

STEM



eNewsletter

Spring 2011

Sentinus STEM Experience



The Ulster Museum will host the last of ten Sentinus STEM Experience events on 30th & 31st March involving more than 2,000 young people.

In the last three years these events have engaged more than 12,000 Key Stage 2 & 3 pupils from schools throughout Northern Ireland in fun, hands on STEM activities to designed to show how exciting the subjects really are.

They have built and launched solid fuel rockets, made helicopters, built a super capacitor car, tried their hand at forensic science, dug for dinosaurs, taken a 3D tour through space, built hovercraft and much more.

Sentinus has been delighted with the response from schools to the events and teachers have taken a lot of ideas back to the classroom to support teaching and learning in the STEM subjects.

Brian Campbell, Sentinus Chief Executive, said, “We are grateful to the Department of Education for its support for the STEM Experiences which has enabled us to get a really important and inspiring STEM message out to young people throughout Northern Ireland.”



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The Royal Institution
of Great Britain

2011 Grants for Schools for Mathematics Enrichment Activity

Do you teach mathematics to primary or secondary pupils?

Would you like to organise enrichment and enhancement activities to raise the profile and enjoyment of mathematics in your school?



The Royal Institution E&E grants scheme will make 60 grants of up to £500 available to teachers of mathematics to choose activities from the STEM Directories (<http://www.stemdirectories.org.uk/>) in 2011. It provides an exciting opportunity to initiate mathematics enrichment and enhancement (E&E) activities in their schools and help integrate E&E into their curricular practice. We welcome applications from all schools, with preference being given to state-funded schools that have not had external mathematics enrichment activities in the past two years.

For more information can be found by going on to the website:

<http://www.rigb.org/contentControl?action=displayContent&id=0000004672>.



THE ROYAL SOCIETY

Partnership Grants for Excellence in Science and Engineering

The Royal Society's Partnership Grants scheme is now open. You can apply for up to £3000 to work with schools on creative investigations that inspire students with all of the excitement and wonder of cutting edge science or engineering research. Funds are available for projects working with students aged between 5-19 as long as the project involves a UK school or college and practising scientist or engineer. The next round for applications closes on 25th February 2011.



For more details about eligibility criteria and to find out how to apply via our new online application system, go to: <http://royalsociety.org/partnership>.

Creating Innovative Solutions to Connect Generations

The **Keeping Connected Design Challenge** will partner Key Stage 3 students with older people and designers to jointly develop new systems and services which connect older people to friends, family and the younger generation. The Challenge is part of our new Independence Matters programme, - a series of projects we are running in partnership with the Technology Strategy Board.



Design
Council

The school with the best idea to help older people keep connected will win a £5,000 prize.

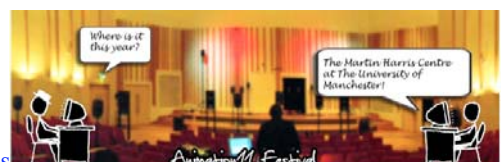
Attention Teachers!

Animation11

We thought you'd like to know that Animation11 - the 4th Annual UK Schools Computer Animation Competition is now in full swing, and the deadline for entries is 1 April 2011. Animation11 is a free-to-enter, not-for-profit competition run by the University of Manchester, designed to enthuse young people about Computer Science and ICT. The competition is open to all UK schoolchildren aged between 7 and 19. Entrants can create their animations (maximum duration: 1 minute) using any of the following programs: *Alice*, *Scratch*, *Flash*, or *SerifDrawPlus*. There are great prizes, and the Animation Festival and Inspirational Computer Science Day will be held at The University of Manchester's Martin Harris Centre on 1 July 2011.

The 2010 competition attracted over 1,300 entries from more than 200 schools, with 50 prize-winning students, and over 400 children, teachers and families attending the Animation Festival and Inspirational Computer Science Day at The Lowry, Salford Quays.

For full details, and to register to enter, please visit: www.cs



Cosmic Explorers!

Ulster Museum - Botanic Gardens, Belfast
Friday 18th March - 10.30am, 12.00am, and 2.00pm
Robert Hill, Northern Ireland Space Office
Free of Charge - **Booking Essential**

This year celebrates the 21st Anniversary of the amazing Hubble Space Telescope. Cosmic Explorers merges gaming technology with the latest in 3D stereo projection to create a cosmic voyage of discovery. As we fly into orbit and out into the universe you will visit other worlds and learn how we are using ground and space based telescopes and probes to unlock the secrets of the universe and discover how space technology and satellites are changing our everyday lives.



*Hubble Space Telescope
(image courtesy of NASA)*



Hubble image of Carina Nebula

The journey will also take us into the realm of the very small, as we miniaturise the audience to travel into the realm of the microscopic to discover the building blocks of life itself!

The show is produced with support from the Dublin Institute of Advanced Studies (DIAS) and the Irish Centre for High-End Computing (ICHEC).

The schools programs links directly to the Council for Curriculum, Examinations and Assessment Key Stage 3 Thematic units 'Underneath the stars' and 'Is there life out there..?' with a strong focus on cross curricular themes and mathematics.

Telephone Rosemary Stewart at the Ulster Museum on 028 9044 0100.

STEM: Spreading the Word *Sentinus calls for STEM Ambassadors*



Sentinus, Northern Ireland's leading promoter of science, technology, engineering and maths (STEM), is calling on local businesses to spread the word about the importance of STEM to the economy by enrolling as Sentinus STEM ambassadors.

STEM ambassadors are individuals from a wide variety of backgrounds including science, technology, engineering and maths, who actively get involved in the pursuit of the innovation economy by volunteering their time and expertise to help inspire the younger generation and demonstrate to them the career opportunities that exist in the STEM industries.



Brian Durnin, Principal Engineer for Innovation at Seagate – the worldwide leader in the design, manufacture and marketing of hard disc drives and storage solutions – said: “As a STEM Ambassador I find it truly inspiring and refreshing to see children’s ‘enthusiastic ‘no barriers’ approach to innovation. The younger generation is the intellectual bedrock that secures the future security and prosperity of organisations such as ourselves in terms of labour supply and expertise and as a result it’s in our interests to engage with students from a young age to present to them the different opportunities available in the STEM industries.

“There are also personal benefits of becoming an ambassador in terms of helping to challenge the stereotypes young people have about STEM careers; strengthening your own skills including communication, planning and presentation skills; and helping to make a difference to the local community and economy.”

For further information on the STEM ambassador scheme contact Sentinus on **028 9262 7755** or visit



The Association for Science Education

Promoting Excellence in Science Teaching and Learning



Further information on the conference and sessions can be found on the ASE website www.ase.org.uk or at www.aseniconf.weebly.com.

Anyone interested in attending the conference should contact Wilson Agnew, Secretary ASE (NI) by e-mailing wagnew737@pc.portadown.ni.sch.uk.



Tomorrow's



At a time when the economy needs them most, Sentinus is reaching out to the next generation of engineers with the launch of 'Tomorrow's Engineers' – a programme of events, supported by EngineeringUK, designed to inspire and attract students to become the future leaders of Northern Ireland's engineering industry.

Running from January to July 2011, Sentinus' Tomorrow's Engineers consists of five different elements designed to excite and enthuse young people, from both primary and secondary schools, about the STEM subjects and give their classroom learning relevance to the outside world. A major facet of the programme will be creating partnerships between schools and STEM Ambassadors from local companies to support the pupils in the activities.

Kick-starting Tomorrow's Engineers' calendar of events is the 'Design for Sport' scheme, which challenges student teams to come up with innovative, practical ideas for a new sports facility that will fulfil the need of their local community. Danny Hughes, one of Down's leading Gaelic football players, was on hand at the Design for Sport launch to provide an athlete's perspective on the ultimate sports stadium.

He said: "From an athlete's point of view stadiums are becoming more and more high-tech to meet the training and development needs of tomorrow's sporting heroes. The Design for Sport scheme will allow students to explore fresh approaches and generate new and innovative solutions while encouraging them to consider engineering as a career. I look forward to getting a chance to see the projects when completed and I would like to take this opportunity to wish each of the project teams the best of luck."

For further information about Design for Sport, contact Sentinus on 028 9262 7755 or visit www.sentinus.co.uk.

Conservation Volunteers Northern Ireland

inspiring people, improving places
www.cvni.org



Biodiversity Lunchtime Lectures

Lecture Theatre, Ulster Museum

1 - 2pm

Free of Charge

Booking Essential.



Alien Invasives - Specialist knowledge recognise signs that threaten biodiversity worldwide, and Northern Ireland's environment. This lecture will take a broad look through the past, present and future of alien invaders.

11th March 2011 - Hedgerow Management and Biodiversity

Speaker: Dr. Terence Henry

Department of Agriculture and Rural Development

According to UK government advisors on nature conservation, hedgerows are the most significant wildlife habitat over large stretches of the UK. This lecture will cover the history, management and importance to biodiversity of hedgerows in Northern Ireland.

1st April 2011 - The story of woodlands around Belfast

Speaker: Dr. Ben Simon

Belfast is fortunate to have many veteran trees in parks, woodlands and old gardens, and Belvoir Park has a number of trees well over 300 years old - including the oldest tree dated so far anywhere in Ireland! This informative lecture will look at the woodlands around Belfast and their importance to our biodiversity.

8th April 2011 - Peatlands: Why are they so important?

Speaker: Ciaran McLarnon

Park Warden, Peatlands Park

Ireland holds some of the last undisturbed peatlands in Europe, and this lecture will explore the formation, values, uses and reasons for the dramatic decline in peatlands in Northern Ireland, as well as the Role of Peatlands park, which was specially established to raise awareness of peatland habitat issues.

Telephone Rosemary Stewart, The Ulster Museum, on the following number for more information: 028 9044 0100.

W5 Careers: The W5 website provides a useful introduction to careers in Science and Engineering. There are brief outlines of a range of opportunities, together with direct links to institutions and organisations providing detailed information.

To get started, log into www.w5online.co.uk.

Click on the [education link](#) and then go into



STEM Online

STEM online directories have been created in direct response to teacher's needs. They comprise a collection of schemes and activities provided by organisations from across the UK that aim to enhance and enrich the curriculum. These schemes are usually based around events or experiences that cannot be delivered with standard school contacts and resources. Each activity is linked to the curriculum so that the impact of the experiences and outcomes can be sustained.

Created by the key players in the Science, Technology, Engineering and Maths (STEM) community, each directory aims to guide you through STEM schemes and resources available to teachers across the UK to help you enrich your lessons and stimulate your students. The directories offer a reliable and comprehensive overview of each scheme that clearly explains their benefits to teachers and students.

For more information on STEM Directories, please go to <http://www.stemdirectories.org.uk/>.



Sentinus Team R+D

Sentinus Team R+D (STR+D) enables sixth form (Year 13) science and technology students from Northern Ireland schools to tackle real industrial problems. Student teams work with companies on research and design over a period of six months. As well as enhancing their knowledge, understanding and capability in STEM subjects (science, technology, engineering and mathematics), students can meet many objectives in key skill areas. For appropriate projects UCAS accreditation is available through the WJEC Extended Project specification at level 3. During 2010 - 11, over 150 students from 32 local schools are participating.



Current projects include using solar energy to purify water in developing countries, harvesting rainwater for caravans and motorhomes, and redesigning packaging for transporting solar thermal collector tubes. Students and the school coordinator will also work together at the engineering workshops of Queen's University or the University of Ulster at Jordanstown during a three-day session in December.

For further information please contact Sentinus:

T: 028 9262 7755

E: info@sentinus.org.uk



Welcome to the Google Science Fair

The Google Science Fair is now live! Google has partnered with CERN, the LEGO Group, National Geographic and Scientific American to launch what we hope will become the largest, most inclusive online science competition in the world.

This is a truly global competition: students around the world between the ages of 13-18 can participate. Students in India (or Ireland or Israel) can compete with students in Canada (or Cambodia or Costa Rica) for [amazing scholarships, once-in-a-lifetime experiences, and real-life work opportunities](#).

Students interested in taking part may now [register online](#) as either individuals or in teams of up to three. Submissions will be accepted until 4th April 2010.

In early May we will announce 60 global semi-finalists (individuals or teams), whose projects will be exhibited in an online gallery and open for voting for a "People's Choice Award". In late May we will be announcing the 15 global finalists (individuals or teams). The 15 finalists, accompanied by a parent or guardian, will be flown to Google HQ in early July for a celebratory finalist event and finalist judging round.

We are excited to have a finalist judging [panel](#) made up of science luminaries, Noble laureates, inventors, innovators and thought leaders in the scientific arena.

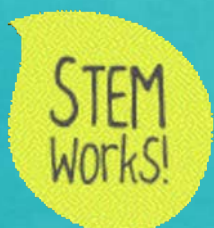
The subject categories are broad and encompass all areas of scientific interest. So whether you teach computer science, chemistry biology or maths, you can encourage your students to enter and get your classes involved. We have some great [Google resources](#), which explain how Google tools like Docs, Maps and YouTube can be used to enrich the students' science fair project. We have also linked to some great [science fair resources](#) and [partner resources](#), which you can use in the classroom or your students can access in order to explore project ideas. We have pulled together a [comprehensive list](#) of FAQs should you have further questions.

Here at Google, we believe that science can change the world and that young scientific talent should be celebrated, championed and encouraged. We hope you are as excited about the Google Science Fair as we are, and that you will encourage your students to enter.

EMPOWERING future generations
through science, technology, engineering
and mathematics to grow a dynamic
innovative economy



Northern Ireland
Curriculum





CREST Awards is Britain's largest national award scheme for project work in the STEM subjects (Science, Technology, Engineering and Maths). It gives young people aged 11-19 opportunities to explore real world projects in an exciting way. CREST links closely to the curriculum and is a great way to make STEM creative and engaging – both in and out of class.

For more information go to: <http://www.britishsienceassociation.org/web/ccaf/CREST/index.htm>.



CREST Star Investigators is a UK-wide award scheme that enables children to solve scientific problems through practical investigation. These activities focus on thinking about, talking about, as well as doing science, and are designed to be used primarily outside of class time (e.g. in a science club), though some are suitable for use in the classroom.

CREST Star Investigators

For more information go to: <http://www.britishsienceassociation.org/web/ccaf/CRESTStarInvestigators/index.htm>.

What is a STEM Club?

STEM (Science, Technology, Engineering and Mathematics) clubs allow children to explore, investigate and discover STEM subjects in a stimulating learning environment, away from the constraints of the school timetable or a prescribed curriculum. They allow pupils and their club leaders to work together and explore many different ideas and activities.



To find out more information about the STEM clubs, go to:

 <http://www.stemclubs.net/about-stem-clubs/>.

The Gatsby Science Enhancement Programme



provides support, free to UK science teachers and technicians, for science teaching, developing innovative resources ranging from booklets, CD-ROMs and online resources to novel practical equipment. As an SEP Associate you get first sight of each new SEP publication, with a free offer before its launch date. Recent titles include *Forensic Chemistry* and *Rockets and Projectiles*. You can also log into the SEP website to access free downloadable versions of publications in the *Innovations in Practical Work* series.



You can join SEP Associates by registering on www.sep.org.uk, click on **become an associate**.



Technology for the Future: Practical Action's...

Small Is... Challenge

A dynamic opportunity for Key Stage 2 and 3 students to be involved in designing a more sustainable future.

The challenge

Invent a product that will help us to lead more sustainable lives over the next 100 years.

Information for teachers

The challenge is supported by a Technology timeline poster, an introductory power-point and student worksheets. You will find this material at <http://practicalaction.org/education/smallischallenge>.

It will take students approximately 3hrs to complete the challenge.

How to enter your students

We are asking **teachers** to **select the work** of up to **four** students per class to be entered in for a prize.

The selected students' worksheets should be sent for judging to Practical Action by the 30th April 2011.

Judging the challenge

All student entries will be acknowledged with a Small Is... Challenge certificate.

The judges will select one student winner from Key Stage 2, one from Key Stage 3 Science and one from Key Stage 3 Design and Technology.

Prizes

The Key Stage 2 winner will be awarded a microscope from **Science and Chemical Supplies** and their school will receive **£150 of vouchers from Philip Harris**.

At Key Stage 3, we will be awarding a prize to a science and design and technology student. Both winners will receive a **solar media player and their schools £150 of vouchers** to spend on D&T equipment, or Science equipment from **Philip Harris**.



Deadline

Schools should submit their entries by post to:
Education Unit, Practical Action, Schumacher Centre,
Bourton on Dunsmore, Rugby, Warwickshire, CV23 9QZ or email
to education@practicalaction.org.uk by the 30th April 2011.

Any queries regarding the challenge please email:
education@practicalaction.org.uk or phone Practical Action's education
team on 01926 634400.

The winning entrants will be notified by the 31st May 2011 and
presented with their awards in July 2011. A selection of entrants and
the challenge winners will be published on Practical Action's website.

schoolscience.co.uk

philip
harris

SC
SciChem

PRACTICAL ACTION
Technology challenging poverty

