



A STORY OF A STEM JOURNEY

Bournmoor Primary School



ASSOCIATE SCHOOLS AND COLLEGES OF
THE ROYAL SOCIETY

Primary Science Quality Mark



What is it? - evaluates, strengthens and celebrates your science provision and therefore support the development of STEM opportunities

Why do it? –

- it will raise the profile of science in your school.
- it will systematically evaluate and develop all aspects of science teaching and learning in your school (including the links between STEM subjects)
- a year-long CPD programme that will develop leadership skills
- you will join a local hub of science subject leaders working for a PSQM award
- it publicly celebrate your school's commitment to excellent primary science (which undoubtedly will link to STEM opportunities!)

Link: www.psqm.org.uk

The Royal Society

Link: www.royalsociety.org

Associate Schools and Colleges

The Associate Schools and Colleges scheme is a UK network of enthusiastic teachers and staff who share their experience and work with us in order to develop scientific expertise and promote excellence in science and mathematics teaching.

Applying for this scheme

The Associate Schools and Colleges network is currently closed for applications. Information about the next application round will be released in March 2017, but you can see our general [eligibility criteria and application guidelines here](#).

You can also find out about the [participating schools and colleges](#) currently in the Associate Schools and Colleges network.

New memberships will begin September 2017 for both Primary and Secondary.



Copland Community School

ASSOCIATE SCHOOLS AND COLLEGES OF
THE ROYAL SOCIETY

Vision for science and mathematics education

06 June 2014

“

The ability of people to understand the world in which they live and work increasingly depends on their understanding of scientific ideas and associated technologies and social questions. For most people such understanding will come mainly through education.

Young People's Book Prize competition winners



The judges said: "It's a lovely book. The pop-ups beautifully illustrate a whole wide range of science from atomic science to volcanic eruptions. We also think the hand-on experiments it suggests will be very popular with a young audience."

Primary Science Teaching Trust



Advice on how to improve science

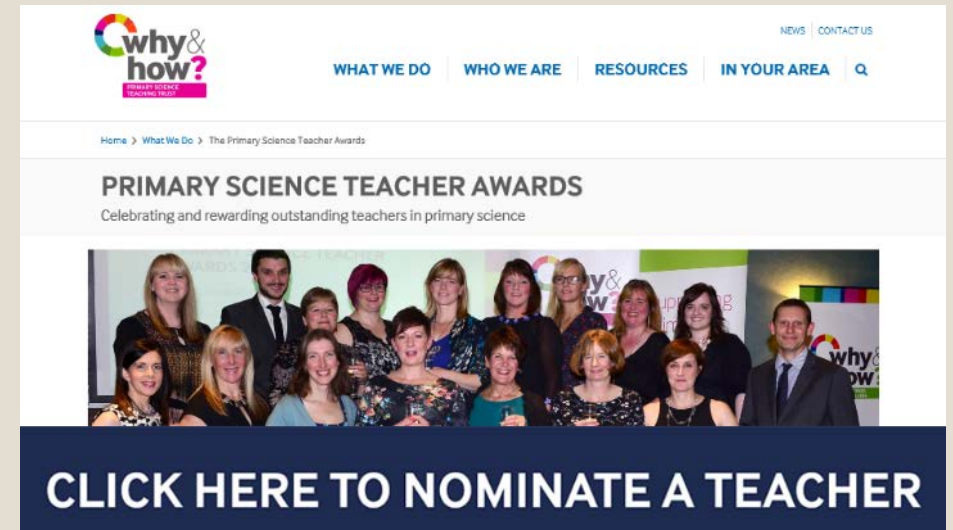
CPD – online and as part of their conferences.

Titanic , Science Trails resources– STEM based

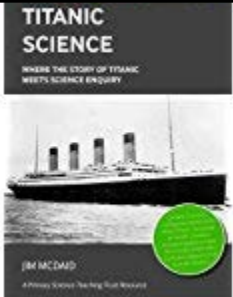
Cluster networks

College fellows can apply for bids to fund projects based on STEM

Primary Science Teaching Awards

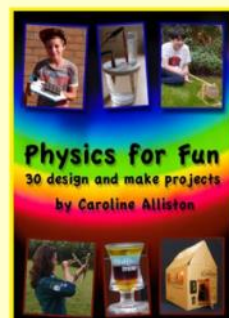
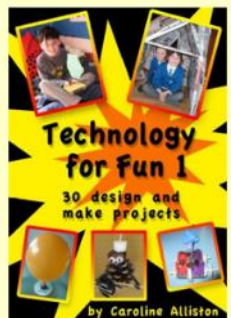


Link: www.pstt.org.uk



STEM Learning / CPD

STEM Club ideas

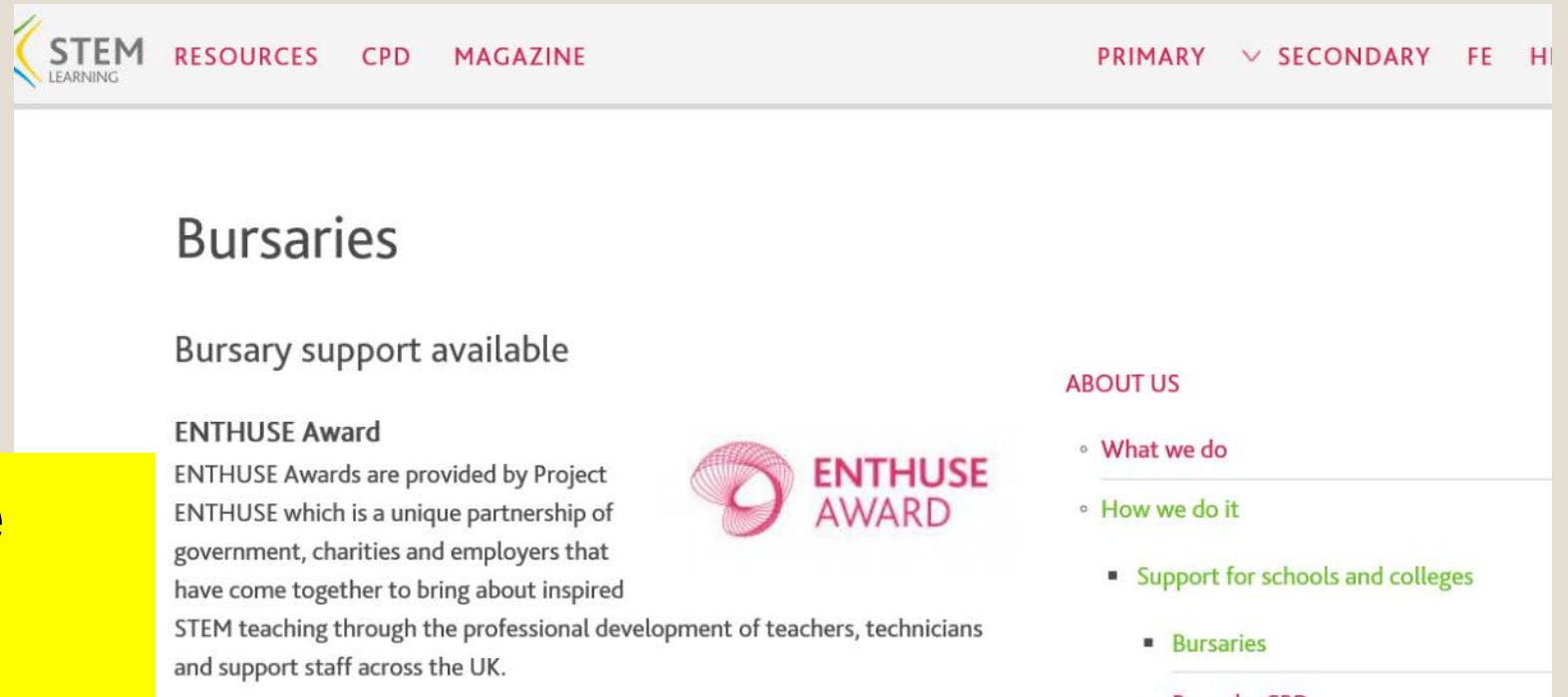


The screenshot shows the STEM Learning website. At the top, there's a navigation bar with 'STEM Learning', 'RESOURCES', 'CPD', 'MAGAZINE', and 'PRIMARY', 'SECONDARY', 'FE', 'HE'. Below this, a section titled 'STEM Ambassador Impact on teachers' features five donut charts showing percentages: 90%, 81%, 76%, 76%, and 73%. Each chart has a corresponding goal: 'Improve their contribution of the curriculum with up-to-date STEM information', 'Improve their understanding so they can better articulate information about STEM careers', 'Increase their motivation', 'Increase their confidence in teaching STEM subjects', and 'Improve liaison with local STEM businesses'. Below the charts, a 'RESOURCE' section titled 'STEM Ambassador Impact on teachers' mentions that STEM Ambassadors are a national treasure and that the report shares four key lessons. To the right, a 'NEWS ITEM' section titled 'Post-16 professional development, now with 100% discount' encourages looking at subject-specific CPD. A quote from a 'Past participant' is also featured. Further down, a 'Supporting STEM learning' section states the goal of achieving world-leading education in STEM. Below this, six icons represent different services: 'Resources' (curriculum-linked materials), 'CPD' (high impact, subject-specific development), 'Magazine' (local point for the STEM education community), 'Bursaries' (financial support for participation), 'Working with us' (partnership with schools), and 'Impact and evaluation' (evidence of professional development impact).

Link: www.stem.org.uk/

Link: www.stem.org.uk/bursaries

ENTHUSE AWARD



The screenshot shows the STEM Learning website. The header includes the STEM Learning logo and navigation links for RESOURCES, CPD, and MAGAZINE. On the right, there are dropdown menus for PRIMARY, SECONDARY, FE, and HI. The main content area is titled 'Bursaries' and includes a sub-header 'Bursary support available'. Below this, the 'ENTHUSE Award' section describes the awards as being provided by Project ENTHUSE, a partnership of government, charities, and employers. To the right of the text is the ENTHUSE AWARD logo, which features a stylized red and white circular design. On the far right, an 'ABOUT US' sidebar lists 'What we do' and 'How we do it', with 'Support for schools and colleges' and 'Bursaries' listed as sub-items under 'How we do it'.


STEM LEARNING RESOURCES CPD MAGAZINE PRIMARY SECONDARY FE HI

Bursaries

Bursary support available

ENTHUSE Award

ENTHUSE Awards are provided by Project ENTHUSE which is a unique partnership of government, charities and employers that have come together to bring about inspired STEM teaching through the professional development of teachers, technicians and support staff across the UK.



ABOUT US

- What we do
- How we do it
 - Support for schools and colleges
 - Bursaries

Intensive Award gave the school £5,000 to spend on science / STEM related CPD

GAINING IDEAS FROM ENTHUSE FUNDED CPD TO SUPPORT SCIENCE DEVELOPMENT IN MY OWN SCHOOL

In a one to one consultancy session funded by ENTHUSE Intensive, Mrs Feasey supported me in the planning and developing of the outdoor areas to use for STEM activities. We mapped out the area and mind-mapped how they could be used. The impact has been phenomenal. Our woodland area has attracted wildlife in many forms, our garden area is filled with raised beds growing our own vegetables and our meadow area provides a safe and excellent resource to find out about biology based objectives. The children love it!



Y5/6



Y3/6



Our revamped woodland area inspired this young man (Y5), who made a bird box at home. This impacted on Years 3 and 4 who then made bird cakes to encourage the birds to come and nest. We took part in the RSPB Big Bird Watch and Year 4 made bird boxes as a class. Identification charts have been purchased to help identify the birds visiting our area and children can name common garden and woodland birds. Boys from Y5 also wanted to create 'bug hotels' using logs they had brought in from home.



Y3/4

On the way to our new woodland area, a Year 3 child noticed a 'trail' of toadstools in an unusual pattern. Impact: children researched the type of toadstool it was, why it was in such a pattern and they had a variety of ideas why it could have grown in that formation.



I think that it is better outside because it has loads of resources like leaves and it's a better habitat for mini beasts. So when we are learning about insects for example, it's a good place to go. It also helps us with lifecycles.



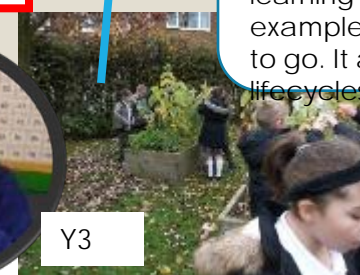
EY



Y1



Y3



I think the science in school is more indoors but I think we should do more outdoors. (April 2015)






The Woodland Trust



Link: www.woodlandtrust.org.uk/get-involved/schools/green-tree-school-award/

Schools Partnership



[Home](#) [About us](#) [Register](#) [Resource gallery](#) [Competitions](#) [Work with us](#) [Contact](#)

Why register with National Schools Partnership

- A registered teacher or school will be given first refusal on any new and appropriate initiatives
- Registered teachers are offered opportunities to help develop new projects
- Your school may have the chance to earn extra funds or gain new resources
- There is no cost and no obligation


[Click Here To Register](#)

Welcome

We believe that great learning is the foundation of life and our mission is to help schools and teachers by offering you an ever-growing wealth of initiatives from great curriculum resources to new health and fitness programmes.

We bring support to your school from a wide range of quality, ethical businesses with whom we have developed tools to help enhance pupils' learning experiences.

For your free resources
Click on the Links below




Inspirational, cross-curricular, STEM based learning experience designed for Year 5 and 6 pupils. The resources will help you:

- Save time - Flexible lesson plans, visual topic map and activity sheets teach essential National Curriculum subjects
- Bring learning to life - Fun, interactive game includes timetabling, scale and forces challenges
- Build pupil confidence - Develop team work and problem solving skills with tasks scalable to all abilities
- All resources are free! Click 'read more' to register.

Ages 9-11 **Maths Science Geography**

[» Read More](#)




Free exclusive half-day learning experience at Sky Academy Skills Studios Livingston

- Create a curriculum-linked television report with Sky Skills Studio staff
- Work with state-of-the-art technology
- Develop core life skills such as creativity, problem solving, communication and teamwork
- Learn more about broadcasting and media careers

P5-7 S1-6 **Maths Literacy Sciences Social Studies Health and Well Being Expressive Arts Technologies**

[» Read More](#)



Sky Academy Careers Lab - free full-day careers experience for 16-19 year olds

- An exciting and innovative initiative that brings careers in the media and creative industries to life
- Select from a choice of three subject specific experiences: Technology, Business or Media
- Students build employability skills

KSS **Media Business Studies Computing Careers Guidance**

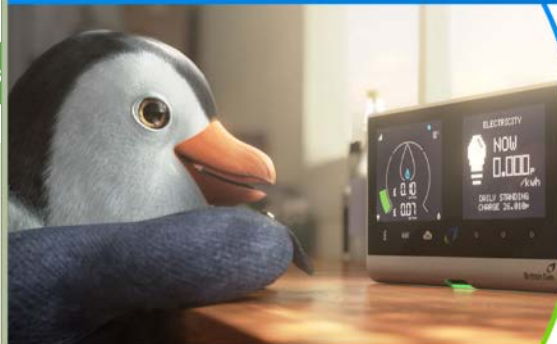
Link: www.nationalschoolspartnership.com/home.html

British Gas – Generation Green

Generation Green is an education programme run by British Gas, used by 28,000 teachers.

Working with Key Stage 1 - 4 teachers and pupils, we provide free of charge classroom resources, educational experiences and sustainable energy technologies to more than 13,000 schools across the UK. To date, British Gas has invested more than £18million in schools and has provided nearly 50 schools with energy makeovers worth up to £100,000 – so keep an eye out for our next competition for your chance to win!

Register your school




New Curriculum-linked Resource and Competition

Terms and conditions apply

Download our free, fun cross-curricular resource – featuring Wilbur the penguin – to teach your pupils, aged 7-11, how to be energy-efficient with smart meters

Enter the exciting Smarter Power Competition for the chance to win a £50,000 Energy Makeover for your school, and many more prizes

[Enter Now](#)



Dear Oliver,

Congratulations to all the regional winners of our **Generation Green Smarter Power competition!**

Entrants were asked to submit their own comic strip of energy saving ideas and the winners were hand selected from over 4000 entries by a panel of judges, including Nigel Parkinson, an artist at world famous comic The Beano!



Congratulations to the following pupils who have won themselves iPad and a Wilbur toy as well as an Einstein+ tablet for their school:

North East - **Jack Malik** - Bournmoor Primary School
South East - **Tansie Davies** - St Peter's Church of England Primary School
London - **Emma Peon** - Hotham Primary School
North West - **Hattie McAffer** - Chorlton Primary School
South West - **Aiya Zaleski** - St Andrew's Church of England Aided Primary School
Yorkshire and the Humber - **Jack Woollen** - William Levick Primary School
East of England - **Martha Rankin** - Bawdsey Primary School
East Midlands - **Evie Sharkey** - St Edmund Campion Catholic School
West Midlands - **Nokutenda Nguruve** - Holbrook Primary School
Wales - **Sasha Terrett** - Coychurch Primary School
Scotland - **Maisie Patron** - Trinity Primary School

One of these winning pupils also stands the chance of winning a **£50,000 energy saving makeover** for their school by becoming our national winner! Two runners up will win a £25,000 energy makeover too, so keep your eyes peeled for the national winner's announcement coming soon!

Thank you very much to everyone that took part and helped to make the competition a great success, but if you missed the competition, you can still help you pupils understand about the importance of saving energy by downloading the free resource.

Link: www.generationgreen.co.uk

Greenpower Car

A winning competition entry!



Greenpower
INSPIRING ENGINEERS

Home About News Partners Racing Events Get Involved The Greenpower Centre Careers Shop Forum Education

Home » Racing » IET Formula Goblin - Teachers

Further Information

- Teachers Home
- Q & A
- Technical
- Curriculum
- Summary
- Start a Team - Info
- Register a Team

IET Formula Goblin - Teachers



Blog Posts

- Micro:bit Workshop at The Greenpower Centre
- Temporary Event Entry S
- 2017 Provisional Calenda
- 2017 Provisional Calenda
- 2017 Technical and Spor Regulations

1 2 3 4 5 6 7 8 9 ... next > last >



Link: [www. http://www.greenpower.co.uk/racing/goblins/teachers](http://www.greenpower.co.uk/racing/goblins/teachers)

Taking delivery and un-wrapping the Goblin



Not long after sending our entry, we heard back from the advanced propulsion team at Newcastle University. WE HAD WON!

The team were extremely impressed with what we had produced and couldn't wait to get the kit car out to us.

You can see here some of the fantastic things they had to say about our entry.

We were so excited to get everything out of the boxes and start to look at what we had got ourselves into. The time had come to begin thinking about putting the car together, but where should we start...

RE: Bournmoor Primary School - GreenPower kit car submission



James Widmer <james.widmer@newcastle.ac.uk>

Fri 04/11/2016, 14:31

You



Reply

Hi Oliver

Thanks for getting back to me so quickly – that information helps a lot. I think that teaching the children to achieve such a high standard of presentation is excellent. We also very much liked the way that they had used lego to demonstrate their concepts.

The good news is that we were very impressed by the poster and have decided that we would like to work with you to pull together a goblin kart this year. At the moment I am still waiting for delivery of the kart and further details of timescales etc, however perhaps it would be a good idea to try and have a quick chat on the phone next week (though I know it can be tricky to build that into a busy teaching day!).

Please pass on our congratulations to the team and also compliments as to the very high standard of their work.

Best regards

James

Dr James Widmer

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Email: james.widmer@ncl.ac.uk

Web: <http://www.ncl.ac.uk/eee/industry/ced.htm>



A visit from the Advanced Propulsion Team and Dr. James Widmer



During our first morning with the Goblin Kit Car we had some very interesting visitors. As part of our journey from winning the first competition, to starting the build, we had two real engineers from Newcastle University pop in to tell us all about the ins and outs of our car.

We started the morning learning about what the two engineers' jobs were. One of our visitors was an Electrical engineer which meant that he invented, designed and made all sorts of electrical circuits and amazing creations. Our second visitor was a mechanical engineer which meant that he looked after the moving parts of the inventions, designed how they worked and fixed problems when they occurred.

Throughout the morning we were shown different engineered products such as a real life gearbox from a Renault and the electrical motor from a solar powered airplane that the two engineers had designed and made.

We learned a lot in a short space of time, taking in information about the main parts of the car and what we will have to do to create a successful race car. The visitors from Newcastle University said how impressed they were with our original submission and loved that we were such a knowledgeable and enthusiastic group of young engineers!

We can't wait for our next visit to find out more details on our motor, friction, bodywork and maybe even some 3D printing for the body work.



Nissan

A trip to the Nissan factory



This is the trip we had all been waiting for. Here in Class Four we all have a huge interest in anything STEM related, so living 10 minutes away from the Nissan factory in Sunderland was just far too big an opportunity to miss.

During the day we had the chance to see how a car goes from a 2D design, to a full size clay model and then into production. We had the opportunity to have a look around the apprentice area and even had a go at racing some pressure powered drag racers.

The day was fantastic and gave us all an insight into what goes on behind the scenes at one of the U. K's biggest car plants. Who knows, one day we maybe there as employees!

Royal Institution Grants



The STEM Directories

Find Science, Technology, Engineering and Mathematics experiences for your class

Quick scheme search 



The Directories

Grants for schools

Teachers

Providers

About

Contact

Login

The Royal Institution runs two 'enrichment and enhancement' (E&E) grant schemes for UK schools. Grants of up to £500 are for UK-registered state schools to host a STEM E&E maths or STEM activity selected from the STEM Directories. Activities listed on the Directories are described as 'enrichment and enhancement' because they are events or experiences that enrich or enhance (go beyond) the school curriculum and cannot easily be delivered with standard school resources. The schemes are designed to integrate STEM E&E activities (such as shows, talks and workshops) into school practice and to support teachers' professional development.

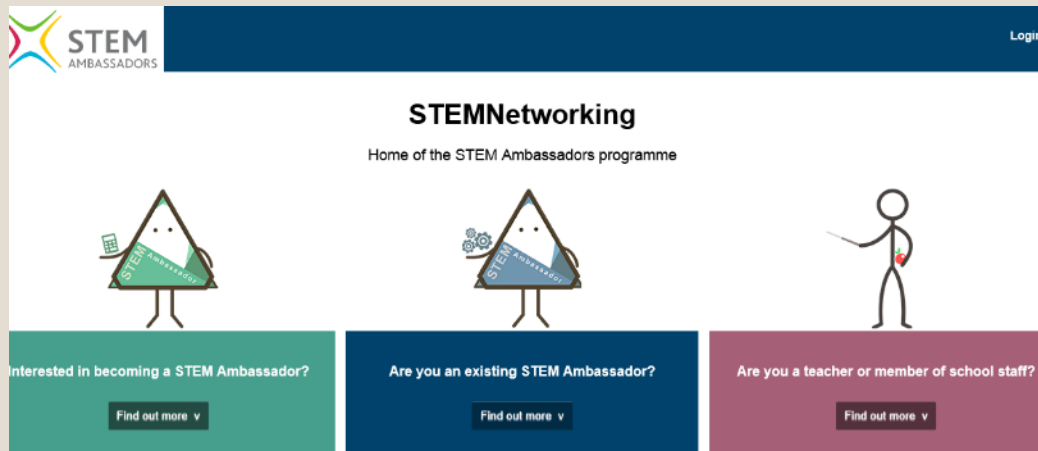
There are currently no grant schemes running. If you would like to hear from us when the next scheme opens, please sign up to the Royal Institution's [Education newsletter](#).

Other schools grant schemes

There are a number of other organisations that offer grants to schools. If you are aware of a scheme that is not listed here then please contact us so that we can add it.

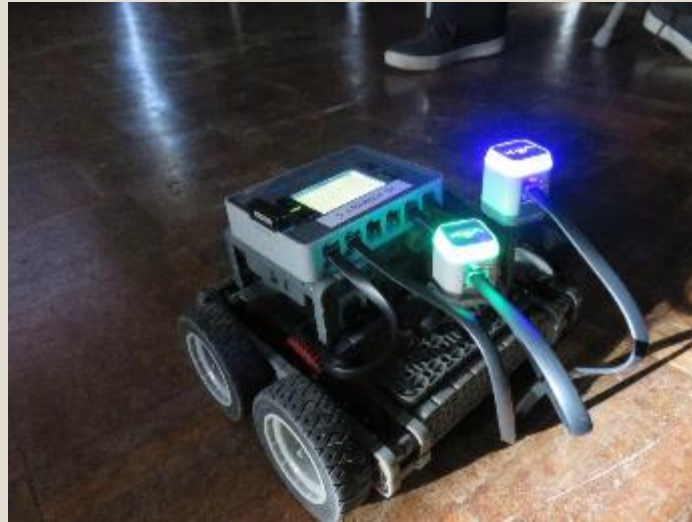
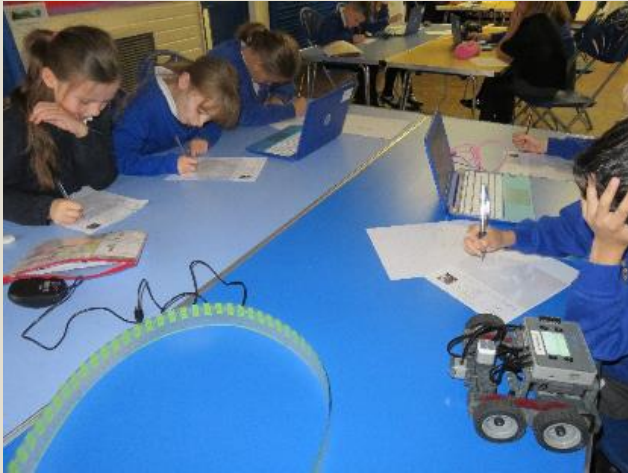
Link: www.stemdirectories.org.uk/grants

STEM Ambassadors



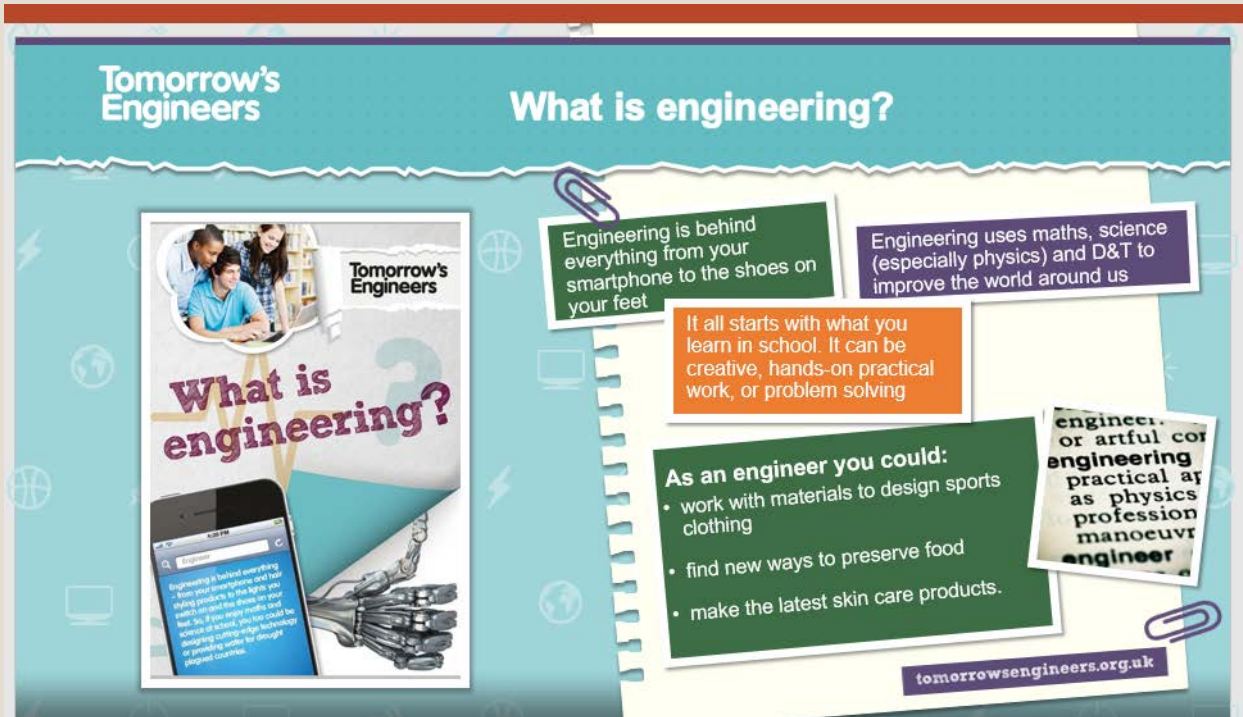
Link: <https://db.stemnet.org.uk/>

Secondary links



◦ Insert video here

Monthly STEM assemblies



Topical Science Update

February 2017

Is Sugar the new Tobacco?



Some groups of doctors are claiming that sugar is the new tobacco and needs new laws to limit the amount of it we're eating. Do you know how much sugar you eat every day? How much should you eat? What effect does sugar have on your body?

It's time we all became sugar-wise so we can make informed decisions about our diet before it's too late.

[How Much is Too Much?](#)

[Are You Sweet Enough?](#)

[Change for Life](#)

[How sugar affects your brain](#)

[Where did sugar come from?](#)

[The Truth About Sugar](#)

Climate Change – Make Your Mind Up

Following recent political events in the USA a significant number of Climate scientists are concerned that their research funding might be about to be cut.

97% of climate scientists publishing in peer reviewed journals share the opinion that climate change is happening and human activity is the major cause. Have a look at the evidence and make up your own mind.



[NASA Climate Kids](#)

[What the World Thinks](#)

[Peer Review](#)

[What do the Scientists Think?](#)

[Climate Change Explained](#)

Monthly topical updates:

Link: http://bit.ly/TSU_TES_Feb17

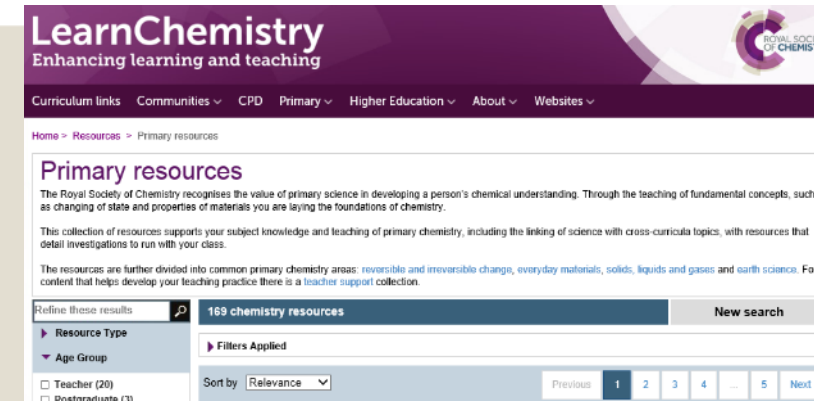
Association for Science Education – well worth joining, loads on online ideas for STEM activities and a chance to share them by writing for their monthly journal.



Brenda Keogh Award – awarded to 2 schools with limited funding to help them with science provision

Link: <http://www.ase.org.uk/about-ase/awards/brenda-keogh/>

Royal Society of Chemistry website



Link: www.rsc.org/learn-chemistry/resource/listing?searchtext=&filter=all&fLevel=LEV00000001&eMediaType=MED00000009&reference=primaryresource

BBC Campaign for science
Link: www.bbc.co.uk/terrificscientific – Terrific Scientific



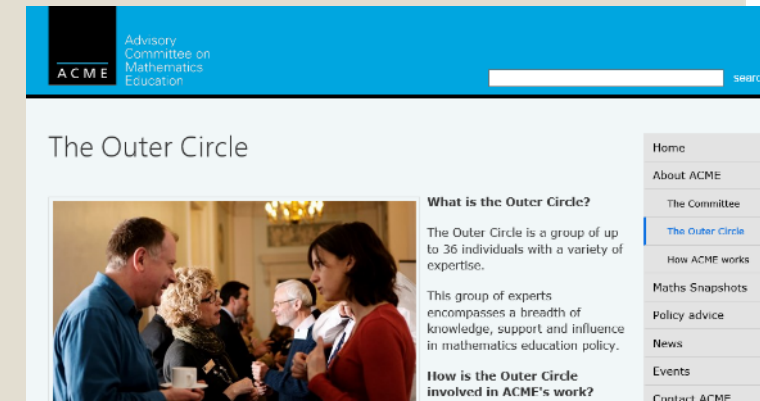
North Tyneside Learning Trust provide reasonably priced CPD for STEM subjects

Welcome to the Science Learning Partnership CPD opportunities brochure

Hello from Northumberland, Tyne & Wear Science Learning Partnership. Together with STEM Learning at the National STEM Centre, we are pleased to offer a range of science specific CPD. We are passionate about supporting teachers and technicians with high quality, subject specific development.

For further details on upcoming opportunities please contact
laura.topping@ntlearningtrust.org.uk

And do let us know if you or your school would like to request science CPD as we are happy to discuss bespoke arrangements.



Association Committee for Maths Education research reports to support the development of maths.

Future plans....

Need to link plans to tighten STEM opportunities especially the engineering side of things.



Bring it on!



THE NORTH EAST EXHIBITION FOR FUTURE ENGINEERS

“Bring It On!” for the future of engineering in the North East **3rd & 4th October 2017** **@ The Stadium of Light, Sunderland**

Bring it On! will open its doors to thousands of 9-14 year olds on the 3rd and 4th October 2017 at the Stadium of Light in Sunderland.

Put the date in your diary for this exciting event to inspire the next generation of North East engineers

With an array of talented North East businesses on board to tell pupils and their teachers about the many possibilities engineering can offer in our region, this event will create the biggest buzz for engineering the region has ever seen.

The event is purely for schools and businesses – so please make sure you get in touch to secure your place.

There will be a limited number of spaces, so sign up now!

Get in touch



THE NORTH EAST EXHIBITION FOR FUTURE ENGINEERS

Sunderland Rotary Club, The Institution of Mechanical Engineers, STEMNET and Engineering UK

are working together to hold an Exhibition to showcase North East Engineering to local young people, throughout the region, with the objectives of:

- **Educating them about the engineering activities taking place in the North East**
- **Inspiring them to want to be part of it**
- **Informing them about what they need to do to become so**

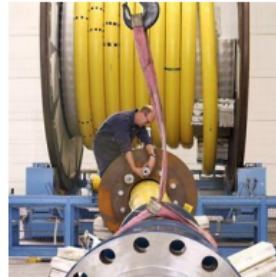
The Exhibition will contribute to improving employment prospects and closing the skills gap



It will be held over two days, one devoted to primary schools and the other to secondary schools.

The audience will be young people from 10-14 with the objective of influencing them before they commit to GCSE Options.

The event will be a celebration and exhibition of engineering prowess in the North East of England and not a 'career fair'. Engineering companies will be invited to showcase their local activities and products, provide young engineers to talk about what they do and provide basic information about their activities to take away.



We want as many items of hardware at the exhibition as possible to inspire young people to 'want to be part of that'.

We expect at least 2,500 young people, about 100 schools and around 50 engineering companies to attend

Link: <http://www.bringitonne.co.uk/>

Primary Engineers Leaders Award



Primary Engineer Leaders Award

Engineering is all around us. It provides the infrastructure to our lives; it keeps us well and looks after us when we are not; it enables us to communicate and share ideas. The Leaders Award offers the opportunity to look at the world in a global sense or at a very small part of it, find a problem and create a solution. All entries receive a certificate. Shortlisted entries are exhibited and awards made to the best from each year group.

**IF YOU WERE AN
ENGINEER-
WHAT WOULD YOU DO?**

North East Leaders Award

This award, funded by The Reece Foundation, and supported by the Discovery Museum, invites pupils from Primary and Secondary schools in the north-east of England to be inspired by an engineer from a local industry. They can then apply an engineer's eye to the world and identify problems in need of solving. When they have settled on their idea, they draw and annotate it, making clear what the problem is and their unique solution to it.

The deadline is the 29th March 2017. All entries we receive will be awarded certificates, some will achieve Merits and Distinctions. A panel chooses two great ideas from each year group. These winners are presented with awards as part of a private show and awards day on the 24th May 2017, followed by a public exhibition at the Discovery Museum Newcastle from the 7th - 12th June 2017. For more information contact the editor@leadersaward.com or register your school here.

Primary Engineer and the Leaders Award extend their thanks to the Institution of Mechanical Engineers, Siemens, The EEF, Nissan, SEVCON, Elring Klinger, the NE Automotive Alliance and many other NE industries for their support. The aim is to inspire pupils with the extraordinary careers available to them in the region, meet engineers and understand their career paths and motivation.



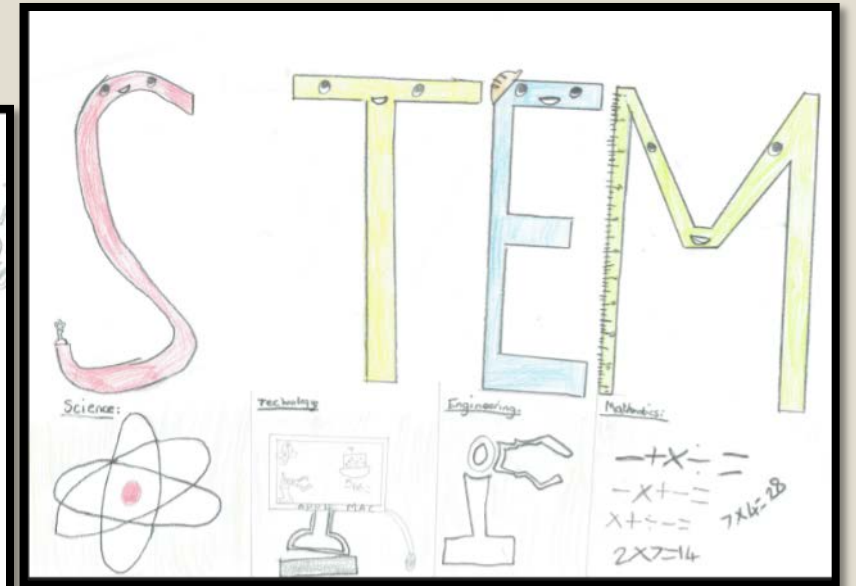
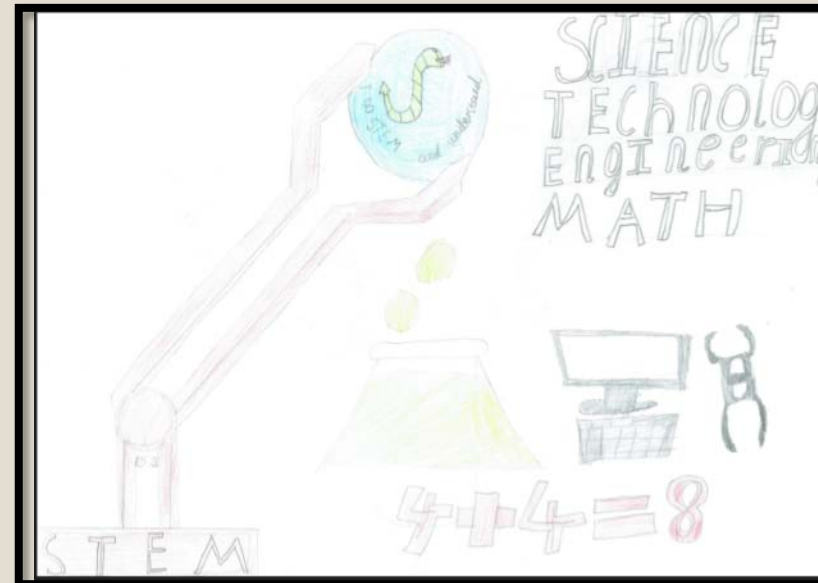
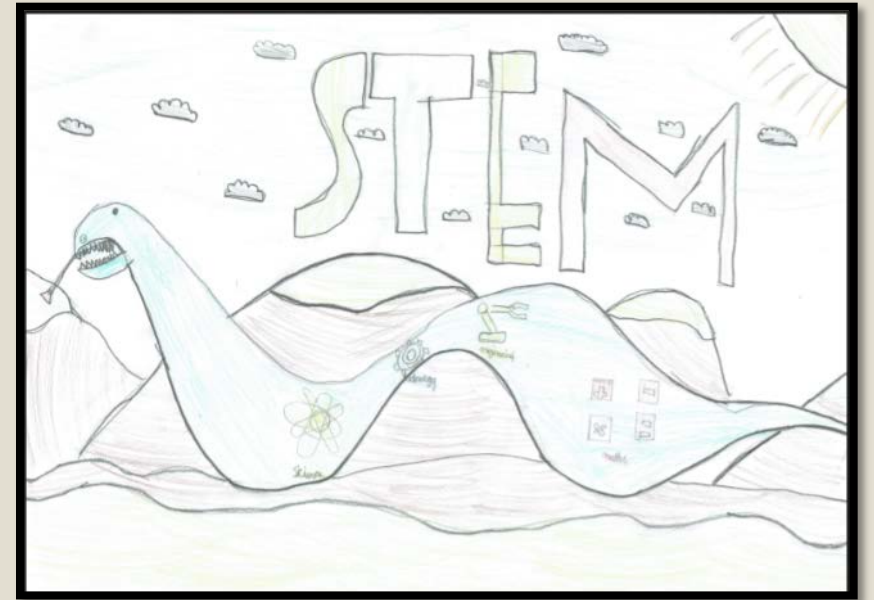
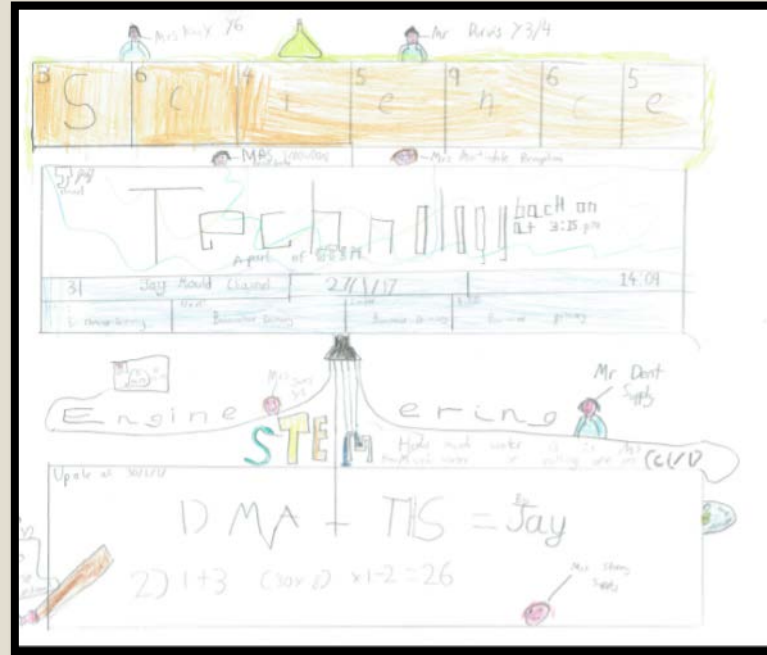
Link: <https://universeofengineering.com/primary-engineer-leaders-award/>

Link with businesses to support the engineering elements of STEM

- Tap into expertise
- Engage with STEM Ambassadors linked to science topics and STEM projects.

STEM LOGO COMPETITION

– raise the
profile of
STEM as a
whole.



Impact on the children...

- The children have grown to love science as it is such high profile within school.
- Monthly STEM assemblies that update children on current thinking in STEM subjects and research.
- The children plan and deliver their own assembly's relating to mini STEM projects they have done at home.
- Governors have become highly engaged with STEM subjects.
- It has opened so many doors, links and partnerships with us as school.
- Our science maths and technology curriculum is tightly linked and children see a real purpose in subject content and how they are connected.
- Created links that have provided opportunities for the children such as working with STEM Ambassadors.
- Winning the book prize video motivated the children even more and they became more interested in reading non fiction books based on STEM subjects event will raise the profile of our school and the STEM work we have been doing as well as the achievements we have made.
- Children are aware of how pursuing a career in STEM links to all sorts of opportunities and real life applications.
- Girls have become engaged, more engaged with STEM activities than boys have!
- Children see real life links to science, technology and maths activities.

To be honest..... The list is endless!



l.parks100@durhamlearning.net

Inspiration...

"It is not what we do to the child or for the child that educates him, but what we enable him to do for himself, to see and learn and feel and understand for himself. The child grows by his own efforts and his own real experience."

Susan Issacs, quoted in *"First Hand Experience – What Matters to Children"* by Diane Rich et al.

