

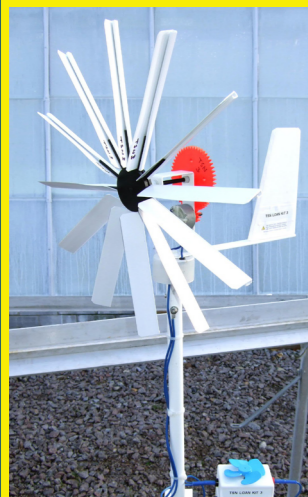
KIT CLUB NEWS!

Renewable Energy Kits - new!

More Light, More Electricity!

Plant Growth

Moaning about Mould!



A new kit is available providing resources for a large number of student investigations into renewable energy. It contains 5 wind turbine kits, 5 photovoltaic kits, 5 solar water heater kits, 5 solar buggies and an energy exchange board. Also included are lamps and hairdryers, so that the kits can be used indoors if necessary. There are comprehensive teachers' notes and background information. We expect this kit to be very popular, so remember to book well ahead and we encourage your feedback about its content and your subsequent needs.

In response to popular demand, we have put together new Light and Electricity Kits which are more suitable for teaching at Key Stage 1. The full details of the contents of each kit will soon be appearing on our website.

We are currently in the process of updating and expanding the Plant Movement Kit. This will metamorphose into a new Plant Growth Kit that should be available for loan from the second half of this term, so if you are interested in borrowing it get in touch soon.

Two final requests ... if you borrow one of our Magnets and Springs Kits, **please do not use the magnets with iron filings**. We do not supply loose iron filings with this kit and recently had to spend a long time cleaning iron filings off all the magnets before we could loan it out again safely. If any of the kit resources get wet, please ensure that they are thoroughly dry before replacing them in plastic bags, otherwise an unpleasant mould situation develops! (a good illustration of 'what microbes need to grow', but rather nasty to deal with)

Full kit information available at www.tsn.org.uk, under Kit Club,

or contact tsn.kits@bbsrc.ac.uk -

email is our preferred method of kit booking.

Alternatively telephone Carol Hince on 01603 450619,

Wednesday - Friday inc.

Dates for your diary

- 28th Jan. - Starting out in primary science, SLC course, JIC (p.3)
- 3rd Feb - Student Careers Convention, JIC (jane.knott@nrp.org.uk)
- 12th Feb. - Assessment for Learning, SLC course, Bury St. Edmunds (p.3)
- 12th Feb. - Darwin Day - 200th birthday - see www.darwin200.org
- 4 - 6th Mar. - BIG BANG FAIR, London (p.3)
- 6 - 15th Mar. - National Science and Engineering Week (p.3)
- 11th Mar. - Employer Engagement & Networks mtg. - Wymondham Coll. (p.3)

Teacher Scientist Network (TSN)

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Coordinator: Dr. Phil Smith, MBE

Chairman: Prof. Keith Roberts

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FREE to a Good Home

With such a major move towards Interactive Whiteboards does the humble OverHead Projector (OHP) still have a place in school, maybe in the school hall at least?



If they do we have 7 available on a first-come first-served basis. Additionally we can offer 4 high-quality stands and 3 x 35mm slide projectors together with carousels.

Their current owner is keen to get rid of them quickly so please ring or email as soon as possible to claim yours (01603 450304, phil.smith@bbsrc.ac.uk)

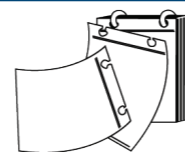
New Members - Welcome

Teachers

Mrs. Nicola Esposito, Roydon Primary School
Miss Mairead Perkins, Wroughton Junior School
Mrs. Lynette Mecrow, Walsham-le-Willows Primary School
Mrs. Tamsin Young, Garboldisham Primary School
Mrs. Pam Reading, Thomas Bullock Primary School
Mrs. Judith Simmonds, Pott Row First School
Miss Kirsty Boggis, Pakefield Primary School, Lowestoft

Scientists

Dr. Simon Griffiths, John Innes Centre
Miss Heather Kingdom, John Innes Centre
Ms. Tracey Holley, John Innes Centre



Happy New Year!



DARWIN200

2009 promises much for science enthusiasts with 2 huge International celebrations that we wanted to make you fully aware of. Locally there will be opportunities to engage with both events throughout the year and TSN will keep you updated but you might want to check out their websites for more information.

2009 marks the bicentenary of the birth of Charles Darwin, with Darwin Day on 12th February. Darwin coined the term 'Evolution' and the year also marks the 150th anniversary of the publication of 'On the Origin of the Species' (now available online at <http://darwinonline.org.uk>) TSN is an official partner in Darwin200 which will see resources and events celebrating Darwin's life made widely available (www.darwin200.org). Some of our events are subject to funding so there is no better time to make sure we have your email address so we can email you details as soon as they are confirmed.

If physical sciences are more your thing then the 400th anniversary of Galileo Galilei's first astronomical observation through a telescope is being marked during the International Year of Astronomy (IYA2009) which has been launched by the International Astronomical Union (IAU) and UNESCO. Details of international and national events at <http://www.astronomy2009.org> and the UK national website (www.astronomy2009.co.uk)

TSN of course was ahead of the game with our invitation to Lucie Green to our 2008 Annual meeting. Lucie is a solar astronomer at the Mullard Space Science Laboratory and a renowned science communicator. She gave an illuminating talk at our Annual meeting with some stunning images and film clips of the sun speaking about what the sun means to her and highlighted some of the opportunities IYA2009 offers.

STOP PRESS:- FREE TELESCOPES FOR STATE SECONDARY SCHOOLS - more details at <http://www.popastro.com/moonwatch> Closing date for applications 31/01/09

Countdown 439 launched

While the rest of the world started thinking about the countdown to the New Year, TSN and the John Innes Centre launched Countdown 439 which you may have seen covered by the Evening News, EDP and Radio Norfolk over the holiday period.

This ambitious project aims to put a John Innes Centre scientist in each and every Norfolk school on the first day of Science Week 2010 to mark the JIC centenary and hopefully inspire scientists for the next 100 years.

The LEA supports 439 schools: first, junior, primary or secondary, and the project was launched 439 days before the big day. So we have lots of time to prepare for this event which will be totally inclusive of all

schools. It would be great to hear from you if you'd be interested in having a visit on **Friday 12th March 2010**, particularly if you haven't got a partnership, and what sort of things you'd like them to do - talks, demos, assemblies etc. ?



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To mark the 200th anniversary of Charles Darwin's birth, the Wellcome Trust is providing FREE activities for all state schools across the UK. The Great Plant Hunt for primary schools is an innovative project that aims to get primary school children out and about and excited by nature. Survival Rivals is a series of Darwin-inspired experiments for secondary schools which provide opportunities for young people to undertake practical science.

The Great Plant Hunt involves the Wellcome Trust working with Royal Botanic Garden Kew to send the UK's 22,000 state primary schools a Treasure Chest full of free resources to be used in the classroom, online and in the great outdoors. Treasure Chests will be delivered to schools in Spring 2009 and contain resources which have been clearly mapped to the primary science curriculum and include fun activities for Years 1-6. With exciting missions to discover plants in the wild (from the school playing fields to weeds growing in the cracks in the pavement!) The Great Plant Hunt also gives children the chance to be part of the UK's biggest ever school science project. They will be invited to take part in a unique experiment to help scientists at Kew's Millennium Seed Bank. Teachers are invited to register their interest in the project by visiting the sign-up site: www.greatplanthunt.org

The Survival Rivals series for secondary schools contains three experiments – *I'm a Worm Get Me Out of here* for 11-14 year

olds explores natural selection, *Brine Date* for 14-16 year olds explores sexual selection and *X-Bacteria* for post-16 looks at antibiotic resistance in bacteria. Each experiment will help young people to see the link between Darwin's ideas, modern evolutionary principles and contemporary biomedicine and will help teachers to deliver the relevant parts of the UK curricula. The kits are free to all state secondary schools within the UK and provide everything required to carry out the experiments in school. Teacher, technician and student notes will be included in the kits and online videos will demonstrate how to successfully deliver these practical enquiries. The kits are available to pre-order now and will be sent out to schools from Spring 2009. See www.survivalrivals.org for more information



REMEMBER, PRIMARY RESOURCES WILL BE SENT TO ALL STATE SCHOOLS BUT YOU NEED TO APPLY FOR THE SECONDARY RESOURCES.

Earthworms and Snails



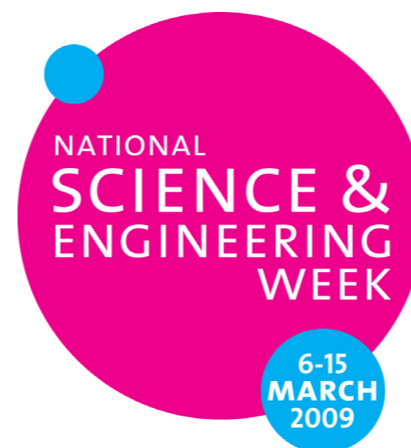
Image courtesy of the Natural History Museum (www.nhm.ac.uk)

OPAL East of England is the regional partner for Open Air Laboratories (OPAL), a new England-wide initiative which will encourage people to explore and study their local environments. Activities begin in Spring 2009 with the first of five national surveys, each one covering a different topic.

March sees the launch of a study into soil and earthworms. Over the next four years, the surveys will also examine water, air quality, biodiversity and climate. The surveys are targeted at secondary school students and adult community groups, but younger participants can take part with guidance. Over 1000 packs will be distributed across the region for each of these projects.

OPAL East of England is led by Dr Agneta Burton of the University of Hertfordshire who is keen to hear from people who can take part in the earthworms and soil quality project focused in March-May 2009. Interest in future activities is also very welcome, including a specific regional project on biodiversity in orchards. She would like to hear from teachers, youth group leaders or community group leaders with an estimate of how many packs they could use in their group or class. Please contact Agneta Burton as soon as possible by e-mail on m.a.burton@herts.ac.uk (Tel. 01707 284517) for further information and to volunteer. <http://www.OPALexplorenature.org>

If Snails are more your thing, how about getting involved in a survey of the distribution of the banded snail, *Cepaea* spp. being coordinated by the Open University. This Evolution Megalab is another way for pupils to make careful observations, just like Darwin did. The variation in shell patterns in *Cepaea* was once regarded as of no adaptive significance to the animals, but we now know that shell colour and banding influence the visibility of snails to thrushes that prey upon them and also the body temperature of the snail. How deep you go with this activity is up to you. It allows basic observation and data collection and an introduction to food chains at primary to some sound genetic studies for A-level. See www.evolutionmegalab.org for more details and get involved with your future scientists.



Darwin Today <http://www.darwin.rcuk.ac.uk> - an exhibition developed by Research Councils UK for Darwin 200 will be in Norwich at The Forum from Monday 9th March - Saturday 23rd March. Find out all about how Charles Darwin is still changing the way we think about our world in this high-impact, modular exhibition with interactive games and accessible text delivered by two cartoon characters. The exhibition will explore our place in the universe, the origins of humans, what evolution might produce in other plants, domestication of animals and plants, evolution of diseases, issues around diversity, conservation and climate change and do extinctions matter?

STEM Directories

The 2008/09 STEM directories are a plentiful source of enrichment and enhancement activities for schools and colleges across the UK. Aimed at providing a one-stop shop for teachers to decipher the raft of opportunities that they are offered in this area (STEM - Science, Technology, Engineering and Mathematics).

Three separate hard-copy directories have been produced and were launched in September 2008 to serve the needs of science, mathematics and D&T teachers across the UK.

You can download pdfs from the STEM Directories website <http://www.stemdirectories.org.uk> - or phone, write or send an email to the mailing house to receive hard-copies supplying your full contact details and your requirements (<http://www.stemdirectories.org.uk/order.asp>)

Schools must book with dawn.barrett@bbsrc.ac.uk to attend in one of the following time slots 09:30, 11:00, 12:30 or 14:00. The exhibition is unmanned but there will be supporting materials for teachers to guide you through it. Space will also be available in the Forum for schools to make camp either in a dedicated room or in the new digital atrium with multiple TV screens which will be showing Darwin related material.

Young Scientists Showcase
13:00 - 15:30, 11th March 09
The Forum, Norwich

A chance for Yr. 12 and 13 pupils to hear from PhD students and their supervisors in a conference style format about their research on the food poisoning bacteria *Salmonella*, resistance to diseases in wheat, how the gut protects us from bugs, antibiotic resistance and how plants respond to stress. Space is limited so advance booking is required (email: dawn.barrett@bbsrc.ac.uk)

The Big Bang - UK Young Scientists & Engineers Fair

We are delighted to promote the inaugural event celebrating and raising the profile of young people's innovation in science & engineering taking place from 4 - 6th March at the QEII Centre, London. Inspirational and challenging lectures, shows and workshops alongside exhibitions from National CRESt finalists and entrants in the first National Science Competition. See www.thebigbangfair.co.uk for more information.

Top Class in Science

Is an Internet-based schools-competition geared towards Year 9 science classes. Matches will take place between classes from opposing schools arranged in a league system similar to that used in the World Cup.

A series of leagues matches followed by the knock-out stages will be staged online at mutually convenient dates and times in the second half of Spring term and the first half of Summer term. A match lasts approximately 30 mins. (typically lunchtime or after-school) and involves classes answering 25 multiple choice science questions which are deduction based as opposed to regurgitating knowledge. The team with the greatest score will win the match. Further details are downloadable from the TSN-website (<http://www.tsn.org.uk>)

The event will culminate in a grand-final, organised as a stage-show, held at the University of East Anglia (UEA) as part of the Science Olympiad (1st and 2nd July 2009).

Science Learning Centre opportunities

More details about all these courses are downloadable from the TSN website or bookable online <http://www.sciencelearningcentres.org/east>

Find out more about IMPACT AWARDS and how they can help offset costs (up to £600 per school) - large sums available for courses before 31st March.

28/01 Starting out in Primary Science (EECo8050), JIC - aimed at Teaching Assistants

12/02 aFL(EECo8026), K.E.VIth, Bury St. Edmunds, **IMPACT award available**

03/03 New practical techniques in Physics, (EECo8019) - Litcham High School. **IMPACT award available**

31/03 Triple Science Support, Biology - (EECo8080) funded by LSN and held at City College, Norwich (FREE)



Employer Engagement Event, 12th March 2009

STEM teachers from across the region are invited to this event being organised by STEMNET at Wymondham College on 12th March 2009. This FREE event will provide a great opportunity to hear and meet representatives from across the world of STEM in Norfolk.

They are building on a highly successful model of similar events run for the last 2 years at Hills Road Sixth Form college in Cambridge which have attracted over 100 participants.

A full programme is available on the TSN website, www.tsn.org.uk
To book your place contact Ian Harvey, IHarvey@billsroad.ac.uk

Darwin Highlights ...

A competition to explore what Darwin might have discovered if Beagle had taken him to a new planet where life exists (aimed at KS1, 2 & 3) - www.the-ba.net/web/NSEW/WhatsOn/NSEWActivities

The BBC have just launched a major new season marking the life and work of Darwin, www.bbc.co.uk/darwin

Major Darwin exhibition at the Natural History Museum, London until 19th April 09, www.nhm.ac.uk