

KIT CLUB NEWS!

Carol is leaving! We need your help ...
New Biodiversity kit available now
Talking Tortoise for Hire

The Kit Club is working through a period of upheaval and we would appreciate your help and patience during this challenging time. In August our long-term volunteer Pauline died and now Carol, who has run the Kit Club so enthusiastically and effectively since her appointment 5 years ago, is leaving to embark on a new life in Somerset. This will mean several months when our ability to turn-around kit requests so quickly will be reduced and we would, more than ever, ask you to be on-time returning your kits in a well-checked condition. Thank you.

Carol's final new addition to our stable of resources is a Biodiversity Kit based upon the hugely popular 'OPAL' resources. This kit is a timely extension for Key Stage 2 or 3 (or older) work on habitats following the International Year of Biodiversity which has highlighted some of the challenges to preserve our precious and diverse ecosystems and the biodiversity they support. See <http://www.defra.gov.uk/environment/natural/biodiversity/> for a very recent report by DEFRA on England's biodiversity and what can be done to prevent its decline. Here you will also find details of the BIG wildlife garden competition running until May 2012 - perhaps the kit will help kick-start your activities?

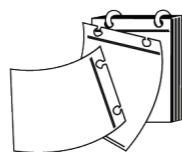
Finally, we have available for loan a 'talking tortoise' with interactive panels. His name is Shelley and has toured the UK with the RCUK Darwin exhibit, he is being retired out to grass in Norfolk. He is quite large (but friendly!) and provides links to adaptations and evolution.



Information about ALL TSN kits 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, (Thursday - Friday inc.)

Dates for your diary

- 30th November - Carol leaving TSN
- 7th Feb. 2012 - Health & Life Science Y10 Convention, JIC
- 13th Mar. 2012 - Westminster Education Forum
- 24th Mar. 2012 - Science in Norwich Day, The Forum
- 18th May 2012 - Fascination of Plants Day



Teacher Scientist Network (TSN)

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In Memoriam - Pauline

Regular visitors to TSN on Thursday and Friday afternoons will no doubt have met our diligent and loyal volunteer, Ms. Pauline Burton (pictured below) who took such pride and worked so hard maintaining our (her!?) kits.

Pauline passed away in the summer and she will be missed by many. Knowledgeable and enthusiastic, Pauline supported many teachers and scientists who sought ideas about how best to use the kits, based on many years teaching experience and a love of natural history and desperate desire to see Electricity taught well!



New Members - Welcome

Teachers

- Mrs. Janette Eyles, Admiral's Junior School, Thetford
- Ms. Rosie Niescie, City College, Norwich
- Mr. Neil Shuttlewood, Cliff Park High School
- Mrs. Anne-Marie Steward, Surlingham Primary Sch.
- Ms. Sara McDade, St. Thomas More Primary School
- Mrs. Sarah Nhamo, Long Stratton High School
- Mr. Gary Hurd, East Norfolk VIth form College
- Mr. Julian de Best, Thetford Academy
- Mr. Neil Taylor, Stowupland High School, S'market
- Mrs. Sue Little, Broadland High School
- Mrs. Alexander Knight, Angel Rd. Junior School
- Mrs. Carolyn Johnson, SS. Peter & Paul Primary Sch
- Mrs. Sue McNeice, Holly Meadows School, K/Lynn
- Mr. James Lowden, Denes High School, Lowestoft
- Mrs. Amy Wood, Woodland Primary, Gt. Yarmouth

Scientists

- Miss Joyita Deb, John Innes Centre
- Miss Carly Turnbull, University of East Anglia
- Mrs. Susan Duncan, John Innes Centre
- Mr. Hadrien Peyret, John Innes Centre
- Mr. Martin Sams, London Pharma, Norwich
- Mrs. Helen Brown, Institute of Food Research

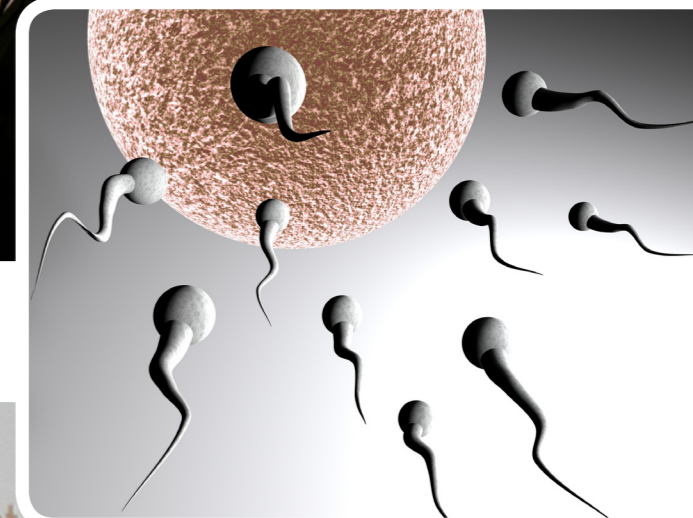


Postcards from TSN's Summer



TSN was represented at this years Royal Norfolk Show thanks to colleagues from the JIC Entomology team. Our poster generated significant interest, HRH Princess Anne being one of the many visitors to the Centre for Contemporary Agriculture's tent.

Our Master Class in June explored recent developments in Reproductive Technologies and was enjoyed by over 30 teachers.



Eminent green chemist, Prof. James Clark from the Green Chemistry Centre of Excellence at the University of York gave our keynote address, enjoyed by many, at the 2011 TSN Annual Meeting.



TSN provided both written and oral evidence to the government's Science & Technology Committee as part of their inquiry into "Practical experiments in school science lessons and science field trips." We were pleased that one of their key conclusions recognised that teachers' knowledge and practical skills must be maintained and developed in order for high-quality science education to be delivered: exactly what TSN does!



In this issue ..		
Partnership Activities	2	Free resources - OPAL and RSPCA
For partners to aim towards ...	2	Kit Club news
CarboSchools & Climate resources	3	In memoriam
GIFT 2012 & Olympics 2012	3	New Members
		Diary Dates

Partnership Activity: A first time for everything - again!

Gary Wortley (IFR) and Emma Court (St. Augustine's Primary School)

Gary admits he was scared. He was returning to TSN more than ten years after his last stint, but it wasn't just 'simple stage fright,' no, there were two reasons for this fear. First, because he had stopped actively doing science (he is now a lab manager at the Institute of Food Research) and second, because at the front of the class there were going to be a pair of eyes looking up at his dad!

By contrast, Emma was new to TSN and relatively new to teaching, in fact last year was her NQT year. A colleague had ordered Emma a resource box, and so she went to pick it up. Emma recalls this first trip to TSN, "whilst I was there I was offered the chance of having 'my very own scientist.' I wasn't sure what it meant, but I wasn't going to turn down extra help!"

A month or so later, at the Induction meeting, Phil stressed that this 'extra help' was "not just another pair of hands" and the first conversations about the new partnership began. "Once I'd found out more and was set up with 'my scientist,' we arranged for Gary to meet the children, although he already knew one rather well!" Gary and Emma's partnership was to be mainly based with Year 3 at St. Augustine's Primary School in Costessey. "In some ways being new to teaching, meant that I had no preconceived ideas about how the partnership should run." And so they planned to start the ball rolling with a get-to-know the class/scientist talk and some mini-experimental interludes under the general topic of 'what is a scientist.' Gary soon realised this was too much free-rein as he spent too many evenings agonising over what to do!



Fear turned to fun though as Gary remembered that keeping it simple is one of the golden rules. "I turned the first session into a 'learn about the science I had done, and what a scientist is,'" said Gary, "to emphasise that asking questions is the most important part of science."

Emma remembers fondly how well the children responded "When Gary came in for the first time the children loved it, they were so excited about having a scientist come in, that it almost didn't matter what he did. Gary made each visit very interesting and interactive for the children and each time he approached the topic from a different perspective, so the children's

learning was always being extended rather than repeated. They always looked forward to seeing their scientist and to be doing many hands-on experiments."

Emma has found having the TSN boxes and a scientist a huge help for her first year of teaching, "it's amazing to find these ready made packages, filled to the brim with tried and tested objects, and ideas to support the teaching of science at the level that's needed. That's like having cake and eating it. And then to discover the cakes come with icing too! I am tremendously grateful for them and I look forward to keeping my relationship with the TSN for many years to come."

Gary quickly decided that Y3 were not scary at all; in fact to use his own words "a wonderful class who, importantly, have proven to be expert question askers. Every single child, in every visit I've made since, has asked good questions."

So what is it like returning to the TSN after a decade away? "I stopped being an active TSN-scientist purely because I moved away from the UK for a while; it was something I missed though. Despite my initial fears, it's been great once more seeing the look on the children's faces when they understand something, the joy at answering (and being able to ask) questions and of course seeing them happily get messy for the cause of science."

For partners to aim towards ...

A scientist working with Blacklawton Primary School in Devon has helped primary school children develop a novel investigation about how bees perceive colour.

The children worked with Dr. Beau Lotto, a Wellcome Trust funded neuroscientist, and have become the first in the world to plan, perform and publish their own scientific experiment in a peer-reviewed journal.

The paper is written in 'kidspeak' and has been published in the Royal Society's publication, *Biology Letters*. The paper can be viewed at www.tsn.org.uk/news.htm

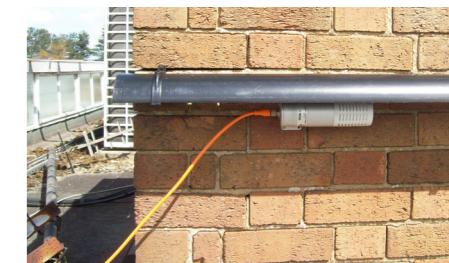


Climate Science resources

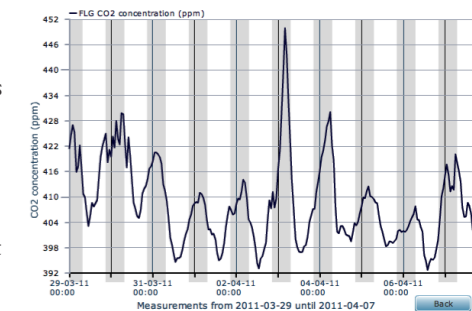
We are delighted to report that data on atmospheric CO₂ levels around Martham, Norfolk are now available as an educational resource for all to use. The data are obtained from a Vaisala Carbocap probe located on the roof of Flegg High school and sent daily to the School CO₂ web pages. Notes on how to interpret and use these data with your pupils is also available on the website (<http://www.carboeurope.org/education/schoolsweb.php>). The data shows day/night (dark areas on graph) and seasonal fluxes in CO₂ levels and is a unique opportunity for pupils to work with real climate data and compare with other institutions around Europe.



In support of their recently opened 'atmosphere gallery' the Science Museum now have a full range of resources on their web-site to support the teaching of climate science in your classroom either as discrete lessons or as part of a collapsed timetable day. This includes the very interactive Carbon Cycle Caper activity (with a collection of plastic balls that represent carbon atoms and teams of students representing the different processes by which carbon moves around the cycle), a 3 minute animated film describes the activity. All resources can be found at, http://www.sciencemuseum.org.uk/educators/classroom_and_homework_resources/ks3/climate_science.aspx



This probe is now gathering data about atmospheric CO₂ levels - here's the first weeks' data from Flegg High School ..



GIFT 2012 - WATER!



TSN is once again promoting the GIFT workshop for secondary school teachers around the UK. This pan-European event takes place in parallel to the European Geosciences Union General Assembly in Vienna next April between 22nd and 25th. It is 2.5 days of subject knowledge cpd delivered by leading scientists. The topic for 2012 is Water and the workshop will cover everything from drought and flooding, to virtual water and water for life. Further details about the workshop and the short application procedure at www.tsn.org.uk/GIFT.htm



Do you know what bugs are living near you? Take part in Bugs Count and discover the incredible variety of invertebrates that make their home around us.

Find as many bugs as you can in our timed challenges and keep a special eye out for the six Species Quest bugs. Your findings will help scientists learn more about the distribution of invertebrates across the country and how the urban environment may be affecting them. Crawlies aren't creepy!

Bugs, or invertebrates, are a vital part of our environment. They can pollinate plants, recycle nutrients, and they provide an important food source for birds and mammals.

To join in the bugs count or report your results visit OPAL's website at

<http://www.opal.explorenature.org/bugscount>

And, if you find a bug and you don't know what it is, get in touch with an expert by sending a photo to iSpot - www.ispot.org.uk

If you are a teacher or group leader and would like help with the Bugs Count survey - get in touch with your regional OPAL representative, Rob Coleman (r.coleman@open.ac.uk)

RSPCA Resources

Did you know the RSPCA offers free-to-access resources for teachers across all key stages to demonstrate how *animal welfare* can be used as a context or focus for delivering the national curriculum?

They offer lesson plans, interactive resources, and an image library. Within each lesson ideas animal welfare is a key aspect, but the resources are truly cross-curricular. For more information see, <http://www.rspca.org.uk/education/teachers>

Olympics - 2012

'In the Zone' is the Wellcome Trust's major initiative linked to the London 2012 Olympic and Paralympic Games. 'In the Zone' will engage the public with the science of how their body works during sport, activity, movement and rest.

The major elements of 'In the Zone' are:

- Kits for schools – a physiology-related experiment for every UK child, supported by scientific equipment and teaching resources
- Touring exhibition – a high-quality, interactive and fun science engagement experience for over 200,000 people.

The free kits will provide experimental equipment, teaching materials and resources to ensure you have everything you need to bring the science of the human body to life in your classroom. Each activity has been tailored to meet curriculum requirements for Science and PE for ages 4-19 years.

Sign-up for the resources at <http://www.wellcome.ac.uk/Education-resources/Teaching-and-education/In-the-zone>

