemic-tickets-127434244255.

Sign up here: https://sites.google.com/site/rssmerseyside/research-meetings/william-guy-lecturer

Outreach Courses

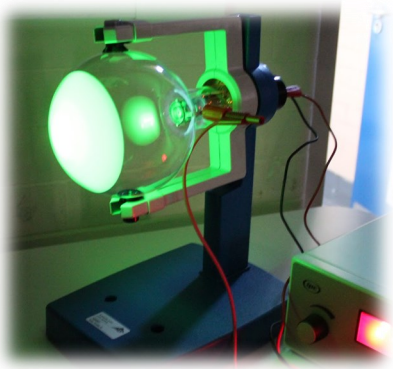
Sixth Form outreach activities have proved very popular. The first group of students preparing for Oxford's Maths Aptitude Test was successfully completed throughout September and October, and a few have even carried on in readiness for the Sixth Term Exam Paper (STEP) sessions that will get going predominantly in 2021. The course is very much open for anybody in Year 12 or 13 wanting help with preparing for these tough exams, or even just to do some challenging maths.

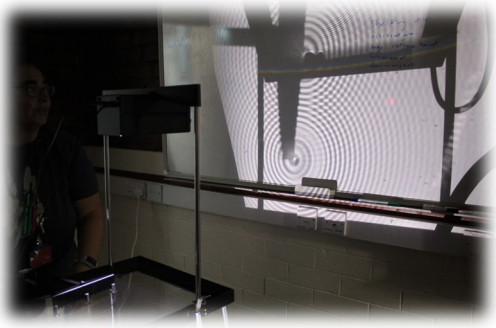
The Outreach lessons on Thinking skills in Physics for Y12/13 are getting much better attended with a high percentage of female students, all eager to improve their ways around difficult problems for university exams or interviews, as well as prepare for physics olympiads. They're always a relaxing and fun way of finishing Wednesdays.

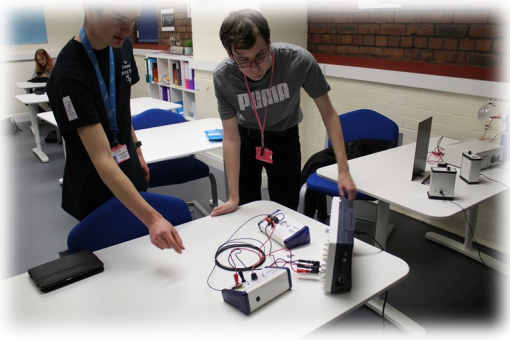
The first session for the GCSE Physics Masterclass started successfully with over 50 students keen to develop their skills in physics.

Physics Equipment

We are now receiving our new equipment for experiments and we're able to show students how electrons diffract or the use of oscilloscopes as well as important experiments into materials science. We've been instructing students on how to carry practical work out in a safely manner in line with both government and CLEAPSS guidance to reduce any covid exposure and I have to say we're all really looking forwards to incorporate practicals to our normal teaching.







Unifrog Launch

We have launched our Unifrog programme. If you ask your son/daughter about this they can show you what it is all about. We also have parent logins we shall share soon so you can also see what is available for beyond Year.

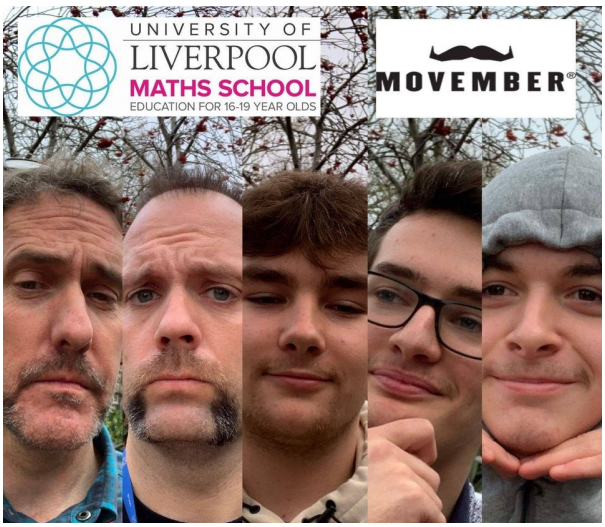
Unifrog brings into one place every undergraduate university course, apprenticeship, and college course in the UK, as well as other opportunities, such as School Leaver Programmes, MOOCs and every college at Oxford and Cambridge. This make it easy for students to compare and choose the best university courses, apprenticeships or further education courses for them. They can also explore exciting opportunities further afield by looking at English taught undergraduate programmes available in Europe and the USA.

Additionally, the platform helps students successfully apply for these opportunities by writing their personal statement, applications and CVs and guiding them through the process, allowing teachers to give live feedback.

We have also set up a parent login so that you can use Unifrog as if you were a student yourself, allowing you to truly support your child. The form code you need is ULMSparents and you can sign up here: www.unifrog.org/code

Charity Support

Students have given us their ideas and we are please to have launched a school Just Giving page so we can easily support a range of worthy causes this year.



Children in Need- Friday 13th November

We also did some fundraising for BBC Children in Need as the students wanted to get involved with this. We helped raise vital funds to support the mental health of young people across the Nation. Students wore Pudsey based clothing/headbands, donated for a lunch Headteacher Damian kindly provided, that staff and students cooked, as well as completing a sponsored 10 question Maths challenge posted around the school.

You can donate to our Children in Need fundraising here: https://www.justgiving.com/fundraising/university-of-liverpool-maths-school1

Movember- Supporting Male Health.

This month students and staff are growing moustaches to help highlight the issues around everyone, particularly men, need to talk about health. We have discussed mental health in lessons and are encouraging all to talk to someone if they feel they need support. Similarly physical health must also be addressed and we will look at this later in the month.

Staff also had Mental Health first aid training so our pastoral team has more expertise in identifying and supporting students who may be having problems.

Information from Movember: Our fathers, partners, brothers and friends are facing a health crisis, yet it's rarely talked about. Men are dying too young. We can't afford to stay silent. We are the leading charity changing the face of men's health. We know what works for men – and what doesn't. Prostate cancer, testicular cancer, mental health and suicide prevention – we're taking them all on.Since 2003, Movember has funded more than 1,250 men's health projects around the world, challenging the status quo, and shaking up men's health research.

You can donate to our fundraising here, and please do as some of us really do look rather silly! https://www.justgiving.com/fundraising/university-of-liverpool-

NASA Talk

In late October we had Dr Andrew Abercromby, originally from Scotland, live from NASA's Johnson Space Centre in Houston to tell our sixth form students how his degree in Mechanical Engineering from Edinburgh led to working for NASA on a whole range of amazing projects and missions which he shared the details of.

Computer Science Lessons

Students have been studying the Structure and function of the CPU, and learning how low level instructions can be provided to the CPU in the form of binary numbers. Students have shown from just a small set of instructions more powerful operations can be created. This technique is called Abstraction and it's a fundamental part of Computer Science. Students have also been looking at logic gates, simplifying Boolean expressions using Karnaugh Maps to show cheaper reduced logic circuits that can perform the same task. They have also been using logic to solve real world business cases. We are now looking at the operating system (such as Windows, Linux, Android) and showing how the operating system supports the users and protects the hardware.

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Our Mission

We exist to enable children with a strong interest and high potential in the mathematical sciences to achieve global impact through careers in the mathematical sciences. By preparing them thoroughly and comprehensively for STEM degrees and significant roles both within local communities and the global community of science, technology, engineering and mathematics, our students will be equipped to become tomorrow's industrial and academic researchers, innovators who will address the world's greatest challenges, teachers who will inspire the next generation, wealth creators, entrepreneurs and problem solvers.

Social Media

We have been posting a lot of information on Instagram, Facebook and Twitter to help get the message out that we are here to help students across the region in our Outreach, and some of these may join us in September. Please do share and pass on information to those who may be interested so we can be sure to help as many students we can in the North West. We have even started a Tik Tok page, but we are rather lost in that one so will have to see how promoting Maths goes on that.

We are also posting weekly vlogs so you can get a feel for the lessons we deliver here. These are in a playlist on youtube you can access on this link:

https://www.youtube.com/playlist?list=PLuCaH0-PTwC7_2EeBByGK3qvHh_UcXCdM

Robotics Club

We have submitted 5 project ideas to the Astro-Pi competition and are awaiting feedback on whether we have been successful to the next stage. If successful we could have 5 project experiments to plan and code with the chance of having our code running on the ISS. I have chased this up so watch this space.

This week we have also looked into the Pi Wars Competition, and are planning to build a team and a sophisticated robot to take part in this competition. Robotics cub members spotted that we can gain a lot more points if the robot can understand voice commands....Hey Alexa bot follow the black line. We were also surprised to see a rule that our robots were not allowed to have a flame thrower 😲

Lastly, great news today our 3D printer arrived as well as some filament, so time to start printing some robotics parts. We also heard that our Arduino Kits are now in the UK so we should have these soon as well. Steve can hardly contain himself 😃

Wednesday 9th December 2020 13.45-14.30

Driving is a risky business!

Dr Laura Bonnett (William Guy Lecturer)

Digital event via the RSS Merseyside Youtube channel