Making time for design and technology

How a vacuum cleaner changed our primary specialist’s ideas about design, technology and engineering.
Welcome

Welcome to the second edition of STEM Learning magazine.

This year we are celebrating ten years of providing high-quality, high-impact professional development for teachers and support staff in the UK through the National Science Learning Centre. The Centre was opened on 17 March 2006 by the then Prime Minister, Tony Blair.

Across our network we have been supporting teachers and technicians for over 10 years and during that time we have learnt some key lessons:

1. Sustained engagement of schools and colleges with Network support is associated with improved teaching and learning, and increased uptake and achievement in STEM.
2. Professional development from the Network improves teachers’ subject and pedagogical knowledge, skills and confidence, resulting in better outcomes for young people.
3. The Network develops strong leadership in STEM – from primary to post-16 – benefitting teachers, schools and young people.
4. Engagement with the Network helps schools and colleges recruit and retain excellent teachers.
5. Professional development from the Network enriches teaching, supporting young people’s engagement, progression and awareness of STEM careers.

Full details of these lessons can be found in our Impact Summary: www.stem.org.uk/impact-10-years

We are starting the next ten years with some big changes designed to meet the changing needs of educators. We have changed our online presence taking the National STEM Centre, National Science Learning Network and ESERO websites and combining them so that all our support can be accessed in one place – www.stem.org.uk. We would be interested in your feedback and thoughts on how to improve this in the future.

We have also changed the name of our Centre in York to the National STEM Learning Centre to reflect the support we offer across computing, design and technology, mathematics and science.

As ever, this magazine is full of ideas, interviews and opportunities for bursary supported professional development – we hope you find it useful and look forward to welcoming you to one of our activities soon.

YVONNE BAKER, CHIEF EXECUTIVE, STEM LEARNING LTD
by Alison Capstick
Head of Teaching and Learning, The White Horse Federation

Can you tell us a little about your primary network and what’s involved?
Our network is designed to encourage all our primary schools to adopt a collaborative approach to CPD for science teachers. It was with this end goal in mind that we set up our primary network to explore current assessment and tracking methods, and to share experiences and develop moderation methods across the region. In essence, our network aims to host long-term, tailor-made professional development that will feed directly into the needs of individual schools, together with an ongoing support mechanism and network of like-minded co-ordinators.

Was there an ‘inspired moment’ that led to the set up of the network?
It provided an opportunity to raise the profile of science teaching in all the primary schools in Swindon and to improve the learning experience of science teaching in all the primary schools in the region. This led to the set up of the network?

Why would you recommend joining a local network?
In addition to walking away with new learning experiences and development in a non-intimidating environment, our network provides an opportunity for schools to share knowledge, a supportive environment! 

What would I fit in with this well qualified team of space ambassadors, who support schools around the country and share their experiences with each other’s perspectives, the meeting benefited from seeing the delivery of systems into school and overladen lunchboxes ready for their trip to various space museums. Engaging with a real astronaut is very motivating and Tim is a great spokesperson for his profession – and I’m very excited to be a space ambassador.

When I first agreed to, become a space ambassador for ESERO-UK, I felt quite daunted. The existing team of space ambassadors, who support schools around the country with using space as an engaging context for teaching STEM, seemed very well established and in possession of at least one, if not more, scientific degrees. Would I fit in with this well qualified and established team?

...
I didn’t think that on this particular Monday morning I would be making a vacuum cleaner. In fact, other than the cleaning of my house, I hadn’t given them much of a thought, let alone considered them to be something a class of primary school children could make!

So, there we were - experienced teachers - making cardboard blades, investigating the best shape and size for a fan, creating circuits to run motors and discussing how differences in design changed the effectiveness of our creations. Basically, working as a team of top engineers... and enjoying every minute.

As part of our day we thought about our preconceptions of engineering and design and technology. We came up with ideas such as: bridges; cars; machines; tools; trains; and men in overalls. Were our own stereotypes limiting our classroom practice? All these ideas are part of engineering - but it’s also so much more: humanitarian engineers help provide shelter and sanitation to refugees and medical engineers design and make the machines that help make us better in hospital. Also, there are some great female role models - Roma Agrawal is one example of an inspiring engineer. She worked on the building of the Shard, utilising skills such as: teamwork, problem solving and creativity.

It is important that we move away from stereotypes and offer children the opportunity to experience a variety of focused practical activities in design and technology. They provide links to the world around us around us, increase awareness of engineering at an early age and offer the glimpse of a possible career.

As well as dashing some of our pre-conceived ideas about engineering, we realised the amount of learning children experience through design and technology projects.

So why not have a go at creating your own vacuum cleaner or hanging sculpture? Or applying knowledge of gears, levers and pulleys to create a mechanical toy? Try building a wind turbine; making musical instruments; designing packaging for a toy; or even building structures from spaghetti and marshmallows!

As well as dashing some of our pre-conceived ideas about engineering, we realised the amount of learning children experience through design and technology projects, whether it is: finding different solutions to problems; applying understanding of science and mathematics; or developing problem-solving skills. Learning is focused around a project, and there are opportunities to make cross-curricular links with writing; computing and art. It may take a little planning to ensure curriculum coverage of all subjects, but think of how much time could be saved in a packed curriculum.

by Rachel Jackson Primary Subject Specialist, STEM Learning Ltd

FEATURE

AVAILABLE RESOURCES

PRIMARY ENGINEER COLLECTION
  - www.stem.org.uk/cx3zp

TEACHING ENGINEERING IN THE CLASSROOM
  - www.stem.org.uk/ty005

LEADING AN EFFECTIVE DESIGN AND TECHNOLOGY CURRICULUM
  - www.stem.org.uk/ty011
Building the next generation of great teachers

by MARGARET SMITH Independent ITE Consultant

Are you involved in planning training for initial teacher trainees? We look at three of the key issues and how to encourage the next generation of teachers.

WORKING SCIENTIFICALLY

Developing trainees’ skills in this area will make sure that there is no decoupling of the development of skills and knowledge. An exposure to the different enquiry types will ensure that a range of skills will be developed with pupils ultimately able to decide for themselves which type of enquiry is needed to answer a question.

FOCUS ON MATERIALS

Mathematics is the language of science, yet we are often covering the concepts and types of enquiry and we forget that children actually require the basic mathematical skills of reading scales, taking accurate readings on thermometers, drawing the scales on a graph or chart and so on.

There are many opportunities for links between mathematics and science, yet often they are undeveloped in schools by teachers under pressure to fit everything in. Yet, surely, these skills are key to learning across mathematics and science, enriching both and providing a more integrated, effective and time efficient way of learning. Linking mathematics and science can provide children with the opportunity to develop skills within real-life contexts, providing them with contextualised hands-on experience that is purposeful and engaging.

JUMPERS FOR PENGUINS!

JUMPERS FOR PENGUINS! These jumpers are used when the birds have been exposed to an oil spill absorbing the oil from their feathers and keeping the animals warm in the meantime. Will the jumpers keep the penguin warm? What would be the best material for the jumper?

MATERIAL WORLD

What is a steady use for concrete? Try a concrete pillow – would you get a good night’s sleep?

Real-life mathematics and science

HOW OFTEN DO YOU PLAN THE MOST EXCITING SCIENCE LESSONS ONLY TO FIND YOURSELF HAVING TO STOP THE LESSON TO TEACH MATHEMATICAL KNOWLEDGE AND SKILLS SO CHILDREN CAN ACCESS THE SCIENCE? LEARNING IS OFTEN LOST BECAUSE OF IMPROMPTU ‘CRASH COURSES’, DESIGNED TO Fill UNFORESEEN GAPS IN EDUCATION.

MATERIALS AND THEIR USES, TEACHERS MIGHT ASK PUPILS TO USE THEIR SENSES TO DESCRIBE WHAT A MATERIAL MIGHT BE USED FOR. PROGRESS WOULD BE SHOWN IF A Pupil COULD THEN EXPLAIN WHY THE PROPERTIES OF THAT MATERIAL MADE IT A GOOD CHOICE FOR THAT USE. TUNING THIS ON ITS HEAD TO SUGGEST A LOW LEVEL QUESTION MIGHT BE: WHAT CAN YOU HEAR WHEN YOU SHAKE THE BOX? A MORE CHALLENGING QUESTION WOULD BE: HOW DOES THE SOUND HELP YOU TO FIND OUT THE MATERIAL IT IS MADE FROM?

Teaching key area of primary science K51 - K52
Primary science for newly and recently qualified teachers

Opposite

WHAT’S IN THE MYSTERY BOX?

IAPPS WORK COLLABORATIVELY USING ALL THEIR SENSES TO DESCRIBE WHAT IS IN THE MYSTERY BOX. TARGETED TEACHER QUESTIONING SUPPORTS PUPIL PROGRESS. FOR EXAMPLE, IT’S A LOW-LEVEL QUESTION MIGHT BE: WHAT CAN YOU HEAR WHEN YOU SHAKE THE BOX? A MORE CHALLENGING QUESTION WOULD BE: HOW DOES THE SOUND HELP YOU TO FIND OUT THE MATERIAL IT IS MADE FROM?

WHAT IS A STEADY USE FOR CONCRETE? TRY A CONCRETE PILLOW – WOULD YOU GET A GOOD NIGHT’S SLEEP?

FIRM UNDERSTANDING OF THE PROPERTIES OF MATERIALS.

WHILE WORKING ON THE AREA OF THE CURRICULUM WHICH INVOLVES MATERIALS AND THEIR USES, TEACHERS MIGHT ASK PUPILS TO USE THEIR SENSES TO DESCRIBE WHAT A MATERIAL MIGHT BE USED FOR. PROGRESS WOULD BE SHOWN IF A PUPIL COULD THEN EXPLAIN WHY THE PROPERTIES OF THAT MATERIAL MADE IT A GOOD CHOICE FOR THAT USE. TURNING THIS ON ITS HEAD TO SUGGEST A LOW-LEVEL QUESTION MIGHT BE: WHAT CAN YOU HEAR WHEN YOU SHAKE THE BOX? A MORE CHALLENGING QUESTION WOULD BE: HOW DOES THE SOUND HELP YOU TO FIND OUT THE MATERIAL IT IS MADE FROM?

TEACHING KEY AREA OF PRIMARY SCIENCE K51 - K52

Primary science for newly and recently qualified teachers

Focus on finding the best growing medium to help the jumpers keep the penguin warm? What would be the best material for the jumper?

TEACHING KEY AREA OF PRIMARY SCIENCE K51 - K52

Primary science for newly and recently qualified teachers

Mathematics is the language of science, yet we are often covering the concepts and types of enquiry and we forget that children actually require the basic mathematical skills of reading scales, taking accurate readings on thermometers, drawing the scales on a graph or chart and so on.

Time for science is limited, so it is useful to identity and teach the mathematical skills, so children are ready and able to access the science. Why not learn how to use a thermometer in a mathematics lesson while exploring which materials keep hot drinks hot? Or develop measuring skills while finding out whether people with the longest legs can jump the furthest?

When learning how to present data in bars and charts in mathematics why not use the data from your science lesson? No matter how you decide to teach mathematics skills for science, it is impossible to ignore the fundamental relationship between these subjects.

Focus on finding the best growing medium to help the jumpers keep the penguin warm? What would be the best material for the jumper?

MATERIAL WORLD

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MATERIAL WORLD

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Exploring the teaching community

by Ben Wolfson
Year 3 Class Teacher, Gildersome Primary School, Leeds

When someone asks what I do, I give the simple reply of ‘teacher’. However, it’s a job that varies massively from school to school, and having worked in two schools in the same village, I can testify to the independent kingdoms that evolve behind the school gates. Teachers become immersed in the ways of their school, from planning formats to the sequence of school trips, and it becomes harder to break the mould each year. However, we’ve come up with some tips to help you develop the connections that could turn into a career defining, community strengthening project.

GET ONLINE

There is a massive push to make sure teachers act professionally on social media, it’s also considered good practice to use these tools to make contact with other teachers from other schools. Most schools these days have a Twitter account which can be used to send messages to fellow teachers, and online conversations using hashtags makes it easy to find other teachers with an online presence. #ASEchat is a great example, where science educators use the hashtag every Monday evening to discuss a wide range of subjects from resources to student motivation. The communities on www.stem.org.uk can be great places to meet like-minded teachers as well as a place to discuss problems and new teaching methods.

FACE-TO-FACE CONTACT

Once you’ve got the right person’s contact details, take the cross-school working to the next level by arranging a face-to-face meeting. Any chance to escape the realm, even for a short while, is something that you should take advantage of. There are huge benefits in simply seeing inside other schools. Every member of staff approaches displays differently, and there’s a big difference in the reward systems in place – scavenge ideas!

COMBINED PROJECTS

For teachers willing to take the next step and embark on combined projects with other schools, the benefit to the pupils and themselves are massive, as well as the local community. It gives children the chance to learn the necessary life skill of making connections with new people. Teachers can take strength from a larger working team, as well as developing important leadership and organisational skills. The wider community benefits from a greater understanding between schools as well as the multitude of fairs, enterprise events and performances that are a hallmark result of teachers building bridges between their kingdoms.

TAKING THE PLUNGE

Talking to fellow professionals from different schools gives teachers an opportunity to gauge their own practice, as well as the effectiveness of their own school. Sometimes they’ll come away feeling better and sometimes come away aware of shortcomings, but in both cases, the lessons learned can have more of an impact on a teacher’s practice than any amount of twilight training sessions.

If you decide to take the plunge and step outside of your castle walls, you’ll find yourself invigorated by the experience, and you’ll return to your classroom with a fresh set of eyes on what is going well and the potential the future holds.
Outdoor learning and the indoor generation

A growing body of research suggests children in the UK are increasingly disconnected from the natural world, impacting on behaviour, as well as physical and mental wellbeing. We asked three experts to give us their opinions on how teachers can address this issue.
Our top picks for you to put in the calendar...

**FEBRUARY 2016**

**FREE ONLINE CPD, ASSESSMENT FOR LEARNING 22 FEBRUARY**

Our free online CPD is ideal for all teachers looking to improve their understanding and use of Assessment for learning.

Led by Dylan Williams and Chris Harrison, two leading authorities on assessment for learning, and supported by Andrea Mapplebeck, this course will help to improve your understanding and use of assessment for learning, a term that is widely used in education, but applied in ways that are variable in their effectiveness. Learn how to write, judge and use the hinge questions that are central to assessment for learning in STEM.

- Book today to secure your place, visit: www.stem.org.uk/mp/online-cpd

**LIBRARY LOVERS MONTH FEBRUARY**

Our free elibrary hosts over 10,000 quality assured teaching resources. As well as videos, games and worksheets to use in the classroom, we also have the latest policy and research documents as well as information on careers in STEM subjects.

With curriculum support, dedicated pages for different subjects and age groups, and curated lists of our top resources, what’s not to love?

- Visit today: www.stem.org.uk/library

**MARCH 2016**

**INTERNATIONAL DARWIN DAY 12 FEBRUARY**

Did you know Darwin’s works, ‘The Origin of Species’ which is considered to be the foundation of evolutionary biology is now over 156 years old?

To celebrate Darwin Day and his contributions to science we have handpicked a selection of our top evolution resources into a handy list for you to use in the classroom.

- Visit: www.stem.org.uk/mp/evolution

**BRITISH SCIENCE WEEK 11 – 20 MARCH**

British Science Week is a ten-day celebration of science, technology, engineering and maths - featuring fascinating, entertaining and engaging events and activities across the UK for people of all ages.

- Find out more and get involved at: www.britishscienceweek.org

We have now launched our brand new website, incorporating the National Science Learning Network, the National STEM Centre, ESERO-UK and HeATED into one streamlined, easy-to-navigate website.

All our resources, CPD activities and blogs have been collected into one, easy-to-access destination. The site provides you with a dashboard which is customised around your needs and interests, bringing you the latest news and activities relevant to you. From here you will be able track the CPD activities you have been on and manage your upcoming bookings.

We hope you enjoy the new and improved experience of our website and share it with your colleagues and friends!

- Visit our new website: www.stem.org.uk

**EDITOR’S TOP PICK CHOICE**

@technologyfun Testing vibrating brush monsters for @BlueCoatPrimary club sponsored by @renishawplc

@scrapstoreGlos

@NtlSTEMCentre

@SciKathryn

My absolute favourite resource at the @NtlSTEMCentre. Just have to have a play every time I’m there! pic.twitter.com/U2XvIigDel

@wiskow_julie

@NtlSTEMCentre Making Martian soil for my ITAOT lessons – #kneesache!

@AlDarkSkyWales

#northernlights taken from Rhigos S. Wales October 7th @NtlSTEMCentre

Let’s take a peek at what people have been tweeting:

@NtlSTEMCentre

Followers: 15.2K

@ScienceVoice

Followers: 4764

Our new website is here!
Bursary supported continuing professional development (CPD)

You can access our CPD online, face-to-face locally through Science Learning Partnerships (SLPs) and on residential activities at the National STEM Learning Centre. We can also tailor our CPD to meet the individual needs of your department, school or network through our bespoke support.

Our high-quality CPD is also very affordable. Generous bursary funding from the Department for Education (DfE) and through Project ENTHUSE means all state funded schools, academies and colleges can benefit from Impact Award and ENTHUSE Award bursaries.

ENTHUSE AWARES

ENTHUSE Awards contribute towards the costs of attending world-class professional development provided by the National STEM Learning Centre. 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.

See the impact CPD makes...

93% of participants who attended courses at the National STEM Learning Centre reported a positive impact on their pupils.

“I left every day enthused and full of ideas for new lessons and schemes of work.”
- Primary Teacher, Hitterfelder Primary School, 2015

95% of participants across our Network stated our CPD positively impacted their own subject knowledge and skills.

“For the CPD, my knowledge in the delivery of science has been enhanced, I am more confident and enthused.”
- Primary Teacher, Ruby Primary School, 2015

We work with over 76,800 teachers and technicians in the UK.

Further details and dates:

All fees and award values are valid for state funded schools and are correct at the time of print (December 2015). See www.stem.org.uk for fees for non-state funded schools and the latest information.

COMPUTING

PRIMARY COMPUTING CONFERENCE

High quality CPD, providing you with ideas, resources and contacts to help progress computing in your school for the coming year.
- Your school receives: £999 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 23 March 2016

www.stem.org.uk/stem05

RAISING ATTAINMENT IN ENGLISH AND MATHEMATICS AT KS1 THROUGH THE EFFECTIVE USE OF ICT

Develop a wider understanding of how ICT can be used to support learning in mathematics and English, with specific focus on engaging your learners and raising attainment.
- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 21 April 2016

www.stem.org.uk/stem07

INTENSIVE SUBJECT-SPECIFIC CPD

GETTING STARTED WITH CREATING MOBILE APPS IN THE PRIMARY CLASSROOM

This CPD activity takes you through the principles of app design, giving you lots of hands on time to develop your skills using the software.
- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 8 Jun 2016

www.stem.org.uk/stem01

RAISING ATTAINMENT IN ENGLISH AND MATHEMATICS AT KS2 THROUGH THE EFFECTIVE USE OF ICT

Develop a wider understanding of how ICT can be used to support learning in mathematics and English, with specific focus on developing your learners, raising attainment and progress in KS2.
- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 23 March 2016

www.stem.org.uk/stem07

USING FILM TECHNOLOGY TO SUPPORT PRIMARY LITERACY

Explore a variety of film related skills and techniques for the classroom, from film analysis and shot direction to creating content using accessible technology and software.
- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 16 June 2016

www.stem.org.uk/stem01

USING MOBILE TECHNOLOGY TO ENHANCE LEARNING IN THE PRIMARY CLASSROOM: GETTING STARTED

This CPD activity is a beginner’s guide to using your mobile device in the classroom. It is suitable for teachers and teaching assistants who are using iPads, Android and Windows based devices.
- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 8 Jun 2016

www.stem.org.uk/stem01

INTENSIVE SUBJECT-SPECIFIC CPD

USING MOBILE TECHNOLOGY TO ENHANCE LEARNING IN THE PRIMARY CLASSROOM: GOING FURTHER

This CPD activity is the next step for teachers and teaching assistants who are using a mobile device themselves and want some experience of the pupils using a mobile device in the classroom.
- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 8 Jun 2016

www.stem.org.uk/stem01

DESIGN AND TECHNOLOGY

INTENSIVE SUBJECT-SPECIFIC CPD

USING MOBILE TECHNOLOGY TO ENHANCE LEARNING IN THE PRIMARY CLASSROOM: GOING FURTHER

This CPD activity is the next step for teachers and teaching assistants who are using a mobile device themselves and want some experience of the pupils using a mobile device in the classroom.
- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 8 Jun 2016

www.stem.org.uk/stem01

TEACHING ENGINEERING IN THE CLASSROOM

Helping provide ideas, practical projects and resources to help make exciting engineering lessons possible in the primary classroom.
- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 8 Jun 2016

www.stem.org.uk/stem01

USING MOBILE TECHNOLOGY TO ENHANCE LEARNING IN THE PRIMARY CLASSROOM: GETTING STARTED

This CPD activity is a beginner’s guide to using your mobile device in the classroom. It is suitable for teachers and teaching assistants who are using iPads, Android and Windows based devices.
- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 8 Jun 2016

www.stem.org.uk/stem01

FOR MORE DATES AND VENUES VISIT WWW.STEM.ORG.UK/CPD • CPD LISTING
This CPD activity takes you through the principles of app design, giving you lots of hands on time to develop your skills using the software.

Your school recieves: £578 ENTHUSE Award

Activity fee £115 (ex VAT)

23 Mar 2016 Keate

www.stem.org.uk/rp112

USING MOBILE TECHNOLOGY TO ENHANCE LEARNING IN THE PRIMARY CLASSROOM: GETTING STARTED

This CPD activity is a beginner’s guide to using your mobile device in the classroom. It is suitable for teachers and teaching assistants who are users of iPads, Android and Windows based devices.

Your school recieves: £667 ENTHUSE Award

Activity fee £500 (ex VAT)

23 Mar 2016

www.stem.org.uk/rp015

USING MOBILE TECHNOLOGY TO ENHANCE LEARNING IN THE PRIMARY CLASSROOM: GOING FURTHER

This CPD activity is the next step for teachers and teaching assistants who are skilled in using a mobile device and have some experience of the pupils using a mobile device in the classroom.

Your school recieves: £578 ENTHUSE Award

Activity fee £551 (ex VAT)

16 Apr 2016

www.stem.org.uk/105

Primary STEM Learning magazine

Changing the way we think about effective teaching and learning. It helps you to make some new ideas to take back to the classroom.

Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

19 Jan 2016 York

www.stem.org.uk/rp050

SCIENCE

ASSESSMENT IN THE NEW PRIMARY SCIENCE CURRICULUM... A WORLD WITHOUT LEVELS

Evidence shows that effective assessment for learning leads to raised attainment. Identify how you can integrate and embed assessment practices into your science teaching.

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

20 Jan 2016 Sheffield

22 Jan 2016 Orpington

26 Jan 2016 Peterborough

27 Jan 2016 Crewe / Heswall

29 Jan 2016 London / Ladbroke Grove

5 Feb 2016 Altrincham

2 Mar 2016 Milton Keynes

3 Mar 2016 Bedford

20 Mar 2016 Blackpool

20 Apr 2016 Leeds

24 Apr 2016 Gloucester

www.stem.org.uk/rp902

CREATING A BUZZ: RUNNING SUCCESSFUL SCIENCE CLUBS, EVENTS AND VISITS

You will be inspired to enthuse your pupils about the thrill of scientific ideas and science enquiry. 

• Your school recieves: £57.50 Impact Award

Activity fee £115 (ex VAT)

2 Mar 2016 Keate / Bradford

15 Mar 2016 Crewe

www.stem.org.uk/rp117

CROSS CURRICULAR SCIENCE: INCORPORATING LITERACY AND NUMERACY IN THE NEW CURRICULUM

We focus on providing a science curriculum which will help raise attainment not only in Mathematics and English but across the curriculum.

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

2 Mar 2016 Preston

4 Feb 2016 Blackburn

www.stem.org.uk/rp065

DEVELOPING SCIENCE SUBJECT LEADERS

Explore a range of strategies to audit and lead science in your school, understand your role more fully and be able to identify and promote effective primary science.

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

19 Jan 2016 Preston

21 Jan 2016 Blackpool

2 Feb 2016 Sheffield

4 Feb 2016 Leeds

11 Feb 2016 Nuneaton

www.stem.org.uk/101

DEVELOPING SUBJECT UNDERSTANDING IN PRIMARY SCIENCE

Focus on the big ideas in primary science, helping you to make a reference to children's learning by identifying and challenging misconception.

Half day:

• Your school recieves: £57.50 Impact Award

Activity fee £115 (ex VAT)

23 Jan 2016 Year 1 or Year 2, Doncaster

25 Jan 2016 London

26 Jan 2016 Year 3 or Year 4, Doncaster

2 Feb 2016 London

10 Feb 2016 Year 1 or Year 2, Hull

17 Feb 2016 Year 3 or Year 4 Doncaster

1 Mar 2016 Year 5 or Year 6 Hull

23 Mar 2016 London

www.stem.org.uk/rp112

HELPING YOU IMPLEMENT THE LATEST SCIENCE CURRICULUM

Our experienced primary practitioners will help revise your curriculum in time with the primary curriculum guidance and offer strategies and advice for any gaps in your plans.

• Your school recieves: £215 Impact Award

Activity fee £430 (ex VAT)

20 Feb 2016 Bishop’s Stortford

www.stem.org.uk/rp104

LINKING THE CORE SUBJECTS: LITERACY AND SCIENCE

Explore the curriculum links between science and literacy and how to develop literacy skills to improve the quality of children’s written work in science.

Half day:

• Your school recieves: £42.50 Impact Award

Activity fee £85 (ex VAT)

24 Feb 2016 Wimborne

15 Jun 2016 Herefordshire

One day:

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

19 Apr 2016 Milton Keynes

10 Jun 2016 Birmingham

23 Jun 2016 Leeds

www.stem.org.uk/rp114

LINKING THE CORE SUBJECTS: MATHEMATICS AND SCIENCE

Identify how to maximise your pupils’ opportunities to develop their numeracy skills and use their understanding of science by planning lessons in which children effectively handle data.

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

25 Feb 2016 Devon

www.stem.org.uk/rp113

PRIMARY CONFERENCE

This conference provides outstanding learning opportunities linked to topical developments in primary science teaching.

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

11 Mar 2016 Kendal

www.stem.org.uk/rp124

PRIMARY SCIENCE CONFERENCE: PRACTICAL IDEAS AND ACTIVITIES TO SUPPORT NEW PRIMARY SCIENCE LEADERS’ NETWORK

Bringing together primary teachers, science subject leaders and teaching assistants who are interested in developing science within their schools.

• Your school recieves: £289 ENTHUSE Award

Activity fee £215 (ex VAT)

1 Jul 2016 York

www.stem.org.uk/rp007

This conference is an ideal opportunity to develop your subject knowledge and skills whilst exploring the most effective strategies for assessment and evaluation in primary science.

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

2 Mar 2016 Crewe

www.stem.org.uk/rp083

SCIENCE AS A VEHICLE FOR READING, WRITING AND MATHS

You will investigate science activities that provide a context to teach and assess mathematics and develop literacy skills to improve the quality of the children’s written work in science.

• Your school recieves: £57.50 Impact Award

Activity fee £115 (ex VAT)

8 Mar 2016 York

www.stem.org.uk/rp172

RAISING ATTENTION IN PRIMARY SCIENCE

Identify teaching and learning strategies that will move good lessons to outstanding by focusing on the learning happening in the classroom.

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

4 Mar 2016 Telford

www.stem.org.uk/rp103

RESOURCING THE PRIMARY SCIENCE CURRICULUM

Become more familiar with the National STEM Centre syllabus and participate in interactive workshops to create a resource package for a science topic.

Activity fee £40 (ex VAT)

9 Feb 2016 York

www.stem.org.uk/rp085

www.stem.org.uk/rp111

TEACHING SCIENCE IN EYFS AND KS1

Try out ideas for practical science that can be used with young children to develop a range of scientific skills and explore opportunities to promote children’s social skills.

Half day:

• Your school recieves: £57.50 Impact Award

Activity fee £115 (ex VAT)

2 Mar 2016 Skipton

One day:

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

19 Jan 2016 London

9 Feb 2016 Bedford

www.stem.org.uk/rp109

WORKING SCIENTIFICALLY IN THE NEW PRIMARY CURRICULUM

Learn to implement strategies for enquiry in order to improve children’s outcomes through effective teaching of scientific enquiry.

Half day:

• Your school recieves: £57.50 Impact Award

Activity fee £115 (ex VAT)

22 Feb 2016 Skipton

One day:

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

19 Jan 2016 Wimborne

20 Jan 2016 Doncaster

21 Jan 2016 Wallsend

3 Feb 2016 Bristol

10 Feb 2016 Oldham

18 May 2016 Northampton

22 Jun 2016 Oldham

www.slc.ac.uk/107

SUPERMARKET SCIENCE

This practical CPD will provide you with a bank of easy to use ideas which you can take away with you to enable your pupils to conduct experiments and investigations. 

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

10 Feb 2016 Milton Keynes

2 Feb 2016 London

12 Feb 2016 Gloucester

www.stem.org.uk/rp125

TAKING SCIENCE OUTSIDE

We offer practical advice to help you make the most of the resources around your school and beyond to engage your pupils.

• Your school recieves: £107.50 Impact Award

Activity fee £215 (ex VAT)

12 Apr 2016 Sheffield

8 Jun 2016 Herefordshire/Birmingham

9 Jun 2016 London

23 Jun 2015 Milton Keynes

www.stem.org.uk/rp111

Primary STEM Learning magazine

Primary STEM Learning magazine
LEADING EARLY YEARS SCIENCE
Explore the nature of teaching & learning in Early Years, identifying national and international innovation and its potential for affecting change in science.
- Your school receives: £3,711 ENTHUSE Award
- Activity fee: £3,416 (ex VAT)
- 2 Mar 2016 (9 days over 3 periods)
  www.stem.org.uk/ny017

NEW AND ASPIRING PRIMARY SCIENCE SPECIALIST
This innovative programme combines hands-on subject knowledge workshops with specially sequenced sessions that will support you in initiating and lead change in your school.
- Your school receives: £3,778 ENTHUSE Award
- Activity fee: £3,476 (ex VAT)
- 20 Jan 2016 (8 days over 3 periods)
  www.stem.org.uk/ny010

PLANNING SCHOOLS VISITS TO ENHANCE SCIENCE AND MATHEMATICS
Take a fresh look at your school visits, including a trip to London to experience the type of school visits available to you.
- Your school receives: £687 ENTHUSE Award
- Activity fee: £500 (ex VAT)
- 23 Mar 2016 (2 days)
  www.stem.org.uk/ny001

PRIMARY SCIENCE FOR NEWLY AND RECENTLY QUALIFIED TEACHERS
Understand the requirements of the primary science curriculum, improve your subject knowledge and make time to plan for excellent science lessons.
- Your school receives: £670 ENTHUSE Award
- Activity fee: £500 (ex VAT)
- 2 July 2016 (3 days)
  www.stem.org.uk/ny017

SCIENCE AND THE CREATIVE ARTS
Develop creative approaches to primary curriculum planning and delivery in schools intended to raise both children’s and teachers’ aspirations and achievements.
- Your school receives: £1,348 ENTHUSE Award
- Activity fee: £1,162 (ex VAT)
- 23 Feb 2016 (4 days over 2 periods)
  www.stem.org.uk/ny008

PROJECT ENTHUSE
Supporting state funded schools across the UK with access to high impact professional development.

ENTHUSE AWARDS
Bursaries available to all state funded schools and colleges in the UK to support participation in professional development through the National Science Learning Centre and partners in Scotland, Northern Ireland and Wales.
- www.stem.org.uk/mp/enthuse

INTENSIVE ENTHUSE AWARDS
£5,000 bursaries to support in-school, consultant led professional development for state schools in England that have not participated in Project ENTHUSE supported professional development in the last five years.
- www.stem.org.uk/mp/intensive-enthuse

ENTHUSE PARTNERSHIPS
£12,000 for groups of between four and eight primary schools located in England, working together to address local issues ofunderachievement in science/STEM subjects.
- www.stem.org.uk/mp/enthuse-partnership
Excitement. Amazement. Awe.

That’s the kind of reaction teachers aim to get from their science and mathematics students, every day. So how do you go about it?

The Rolls-Royce Science Prize is an annual awards programme that continues to seek out, recognise and acknowledge inspirational teaching.

If you’re a teacher, teaching assistant or technician, we want to hear how you inspire pupils. Not only could your school share in our award fun, you’ll also get mentoring support for a full year to see your plans turned into reality.

Find out more and enter at www.rolls-royce.com/scienceprize

Bespoke CPD tailored to your needs

Our comprehensive range of support can be requested as a bespoke offer for your department, school or network. We can make the CPD more effective and tailored to the specific challenges and needs your school faces.

We have a proven track record of highly evaluated, impactful professional development and a wealth of experience in supporting teachers, technicians and support staff in all aspects of STEM education.

Find out more at www.stem.org.uk/mp/bespoke-cpd

Primary Science resource packages

Access free, quality assured packages of resources on the National STEM Centre eLibrary

www.stem.org.uk/mp/primaryscience

Tim Peake inspires

Have you and your students been inspired by Tim Peake’s mission to the International Space Station (ISS)?

ESERO-UK has created a page dedicated to the educational resources linked in to Tim’s mission and human spaceflight. These resources include:

- AstroPi – access data from two Raspberry Pi computers running aboard the ISS, and explore coding with your students
- Rocket seeds - discover more about this exciting project, which will see packets of rocket seeds sent to the ISS and then grown back on Earth
- Explore the ISS with our great collection of resources looking at life aboard this flying laboratory

And many more! To explore the full range of free, STEM related resources visit www.stem.org.uk/mp/timpeake

www.stem.org.uk/mp/primaryscience
Explore our new website

Join our community
Share ideas, problems and best practice in our vibrant community groups

Personalise your experience
Use your dashboard to find and store information tailored to your interests

Access resources
Download exciting resources to use in the classroom and share your own

Book CPD activities
Enhance your learning with CPD activities and have a positive impact on yourself, your students and your school

www.stem.org.uk