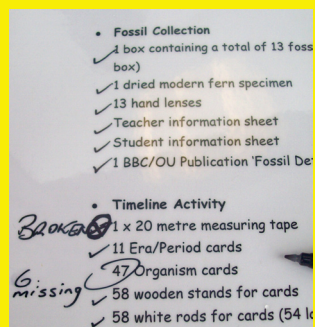


KIT CLUB NEWS!

Introducing the Kit Check Card New Primary Kit - Sustainable Living

From February, *all of our kits will contain a laminated Kit Check Card, with a permanent marker pen attached.* This is to help YOU to check off the contents of the kit before you return it to TSN. Please tick each item as you replace it in the kit box and then place the completed checklist on top of the kit contents in the box, so that we know this important check has been carried out.



We are aware that most schools are already very conscientious about checking kits before returning them. However, there have been occasions recently when kits were returned with many items missing and this has necessitated a lot of extra work chasing up these items as well as inconvenience to the schools who subsequently wanted to borrow the kits.

We hope that this new system will make it easier for all schools to check kits carefully when they have finished using them. If items are lost or damaged, please make a note of this on the Kit Check Card. Although we don't want to appear unnecessarily tyrannical, *completing the Check Card for every kit borrowed is now a prerequisite of Kit Club membership*, and if schools fail to do this, they will not be able to continue to borrow kits. When you sign up for free membership of the Kit Club one of the things you agree to do is 'Return the kit in a complete and tidy condition ready for the next school.'

Our exciting new resource for Primary Schools is the Sustainable Living Kit. Last year, while researching resources for the Ecoboxes we came across a lot of material that was equally or sometimes more suitable for primary schools.

We also felt that the cross-curricular approach, which is the best way to tackle this topic, might be easier to adopt in the primary curriculum. So we developed the Sustainable Living Kit, specifically for primary schools. The kit has already been piloted very successfully in one of our schools. Feedback comments included 'an excellent resource for a themed week' and 'gave a heightened awareness of the issues.' The kit is now available for all schools to borrow, following the usual booking procedure. Why not have a look on our website for more information?



Information about ALL TSN kits at www.tsn.org.uk/KitClub.htm
or contact tsn.kits@bbsrc.ac.uk -

Alternatively telephone Carol Hince on 01603 450619 (Wed - Fri. inc.)



Science Learning Centre

The Science Learning Centre (SLC) East of England is bringing 3 different primary science courses to the John Innes Centre, in the coming months, all hosted by TSN.

29th March, Outdoor Learning: 'Stepping Outside of the Classroom' (EEC10060)

10th May, Essential Science Enquiry: Responding to Pupils' Ideas (EEC10241)

19th May, Assessment for Learning and Assessing Pupils' Progress (EEC 10247).

Other primary, secondary and technician courses are being offered between now and the end of the year at venues across the region and these are listed in a special summary document available at the TSN website, <http://www.tsn.org.uk/news.htm>

Full details of all SLC East of England courses are on their website www.sciencelearningcentres.org.uk/east Places may be booked online at www.slcs.ac.uk/network/courses or telephone 01992 503498

New Members - Welcome

Teachers

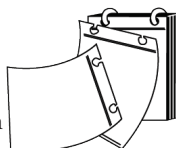
Mrs. Maxine Rushton, Ormiston Victory Academy
Mrs. Suzanne Dean, West Earlham Junior School
Mrs. Caroline Lock, West Walton Primary School
Mrs. Sara Watkins, Alderman Peel High School
Mrs. Emma Blackman, Watton Junior School
Ms. Hannah Catchpole, Costessey Junior School
Mr. Scott Pritchard, Harleston Primary School
Mr. John Ward, Ten Mile Bank Primary School
Miss. Sam Gates, St. Andrews CoE Primary School
Mr. Richard Peters, Norwich School
Mrs. Victoria McConnell, Larkman Primary School
Mr. Gary Hurd, East Norfolk Sixth Form College
Mr. Andy Gilbertson, Sir John Leman HS, Beccles
Mrs. Emma Court, St. Augustines RC Primary School
Mr. Mark Jones, Mulbarton Junior School

Scientists

Miss Rachel Gibson, University of East Anglia
Mr. Sebastian Runkel, University of East Anglia
Miss Tilly Eldridge, John Innes Centre
Dr. Sarah Field, University of East Anglia
Miss Katie Abley, John Innes Centre
Mrs. Heather McCartney, The Genome Analysis Ctr.
Mr. Andy Osborne, University of East Anglia
Ms. Laurence Boutemy, John Innes Centre
Miss Emma Leedham, University of East Anglia

Dates for your diary

11 - 20th Mar. - National Science and Engineering Week
(more at <http://www.britishtscienceassociation.org/web/NSEW/>)
19th Mar. - Science in Norwich day, 10-4 pm, The Forum
18th Jun. - NNUH (hospital) Open Day, 11-4 pm
30th Jun. - closing date for Inside Science applications (p.4)



Teacher Scientist Network (TSN)

Telephone +44(0)1603 450304, Fax +44(0)1603 450045,
Coordinator: Dr. Phil Smith, MBE

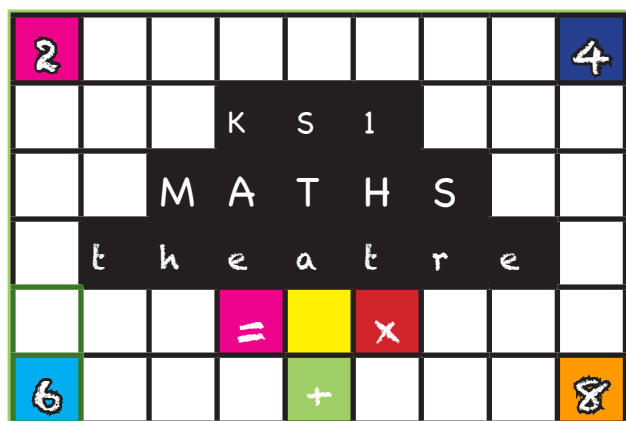
Email ts.network@bbsrc.ac.uk, www.tsn.org.uk
Chairman: Prof. Keith Roberts, OBE

TSN is a company limited by guarantee. Registered in England No. 4556366. Registered charity no. 1096208
Registered office: John Innes Centre, Norwich Research Park, Colney, Norwich, NR4 7UH



TSN News

Maths event at JIC - 17th and 18th March



TSN is delighted to announce that it is bringing ShoeFly productions presentation of "Two, four, six, eight!" to Norwich as part of this years Science Week. This 35 minute play is geared towards KS1 maths and will be supported by a Maths trail designed by TSN around the John Innes Centre conference centre before each performance.

Three performances are scheduled for Thursday 17th Match and two on Friday 18th March. Timings are as follows:

Session 1:
09:30 - 10:05 - Maths Trail
10:10 - 10:45 - Performance 1

Session 2: Thursday only
11:30 - 12:05 - Maths Trail
12:10 - 12:45 - Performance 2

Session 3;
13:05 - 13:40 - Maths Trail
13:45 - 14:20 - Performance 3

Places for each performance will be limited to 175, with a maximum of 60 per school to allow as many schools as possible

to attend the event while taking account of coach capacity.

Conscious of the costs of coach hire we have made this event as reasonable as possible for our schools and we are charging just £1.00 per child for this event.

Places can be reserved by post, telephone, fax or email to TSN at our usual addresses (see back page of newsletter).

Invoices will be issued and your booking will be secured by receipt of a cheque made payable to the 'Teacher Scientist Network'

In the event of spare seats still being available at the start of March we will contact all those with existing bookings to see if they would like additional places.

Performances will be held in the John Innes Centre conference centre which is easily reached by several different bus services - full details given on our website, <http://www.tsn.org.uk/Twoofoursixeight.html>



Images courtesy of Farrows Creative

CONTENTS

Prolific Partnerships	2
Partnership Activity	2
Norwich Eco-Dragons' Den	2
Keeping in Touch - email changes	3
Artificial Gametes - free film resource	3
JIC organised events in 2011	3
F=ma in the classroom and real-life	3
Kit Club news	4
Science Learning Centre events	4
New Members	4
Diary Dates	4

Prolific Partnerships!

The last 3 months have seen a real surge in the formation of new partnerships between teachers and scientists for both our primary and secondary school members. All partnerships start with an induction meeting between teachers and scientists led by the TSN coordinator - this manages the expectations of both partners and provides an ideal starting point for the development of long-term, sustainable links that are of real value for teachers and scientists. We hope the benefits to them and the many pupils they work with will be seen long into the future. I expect there will be a lots of 'drawings of scientists' made over the coming months as teachers lead into the first visit of the scientist. The excitement I have seen from both teachers and scientists at these meetings has been refreshing and exciting for me too. I look forward to reporting here some of their activities in the future. Thank you to those 'new' scientists who have come on board to make these partnerships possible. Hopefully more will follow.



First meeting of teachers & scientists at Angel Rd. Junior school (Sarah Field, UEA & Alex Knight) and Attleborough High School (Claire Leeder & Heather McCartney, TGAC) - two of 13 new partnerships created since November 2010.

Partnership Activity: Mike Green (Langham Primary) and Henry & Rob (NRP)

Twelve months ago for Countdown 439, Norwich Research Park PhD students Henry Creissen (JIC) and Rob Green (UEA, BIO), signed-up together to visit Langham Village school in North Norfolk. Friends from undergraduate days, Henry and Rob have built upon their successful visit and recently hosted the school on site at JIC. Below, they also highlight the benefits of working together in this partnership.

Pupils aged between 8 and 11 were invited to JIC for a full day of activity-based learning. With Autumn coming to a close, we decided to put the focus of the day on minibeasts and autumnal fruits. The pupils searched for minibeasts in both an aquatic and woodland habitat, and learnt to use microscopes to identify their finds using specific keys. A visit to the JIC Insectary allowed them to discover the secret lives of exotic species such as leaf cutter ants. Having explored the diversity of autumn fruits, seeds and nuts, the pupils learnt to identify dispersal methods from seed morphology. They also performed experiments involving the uptake of food dye by carnations allowing them to visualise transpiration as it happened.

The day proved extremely fruitful for pupils and PhD students alike. Questions were often very probing and responses highly insightful. The success of the day was illustrated by the pupils who said it was their favourite school trip ever!

Beyond the event, the headteacher wrote to Henry and Rob thanking them for producing a fabulous day for the children. "Everything was planned really well and your enthusiasm was infectious. It was a real treat for us and I hope in some way you may have been impressed with some of our questions/answers. Thanks again"

Chatting to Henry, he highlighted that being friends with Rob had helped in both the planning and delivery of the session. "Rob and I see each other socially anyway so meeting to plan the event wasn't difficult. Being mates is also an advantage when delivering as we communicate with each other well."

Eco Dragons' Den

If your pupils have a green business idea, they can enter it into the Norwich Eco Dragons' Den and test it against a high-powered team of local Dragons.

The Eco Dragons include the:

- Head of Corporate Strategy at Lotus
- course director in Strategic Carbon Management at the School of Business, UEA
- Director of Anglian Print Ltd, which publishes Triangle magazine.

Schools and youth groups in Norwich and the surrounding area can submit proposals by 1st March to Norwich Carbon Reduction Trust. Please see www.ncrt.org.uk for more details and an entry form. The competition is open to two age groups: 9-13 year olds and 14-18 year olds. We are looking for exciting proposals on the following theme: *new and creative products or projects to help us live in a more sustainable manner.*

Winning teams can visit the Lotus factory to see their electric vehicles or make a film about their proposal at the BBC Voices studio. To register your interest or if you have any queries, please contact Rachel Watson, Co-ordinator of Norwich Carbon Reduction Trust: RachelWatson@norwich.gov.uk or telephone, 01603 212197

Keeping in Touch - goodbye esinet, hello nsix



Communication is a vital aspect of TSN - how scientists communicate their science, and how partnerships keep in touch after that initial induction meeting and planning session. With the establishment of so many new partnerships we have become aware of lots of teachers with new email addresses replacing the @colour.esinet.org.uk

Our email mailing list, that we protect diligently, contains over 250 teachers names,

many in the *esinet* format - if you think this could be you and you would like to keep up-to-date with TSN activity by email, hear event announcements as soon as the date is fixed etc. please send a quick email to phil.smith@bbsrc.ac.uk giving us your new email address.



Artificial Gametes - free teaching resource

The film *In Vitro* follows the story of Rachel, a wilful, brilliant young scientist. The story is one of arrogance, human failing and uncertainty, played out in a world where science and technology have the power to fragment human lives and values. Rachel has managed to create 'artificial sperm' using her own bone marrow. Eager to make her mark on the world, she fertilises one of her eggs with this artificial sperm. Against the odds, she has a child ... but what sort of life will such a child lead? How will society respond to this seismic upheaval that redefines the very nature of parenthood?

In our opinion, the film is suitable for viewers of around 15 years and over, although teachers may choose to work with younger pupils. The aim of the film is to show viewers how technology may change the future, and to explore the questions that this raises. How can a sperm cell be "artificially" created? Can a woman really have a child using only her own genetic material? Is science always "neutral"? Is it wrong to "mess with nature"?

The team behind *In Vitro* have designed and developed a special teaching pack to enable the film to be used in a variety of subject areas, including Science, Citizenship, English, Media Studies, Politics and others. The activities provided in the teaching pack are suggestions, and can be modified or altered at teachers' discretion. We hope that you and your students find this material useful, engaging, and intriguing!

<http://www.invitrofilm.com>



Film not available until 1st March

F=ma in your classroom and real-life



I have had the good fortune to meet a PhD student from the Royal Veterinary College in Hertfordshire recently who is keen to explore the possibility of linking with a Norfolk school, most likely via the A-level physics department. Her PhD involves the detailed analysis of racehorse motion, and athletic performance and so here is a chance to bring alive and provide real-life applications of $F=ma$ and Newton's Laws of Motion.

JIC organised events

Thurs. 17th March - Showcase of Young Science - 12:45 @ The Forum in the Curve

A chance for 6th formers considering a career in science to hear PhD students and their supervisors talk about their work and to vote for the project you think should get continued funding!

Saturday 19th March - Science in Norwich Day - 10:00-16:00 @ The Forum

A FREE family science day in Norwich with hands-on fun, talks, shows for all ages. Come and do the DNA Boogie and join in a world record attempt at the biggest human DNA helix. Extract DNA and see what it looks like and find out why Norwich is a city of scientific excellence. <http://soin.org.uk>

27-29th September - Inside Science Workshop for G&T Students (Yr11+)

An intensive 3 day course on the Norwich Research Park. There will be talks, demonstrations, lab visits and practical sessions from some of the worlds leading scientists talking about their ground breaking research. A place on the course is competitively won and a letter of application, CV and letter of recommendation from a teacher is required by end of June.

Weds. 28th September - Microscopy Day

Students get an introductory talk on microscopy followed by tours and demonstrations of the different types of light and electron microscopes, with exhibition & quiz, <http://www.jic.ac.uk/microscopy>