



# STEM HUB NEWSLETTER

A STUDENT NEWSLETTER AT DRAYTON MANOR HIGH SCHOOL

Summer Term Edition

[draytonmanor.wixsite.com/stem](http://draytonmanor.wixsite.com/stem)

## WELCOME TO THE STEM HUB NEWSLETTER

Hello, and welcome to the third Drayton Manor High School STEM Newsletter. This newsletter will focus on STEM (Science, Technology, Engineering and Mathematics) news and activities which have taken place during this school term. It will also contain information about the winners of our STEM competition, as well as the key stage, year group, and top three tutor groups that have accumulated the most points on the STEM Leaderboard.

This term, the STEM Hub Team here at Drayton Manor have been busy organizing quizzes, running competitions and attending events so as to encourage STEM participation across the school.

Our fortnightly quizzes have enabled tutor groups in KS5 to engage in friendly competition, whilst simultaneously learning a wide variety of STEM trivia. We hope to make more of our quizzes available to KS3 and KS4 tutor groups from September.

### STEM Hub KS3 Competition

The STEM Hub Summer KS3 Competition gave students in years 7, 8 and 9 the opportunity to research a turning point in science between 1920 and the present day.

Well done to **Payal (8I)**, **Sophia (8L)** and **Emmanuel (8I)** for achieving first place in this competition! Their group conducted and compiled interesting research into the tetanus toxoid vaccine – a vaccine developed in 1924 which has helped save countless lives.



### How was it discovered?

Tetanus antiserum was developed in 1890, with its protective effects lasting a few weeks. The tetanus toxoid vaccine was developed in 1924, and came into common use for soldiers in World War II. Its use resulted in a 95% decrease in the rate of tetanus.



After three doses, almost everyone is initially immune but additional doses every ten years are recommended to maintain immunity. A booster shot should be given within 48 hours of an injury to people whose immunization is out of date.

Globally deaths from tetanus in newborns decreased from 787,000 in 1988 to 58,000 in 2010, and 34,000 deaths in 2015 (a 96% decrease from 1988).



### Similar discoveries to the Tetanus Toxoid in recent times

- Pfizer - vaccine created in 1 year to protect humans from Covid - 19
- Varivax - vaccine created in 1995 to prevent chickenpox
- HPV - vaccine created in 1990 to protect humans from several types of cancer

Our winners' presentation is now available for viewing on the STEM Hub website. Well done all!

### Drayton Manor Online Awareness Research

In the digital and interconnected world of today, the topic of online awareness has never been more prevalent. It is for this reason that, over the past few months, the Digital Ambassadors at Drayton Manor have been conducting research into social media and technology usage across our school.

Their research has brought both the positives and negatives of technology to light. Did you know, for example, that we all on average spend over 60% of our time online using social media?

You can view the Digital Ambassadors' leaflet on this topic on the STEM Hub Wall of Fame [here](#).

### STEM Hub Points

TOP YEAR GROUP:  
Year 12: **(768 Points)**

TOP TUTOR GROUPS:  
12.4: **(108 Points)**  
12.8: **(107 Points)**  
12.2: **(101 Points)**

TOP KEY STAGE:  
KS5: **(1321 points)**

### STEM Hub Houses Leaderboard

1st: **Caladrius (661)**



2nd: **Griffin (392)**



3rd: **Pegasus (379)**



4th: **Phoenix (360)**



<https://draytonmanor.wixsite.com/stem/leaderboard>



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## Trips to Imperial College London

Students in the Drayton Manor Sixth Form were pleased to embark on two trips to Imperial College earlier in the term. In early May, our Year 12 STEM Hub members took part in the final stage of the interschool Green STEM Competition. Working with students from a number of different schools, each group heavily researched a product or plan to improve green living across the UK, which they then presented to a panel of scientists and a rather large audience!



The second trip to Imperial College took place over a week in June, and was open to Year 12 physicists from a number of different schools. The focus of this trip was on the topic of simple harmonic motion (SHM), a type of motion in which the acceleration of an object is proportional to its displacement, but in the opposite direction. Pendulums oscillating

back-and-forth and springs bobbing up-and-down are two examples of simple harmonic motion in effect. Participants used the Python programming language and differential equations to model SHM in a variety of different contexts. Percy (12.4) said “the week was really enjoyable. We completed tasks that were genuinely interesting and stimulating, and gained valuable insight into scientific computing and physics in general. Individual schools had the opportunity to present their findings as a team at the end of the week. The creativity and depth of research across all the presentations was outstanding, and I was truly impressed by the quality of teaching by Imperial College staff”.

## STEM Hub Report

As it is now the end of yet another academic year, a number of our STEM Hub members will be heading off to pastures new over the coming months.

We would like to give our thanks to all of our Year 13 team members for their efforts towards helping this community grow. In particular, we give our special thanks to Kuba (13.8) for diligently founding the STEM Hub in 2021.

The STEM Hub is currently looking to take on new members who will be in Year 12 next year. If you are passionate about Science, Technology, Engineering and/or Mathematics, we encourage you to apply using the MS Form [here](#). Places are limited, and will be confirmed in the Autumn Term.

We hope you have enjoyed the STEM Hub Newsletter. Thank you very much to our STEM Hub team:

**Kuba 13.8** – STEM Hub Creator

**Neil 12.1** – STEM Hub Manager and Acting Newsletter Author

**Amar 13.7** – Newsletter Author

**Muhammad 13.8** – Leaderboard and Systems Coordinator

**Beth 12.4** – Quiz Author

**Thaleise 12.8** – Marketing

**Tiyonne 12.8** – Competitions Coordinator

**Abdiqani 12.8** – Competitions Coordinator

**Zahra 12.6** – Blog Author and Coordinator

**Rathurshan 13.3** – Blog Author and Coordinator

**Dilvir 12.8** – Opportunities Coordinator