

Institute of Physics Teacher Network: London Area

Spring 2009 Newsletter

Have you passed this round?

Regional news

Using science in the news

Why not use science in the news to explore applications and implications of physics?

A 3rd Heathrow runway?

Link this story to concepts such as greenhouse warming (radiative balance) and carbon emissions. Students could discuss lifestyle choices against a backdrop of how science works: the scientific consensus about the role of human activities in global warming, and the growing urgency of action.

http://news.bbc.co.uk/2/hi/uk_news/politics/7855522.stm

The London Array

Offshore wind farms planned in the Thames estuary could generate 1,000 MW. Link this story to concepts associated with wind turbines and renewable energy.

http://news.bbc.co.uk/2/hi/uk_news/england/7673447.stm

Some say that energy security is 'more important than climate change'. Take a critical look at the arguments. www.guardian.co.uk/environment/2008/sep/17/renewableenergy.fossilfuels

Free software

Teachers' Domain

Online library with over 1,000 free media resources.

Includes video & audio clips, Flash interactives, images, documents, lesson plans for teachers, and student-oriented activities. Users must register.

www.teachersdomain.org/

IOP Institute of Physics

Physics Teacher Network

A national network to support all those who teach physics in schools.

Together we work two days a week as London's Teacher Network Coordinators.

Our main aims are to

- Establish ways for London physics teachers to communicate.
- Support non-specialists teaching physics at KS3 and especially KS4.
- Set up university and industry contacts that help with physics education and encourage students to continue studying physics.

There are over 400 secondary schools in the London area.

We therefore try and work with clusters of schools.

Peter Campbell

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Teacher events

CPD

London A-level Physics Teachers' Day

Thursday 19 March, Institute of Physics, Portland Place W1B 1NT

A free IOP event, in association with Science Learning Centre (SLC) London. Lunch and refreshments are included.

Programme includes talks and practical workshops:

- **Dark matter** (Dr. Damian Pope, Perimeter Institute for Theoretical Physics, Canada)

- **Nanotechnology** (Prof Richard Jackman, University College London)
- Experiments with food, teaching with electron beams (Teltron tubes).

The event will be popular.

There are only 45 places available, so **do not delay!**

Book your place via the SLC webportal, where it's listed as code LNC08226. Find details of the programme there too.

www.sciencelearningcentres.org.uk/WebPortal.aspx?page=5

Your school may even be eligible for supply cover - check Priority Audience Impact Awards, noting the Terms and Conditions.

<http://content.sciencelearningcentres.org.uk/centres/london/Impact%20Awards.html>

Watch this space!

This July we plan to repeat last year's successful **one-day events for non-specialist teacher of physics**. Similar format, but different workshops. Dates and venues will be posted on the IOP London webpage in April.

IOP Physics Update

3rd - 5th April 2009
University of Manchester

For practising teachers of physics and science.

- lectures on innovations in physics & the curriculum.
- 'hands-on' workshops: try new equipment & develop new skills.

Contact: Leila Solomon

Tel: 020 7470 4800

Email: leila.solomon@iop.org

More **Teacher events CPD** over...

Teacher events CPD continues

Science
LEARNING CENTRES



London SLC courses

Newswise

Tuesday 9 June 2009

Cutting Edge Science: Climate Change

Tuesday, 10 March 2009

Girls in Physics

Wednesday 11 Mar 2009

These courses offer an Impact Award £200 cash back.

NEW Science Additional Specialisms Programme (Physics)

Would you like to teach physics with confidence at GCSE and Advanced level?

Sponsored by TDA (Training and Development Agency for Schools), this course is for Biology & Chemistry teachers in maintained schools, with QTS, who have completed their induction period.

You will be released from school every Monday during 2009-10, to develop your physics and physics teaching knowledge & skills.
Further information:
www.sciencelearningcentres.org.uk/?page=5



The Association for Science
Education

ASE Science & CPD Conferences

East of England
Harlow, Saturday 21 March

Details: www.ase.org.uk

IOP London & Southeast

Branch evening lectures are free and open to non-members. They take place on Wednesday evenings starting at 18:30. For example, on 25 Feb 2009, Dr Peter Ford, University of Bath, will

talk about 'Michael Faraday & the Beginnings of Electromagnetism'. Further details can be found at tinyurl.com/448p6g.

Events for students

IOP Schools lecture 2009

'How to explore the Universe: a tale of telescopes, time travel and extra-terrestrials'

Royal Institution
Monday 6 Jul 2009, 11:00 & 13:30
Contact: Olympia Brown
OBrown@ri.ac.uk

Queen Mary, Uni of London
Thursday 9 Jul 2009, 10:30 & 14:00
Contact: Laura Jackson
l.f.jackson@qmul.ac.uk

Royal Observatory Greenwich

The RGO programme includes planetarium shows, study visits for GCSE and A-level, gallery visits and teacher CPD.
www.nmm.ac.uk/places/royal-observatory/

National Particle Physics Masterclasses

Mon 30 March
Imperial College, London
Contact: Piera Brambilla
p.brambilla@ic.ac.uk

Tues 31 March
Queen Mary, Uni of London
Contact: Laura Jackson
L.F.Jackson@qmul.ac.uk

Mon & Tues 20/21 April,
Royal Holloway, Uni of London.
Contact: Denise Denman
Denise.Denman@rhul.ac.uk

Other dates and venues, see:
www.particlephysics.ac.uk/teach/master-classes/2009.html

Corti Science Prize

Essay competition for students going to university in 2009, to read engineering, maths or a science-based course. £2k prize

The brief: "Explain a recent advance in renewable energy generation, and relate this to the UK's energy demand over the next decade."

Closing date: Monday 2 April 2009
Further information:

www.cortiscienceprize.org/

Summer science camps

Canada's Perimeter Institute offers students aged 17 - 18 years a free place at their International Summer School. Application deadline: 19th March. Visit www.issyp.ca

Make accessing URLs simple.

Bookmark the IOP Teacher Network London webpage, so you can download electronic copies of the Newsletters.

www.iop.org/activity/education/Teacher_Support/Teachers_Network/London/page_5267.html

Grants

The Royal Astronomical Society gives grants for events, exhibitions or other activities related to 2009 International Year of Astronomy.
www.astronomy2009.co.uk/index.php/funding-mainmenu-65

Teaching resources

Global dimensions of science

Complete lessons, KS3 & KS4.
www.ase.org.uk/html/ase_global/tr2009/itmakesyouthink/index.php

The Millenium Bridge

Detailed information about engineering this famous bridge.
www.arup.com/MillenniumBridge/

Weighing the Earth

A news report about recreating Maskelyne's 1775 experiment on a mountain in Scotland

www.countingthoughts.com/sciehallionclip.php

Managing radioactive substances

Are you aware of last year's changes to legislation? See the CLEAPSS Guide L93

Managing Ionising Radiations and Radioactive Substances, available free online.

www.cleapss.org.uk/secfr.htm

Renewable energy

Downloadable instructions for various generators involving coils and neodymium magnets.

<http://re-energy.ca/>

LabAid

Many secondary schools around the world do not have any science equipment. If you have unwanted apparatus, donate it to

www.labaid.org/

School reports

Physics jokes

Early in December, physics teachers on the email forum **ptnc** shared suggestions about jokes for a physics T-shirt, and then physics jokes generally. Here are a few:

If it isn't Dark,
it doesn't Matter

 $E=ma^2$ $E=mb^2$ $E=mc^2$

There were 2 atoms. One atom suddenly said, "Oh no, I've lost an electron!"

"Are you sure?" the other atom replied.

"Yes", said the first atom, "I'm positive!"

Q: Why did the electron cross the road?

A: The other side had more potential.

Particle physics gives me a hadron.

Q: How many quantum physicists does it take to change a light bulb?

A: Depends how you look at it.

For red T-shirts only: "If this T-shirt looks blue, you're running too fast."

I'm attracted to you!

$$F = G \frac{m_1 m_2}{r^2}$$

A bar walked into a man. Sorry, wrong frame of reference!

Q: What's a nuclear physicist's favourite meal?

A: Fission chips!

Astronomy Club – a success story



The WGGs Astronomy Club started in November 2007. Nine sessions were fitted in by Christmas, including evening observations. Over 60 students, ranging all years (7 to 13), took part in practical activities including the construction of a 20cm (8inch) reflector telescope.

Another nine sessions took place in the first half term of 2008, with an even bigger attendance. The year 12s were keen to try for a GCSE and thirty nine enrolled at the first after-school session dedicated to GCSE Astronomy. The

weather had been largely overcast during term time in the winter of 07/08, yet fourteen students and staff took part in evening observations.

In summer 2008, fourteen Year 12 students and one member of staff entered for Edexcel's GCSE Astronomy. The group achieved 4 A* and 6 A grades. Each candidate produced two pieces of coursework, for example sundials, moon charts and drawings of direct observations.

Autumn 2008 saw a new influx of students, again ranging across the years. Over twenty students from years 9 to 13 have shown a desire to enter for this year's GCSE exam. As the teacher organizing the club, I have been staggered by the interest shown by the girls. It's quite a challenge to teach a group with such a range of ages. Hopefully last year's successful candidates will lend a hand.

C Teal, Watford Girls' Grammar School

Contribute

The Summer 2009 issue will be published in May. Please contribute

- forthcoming events
- useful teaching resources
- report of a classroom activity or school event.

Please send copy by Friday 1st May.

Peter Campbell

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Information on the many services available from the IOP Education Department:
www.iop.org/activity/education/index.html