

National News

Autumn 2011



A boost for physics

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This summer saw an increase in the number of students sitting A level examinations in physics for the fifth consecutive year. The total number of students entered for physics A level increased by 6.1%, from 30,976 in 2010 to 32,860 in 2011, while applications for physics courses at university has also risen by more than 17% on last year. This is excellent news for programmes like the Stimulating Physics Network, where our aim is to improve the take-up of A level physics. The free events, resources and activities we offer are all intended to support teachers and help inspire students.

Our programme is run by the Institute of Physics and the National Network of Science Learning Centres and is part of a range of activity supported by the Government focussed on increasing young people's STEM skills. The importance placed on STEM (Science, Technology, Engineering and Mathematics) by the Government is a recognition of the need for a 21st century workforce that has the skills necessary to ensure the UK's place as a leader of science-based research and development.

This need was emphasised by the employers' group CBI in, 'Ready to Grow' the CBI/ EDI education and skills survey 2010, which identified "an under-supply of individuals with the right STEM skills at all levels – nearly two thirds (60%) of all employers report a problem. Yet these problems are likely to get worse – over half (59%) of employers expect difficulty recruiting STEM staff in the next three years. The science, hi-tech and IT sectors are particularly vulnerable – two-thirds of employers already report shortages, rising to three quarters of manufacturers."

Although this shortage could be seen as daunting, it does show that there are potentially excellent employment opportunities for students with the necessary STEM skills; so to find out how we can work with you to help engage and enthuse your students in physics, visit stimulatingphysics.org.

Creating a lasting impact

We are delighted to announce that our funding from the Department for Education has been extended to March 2014, at least at the current level. This means that we can continue to work to meet the aims of the Stimulating Physics Network: raising the profile of physics in schools; supporting the professional development of physics teachers; and engaging students with physics as an exciting, accessible, aspirational and relevant subject.

The extended funding is an excellent testament to our teams of Physics Network Co-ordinators and Teaching and Learning Coaches, who bring their hands-on experience from the classroom to inspire and support teachers of physics, both specialists and non-specialists. To ensure that the CPD and resources we offer continue to effectively meet the needs of teachers and students, we are launching an evaluation of SPN. The results from the online surveys will both inform future developments and measure the impact of our existing activity, helping us to prove to the government that we deliver real value and results in these tight economic times.

Schools currently working in partnership with SPN will be sent invitations shortly to take part in the evaluation. An independent evaluator, Babcock Research, is conducting the survey and will be emailing out invitations. If you receive an invitation, please do complete the survey as it is your feedback that enables us to offer effective support.

If you have any comments about SPN please don't wait for the evaluation but get in touch with your External Liaison Officer.

Bringing experts into the classroom

Connecting students with real-life science and scientists can be a powerful way of engaging them with physics. You can do this through resources, online communities and face-to-face visits, all of which can be accessed easily and many of which are free.

STEM Ambassadors

STEMNET (Science, Technology, Engineering and Mathematics Network) creates opportunities to inspire young people in Science, Technology, Engineering and Mathematics (STEM). They have developed a nation-wide volunteer programme that recruits professionals to engage with local schools as STEM Ambassadors. To date they have over 27,000 inspirational volunteers all willing to give up their time to open up the world of work to students. It is free to get a STEM Ambassador into your school, all you need to do is get in touch with STEMNET and identify how best to use a STEM Ambassador's skills. They could get involved with an after-school club, bring real-world perspective to curriculum topics or take part in a careers event.

→ To find out more visit: stemnet.org.uk

Contemporary Science

Bringing contemporary topics into the classroom can engage your students through controversial debate and the excitement of exploring cutting-edge, real-world problems. You can access the latest in scientific research, issues and ideas through physicsworld.com, an online global physics community created by IOP publishing. There are news stories, blogs, discussions, videos and free online events that you can explore, including topics such as 'Black holes act as galactic thermostats' and 'the inside track on simulation software'.

→ To find out more visit: physicsworld.com

Ashfield Music Festival

The IOP worked with the The Career Development Organisation (CRAC) to develop the Ashfield Music Festival, an enterprise activity for schools that engages students with a range of work skills and highlights the variety of careers opened up by A level physics. You can set your students the challenge of creating a music festival for a local council (Ashfield). Working in teams, students design all aspects of the main stage for a music festival, using the resource videos to learn from relevant professionals including an electrical engineer, project manager and health and safety adviser. You could get a STEM Ambassador involved to bring more real-world experience into the activity.

→ All the Ashfield Music Festival resources can be accessed free at: iop.org/education/teacher/extra_resources

Futuremorph

Created by the Science Council, Futuremorph is a website that brings to life the range of careers open to students studying science. Designed to be accessed directly by students, the features include interviews with scientists, quizzes, games, posters and the inspiring 'my future finder'. There are also areas for teachers and careers staff where you can find tips, resources packs and links to further useful sites.

→ Start exploring at: futuremorph.org

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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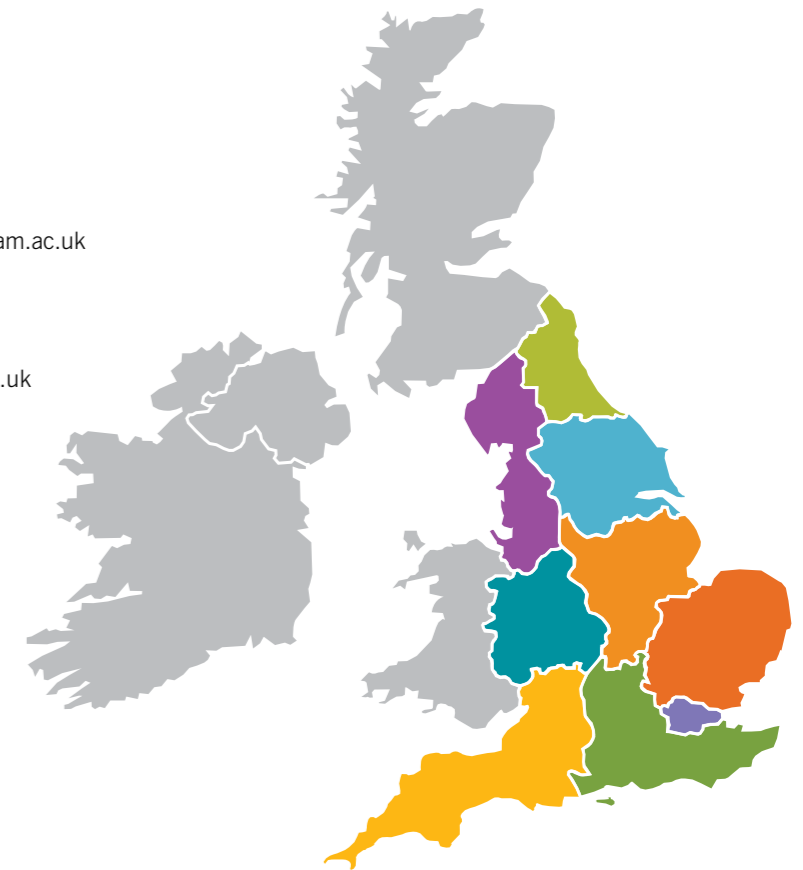
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To keep up to date with what workshops and events are being planned for your area visit: stimulatingphysics.org/regions and select the page for your region.

Although the listings are split into regions there are no boundaries to our support, so if, for example, you work in London but find it easier to get to one of the East of England events then just contact the relevant PNC or ELO and book yourself a place.

talkphysics.org

The resources and support available on talkphysics.org are expanding. Last term saw the launch of new online CPD sessions. The first one was focussed on KS3 forces and the feedback from teachers who took part was 100% positive. Over the next couple of terms more online CPD sessions will be run addressing KS3 and KS4 topics.



→ To find out more about the CPD sessions and to get engaged with the supportive online community for teachers of physics register free with talkphysics.org

The ASE Annual Conference

5-7 January 2012, Liverpool

Every year the ASE Conference brings together practitioners in science education from across the world to share experience, resources and inspiration. The programme of workshops, drop-in sessions and lectures covers a wider range of themes and topics from 'STEM at the Olympics' to the IOP's 'Making more of your physics demonstrations'.

Visit ase.org.uk for more details and see over the page for a full list of the Stimulating Physics Network activity at the conference.



→ Workshops and lectures at ASE January 2012

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 Liverpool this January.

Thursday 5 January

- 0930 - 1030** Recruiting student teachers to the sciences [BC04](#)
1400 - 1500 Electromagnetic Spectrum: Demonstrations to Supporting Teaching (repeated Friday) [BC14](#)
 Teaching Electricity 11-16 with the SPT Resources [BC15](#)
1400 - 1530 Engaging with Girls: Making Your Physics Lessons more 'Girl Friendly' [BC16](#)
 Finding Funding
1400 - 1600 Teaching Forces with Force Spectacles! [BC18](#)
1500 - 1700 Jolting the jaded - do physics! [BC22](#)
1530 - 1700 What Happens Next? [BC23](#)
1600 - 1700 Curriculum Map of Physics [BC13](#)
 Now you see it, now you don't [BC25](#)
 Seeing inside the Body: Practical medical physics activities and resources [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, they are all free to attend and are largely in the Chadwick Building. 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 place in advance via the ASE website, www.ase.org.uk or on the day in Liverpool.

Friday 6 January



- 0930 - 1030** Electromagnetic Spectrum: Demonstrations to Supporting Teaching (repeat) [BC29](#)
 TalkPhysics (repeated Saturday 1400) [BC30](#)
 Waving not drowning [BC31](#)
0930 - 1130 Rocket launchers make-and-take [BC35](#)
 Build your own modulated laser pen (repeated Friday 1500) [BC37](#)
1130 - 1230 The IOP John Lewis Lecture: The highs and lows of solar activity and why we should care
 Dr Lucie Green, Mullard Space Science Laboratory
1400 - 1500 The Best of *Physics Education* - lecture/demonstration
1500 - 1700 Build your own modulated laser pen (repeat) [BC49](#)
 Teltron tubes [BC50](#)
1600 - 1700 Physics made fun for primary teachers [BC51](#)
 Real graphs from real data [BC52](#)

Saturday 7 January



- 0930 - 1030** My Bulb Won't Work! Teaching electricity without the fire Fighting [BC54](#)
 Toys in physics [BC55](#)
0930 - 1100 Teaching Energy at KS3 and Beyond [BC57](#)
 Outdoor Physics
0930 - 1130 Engaging Space [BC59](#)
1100 - 1300 LIGHT – let us illuminate the topic! [BC64](#)
 Make and take home your own Dragster Launcher [BC64](#)
1130 - 1230 Go outdoors [BC66](#)
 Making more of your physics demonstrations
1400 - 1500 Dare we teach tops? [BC68](#)
 Free physics ICT [BC69](#)
 TalkPhysics (repeat) [BC70](#)
 Towards a Fuller Understanding of Forces at KS3 [BC71](#)
1400 - 1600 Datamouse [BC75](#)

Do drop-in to the talkphysics area in the Chadwick Building for an informal programme of practical demonstrations, tea, biscuits and a chat with our team.