EXETER MATHS SCHOOL
FREEDOM FOR THINKERS

PARENTS' NEWSLETTER

November 2019 – Issue 19

Welcome to our latest newsletter for parents, designed to give you a little insight into what has been happening at EMS. As ever, this term is long and exhausting but also exciting and your sons and daughters continue to make us proud every day.

Year 12 really hit the ground running in September, embracing EMS life, each other and the opportunities presented to them. Year 13 have been coping well with the competing demands of university admissions, A-level study and EMC projects. Form tutors have been spending time with students on a 1-2-1 basis to review how they are doing and offer support.

Our student council has gone from strength to strength with students articulating and sharing their views and those of others with respect and maturity. Most recently they have been discussing how to further improve integration between year 12 and year 13 and have also selected furniture for their courtyard space. Whilst on the subject of their maturity, they have crucially been forming ideas for some fun activities for the Christmas season which may or may not involve Joe dressing up as Santa with Perin (his dog) as a reindeer… never too mature for Christmas joy!

In December we will once again be hosted by the University of Exeter for our annual Christmas Lectures – an opportunity for year 12 students to shine by sharing the outcomes of their academic projects. I do hope you will be able to join us for what is always a highlight of the year.

Kerry

PARENTS' FORUM

Dear Parents

The parents' forum is an informal network to share information and get to know other parents in order to better support our EMS students. In addition to half-termly meetings, there are WhatsApp and closed Facebook groups.

The next parents' forum meeting is on Friday 20th December 12:30-2 about 'Why consider integrated masters?', 'HPV vaccination for boys' and a general catch up. Briefing notes will be sent out as I appreciate many people can't get to the Friday meetings.

I plan to have a meeting about university open days next year and would really appreciate Yr 13 parents sharing general hints/tips and any university specific information. An evening meetup is planned for Tuesday 14th January at one of the restaurants near Exeter Central - save the date!

Gail: ems.parentsforum@gmail.com

UPCOMING DATES

- Thursday 19 December – Christmas Lectures
- Friday 20 December – Last day of term
- Monday 6 January – First day back after Christmas
- Monday 13 January – Non-student day

Our non-student day will enable staff to spend some crucial time training and preparing for the remainder of the school year. No students will be in school that day and EMS lessons will begin at 1045 on Tuesday 14th January. Students in accommodation will be expected to arrive on Tuesday 14th January.

STAFF CHANGES

When you give the school a ring or email our enquiries, you are most likely to be answered by our fabulous new receptionist and administrator, Tor. This September we welcomed a new Physics teacher to the team: Marcus is joining us for a one year development post during which time he will be completing research into improving teaching and learning. We are also expanding our mathematics teaching team in January when Fiona Reid will be joining us. Fiona is moving to the area having previously taught at the only other maths school in the country.

You can read more about all our staff members on our website: https://www.exetermathematicsschool.ac.uk/people/

TEAM MATHS CHALLENGE

Oscar A, Chloe-Anne E, Harriet W and Ollie P represented EMS at the regional heats for the Senior Team maths Challenge in Exmouth on Wed.

They finished joint first out of 17 teams and will be attending the final in London February. Well done Team!

AWARDS, COMPETITIONS & ACTIVITIES

Running Club

The running club has become a popular fixture here at EMS. Students run every week on a Wednesday with Lewis and Mel. The weather hasn't beaten us yet, and we can be clearly seen by all in our high-vis jackets! Well done to all of you who turn up each week smiling and ready to go.

Lewis

Christmas Lectures

The 2019 EMS Christmas Lectures will take place on Thursday 19th December from 1230-1600, when Year 12 students will be presenting their EMC findings to an audience of academics, families, staff, governors and Outreach students. Year 12 families were emailed on 13th November with information about how to reserve tickets. Please note that this event is taking place at the Alumni Auditorium on the Streatham Campus of the university: https://www.exeter.ac.uk/visit/directions/streathammap/

Susie

English Speaking Board (ESB)

13 of the 17 students who have expressed an interest in taking the English Speaking Board Level 3 Certificate in Speech (grade 6) were able to attend the first lunchtime meeting to prepare for the examination in the Spring. Five students dared to stand up and read poems and prose aloud to the group, choosing excerpts from writers as varied as Terry Pratchett to Marcus Aurelius, and we started to compare performance with the expected criteria and think about how we can improve. The examination requires students to give a five minute presentation about a piece of equipment or IT application, talk about and recite a piece of literature, give a critical review of a piece of performance art and take part in discussions about the presentations in their group. All year 13 students are invited to take part each year and the results over the last two years when we have offered this have been really excellent.

Claire

Student Volunteers

EMS has always relied on its students to contribute to our busy school community through volunteering their time. This year, for the first time, we asked EMS students to sign up to specific volunteering opportunities at the start of the academic year. The response has been fantastic. We'd like to thank everyone who's participated but would like to particularly mention Chloe M, Iris P, Ryan T, Leo C, Aziz B, Yuki A, Simon H and Jess B who have gone above and beyond. Some of the activities the students have supported so far include helping out at workshops with Years 6, 8, 9, 10 and 11 external students, showing prospective students and parents around the school on Taster Days, overseeing the care and maintenance of our laptops, undertaking training to teach Primary students on our Ri programme next term, keeping the student kitchen spick and span and visiting schools in the region to support applications for the TeenTech Awards 2020, a national programme that helps students to see how they might apply science and technology to real world problems.

Thank you to all of our students for the help they give – keep up the good work!

Susie

Non-Euclidean Geometry

Some students have been coming to meetings on Thursdays after school to learn how to crochet and how to make Euclidean surfaces (flat surfaces) and non-Euclidean surfaces (curved surfaces where Euclid's parallel postulate no longer holds true). Some curious shapes are starting to be seen around the school and I hope some will be appearing in tinsel yarn on the Christmas tree a little later…

Claire

MATHS OLYMPIAD FOR GIRLS

Twelve of our students recently took part in the Mathematical Olympiad for Girls (MOG). This is a 2.5-hour competition consisting of five challenging problems aimed at girls and young women across the UK. Marks are awarded not just for correct answers but for well written solutions.

The questions in the paper are extremely challenging but very interesting. The students did enjoy the paper and they performed really well. Their performance was comfortably above the national average, even though most schools only enter their top one or two students.

Top scorer in the year was Lily who achieved a score of 48 out of 50, placing her in the top twenty of students nationally. Joanne and Harriet W also received Distinctions. Congratulations to everyone who took part and for those who didn't, this is just one of several competitions taking place throughout the year.

The following is an extract from one of the questions in this year's MOG:

Consider the list of 1800 fractions

$$\frac{1}{1800}, \frac{2}{1800}, \ldots, \frac{1799}{1800}, \frac{1800}{1800}.$$

How many are *not* in simplest form? Explain your reasoning.

PHYSICS

With October assessments done, the physics department now looking forward to several extra-curricular activities that we have planned. Our new Micro-Controllers club is proving popular and we hope to see some interesting projects coming together once we obtain all the necessary hardware. We are also looking forward to taking a group of students to the Culham Centre for Fusion, home of the Joint European Torus, for what should be a fascinating tour of the facility.

Ten of our year 13 students have entered the British Physics Olympiad this year. It's a very tough competition so we'll keep our fingers crossed for them! We also have several keen physicists entering this year's Online Physics Brawl and we wish them the best of luck too!

MATHS

How do you write about Mathematics in a Maths school? It is everywhere and touches all that we do.

We have had our first round of assessments for year 12 in October. The Mathematics assessments are tough for students so recently come from GCSE, but we want to challenge them and see how far they have come. The more work they do the better they will get, and there are some who are realising that more work is needed at this level than was needed for GCSE. The year 12 students I have come across so far are a lovely bunch with a lot of enthusiasm and lots of potential. Many have been helping with outreach, and I can vouch from personal experience that it is far more enjoyable to be teaching year 6 students when I have two year 12 helpers getting involved and encouraging participation.

Our year 13 students are settling into the deeper ideas of Further Mathematics now and starting to see connections between topics which they hadn't realised were connected. There is a thrill which runs quietly (or not so quietly) round a class when they realise that

$$\left(\sum_{r=1}^{n} r\right)^2 = \sum_{r=1}^{n} r^3$$

and can finally see why $e^{\pi i} = -1$ from infinite polynomial expansions. What's not to like there?

COMPUTER SCIENCE

The Computer Science department returned to the new academic year with the best results to date and an increase in student numbers opting to study our subject in Year 12. It is partially due to the school being selected to be one of 23 Computing Hubs to support the aims of the National Centre for Computing Education (NCCE). In this role we have begun to support both Primary and Secondary Schools in their provision of our subject across all year groups. In this capacity we have already visited St. Peter's in Exeter, Exmouth Community College, Great Torrington Secondary School and Chulmleigh Academy Trust to help their students achieve in the national TeenTech competition. We are extremely proud to the following students who have volunteered to facilitate these workshops:

Ryan Traviss, Ellie Harris, Chloe Morgan, Tilly Widdowson, Harry Taylor, Ollie van Aerle, Craig Moncur, Yuki Aizawa, Ben Harbey, Moris Shi & Harriet Wood

The highlights of our in-school activities have been the launch of the final project in year 13 and the participation of all EMS students on the Bebras Computational Thinking competition.

EMC CERTIFICATE

The Autumn term is always a great term for EMC. Year 12s have started their first projects with University of Exeter academics. This year's projects are varied and interesting. Topics range from a Disco Ball Earth to Random Walks to Snowflake Mathematics. The way the year 12s get stuck into these projects, with very little help, never ceases to amaze me. The determination, motivation and skill shown this year has been incredible.

EMS staff offer little specific support although we do run EMC skill sessions in programming and literacy. The students not only get to interact with University academics but with undergraduate mentors, who have done a great job this year, especially with facilitating collaboration and teamwork.

Coming up is the daunting yet exciting task of speaking in a university lecture hall in front of 400 people and we hope many of you are able to attend.

This term is all about self-motivation for the year 13s together with persistence, time management and effort. This is the term in which the majority of their individual project is done. This is the hardest project we do at EMS as it is completely independent. It is hugely rewarding to see students highlight and solve their own problems during their project. I am sure that it will prove to be an extremely useful experience for later in life. I look forward to seeing the outcomes in the spring.

ACCOMMODATION – SPRING 2019

It has been a busy term in accommodation! The Year 12s continue to find their feet and the Year 13s are supporting them brilliantly. The students are enjoying the opportunity to socialise in the evenings, with many groups playing card games, having movie nights, going for walks, or using the games consoles together. One highlight has been the Red Coat Tours' Halloween Special, where we uncovered Exeter's spooky past. Running Club has also proved a big hit with Year 12 and 13 alike – so a big thanks to Lewis and Mel. Students working together on homework continues to play an important part of accommodation life. They have been preparing together for entrance tests and various competitios, including the Girls' Olympiad and Senior Maths Challenge

Some of our students have been looking at ways to reduce the environmental impact we have in accommodation by making changes to the way we shop and eat. Overly packaged snacks and products containing palm oil are being replaced by delicious homemade treats such as flapjacks, and we have swapped some of the plastic wrapped items we usually buy for loose or alternatively-packaged ones instead.

Our Year 12s will soon complete their training in Food Hygiene and we continue to encourage all students to push their culinary horizons. Our recent focus has been on wholesome and home-cooked dishes, and we are looking forward to the upcoming Christmas buffet and Secret Santa later this term.

We can be contacted at: gracestrachan@exeterms.ac.uk; billhughes@exeterms.ac.uk and carlymiller@exeterms.ac.uk

Carly, Bill & Grace

EXAM TIMETABLE

Timetable for EMS A level Exams Summer 2020

Please note that this timetable was updated on 08/11/19 following changes introduced by all exam boards. Some exams that were scheduled for the morning have now been moved to the afternoon. These changes are marked in blue below

Physics Component 1	2 hr 15min	A420U10-1	Monday 18 May	pm
Further Mathematics Core pure	2 hr 40min	Y420	Friday 22 May	am
Computer Science Paper 1	2 hr 30 min	7517/1D	Monday 1 June	am
Physics Component 2	2 hrs	A420U20-1	Monday 1 June	pm
Pure Mathematics and Mechanics	2 hours	H640/1	Wednesday 3 June	pm
Further Mathematics Mechanics Major	2 hr 15min	Y421	Thursday 4 June	pm
Further Mathematics Mechanics Minor	1 hr 15min	Y431	Thursday 4 June	pm
Physics Component 3	2 hr 15min	A420U30-1	Friday 5 June	pm
Computer Science Paper 2	2 hr 30min	7517/2	Tuesday 9 June	am
Pure Mathematics and Statistics	2 hrs	H640/2	Wednesday 10 June	pm
Further Mathematics Statistics Major	2 hr 15min	Y422	Thursday 11 June	pm
Further Mathematics Statistics Minor	1 hr 15min	Y432	Thursday 11 June	pm
Pure Mathematics and Comprehension	2 hrs	H640/3	Friday 12 June	pm
Further Mathematics Modelling with Algorithms	1 hr 15min	Y433	Tuesday 16 June	pm
Further Mathematics Numerical Methods	1 hr 15min	Y434	Thursday 18 June	pm
Further Mathematics Extra Pure	1 hr 15min	Y435	Monday 22 June	pm
Further Mathematics Further Pure with Technology	1 hr 45min	Y436	Tuesday 23 June	pm