

STEM eNewsletter



Sentinus – The Northern Ireland SETPOINT – Where Industry Matters



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THIS IS YOUR eNEWS

If you have News, Events, Information or Photos you would like included in the next Newsletter just email to: <mailto:info@sentinus.co.uk>



On 1st August **Sentinus** became the STEMPOINT contract holder for Northern Ireland. As part of its remit **Sentinus** will provide a brokerage service to schools, giving information and guidance on STEM enrichment and enhancement activities. This will cover a wide range of national and local activities which schools can access to support the development of their pupils, highlight the importance of the STEM subjects and ultimately inspire them to consider careers in the area.



In addition **Sentinus** will continue to manage the Science & Engineering Ambassadors Scheme (SEA's) in Northern Ireland to ensure that all schools in Northern Ireland have access to role models in STEM. SEA's come from a wide range of backgrounds but all have the common goal of inspiring young people about science, technology, engineering and maths. SEAs can help support classroom activities, school project work, after school clubs or careers events. (See article on page 2.)

If you wish to find out more about STEM enrichment and enhancement activities which support the curriculum and help the development of your young people or find out more about the Science & Engineering Ambassadors Scheme please contact **Sentinus**.

Tel: 028 9262 7755 E-mail: info@sentinus.co.uk.

Useful Web Sites

AstraZeneca Science Teaching Trust - www.azteachscience.co.uk	Darwin 200 - www.darwin200.org/
International Year of Astronomy - www.astronomy2009.org	Rolls Royce Prize - http://science.rolls-royce.com/
The Grid Club (for pupils, teachers & parents) – www.gridclub.com	Royal Institution – www.rigb.org
International Year of Astronomy - www.astronomy2009.org	Science Museum - www.sciencemuseum.org.uk
Books and Stories in Children's Science project - http://www.stran.ac.uk/research/FundedProjects.html	

Science & Engineering Ambassadors (SEAs)



What is the SEAs Programme?



The Science and Engineering Ambassadors Programme aims to promote Science, Technology, Engineering and Mathematics (STEM) by providing enthusiastic, vetted volunteers to work with young people and teachers in schools. They want to help inspire and excite children and young people about the possibilities these subjects and careers can bring.

We welcome volunteers of all ages and backgrounds. You may be working for a company, you may be a student, you may be a full-time carer, you may be an active retiree. There is no minimum commitment - we simply ask that you get involved in the activities with which you feel comfortable, when you are available.

Science and Engineering Ambassadors can get involved in a whole range of activities and events, either organised and managed by Sentinus or working with other organisations and schemes aimed at enthusing school-age children in STEM.

What are the benefits of becoming a SEA?

- Exciting opportunities for personal development - particularly in 'soft skills' of confidence building, presentation skills, personal effectiveness and teamwork.
- Great experience which can contribute to IPD and CPD.
- An increasing number of employers recognising SEAs as a worthwhile and valuable activity.
- Can be used as commitment to the community

So how do I become a SEA?

Becoming a SEA is simple. We ask you to register online at http://www.stemnet.org.uk/ambassadors_seas.cfm and complete a CRB (Criminal Records Bureau) Disclosure Application Form which will be sent to you after you register. To facilitate this we need you to show us:



- A valid passport **or** valid driving license;
- and**
- Two forms of official confirmation of address, eg. mobile phone bill, bank statement, credit card bill, or any other official document showing your address.

For further information about SEAs please contact Sentinus:
Tel: 028 9262 7755 or email info@sentinus.co.uk





Youngest Ever Representatives From Northern Ireland At ISEF

Matthew McCartney and Adam Magill, from the Abbey Grammar School in Newry, had only one thing on their minds in the weeks leading up to Saturday 10th May and that was their forthcoming trip to the USA. They had won the top prize, at Seagate Young Innovators 2007, to represent Northern Ireland at the International Science and Engineering Fair 2008 (ISEF) held in Atlanta, Georgia. ISEF is the biggest event of its kind in the world and competition is intense with over 3000 students. The week long event attracted 1200 science and engineering projects from the USA and 52 other countries around the world. Accompanying the two students on the trip was their teacher Gerard Savage, who won the Seagate Young Innovators Teacher of Excellence Award.

Adam and Matthew had designed and built an ultrasonic device to prevent an ATV (all terrain vehicle) operator from starting the vehicle without first properly fitting their helmet. The device was incorporated into the helmet without compromising its protective function - it also acted as a theft deterrent. Feedback from the ISEF judges, after intense scrutiny of the project, was very positive and they were particularly impressed with the fact that there was no equivalent product on the market at present. They were also impressed by the depth of knowledge of the electronics and circuitry exhibited by the students taking their ages into consideration.

Matthew and Adam, at 14 years of age, were the youngest students ever to represent Northern Ireland in the competition. However the boys' tender years did not prevent them from participating fully in the social dimension of ISEF and making friends from around the world. They had the opportunity to travel to a number of interesting places in and around Atlanta including the Aquarium, Stone Mountain, the Zoo and the Coca Cola Museum.



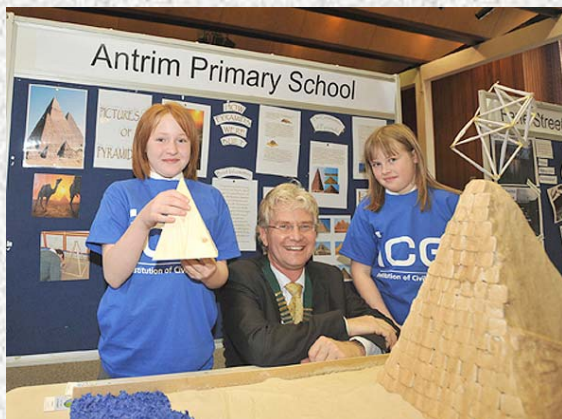
Matthew was one of only 35 students chosen to attend a special dinner with the Nobel Laureates and he had the opportunity to pose questions to these famous scientists and participate in discussions with them. All 3000 students had been asked, in advance, to pose a searching and relevant question which would challenge these eminent scientists. Matthew's question was chosen as one which stood out in as relevant and incisive. He asked the Nobel Laureates "Is it practical or indeed viable for man to consider setting up communities on other planets such as Mars?". (Visit <http://www.scisvc.org/isef/>)

Civil Engineering in Primary Schools

CEPS was designed and launched in 2007 to develop the interest of Key Stage 2 primary school children in civil engineering, within the context of the revised CCEA curriculum, "The World Around Us."

This year 400 pupils from 19 primary schools located across Northern Ireland took part in the Civil Engineering in Primary Schools (CEPS).

The schools received a visit from an assigned ambassador in January, when they learnt more about engineering and took part in some ice breaker activities. The pupils then got to work on a project for the Celebration Day. They investigated and built distinct and exciting projects including a zoo, car parks, bridges, theme parks, water filtration systems, wind turbines and football stadiums.



Two celebration days were held, the first on 18th April in the University of Ulster, Jordanstown, with special guest Andy McCrea, Chief Executive of Action Renewables and the second in the North West Regional College, Derry, on 25th April which was attended by John Gilliland, OBE.

ICE NI would like to thank all the ambassadors as well as Martin Brown and Colin Press who were also involved.

BBC breathing places schools

BBC Breathing Places Schools.

Teachers, have you signed up to BBC Breathing Places Schools yet? Schools across Northern Ireland have been registering for Breathing Places Schools and are delighted with the variety of free project materials they have received from the BBC, and on line, each term. Each of the termly activities are curriculum linked and there is no pressure - you can do as much or as little as you wish, and since the project will run for another year, it's not too late to join in!

Registration takes only two minutes and it's free, so why not sign up today!

Visit

<http://www.bbc.co.uk/breathingplaces>

National Science & Engineering Week

6th – 15th March 2009

A week of science and engineering events for everyone!

National Science and Engineering Week is one of the world's largest celebrations of science and engineering. NSEW 2008 was a huge success with an estimated 3500 events and 1.4 million attendees!

Would **you** like to run an event for National Science & Engineering Week 2009?

Find out more & enter your event at:

www.the-ba.net/the-ba/Events/NSEW

National Science & Engineering Week Grants for Schools

Small Grants of up to £500 are available through the BA to allow schools to run events for National Science and Engineering Week 2009. For more information follow the link below:

www.the-ba.net/the-ba/Events/NSEW/NSEWFunding/smallgrants.htm

THE STEM DIRECTORIES



The 2008/9 STEM Directories – one each for Science, Mathematics, Engineering & Technology - have been created in direct response to teachers' needs. (STEM – science, technology, engineering and mathematics)

First published in hard copy in September 2008, they comprise a collection of around 200 STEM enrichment and enhancement schemes and activities provided by organisations from across the UK.

To understand more about who has created the Directories, and why, please go to: www.stemdirectories.org.uk

We were delighted that we managed to reach a good number of STEM enrichment and enhancement activity providers in the short timeframe available to us to communicate with the STEM community about this project. 278 schemes/activities registered via an online website by June 2008. We know of course, that there are many more of you out there and we certainly wish to hear from you for the next stage of the project.

The STEM Directories in 2008/9 are only a staging post for further development. We plan to build on the progress we have made in 2008 and to reach a wider, more diverse number of providers in the next 12 months.

Maths is Everywhere!

Maths affects everything we do in our lives. It forms the basis for many other subjects and is fascinating in its own right.

It also leads on to a variety of fulfilling careers. Every time we pick up the phone, use the internet, manage money or travel anywhere, maths plays its part. Maths is everywhere. Without realising, we use maths every day, and it plays a part in nearly all our daily activities.

Ever wondered what mathematicians do all day?

For all the answers log on to: www.mathscareers.org.uk



shape the future



Shape the Future is a campaign to help organise the promotion of engineering and technology in schools. As part of this campaign, Shape the Future has created a Shape the Future directory and an Access Fund linked to it. The Access Fund has been set up to make small grants to schools wanting to get involved with the activities for the first time that otherwise would be excluded on the grounds of cost alone.

To obtain a copy of the Shape the Future directory and the Access Fund application details contact: shapethefuture@raeng.org.uk

Northern Ireland Maths Activities 2008/2009

Date	Event / Activity	Web Link / Info
5 th Dec 2008	Computing and Electronics...Creating the Technology of Tomorrow (AS / A Level Lecture targeting maths students) Dr Maire O'Neill, Dr William Scanlon and Dr Ian O'Neill School of Electronics, Electrical Engineering and Computer Science, Queen's University Belfast At W5: 11 am – 12.30 pm 5 th December	In this talk we will explore just some of the latest advancements in technology across broad disciplines, including robotics, cyber security, and the remote monitoring of illnesses by medical practitioners. You will be surprised how computing and electronics invade most parts of our daily lives, in a good way!
4 th Dec 2008	NSPCC Number Day	http://www.nspcc.org.uk/getinvolved/raisemoney/fundraisinginschools/numberday/numberday_wda33286.html
4 th Mar 2009	World Maths Day	http://www.worldmathsday.com/
6 th -15 th Mar 2009	National Science and Engineering Week	http://www.the-ba.net/the-ba/Events/NSEW/
14 th Mar 2009	Pi Day	http://www.piday.org/
Ongoing 2008/09	Northern Bank Science Counts Programme	Full details from W5.



Pictured at the launch of the MATRIX report are:
Arlene Foster, Minister for Enterprise, Trade & Industry;
Adam Snowdon, Friends' School, Lisburn;
Damien McDonnell, MATRIX Chair;
Elizabeth Dickson, Principal, Friends' School, Lisburn

MATRIX REPORT LAUNCHED

On 8th October MATRIX, the Northern Ireland Science and Industry Panel, launched its first report. The report detailed the steps required to secure Northern Ireland's competitive future in the global technology knowledge based economy over the coming decade. The report states that, to succeed business, government and education must all work together to create the platform on which will be built a stronger and more sustainable economy. For more information please visit:

<http://www.matrix-ni.org/>

F1 IN SCHOOLS MEETS F1 ON TRACK

7 July 2008 saw the British round of the Formula One World Championship, a huge event hosting stars of F1 as well as celebrities from TV and film. Silverstone was also the destination for motor racing champions from F1 in Schools, an inspirational national and international student challenge. The winners of the F1 in Schools National Finals in Birmingham earlier this year were given a rare insight into this prestigious and glamorous event, including grandstand passes and tours of the VIP area – the Formula One paddock. Some of the teams were even lucky enough to visit a team garage.

Primary school students from County Antrim, 'The Antrim Griffins', won the Juniors National title. Although they were not able to see behind the scenes in a team garage, they were photographed with a host of stars including Ross Brawn from Honda Racing F1 team, Louise Goodman from ITV, Mark Blundell, ex-F1 racer and commentator for ITV, as well as HRH Duke of Kent and Sir Jackie Stewart.

F1 in Schools is a global multi-disciplinary challenge for students aged from 9-18 to use CAD/CAM software to design, analyse, manufacture, test and race their miniature F1 car made from balsa wood and powered by compressed air cylinders. Working in teams of between three and six, the students prepare a business plan, develop a budget and raise sponsorship and design and race their car. The challenge inspires students to learn about science, maths, aerodynamics, design, manufacture, branding, graphics, sponsorship, marketing, leadership, teamwork, media skills and financial strategy, and apply them in a practical, imaginative, competitive and exciting way.



For further information contact: Alison Hill, ID PR & Marketing Ltd
Tel: +44 (0)1327 856060 Mobile: +44 (0)7710 306588



Cassini Scientist for a Day 2008

Two pupils from Glenlola Collegiate School in Bangor, Co Down had the privilege of meeting Prof Carl Murray from Queen Mary, University of London, on 9 July 2008 as part of a prize in the 'Cassini Scientist for a Day' competition.

Pupils from all over the UK were invited to submit a 500 word essay suggesting whether Pan, Rhea or Enceladus (three of Saturn's moons) should be imaged by the Cassini camera on 10 June 2008. Students had to research different features of each of the three moons and determine which one deserved special attention. Lorna Rainey from Glenlola Collegiate won the 14-16 years section of the competition and was invited to London to meet the Cassini scientists and take part in a videoconference with other members of the team from the Jet Propulsion Lab, California. Lorna chose Enceladus as her target and received the resulting image of the moon as part of her prize.



'Uncover the real stars of sport'

The IET Faraday informs young people about the world of science, engineering and technology and inspires them to become involved in it. The engagement of young people and teachers is through a programme of specially made films, student challenges, school visits and teaching resources. Resource materials are available free to all schools throughout the year through a high quality, interactive website: <http://www.theiet.org/faraday>. Students will create their own competition entries and compete for fantastic prizes.

There are also the action-packed Faraday Engineering Challenge Days which are creative and inspiring opportunities for schools to take part in around the country. Winners from the days will be chosen to attend the live Faraday Challenge Final to compete for the 'Faraday Team of the Year' award. This will be held in London during the first UK Young Scientists and Engineers Fair in March 09. Every year, the IET Faraday explores different aspects of science and engineering to highlight the diversity and excitement of this high technology profession. In 2008/9 the theme is engineering in sport. Inspiring role models will reinforce the image of engineering as a worthwhile, interesting and varied career choice.



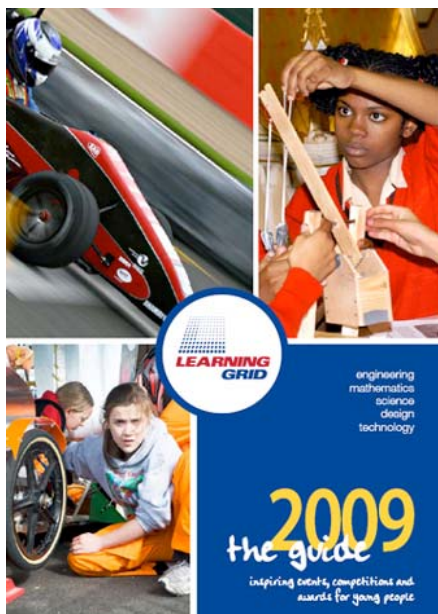
Rolls Royce Science Prizewinners St Anne's Primary School

After dedicating a whole year of hard work to their entry, St Anne's Primary School was named Rolls-Royce Science Prize winning team 2007/2008!

The team received the award and cheque for £15,000 at the Science Prize Awards Dinner at the Science Museum in London on 18 June 2008. For their project, "Investigating water", students explored the water cycle and analysed the quality and treatment of water in their local community. Pupils visited a local water treatment plant and, under the guidance of experts, used a variety of scientific tests to measure the quality of local water sources. The project culminated in pupils developing a water filtration system for a local farm.

Project team leader Cieran Kinney said: *"Taking part in the Rolls-Royce Science Prize has drawn the whole school together and children who had little interest in science are now telling me that they want to be science teachers. Winning the Rolls-Royce Prize is a real incentive to continue to inspire children about the importance of science."*

As part of their award, the team and pupils will also spend a day out with the incredible Red Arrows!



The Learning Grid Guide

brings together a wide range of events, competitions, short courses and awards for young people from primary school to university. These activities are all related to science, technology, engineering and maths (STEM) subjects and several are included as part of the National Curriculum (click on link in website to get a copy).

www.learninggrid.co.uk/guide

Activities for schools

Focussing on:

- **STEM**
- **Employability Skills**

Full details from:

www.sentinus.co.uk

T: 028 9262 7755



Sentinus at the International Scout Jamboree in Punchestown

On the 3rd of August 2008 Sentinus presenters Gerard Hughes and Thomas Keane faced the daunting task of presenting four different science activities to a total of 6,000 venture scouts, scouts and cub scouts from all over the world. Twenty eight scout leaders were trained to act as facilitators for these activities. With scout groups from America, Japan, France, Austria, Holland, Italy, Spain it came as little surprise to discover that some of the leaders spoke very little English. This proved to be no problem to the intrepid duo as they quickly organised the groups so that Thomas could use his language skills to train one group totally in French!

With the training day over everyone looked forward to the next day and of course prayed for good weather. The activities - pneumatic cars, geodesic domes, pneumatic rockets and bridge building - were set up in four different zones and very hour a different group of 350 scouts descended on each base. At least that was the way it was meant to be – at times the bases were swamped with as many as 500 scouts all ready to participate in the given activity. The scouts ranged in age from 8 to 16 so the activities had been carefully structured to ensure all could participate and benefit fully - and they did as was evident in the enthusiastic way they set about meeting the challenge at the each base.

There was a great deal of competition between scout units, lots of arguing about the right way to do things but most importantly there was a tremendous amount of fun and a great sense of achievement when a challenge was completed. Many of the scouts took their finished masterpieces home but as home was a tent for the next seven days it is unlikely many really did make it truly home!

All in all a great day was had by all and Scouting Ireland would like to take this opportunity to thank all the staff at Sentinus and particularly Gerard Hughes and Thomas Keane for all their hard and very professional work.

Science NI

At a meeting on Tuesday 2nd September a decision was taken to set up a new Northern Ireland Branch of the British Association for the Advancement of Science, Science NI. This new organisation will be involved in promoting interest and public understanding in science, engineering, technology and maths, particularly with the public.



Dr James Uhomoibi from the University of Ulster was elected as the first Chairman of the group and hopes it will be able to engage with a wide range of stakeholders to raise the profile of STEM in Northern Ireland.



The Festivals are one-day fun events held at universities throughout the UK and Ireland. They begin in late March and run through to mid June.

Salters' Festivals provide the opportunity university department and to take part in practical chemistry activities which are fun! Cash and prizes are awarded to the winning teams and all students receive participation certificates and fun prizes. For information contact: <http://www.saltersinstitute.co.uk/festivals/>



SALTERS' Chemistry Camps

The Festivals are one-day fun events held at universities throughout the UK and Ireland. They begin in late March and run through to mid June.



Salters' Festivals provide the opportunity for enthusiastic young students to spend a day in a university department and to take part in practical chemistry activities which are fun! Cash and prizes are awarded to the winning teams and all students receive participation certificates and fun prizes. For information contact: <http://www.saltersinstitute.co.uk/camps/>

Wrap up warm project

Team QinetiQ's Ben Fogle and James Cracknell will be taking part in the first race to the Geographic South Pole since Scott and Amundsen's legendary duel nearly 100 years ago. The race covers over 400 miles across one of the harshest environments in the world and aims to start in December 2008.



In partnership with the BA, Team QinetiQ has developed a new CREST Bronze Award project. The project is to design a jacket for the cold environment of Antarctica and is in line with the KS3 curriculum. If your Team QinetiQ CREST project successfully achieves a Bronze Award, you will be invited to enter your school project into an exciting competition. The winning school will receive a visit by Ben Fogle and James Cracknell during National Science and Engineering Week in March 2009. The whole school can hear all about their experiences in the race and the CREST Project team can show their project to Ben and James.



You can register your school and receive a free wall chart, download teaching aids, facts about Antarctica and a quiz and learn more about the scientists in Team QinetiQ.

For more information go to:

<http://www.TeamQinetiq.com/learningzone>