



National News

Summer 2010

Hands-on physics

The central aim of the Stimulating Physics Network is to inspire students with the excitement and opportunities physics can offer. To achieve this it is vital to first inspire teachers. Our team of Physics Network Co-ordinators (PNCs), who are themselves teachers, run a series of free hands-on workshops that offer engaging, entertaining and effective approaches to teaching physics. Two workshops on offer this term look at new ways to approach classic equipment and ideas.

Shocked and Stunned workshop

This workshop aims to improve people's knowledge of how the Van de Graaff generator works and explore the ways of how it can be used effectively within the classroom. Although these shrunk down particle accelerators can really help visualise physics and make for a memorable lesson, we have found that many teachers lack the confidence to use them, especially non-specialist physics teachers.

At this workshop you can play with the portable generators and accessories supplied, as well as get some ideas about how to employ them in your teaching. Participants will leave this workshop with a CD of resources and the determination to retrieve their generator, dust it off and begin to use it to engage students.



Software for Skint Schools

Discover 21 bits of free software that you could use in school to enliven your teaching while saving your budget. Schools are often bombarded with adverts for software by companies that have the money to invest in advertising. People who produce free software are, of course, unlikely to be able to publicise their products to the same extent. In the Software for Skint Schools workshop you will get a demonstration of some of the packages and the chance to explore what they offer. At the end of the session you will get a CD with all 21 pieces of software on (note: all the software is freely available on the web).

We have permission from all the authors of the software to be able to distribute the material in this way and also for you to go back to school, deliver the PowerPoint (which is also included on the CD) and copy the CD for colleagues.

There is a wide selection of workshops on offer from the PNCs, see your region's newsletter for details of the workshops in your area this term or view the calendar on your region's page on stimulatingphysics.org/regions. For a fuller list of workshops that the Stimulating Physics Network can offer visit iop.org/workshops.

If there is a workshop you fancy it should be possible to arrange a bespoke session, especially if you can bring together the science teachers from several schools in your area to join in. To discuss the possibilities contact your regional External Liaison Officer, whose details are on page 3.

talkphysics.org

The support and inspirational ideas extends beyond the workshops through talkphysics.org, a free specialist, online community for teachers of physics. Developed by the Institute of Physics, our teams of Teaching & Learning Coaches and Physics Network Co-ordinators, as well as in-house specialists at IOP, are available online with ideas, solutions, support and resources. Through discussions on hot topics in the physics classrooms, teachers from all across the country are asking questions, sharing experiences and swapping top tips. A topic posted a couple of weeks ago asking for help on 'Measuring the speed of sound in a metal rod' has received a wealth of responses and advice including links to online video presentations and Nuffield resources as well as sparking a discussion on the journey of the pulse through a hammer head.

In addition to discussion groups, talkphysics provides easy access to Supporting Physics Teaching resources. You can join the SPT Resources group and then download materials on forces, electricity and magnetism, Earth in space, light, sound and energy.

Register free at talkphysics.org.

Propelling physics teaching into the future

The Stimulating Physics Network is a government funded project aimed at improving the take-up of A level physics, offering free events, resources and activities to support teachers and inspire students in secondary schools across England.

stimulatingphysics.org

Supporting the supporters

The Stimulating Physics Network is now supporting 'non-specialist' teachers of physics in 276 schools across England. Each school can access up to six days of bespoke, in-school support from a local Teaching and Learning Coach. We attempt to focus our work in schools where 'non-specialists' do not have a physics trained colleague to provide this support. This is of real importance as only 19% of science teachers are classed as 'physics specialists' and in 2008, a total of about 800 secondary schools had no physics specialists. Whilst we are supporting approximately one third of these schools, we are very keen to establish and build new links to help co-ordinate and strengthen the support available to all new, existing and non-specialist teachers of physics.

Consequently, one of the long term aims of the network is to invest in resources, guidance and assistance to anyone who provides support, CPD or training for teachers of physics and subsequently strengthen the community of physics teacher supporters.

One approach being taken is to develop an annual national CPD conference for all supporters of teachers of physics. The first conference took place in June 2010 with 80 Advanced Skills Teachers, ITE tutors, Local Authority Science Advisers, CPD providers, Heads of Department and Secondary National Strategy Consultants gathering at the IOP HQ for the three-day event. The programme included workshops on developing teachers' Pedagogical Content Knowledge, our Rocket Launchers Make-and-Take workshop, 'Engaging with Girls' and a session on our physics enterprise activity, the Ashfield Music Festival.



We are already planning next year's event (visit www.iop.org/education/calendar), but in the meantime if supporting teachers of physics is an area you are interested in then please visit talkphysics.org. There you can find our 'Supporting Physics Teaching' resources which we base most of our teacher workshops on and join in discussions with other like-minded professionals.

Physics in the sun

The Stimulating Physics Network summer schools focused on increasing the skills, knowledge and confidence of non-specialist teachers of physics. Held in York and in Oxford, each event offered four days of workshop-based intensive support. Our team of Teaching and Learning Coaches ran the majority of the workshops which included hands-on, practical approaches to teaching basic physics topics from forces to sound, 'Software for Skint Schools' and encouraging girls in physics.

Almost 100 teachers attended the summer schools and feedback received indicated that the days had succeeded in engendering confidence and inspiration: "I found the course very useful in developing my understanding of physics and feel the skills I have learnt and the experience I have gained will be of huge benefit to my ability to teach the subject. Thank you all for the fantastic resources and support you gave us all and an overall great experience!" and "Finally looking forward to teaching physics!!!" We will keep you updated on plans for next year's summer schools.



Keep up to date

The Stimulating Physics Network website has been extended so now offers regional calendars listing all the Institute of Physics and Science Learning Centre events in your region. The listings are updated regularly so go online to find out about the physics support in your area. Visit stimulatingphysics.org/regions and select your region.

► Get in touch

To get connected with the Stimulating Physics Network contact your regional External Liaison Officer. They will be able to give you details of events and courses happening across your region. If you want a workshop on a particular

day then you could create a cluster group with two or three other schools and look to organise a session with a Physics Network Co-ordinator for a day and time that suits you. Contact your External Liaison Officer to find out more.

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Physics Update

The Institute of Physics is hosting a series of three-day residential courses for physics specialists. Each event features an exciting programme of talks and workshops with special guest speakers.

Autumn Physics Update

University of Oxford 17-19 December 2010

This course will include a visit to the world's largest fusion experimental facility at Culham Science Centre and a lecture from Prof Jim Al-Khalili on "The Secret of Chaos".

Spring Physics Update

University of York 15-17 April 2011

Hosted at the National Science Learning Centre, participants on this course will have the chance to explore the brand new National STEM Resource Centre and experience a practical medical physics workshop on "Seeing Inside the Body" from Dr Michael Drinnan.

Summer Physics Update

University of Bristol 8-10 July 2011

After Dr Neil Downie's hands-on sessions "Vacuum Bazookas & Vortex Transistors", participants will be able to indulge in an evening wine-tasting session on "The Science of Taste & Flavour" with Prof Peter Barham.

For more details on any of the Physics Update courses or to book a place visit iop.org/update or contact Manchi Chung (e-mail: manchi.chung@iop.org).

→ Workshops and lectures at ASE January 2011

Our teams of Physics Network Co-ordinators and Teaching and Learning Coaches are drawing on their wealth of experience in both teaching and supporting other teachers to provide an inspiring range of physics workshops at the Association for Science Education Annual Conference in Reading this January. For more details on ASE and to book conference places visit www.ase.org.uk.

Thursday 6 January

0930 - 1030	The Electric Magnetic Demonstration BC02
0930 - 1100	Toys and Physics BC03
0930 - 1130	Sparking Interest in Electricity BC05
1100 - 1300	Rocket Launchers Make-and-Take BC08
1130 - 1230	New Ideas? BC10
	Radio Astronomy BC11
	Earth in Space
1400 - 1500	Engaging with Girls: Making Your Physics Lessons More 'Girl Friendly' BC14
	Lights, Camera, Images: Ideas for Teaching Light, Colour and Spectra BC15
	Teaching Forces by Pulling Them Apart BC16
	Real Graphs from Real Data
1600 - 1700	Lights, Camera, Images: Ideas for Teaching Light, Colour & Spectra (repeat) BC25
	Magnetism with T.L.C. BC26
	Physics and Enterprise: Ashfield Music Festival Workshop BC27
	Son of New Ideas? BC28

→ All our sessions are listed as IOP in the ASE programme. If there is a **BC** code it means the workshop is a booked course so all are welcome to attend but you need to book your free place in advance via the ASE website or on the day in Reading.

Friday 7 January



0930 - 1030	A Practical Approach to Teaching Medical Physics BC30
	Teaching Physics Using YouTube and Hollywood BC31
	The Datamouse Project BC32
0930 - 1130	Dragsters Make-and-Take BC34
1130 - 1230	The John Lewis Lecture: Sustainable Energy - Without the Hot Air, Prof. David MacKay
	Teaching Energy at KS3
1100 - 1300	Modulated Laser Pen Workshop BC35
	Shocked and Stunned BC36
1400 - 1600	Modulated Laser Pen Workshop (repeat) BC44
	Large Scale Science Shows in your School Hall
	The Best of Physics Education (lecture)
1500 - 1600	The Best of Physics Education Plus!
1600 - 1700	Electricity - A Simple Circuit Model

Saturday 8 January



0930 - 1030	Encouraging Group Work in Physics Lessons BC50
	Physics Investigations High and Low Tech BC51
	Teaching Astronomy (talk)
	The SUN: Ideas about Daytime Astronomy and Solar Power BC52
	What Happens Next? BC53
1100 - 1300	Sparking Interest in Electricity (repeat) BC59
1130 - 1230	Encouraging Group Work in Physics Lessons (repeat) BC62
	Physics Investigations High and Low Tech (repeat) BC63
	What Happens Next? (repeat) BC64
1400 - 1500	Encouraging Group Work in Physics Lessons (repeat) BC65
	Physics Investigations High and Low Tech (repeat) BC66
	Teaching Forces with Force Spectacles! BC67
	What Happens Next? (repeat) BC68
1530 - 1630	Encouraging Group Work in Physics Lessons (repeat) BC71
	Physics Investigations High and Low Tech (repeat) BC72
	What Happens Next? (repeat) BC73

Do drop-in to the talkphysics area in the AMS Building for tea, biscuits and a chat with our team.