

PHYSMATHS – Wednesday 10th July 2019

Physics Workshop Information – Overview

Timetable for the Day

0845-0915	Arrival
0915-0930	Welcome
0930-1025	Workshop 1
1035-1130	Workshop 2
1130-1150	Break
1150-1245	Workshop 3
1245-1330	Lunch
1330-1425	Workshop 4
1435-1535	Keynote Speaker
1535-1545	Feedback
1545	Depart

All delegates need to choose which workshops they would like to attend from the information on the following pages. Please ensure that you only book one ticket per timeslot.

Please ensure that you do choose 4 workshops, there will be adequate time for breaks throughout the day and we expect delegates to make the most of the day and attend all 4 sessions plus the Keynote Presentation.

Please review the information about each workshop on the following pages to determine which sessions you would like to attend. For clarity, each workshop timeslot is outlined on a separate page. Once you have made your selection, please click the link below to book up specific workshops.

<https://www.eventbrite.co.uk/e/physmaths-workshops-2019-tickets-62200190444>
YOU WILL NEED TO ENTER A PASSWORD TO BOOK: Physics1007 (case sensitive).

Should you have any queries, please email events@exeterms.ac.uk.

Please ensure that you have made your workshop choices by 9am on Monday 1st July.

WORKSHOP ONE: 0930-1025

Choose ONE of the following: -

Workshop Details	Workshop Lead
1A. What is Physics? Open ended problem solving questions that encourage teachers and students to embrace the fact Physics and science involves unknowns. Then using GCSE equations to solve interesting questions on the back of an envelope.	Ed Horncastle, EMS
1B. Maths for Physics A recap of the mathematical techniques typically used in GCSE physics, including re-arranging formulae, interpreting graphs. Will include lots of examples and practice. Suitable for anyone who feels their maths is a little rusty!	Malcolm Simpson, EMS
1C. Geogebra and Physics Geogebra is a free, easy to use and very powerful graphical calculating program that will empower you and your students to solve problems!	Joe Rowing, EMS

WORKSHOP TWO: 1035-1130

Choose ONE of the following: -

Workshop Details	Workshop Lead
2A. Wait... what? A journey through some of the counterintuitive, confusing, and sometimes downright weird findings from KS3/4/5 physics. We will look at Newton, waves, circuits and perhaps some other problem areas with which pupils struggle.	Will Braithwaite, EMS
2B. Introduction to the Isaac Physics Programme This session will provide information about the Isaac Physics programme and its aims. Isaac is a site designed to offer support and activities in Physics problem-solving to teachers and to students; it combines online study tools with face-to-face and on-line events. We will show examples of the resources in Isaac Physics and demonstrate how teachers can use Isaac Physics to set and monitor assignments tailored to the needs of their students. For non-specialist teachers of Physics, Isaac provides opportunities for ongoing CPD and we will help to develop your own problem-solving skills by working through some selected Isaac Physics problems.	Roger Nuttall
2C. TSST Wrap-up <i>FOR TEACHERS WHO HAVE COMPLETED TSST COURSE AT EMS THIS ACADEMIC YEAR ONLY. IF YOU DID DO THIS COURSE, YOU <u>MUST</u> SELECT THIS OPTION FOR THIS TIMESLOT.</i>	EMS Staff



WORKSHOP THREE: 1150-1245

Choose ONE of the following: -

Workshop Details	Workshop Lead
3A. Electrical Current and Resistance Further info to follow.	Dorian Pascoe, IoP
3B. Make and Take Scratch Holograms Holograms can provide us with an engaging and interesting activity to investigate light, reflection, information storage and more!	Joe Rowing, EMS
3C. How does Radiation work? An in-depth look at the physics that leads to nuclear radiation and gives alpha, beta and gamma their properties. The aim of this session is to give you a better feel for this fairly abstract topic and to improve confidence in your understanding of it.	Malcolm Simpson, EMS

WORKSHOP FOUR: 1330-1425

Choose ONE of the following: -

Workshop Details	Workshop Lead
4A. Electricity and Transmission This session is for new or training Physics teachers, experienced teachers not specialist in Physics and interested technicians. It is aimed at the delivery of electricity in KS3 or 4, with a focus on 'getting the basics right' and how this applies to higher level ideas like mains a.c., transformers etc. There will be some hands-on practical, and discussions surrounding; making the most of demos, tackling the concepts, and cracking the maths. The session works well as a stand-alone or as a "part two" following Dorian's session earlier.	Rich Barry
4B. Practically Imperfect: always less than 100% (KS3 and KS4) Getting to grips with understanding the physics sums on energy, power and efficiency up to GCSE level. We'll look at making sense of how the formulae can be used in selected practical/ demo / real-life contexts, which can be used with classes up to GCSE. We'll aim to describe what's going on in terms of energy/power stores and pathways, using the recommended terminology. A session for those who are not already confident about explaining these to classes and guiding them through the calculations.	Alastair Cuthbertson, IOP 11-18 Physics Network Co-ordinator for Devon & Cornwall
4C. The Spinning Jelly and other Fun Experiments Topics will come from a variety of areas of the GCSE and A level Physics specifications. Audience participation essential!	Keith Gibbs, School Physics



KEYNOTE SPEAKER: 1435-1535

Workshop 4 will be followed by our Keynote presentation which all delegates will attend, given by sculptor Peter Randall-Page, *Nature's Pattern Book*. Peter will explore how natural phenomena are underpinned by the laws of Physics in relation to his practice as an artist.

There is no need to make a booking for this presentation.

The conference will conclude with a brief feedback session, with departure by 1545.

Data Protection

Exeter Mathematics School takes the protection of your information seriously and is fully committed to respecting the data privacy of all individuals.

The information you have given on this form will be used by the School, only in connection with Teacher CPD Programmes and its subsequent administration. The School may be obliged to share your personal information with certain agencies or organisations for the purpose of 2018-19 CPD programmes, subject to their own fair processing notices.

For further information on how Exeter Mathematics School collects, uses, and stores your data or how you can request access to your data – please refer to the Data Protection section on our website: <https://www.exetermathematicsschool.ac.uk/data-protection/>

