Regional Physics Day in Bristol 2020

Clifton College, Guthrie Road, Clifton, Bristol, BS8 3EZ
Friday 27 March 2020

This full day of Physics CPD is run, organised and funded by the Institute of Physics with generous support from Clifton College. Lunch and refreshments are provided.

Programme

9.00am – 9.30am	**Registration, welcome and refreshments**
9.30am – 10.45am	Session 1 (Workshops 1A – 1F)
10.45am – 11.05pm	**Refreshment break and exhibitor stands**
11.05pm – 12.20pm	Session 2 (Workshops 2A – 2F)
12.20pm – 1.20pm	Lunch, **Exhibitor stands, raffle**
1.20pm – 2.35pm	Session 3 (Workshops 3A – 3F)
2.35pm – 3.15pm	Keynote Speaker
3.15pm – 3.30	**Evaluations**

Choosing your workshops - Please read all about the workshops before booking online.

How to Register
Book your place at: http://bit.ly/IOPRegionalDayAtCliftonCollegeBristol
If you have any problems booking or questions about the day, email education-south@iop.org

Workshop 1 choices		Overview
1A	Make the most of dry ice Workshop Leader Glyn Jones-Parry	Dry ice can be expensive, so when you get it, why not make the most of it by doing numerous experiments with it at the same time? Ideas to make use of Dry Ice in classroom and clubs. KS 4-5
1B	Energy, moving forward Workshop Leader Trevor Plant	This workshop takes you from where you are in your teaching of the new energy curriculum, and moves you forward. It is therefore suitable for all teachers, from newly qualified (or still in training) to experienced physicist. KS 3-4
1C	Do Physics – a carousel of short experiments	A carousel of short experiments is suitable as starters, investigations or bait to draw students into greater involvement in Physics. They are easily set up and rich in intriguing Physics designed to inspire, provoke and engage. As well as having a go at experiments, we will discuss effective ways to use these with students to support

	Workshop Leader Nicky Thomas	careers. KS3-5
1D	Active Learning with Non-Specialist Teachers of Physics Workshop Leader Alessio Bernardelli	In this workshop we will explore strategies to develop active learning with non-specialist teachers of physics to tackle difficult topics in physics and support learning for students. The activities modelled can be used equally effectively in the classroom with students to develop deeper understanding and independent learners. KS 3-5
1E	Physics with Food Workshop Leaders Alison Alexander and Ruth Wiltsher	Physics is everywhere, and the ideas taught at school can be easily demonstrated using everyday objects. The series of demos and experiments in this workshop all use food. They were chosen because they can be used to introduce or explore different physics topics. We will discuss how the demos and experiments could be used in class. Many of the demos fit into more than one key stage. KS 3-5 and Science clubs
1F	Isaac Physics Workshop Leader Barrie Hall	Isaacphysics.org offers support and activities in physics problem solving to teachers and students from GCSE level upwards. This session covers the basics of setting assignments, looking at results, how to use the data, and ways to embed Isaac Physics in teaching materials by customising boards of questions and embedding links. Bringing your own laptop will be useful. KS 4-5
Workshop 2 choices		Overview
2A	What can you do with Balloons Workshop Leader Joanna Kent	Take a look with us at a variety of demonstrations and investigations that use balloons to teach topics in the physics curriculum. Please feel free to bring your own ideas! KS 3-5
2B	Putting #CogSciSci into practice in the physics classroom.	Have you seen or heard of #cogscisci on Edutwitter? Are you wondering what all the fuss is about? Do you want to find out more about cognitive science? Would you like to know where to find resources to use in Physics? If the answer to any of these questions is yes, come along to my workshop. I will go through the background

	Workshop Leader Liz Noursargh	to #cogscisci and show you where to find out more about it as well as how to access the wealth of free resources made available by teachers across the country. KS 3-5
2C	ICT in the Science Lab Workshop Leader David Richardson	This session will get us to think about how we use ICT in the Physics Classroom. We will consider the use of spreadsheets, plotting graphs, online collaboration and datalogging. Bringing a connected device will be useful - public Wi-Fi access will be available. KS 4-5
2D	The EM Spectrum and Climate Change - sources, uses and dangers in a different light Workshop Leader Jeremy Thomas	This workshop is designed to enhance your knowledge of EM radiation in the context of climate change and Earth observation whilst also providing ideas for teaching this topic in a very relevant and engaging way for your students. Through explanation, practical demonstrations and shared resources I hope to show you ways in which to encourage interest in Physics through emphasising its relevance in the context of a very relevant, real world problem. KS 3-4
2E	Using Modelling when teaching Electricity Workshop Leader Helen Pollard	We'll familiarise with three different models for electric circuits, and then discuss when you might use them in the classroom. Comparing the strengths and weaknesses of each model, we'll develop a hierarchy of understanding so that you can plan lessons to track your learners' progress at all levels. KS 3-4 (5)
2F	Isaac Physics **(REPEAT)** Workshop Leader Barrie Hall	Isaacphysics.org offers support and activities in physics problem solving to teachers and students from GCSE level upwards. This session covers the basics of setting assignments, looking at results, how to use the data, and ways to embed Isaac Physics in teaching materials by customising boards of questions and embedding links. KS 4-5
Workshop 3 choices		Overview
3A	Ideas for teaching forces	This session looks at some practical ways to teach forces, from introducing them in Year 7 to explaining Newton's Laws at GCSE.

	Workshop Leader Lewis Matheson	KS 3-4
3B	Physics with Geogebra Workshop Leader Joe Rowing	In this workshop we will learn how to use the free and cross platform software “Geogebra” in the physics classroom. Whilst many students will be familiar with Geogebra as a fantastically simple and powerful mathematical tool, it can also be used quickly and easily to model physics concepts in a way that is fantastic for the classroom. The workshop is suitable for all key stages though the examples used will be predominantly from the GCSE and A-level (Practical data processing, Waves topic, Motion in one and two dimensions). KS 3-5
3C	Understanding and implementing Science capital in your practice Workshop Leader Shane Clark	Science capital can be defined as the sum of all the science-related knowledge, attitudes, experiences and resources that an individual builds up through their life. This includes what science they know about, what they think about science, the people they know who have an understanding of science, and the day-to-day engagement they have with science. So, what is your student’s science capital? And, how can you improve your student’s science capital? In this workshop we will look at how we can ‘measure’ your student’s science capital and use this to develop strategies in your practice to enhance and develop your student’s engagement and understanding of science. KS 2-5
3D	The EM Spectrum and Climate Change - sources, uses and dangers in a different light **(REPEAT)** Workshop Leader Jeremy Thomas	This workshop is designed to enhance your knowledge of EM radiation in the context of climate change and Earth observation whilst also providing ideas for teaching this topic in a very relevant and engaging way for your students. Through explanation, practical demonstrations and shared resources I hope to show you ways in which to encourage interest in Physics through emphasising its relevance in the context of a very relevant, real world problem. KS 3-4
3E	Atomic and Particle Physics using LEGO	This relaxed and informal workshop will explore creative ways to learn about the basic building blocks of the universe using

	Workshop Leader Dan Cottle	the building blocks of lego. It will focus on representations of atoms and radioactive decay at GCSE level and the standard model at A level. KS 4-5
3F	Big Picture physics - Making progress visible Workshop Leader Simon Ransome-Williams	'A discussion on approaches that allow students to understand their physics course in KS3 and KS4 and their place in it. The new energy model will be discussed and used as a possible approach to a physics 'big picture'. Also ideas on how progress in physics at a lesson, topic and yearly level can be made visible to students. KS 3-4