

Regional Matter

West Midlands
Spring 2012

Engaging girls in physics

Despite the pleasing increase last year in the number of students sitting exams in the STEM subjects (science, technology, engineering and mathematics), recent reports from the CBI still identify a significant gap between the number of students pursuing STEM subjects and the number of skilled employees needed in the UK economy: “Science, technology, engineering and maths (STEM) skills underpin the UK’s ability to compete and grow in a range of industries... STEM skills shortages are widespread – 43% of employers currently have difficulty recruiting staff, rising to more than half of employers (52%) expecting difficulty in the next three years.” (CBI/EDI education and skills report, 2011)

If you match this shortage with the figures published on the number of women pursuing STEM, it is possible to identify how we might begin to reduce the gap in supply and demand, as detailed in ‘Women and men in science, engineering and technology: the UK statistics guide 2010’ from the UKRC: “While girls were half or nearly half of all students in most STEM GCSE subjects in 2009, this proportion declines when they reach A-level. This decline is particularly large for physics and combined sciences (science subjects). The proportions of girls in these subjects taking A-levels roughly halved in comparison to GCSEs. It is an illustration of the first and biggest leak in the gender and STEM ‘leaky pipeline’.”

To try to help close this gap, the Stimulating Physics Network is working with schools to engage more girls in physics. Our team of Teaching and Learning Coaches (TLCs) establish close, direct relationships with the selected SPN Partner Schools; so they have the time to work with the whole science department and the whole school. This gives our TLCs both the chance to implement activities aimed at engaging girls with physics and the time to review the impact of different approaches.

One TLC reports on work they have done in a large, mixed school: “I planned activities to encourage the girls to continue with physics.



This included a special focus on Year 11 girls doing Triple Science, we provided relevant careers information and created a girls-only setting for some special events, such as a SEPNet practical activity and a meeting with a potential mentor - a female physicist from the Rutherford Appleton Lab. It is still too early to have solid data on the impact of this activity but the response from the girls has been very enthusiastic.”

The Stimulating Physics Network is working with several SPN Partner Schools to pilot more activities to engage girls and we will use the results to produce guides and resources that could be used by teachers in any school. There is already a growing portfolio of publications, resources and tools produced for teachers and students, focused on inspiring girls.

The Institute of Physics has published a review of the current research into girls participation in physics and has used the lessons learned to produce a teachers’ guide for action as well as videos to be used by departments to review their practice. These resources can be accessed free at: iop.org/education/teacher/support/ - select the Girls in Physics section.

The WISE Campaign led by the UKRC offers free student resources including games, postcards and interactive tools, as well as guides on work experience useful links for teachers and parents and profiles of inspirational women. To explore the WISE resources, visit: theukrc.org/get-involved/wise

Physics Update

As part of its active involvement in supporting physics in schools and colleges, the Institute of Physics runs termly Physics Update courses to update your knowledge of recent developments in physics and let you explore new practical activities and resources for use in the classroom.

Spring Physics Update: Royal Holloway, University of London, 30 March-1 April 2012

Summer Physics Update: University of Birmingham, 6-8 July 2012

There are a limited number of places available at each Physics Update. Each course costs £140 for a residential place and £80 for a non-residential place; or even less if you or your school/college/ITE centre is a member of the IOP.

For more information, visit: iop.org/education/teacher/cpd/ and select Physics Update.

FREE
CPD
EVENTS

Workshops in the West Midlands

EVENT	LOCATION	DATE	CONTACT
KS3 Practical Physics for Non-specialists - Part 1	King Edwards School for Boys, Edgbaston	7 February 5.00pm - 7.00pm	Richard Bonella: trbonella@yahoo.co.uk
Lights, Camera, Images!	St Marys Worcester	8 February 4.45pm - 6.30pm	Nicky Thomas: n-d-thomas@tiscali.co.uk
KS3 Practical Physics for Non-specialists - Part 2	King Edwards School for Boys, Edgbaston	21 February 5.00pm - 7.00pm	Richard Bonella: trbonella@yahoo.co.uk
Using an Oscilloscope	Stoke or Stafford (TBC)	7 March 4.00pm - 6.00pm	Tom Dawson: physicsiseasy@ gmail.com
Using an Oscilloscope	Newport Girls' High School	8 March 4.00pm - 6.00pm	Tom Dawson: physicsiseasy@ gmail.com
Shocked and Stunned	St Marys Worcester	14 March 4.45pm - 6.30pm	Nicky Thomas: n-d-thomas@tiscali.co.uk

Free practical workshops are run by the West Midlands Physics Network Co-ordinators, usually in the evening or at weekends. For the latest events in your region contact the External Liaison Officer (ELO) for the West Midlands, Mari Connal, e-mail: enquiries@westmidlands.slcs.ac.uk or visit: stimulatingphysics.org/regions

You can also contact the PNC in your area if you would like to be sent details of their planned events or would like to host an event at your school:

Shropshire & Keele Tom Dawson: physicsiseasy@gmail.com

Herefordshire & Worcestershire Nicky Thomas: n-d-thomas@tiscali.co.uk

Follow Nicky's tweets: @NickyThomas1

Shrewsbury Richard Bonella: trbonella@yahoo.co.uk



In addition Science Learning Centre West Midlands offers several physics-related courses:

○ Technicians A level Physics	3 February	Course fee: £125
○ NQT Conference - Next Steps	13 February	Course fee: £150
○ Physics for Non-Specialists	6 & 7 March	Course fee: £400
○ Physics for Non-Specialists	13 & 14 March	Course fee: £400
○ Active Approaches in A Level Physics	23 March	Course fee: £150
○ New Materials and Nanotechnology	17 April	Course fee: £150
○ Physics for Non-Specialists	15 & 16 May	Course fee: £400
○ Practical Work in Physics	13 June	Course fee: £150 Teachers / £110 Technicians
○ Stage 2 Master Class - Active Approaches in A Level Physics	25 June	Course fee: TBC
○ Materials Masterclass	10 & 11 July	Course fee: £50
○ Physics Summer School	23 - 26 July	Course fee: £450

To book and for details about more courses please contact us:

Impact
Awards of up
to £200 per
day may be
available