

# secondary **(stem)** LEARNING

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## Building the next generation

We look at three of the key issues for trainee teachers

## WELCOME

# Get in touch...

We would welcome your feedback on our new magazine: [feedback@stem.org.uk](mailto:feedback@stem.org.uk)

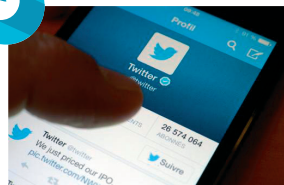
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# Welcome



## 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/ms/impact-10-years](http://www.stem.org.uk/ms/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](http://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.

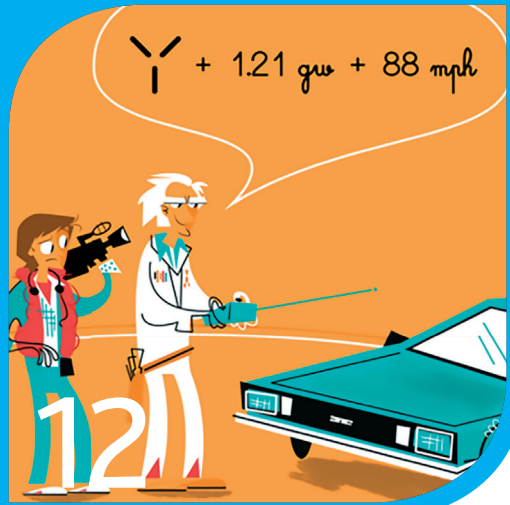
As ever, this magazine is full of ideas, interviews and opportunities for bursary supported professional development – we hope you find it useful and look forward to welcoming you on to one of our activities soon.

YVONNE BAKER, CHIEF EXECUTIVE, STEM LEARNING LTD



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Having taught in primary and secondary schools, Margaret has a wide experience of developing science teaching and learning. She has worked as a science adviser, senior adviser with the National Strategies and as an Initial Teacher Education (ITE) lecturer at the University of Leeds.

# Building the next generation of great science teachers

by MARGARET SMITH  Independent ITE Consultant

Are you involved in planning the very best training programme for initial teacher trainees? We look at three of the key issues, and how you can build in the support that trainees need.

## DEVELOPING SUBJECT KNOWLEDGE

Our graduate trainees will specialise in one of the sciences but will frequently be required to teach the other two sciences to GCSE. They may not have studied these since they took their own GCSEs. They can come to training lacking in the necessary subject knowledge and confidence to teach to this standard. This needs to be addressed so they can evidence 'Teacher Standard 3: Demonstrate good subject and curriculum knowledge'.

## WORKING SCIENTIFICALLY

New specifications mean that knowledge and skills related to practical work will contribute to pupil outcomes at GCSE and A level. Can your trainees communicate clear learning objectives and outcomes associated with an acid-base titration practical at GCSE? Are they clear what skills they are developing in their pupils?

Considering the learning outcomes planned from the required practicals is a key development area for science trainees.

## IT'S ALL ABOUT PROGRESS

Trainees often find it hard to incorporate effective differentiation into their planning. In science this learning can be based on increased subject knowledge but also the scientific skills embedded in working scientifically. Being clear what progress in learning in science looks like is an important area for trainees to develop mastery.

Trainee science teachers need to be confident about the next step in learning for their pupils. Integral to this is their ability to assess their pupils – developing assessment for learning techniques including the use of effective questioning is key.

**Trainees need the opportunity to develop and practice these pedagogical skills. There is so much to include in an effective training course for would-be science teachers. But help is out there!**





“ Trainee science teachers need to be confident about the next step in learning for their pupils ”



#### AVAILABLE LEARNING RESOURCES

##### SHARE IDEAS AND CHALLENGES WITH FELLOW SCIENCE TEACHERS IN OUR SECONDARY SCIENCE RESOURCE GROUP

■ [www.stem.org.uk/ms/group-secondary-science](http://www.stem.org.uk/ms/group-secondary-science)

##### BE INSPIRED WITH OUR DEDICATED SCIENCE RESOURCE PACKAGES

■ [www.stem.org.uk/ms/resources-secondary-science](http://www.stem.org.uk/ms/resources-secondary-science)

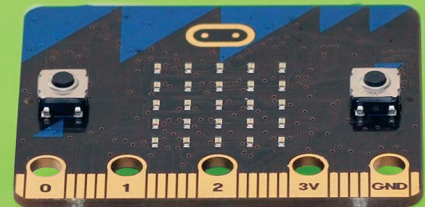
##### SUMMER SCHOOL FOR NEWLY AND RECENTLY QUALIFIED TEACHERS

■ [www.stem.org.uk/ny255](http://www.stem.org.uk/ny255)

##### DELIVERING THE LATEST SCIENCE CURRICULUM

■ [www.stem.org.uk/rp223](http://www.stem.org.uk/rp223)

## BBC micro:bit STEM roadshow - coming soon to a town near you



The micro:bit is the biggest BBC Education project in 30 years - every 11-12 year old in the UK will receive one. The micro:bit presents a unique opportunity to teachers of STEM subjects; a free, versatile and easy-to-use device that will engage young people and extend learning in science and design and technology.

Involving hands-on introductory sessions and subject-specific learning resources, the course is presented by the National STEM Centre working in partnership with the Institution of Engineering and Technology (IET) and the Design and Technology Association (DATA).

#### JOIN US FOR BBC MICRO:BIT IN SCIENCE AND DESIGN AND TECHNOLOGY – THE MICRO:BIT STEM ROADSHOW

##### One day courses:

- Bury St Edmunds 26 Feb 2016
- Sheffield 1 Mar 2016
- Altrincham 3 Mar 2016
- Reading 8 Mar 2016
- Yeovil 9 Mar 2016
- Dunfermline 15 Mar 2016
- Belfast 16 Mar 2016
- Cardiff 21 Mar 2016

- Your school receives: £194 ENTHUSE Award
- Activity fee: £150 (ex VAT)

■ [www.stem.org.uk/tv200](http://www.stem.org.uk/tv200)

HOW TO

# Planning ahead

by **TRACEY BAXTER**

@TraceyBaxter72

Regional Development Leader, National Science Learning Network, North West

Planning a science curriculum has become complicated in recent history, with several pathways to plan for within each department. The challenge is changing, with alterations to performance tables and the inevitability of a new science curriculum at KS4 in 2016. If you want to stay ahead of the curve, you need to create a gold-plated curriculum plan for your department. Not sure where to start?

Here are some ideas:

## SUPPORTING THE BIGGER PICTURE

It's important to ensure that students have regular exposure to biology, chemistry and physics. Try teaching all three subjects in parallel or merging topics across specialisms into themes - this helps students see links and increases their perception of the 'big ideas' in science.

## DECIDING ON THE SPLIT

When deciding on the time allocated to each key stage, remember that students should have mastered KS3 before moving on. Curriculum time at KS4 (or lack of) can be a driving factor in determining whether KS4 is introduced prior to Year 10 but this often feels counterintuitive. Ofsted's recent report, *KS3: the wasted years*, has some clear messages that we can take as science departments.

## PLANNING A FAULTLESS 'KS3/4 SEAM'

Ensure that KS3 is used effectively, not only to support knowledge and understanding but also in developing skills, such as practical skills and mathematics skills. Working backwards from the skills set out in the GCSE Subject Content to embed opportunities to develop these skills at both KS3 and KS4 is a good starting point.

## DIFFERENTIATING YOUR APPROACH

Many schools are likely to have a much more varied cohort studying two GCSEs-worth of science. Within your cohort studying Combined Science, lower ability students may benefit from more 'chunking' of topics and activities. Some groups may benefit from putting GCSE specifications on hold at the start of KS4 to spend time on consolidating key concepts using bridging activities.

### Triple Science Support Program iBook on Curriculum Planning

- [www.stem.org.uk/ms/curriculum-planning](http://www.stem.org.uk/ms/curriculum-planning)

### Essential skills for new and aspiring science leaders

- [www.stem.org.uk/rp206](http://www.stem.org.uk/rp206)

### Resourcing the new science curriculum

- [www.stem.org.uk/ny239](http://www.stem.org.uk/ny239)

Ultimately, we all need to aim to create a supportive and flexible curriculum plan that brings out the best in every student.

# Achieving recognition

by **ED WALSH**

@cornwallscied

Regional Development Leader, National Science Learning Network, South West

In Robert Bolt's play, *A Man for All Seasons*, Sir Thomas More says to (the ambitious) Richard Rich: "Why not be a teacher? You'd be a fine teacher; perhaps a great one", to which the response comes: "If I was, who would know it?" More replies: "You; your pupils; your friends; God. Not a bad public, that".

In teaching we're used to the idea that the students sat in front of us are the key determinant of quality, both in terms of their immediate response to effective teaching and also, thinking longer term, with the grades they get. We learn to judge if progress is being made. However, there are reasons for going for a wider audience and seeking recognition beyond our own school.

One of the reasons is that you might want to attract attention over a wider area. If

you're keen to recruit good staff, find the next promotion or to catch the eye of potential students for your school who are interested in science, you might want to have some kind of flag to wave.

Secondly you might have a role, actual or aspirational, for being a local centre of excellence for science education. If you're suggesting that you have some expertise to offer, this will be more convincing if you have some kind of recognition.

However, there's a third reason, and this is the killer: in order to gain recognition you not only need to know that you're good, but also why you're good. It's important to point out the outcomes your team achieves but also to know the 'back story' and be able to justify it. You should be hot, not only on your practice, but also on the evaluation of practice. Its schools like this that have the capacity to sustain their effectiveness.

Award schemes provide a great opportunity to do this. It has to get to be good at justifying why a particular course of action was not only effective, but better than the alternatives. It has to have made a convincing case for its course of action being the right one.

What Sir Thomas offered Richard wasn't a bad public, but a wider one.

## GET YOUR SKILLS RECOGNISED! >

Our Teacher and Support Staff Recognition Scheme has been designed to recognise your commitment to professional learning and the impact it has had on students, colleagues and the wider profession.

## IS YOUR SCHOOL BEING RECOGNISED? >

Science Mark is a new quality standard designed to recognise and celebrate good, excellent and outstanding practice in secondary science departments across the UK.

The Space Education Quality Mark (SEQM) is given to schools that have shown significant use of the context of space across the STEM subjects.

■ Find out more about achieving recognition at: [www.stem.org.uk/ms/recognition](http://www.stem.org.uk/ms/recognition)





# THE KING AND I

REENA SIKKA

IT and Computing Teacher, MCE Academy



## RESOURCES

Astro Pi – computing technology in space  
• [www.stem.org.uk/ms/astro-pi](http://www.stem.org.uk/ms/astro-pi)

Robotic landers: small with big benefits  
• [www.stem.org.uk/ms/robotic-landers](http://www.stem.org.uk/ms/robotic-landers)

Space robotics  
• [www.stem.org.uk/ms/space-robotics](http://www.stem.org.uk/ms/space-robotics)

EV3 activities for the busy teacher  
• [www.stem.org.uk/ms/busy-teacher](http://www.stem.org.uk/ms/busy-teacher)

Unleashing creative ideas from your students  
• [www.stem.org.uk/ty215](http://www.stem.org.uk/ty215)



Teacher, Reena Sikka, describes her unique training experience with the European Space Agency in Belgium.

**Can you tell us a little about the professional development you participated in? We hear you met someone rather special...**

I got an opportunity to take part in an e-robotics teacher training workshop at ESA's Redu Centre. During this workshop, innovative ways in which space can be used as an engaging context for teaching STEM subjects were presented, as well as practical sessions on robotics and programming. King Philip of Belgium, along with a lot of dignitaries, visited the centre and saw the work teachers were doing. A journalist interviewed me about the royal visit, which was broadcast on national TV.

That was my few seconds of fame!



**Did you bring back anything for use in the classroom?**

After the training, I had the chance to borrow the Lego EV3 kits from the National STEM Centre. At Redu, we built and programmed a robot to explore a fantastic model of the surface of Mars. My technicians were brilliant and created a replica of it to use in my lessons. I started teaching robotics to a couple of my Year 7 classes, but the buzz it created motivated me to teach robotics to all my teaching groups.

**How has this affected your students and colleagues?**

It was thrilling to see them enjoy the practical experience of testing and programming the robots.

**What did you enjoy most?**

It was a wonderful opportunity to take part in the workshop and to work with teachers from different countries and from diverse subjects. I really enjoyed the collaborative working, sharing skills and learning about Lego robotics in space.

**What's your teaching background?**

I taught in a secondary school in India for several years and moved to the UK when my husband was offered a job here. Once in the UK, I started working as an ICT teacher, but I have seen the subject change over the years. As a teacher of IT and Computing, you are an active lifelong learner. I am teaching new things every year and I love the challenge and buzz of learning.

**What interested you in Lego robotics?**

I remember playing with Lego kits and building models with my sons. When my name was recommended for attending the workshop, it seemed too good to be true. We'd used Lego a bit in school, but we wanted to develop the curriculum to include robotics, so this was the perfect opportunity to learn new skills. The students loved using Lego EV3 kits and we plan to use them again.



**How do you see your teaching of computing and robotics developing?**

In Redu I invited the experts to visit my school, and luckily this offer came to fruition. Students benefited from working with the experts and learning about space. Looking forward, we will continue to develop the scheme of work and teach robotics as an integral part of the curriculum.





# My favourite job in school

by **STEVE LYON**  
@SteveJLyon

Mathematics Specialist, National STEM Centre

I can still remember it as though it was yesterday: my first day as the new head of the mathematics department; new suit on, nervous, sweaty palms, stood in the staff meeting waiting for the headteacher to introduce me to the staff. What would the next stage of my career hold? Would I be able to meet all the challenges? What had I let myself in for?

My goal had always been to be head of mathematics, and here I was. However, it was very clear that rather than being the end of a journey, this was very much the beginning. I was the new boy again and I certainly had a lot to learn if I was not just to be any head of mathematics, but a good, successful head of mathematics.

I wanted the department, staff and students to be happy, feel successful and confident in lessons and to enjoy mathematics. My philosophy was that if we could achieve this, then examination results and inspection reports would look after themselves, but how does a head of department achieve this grand aim?

As my time as head of department progressed I found the role to be the most challenging, yet the most rewarding, of my career. Constantly walking a tightrope between meeting the needs of the students, department staff and senior management, I often considered myself as something of a buffer between the different parties. Heads of department are required to meet the needs of the 'here and now', managing the department, whilst at the same time scanning the horizon for the next new thing, preparing to lead the department through the next series of changes.

With even more pressure being placed on the mathematics department – new accountability measures, changes to the exam specifications and a requirement for more students to study mathematics for longer – the role of head of mathematics has not gotten any easier. New

“  
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”

heads of mathematics must feel at least as daunted as I did when I took up the role. I hope this does not put talented teachers off taking this step as despite all these challenges, being a head of department is the role in which I felt I had the greatest influence over the mathematical education of the students at my school and a time I look back on as being the most satisfying of my career.

## LEARNING RESOURCES

Share ideas and challenges with fellow mathematics teachers in our secondary mathematics resource group:

- [www.stem.org.uk/ms/group-secondary-maths](http://www.stem.org.uk/ms/group-secondary-maths)

Be inspired with our dedicated mathematics resource packages:

- [www.stem.org.uk/ms/resources-secondary-maths](http://www.stem.org.uk/ms/resources-secondary-maths)

New and aspiring leaders of mathematics

- [www.stem.org.uk/my200](http://www.stem.org.uk/my200)

Resourcing the new mathematics curriculum

- [www.stem.org.uk/my202](http://www.stem.org.uk/my202)

# Stepping out of the classroom

**Leanne Trefz** > Head of Science and Mathematics, St Marys C of E High School

Leanne talks about her experience of taking part in the Teacher Industrial Partners' Scheme (TIPS) at BP.

## What were the highlights of your placement?

Everything! I was overwhelmed by how helpful and open all the staff were that we met. They were so willing to share their knowledge and experiences with us that it made it a phenomenal CPD for us.

## How has the scheme benefited your students?

A much renewed and refreshed teacher came back to the classroom; CPD on this level is very hard to achieve. The stories I could tell my students with the first-hand experiences made the topics much more relevant and interesting. I was able to bring the outside world in on a much deeper, but also accessible, level. I gave my students a survey before I went on the placement and asked various questions about science and maths, and also on whether they would see themselves using it in the future. There was an overwhelming 'no' from the students. Since my placement lots of students are asking questions about possible careers and future science subjects to study. They have a renewed interest because I have shown them more options.

## What extra activities or projects have you done with your students since participating in the scheme?

A whole school assembly on my TIPS placement and an assembly on the future of science with engineering were held. The students had a visit to the site and met lots of different staff (this was arranged through my contact there), plus STEM practicals were carried out at the end of term (these were ideas given to me from other teachers from the course), with a STEM club due to begin to coincide with a space theme, for the Tim Peake space mission in December.

## How have you benefited from the scheme?

I am far more enthusiastic and knowledgeable about teaching the curriculum, especially the chemistry parts.

## Has the placement changed the way that you teach your subject?

My lessons have become more contextual. I'm always trying to show the relevance, but more so now as I'm trying to push my students towards careers I didn't even know existed before my participation in the scheme.



## Do you feel that the scheme has helped to improve your students' awareness of STEM careers?

Definitely. My lack of knowledge really limited theirs. Increasing mine has opened the door to so many potential opportunities. Quite a few of my students have applied for work experience in STEM related fields, because they see a future in it and are applying for FE STEM related subjects because they see the possibilities from them.

## What were the benefits of having a member of staff spend two weeks working with BP?

Levels and opportunities as a career for students were at the forefront from the CPD. The member of staff was able to share the message about the future of science and its endless possibilities. The assembly that followed, as well as the TIPS connections that allowed for a school visit and all the activities, were invaluable. These would have been very difficult, if not near impossible, to organise.

## How important was the bursary in supporting the school to participate?

Very important. Given the current economic climate, it is difficult to let staff out of school. This allowed us to secure a high quality supply teacher, so the children would have the least negative impact.

## Would you recommend the scheme to other schools?

Absolutely, yes.

## ARE YOUR STUDENTS PREPARED FOR THE CAREER CHOICES THAT LIE AHEAD? >

To ensure that your students are informed for the next academic or industrial phase of their lives, it is crucial that teachers keep up-to-date with both modern career options and routes into academia. Being part of the Teacher Industrial Partners' Scheme or the Teacher Academic Placement Scheme provides the perfect opportunity for STEM teachers to step out of the classroom and experience the world of industry or a cutting edge biochemistry department. The skills learned from the scheme will enable teachers to better advise students, create partnership links with industry or a university and support the contextualised teaching of the STEM curriculum.

Placements happen throughout the year with universities and employers across the country. To support with the cost of your teacher leaving the classroom, a generous bursary is available to state funded schools, academies and colleges.

- [www.stem.org.uk/ms/tips](http://www.stem.org.uk/ms/tips)
- [www.stem.org.uk/ms/taps](http://www.stem.org.uk/ms/taps)

# Back to the future of physics

by **ADAM LITTLE**  
@SecretPhysicist

Professional Development Leader, National STEM Learning Centre

2015 was the year that sparked my love for physics and science. The strange thing is that this occurred before the end of the 1980's. Confused?

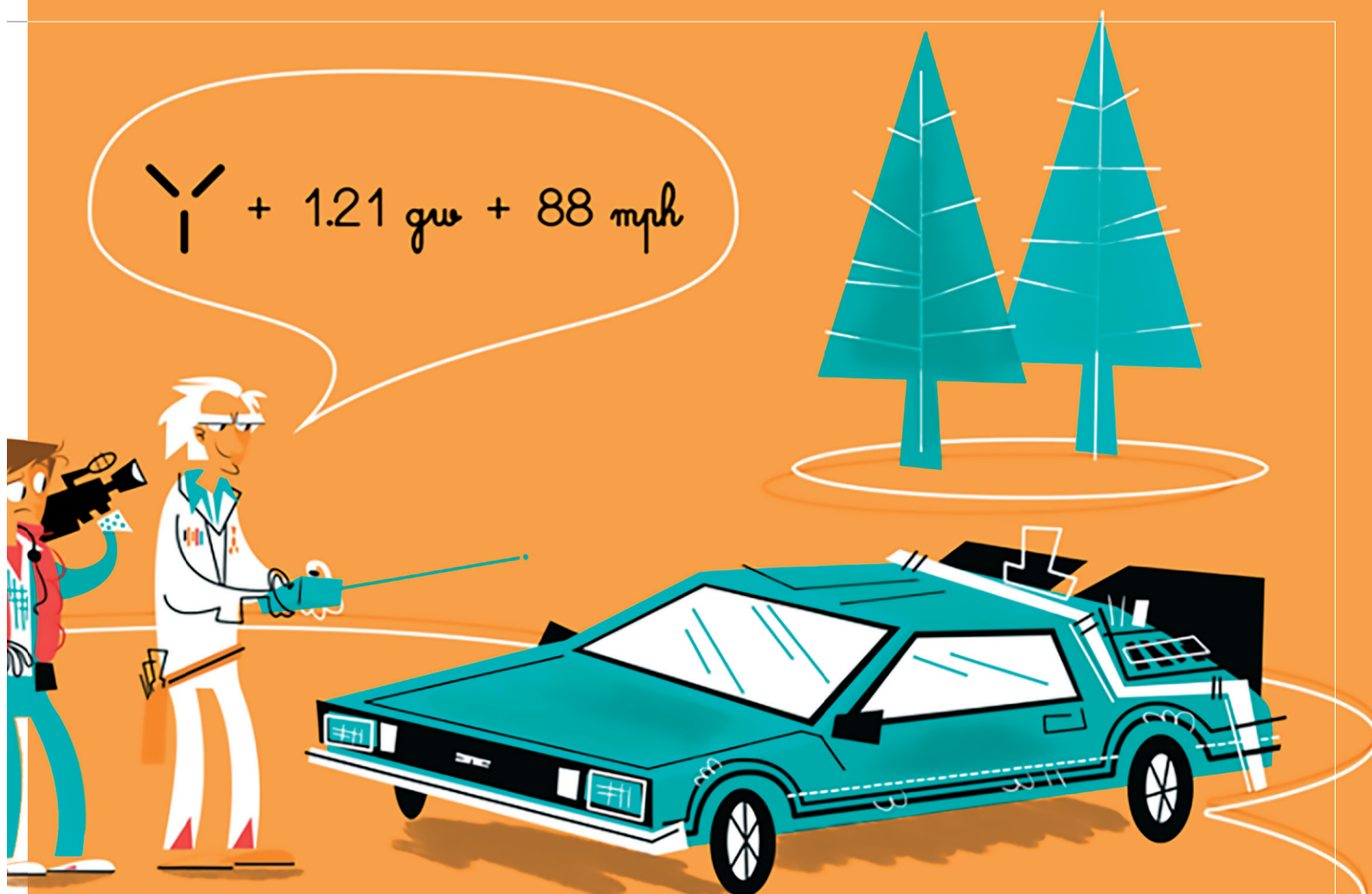
Back to the Future 2 had just come out and when Marty McFly, Doc Brown and the flying DeLorean travelled to 2015, I saw what the future could hold. I became hooked on all things science and STEM related.



Now, admittedly, we don't have flying cars, which are powered by nuclear fusion reactions from household waste, but there are some things the film predicted that are now a reality.

3D films have been around for years, but the technology and the way it is presented has come on leaps and bounds. When we see Jaws 19 in the film, admittedly it is holographic, but we can experience 3D thanks to those lovely polarised glasses we get at the cinema. Two synchronised projectors project two respective views onto a screen, each with a different polarisation. Each lens lets in one of the images which is what gives us the 3D depth perception. Unlike old 3D glasses, which used colour to separate the images, this means we can watch colour films in 3D without the clashing of colours.

And what about time travel? Students at A level get excited when we look at time dilation. This is where properties such as mass, length and time can change when we reach speeds close to the speed of light. This means as we approach the speed of light, time appears to run slowly. Keeping it simple, if you went into space for 15 years, approaching speeds close to the speed of light, and then returned to Earth, everyone on Earth would have aged 15 years, but you might have only aged five years. This can give the impression you have travelled into the



future. This was also used in another 80's classic: *Flight of the Navigator*.

Finally, the hoverboard. I think when we all saw that it was one of those "I want one!" moments. Well, apart from the odd internet hoax we can now say that this is a real possibility. Using superconductors and magnets you get the Meissner effect, which means that when you place a magnetic field near the superconductor, a current is generated, creating the opposing magnetic field, causing the board to levitate. Lexus used this idea to create the SLIDE, which is a hoverboard that can travel around a skate park with magnets hidden under the ground. You do need a lot of liquid nitrogen to keep everything working, but it's a start and something that is continually developing.

We are involved in many programmes that help raise the profile of physics at your school or college and this could lead to one of your students designing the first commercial hoverboard, or even following in the footsteps of cutting-edge research to get nuclear fusion powering our houses and cars.

## SUPPORTING THE TEACHING AND LEARNING OF PHYSICS

### NATIONAL SCIENCE LEARNING NETWORK

Supporting professional learning with proven impact on teacher development and student outcomes. We can also tailor our CPD to meet the individual needs of your department, school or network through our bespoke support.

• [www.stem.org.uk/ms/bespoke-cpd](http://www.stem.org.uk/ms/bespoke-cpd)

### STIMULATING PHYSICS NETWORK (SPN)

A partnership with the Institute of Physics, SPN works to achieve a step-change in the culture of physics education. We provide free CPD for all schools, and bespoke programmes of support for over 400 English secondary schools.

• Find out more, or join us, at [www.stem.org.uk/ms/spn](http://www.stem.org.uk/ms/spn)

### TRIPLE SCIENCE SUPPORT PROGRAMME

Through the Triple Science Support Programme we are ensuring that high quality inspiring science teaching leads to more young people of all backgrounds continuing science studies post-16 particularly by increasing the number of young people opting to study triple science.

• [www.stem.org.uk/ms/resources-triple-science](http://www.stem.org.uk/ms/resources-triple-science)

### NATIONAL STEM CENTRE

Discover thousands of free, quality assured teaching resources for physics and across the all the STEM subjects to help with planning and inspire your lessons.

• Visit today: [www.stem.org.uk](http://www.stem.org.uk)



# Our top picks for you to put in the calendar...

EDITOR'S  
**TOP PICK**  
CHOICE



## TEACHER AND SUPPORT STAFF RECOGNITION SCHEME

Make sure you get your entry in for our Teacher and Support Staff Recognition Scheme. It's totally free and has been designed to recognise your commitment to professional learning and the impact it has had on students, colleagues and the wider profession.

■ Apply at: [www.stem.org.uk/ms/recognition](http://www.stem.org.uk/ms/recognition)

## FEBRUARY 2016

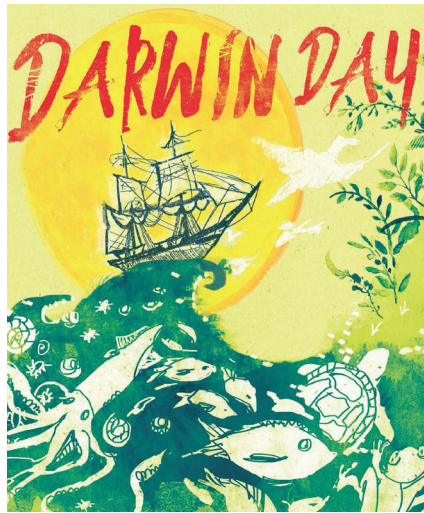


## LIBRARY LOVERS MONTH FEBRUARY

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/resources](http://www.stem.org.uk/resources)



## 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.

■ [www.stem.org.uk/ms/evolution](http://www.stem.org.uk/ms/evolution)

## 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 Wiliam 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/ms/online-cpd](http://www.stem.org.uk/ms/online-cpd)

## MARCH 2016



## 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.britishsienceweek.org](http://www.britishsienceweek.org)



## WORLD PI DAY 14 MARCH

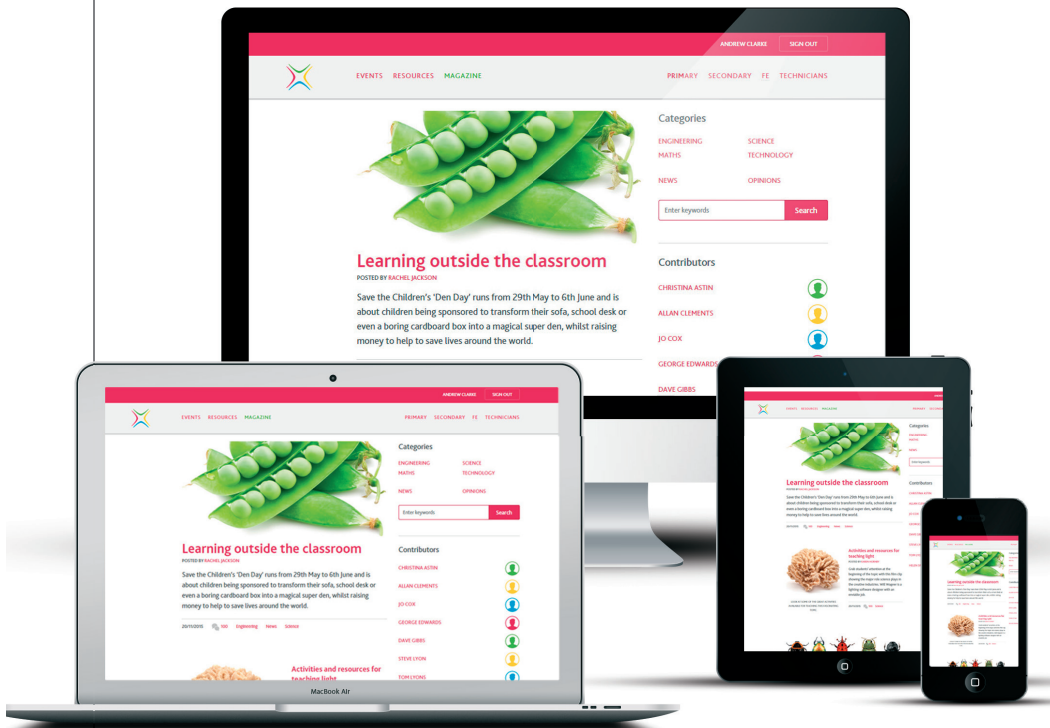
3.14 can only mean one thing, its World Pi day. We celebrate  $\pi$ , pie's and all things circular with our interactive list of resources.

■ Join in at: [www.stem.org.uk/ms/world-pi-day](http://www.stem.org.uk/ms/world-pi-day)



DIGITAL

# Our new website is here!



We have now launched our brand new website, incorporating the National Science Learning Network, the National STEM Centre and ESERO-UK 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 to track the CPD activities you have been on and manage your upcoming bookings.

It now offers a mobile and tablet friendly experience, allowing you to access everything we have to offer on the move.

Also don't worry! If you have an account on the National STEM Centre website or have previously booked onto a National Science Learning Network CPD activity then you will have an account on the new site, and will be able to access it with your current login details.

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](http://www.stem.org.uk)



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

**@NtlSTEMCentre**  
Followers: 15.2K

**@ScienceVoice**  
Followers: 4764



**@ScienceTechEm** Here on an excellent Health and Safety course, led by @mark\_sailor @ScienceVoice.

**@JocoxSTEM** Love this quote from a female engineer in @yvonnebaker article #FutureEngineers @ScienceVoice

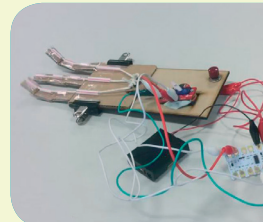
"I can save more lives in a day than a doctor will in their whole career, just by ensuring the buildings we design and construct are safe."



**@julesgordon1** @ScienceVoice @MrJDexter showing how a MRI works. Brave teacher from Trinity #RCUK



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



**@GTaylorSTEM**  
It's alive!! #crumble robot hand mk1 @RedfernElec @NtlSTEMCentre #servocrumb

Follow us **@NtlSTEMCentre** and **@ScienceVoice** and let us know what STEM related things you're up to!

# 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 AWARDS

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.

■ [www.stem.org.uk/ms/enthuse-awards](http://www.stem.org.uk/ms/enthuse-awards)

## IMPACT AWARDS

Impact Awards are equivalent to 50% of the CPD fee and are available for many of the CPD activities offered through the Science Learning Partnerships across England. Impact Awards are provided by the Department for Education (DfE).

■ [www.stem.org.uk/ms/impact-awards](http://www.stem.org.uk/ms/impact-awards)

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](http://www.stem.org.uk) for fees for non-state funded schools and the latest information.

# See the impact CPD makes...

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

**"The centre and facilities are fantastic and I will be recommending that all teachers visit."**

- Design and Technology Teacher, 2015

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

**"Fantastic session, really relevant, hands-on and practical. Easy to implement in my own teaching."**

- Secondary Science Teacher, 2015

We work with over **76,800** schools and colleges in the UK.

## COMPUTING

### INTENSIVE SUBJECT-SPECIFIC CPD

Accommodation and meals included

#### USING 3D PRINTERS CREATIVELY AND EFFECTIVELY IN THE CLASSROOM

Find out how 3D printers can be used to encourage creativity and risk taking in the classroom.

- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 14 Jul 2016 (2 days)

■ [www.stem.org.uk/ty214](http://www.stem.org.uk/ty214)

## DESIGN TECHNOLOGY

### BBC MICRO:BIT IN SCIENCE AND DESIGN AND TECHNOLOGY – THE MICRO:BIT STEM ROADSHOW

Practical ideas for using the BBC micro:bit in design and technology lessons. Developed in partnership with the IET.

- Your school receives: £194 Impact Award
- Activity fee: £150 (ex VAT)
- 26 Feb 2016 Bury St Edmunds
- 1 Mar 2016 Sheffield
- 3 Mar 2016 Altrincham
- 8 Mar 2016 Reading
- 9 Mar 2016 Yeovil
- 15 Mar 2016 Dunfermline
- 16 Mar 2016 Belfast
- 21 Mar 2016 Cardiff

■ [www.stem.org.uk/tv200](http://www.stem.org.uk/tv200)

### INTENSIVE SUBJECT-SPECIFIC CPD

Accommodation and meals included

#### DESIGN AND TECHNOLOGY TECHNICIANS: CO-LEADERS IN THE DEPARTMENT

Perfect for those responsible for running or aspiring to run their design and technology department's technical service.

- Your school receives: £867 ENTHUSE Award
- Activity fee: £852 (ex VAT)
- 14 Mar 2016 (3 days)

■ [www.stem.org.uk/ny619](http://www.stem.org.uk/ny619)

#### TEACHING FOOD SCIENCE CONTENT AT KS4: FOOD PREPARATION AND NUTRITION

Through practical experiments and classroom learning, learn how your school food curriculum can be adopted to include science experimentation and theory.

- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 10 Jun 2016 (2 days)

■ [www.stem.org.uk/ty205](http://www.stem.org.uk/ty205)

### TEACHING LITERACY, NUMERACY AND SCIENCE THINKING IN DESIGN AND TECHNOLOGY

Supporting technology teachers in responding to the increased literacy, numeracy and scientific context in the new secondary curriculum.

- Your school receives: £867 ENTHUSE Award
- Activity fee: £801 (ex VAT)
- 4 Jul 2016 (3 days over 2 periods)

■ [www.stem.org.uk/ty201](http://www.stem.org.uk/ty201)

### TECHNICAL TEXTILES: USING SMART AND MODERN MATERIALS IN YOUR SECONDARY CLASSROOM

Learn how smart materials and wearables are changing the way that we use textiles and discover practical ideas for incorporating these new technical textiles into the classroom.

- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 1 Jul 2016 (2 days)

■ [www.stem.org.uk/ty208](http://www.stem.org.uk/ty208)

### UNLEASHING CREATIVE DESIGN IDEAS FROM YOUR STUDENTS

Hands-on ideas to encourage more creative design responses from students.

- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 11 Jul 2016 (2 days)

■ [www.stem.org.uk/ty215](http://www.stem.org.uk/ty215)

### USING 3D PRINTERS CREATIVELY AND EFFECTIVELY IN THE CLASSROOM

Find out how 3D printers can effectively be used to encourage creativity and risk taking in the classroom.

- Your school receives: £578 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 14 Jul 2016 (2 days)

■ [www.stem.org.uk/ty214](http://www.stem.org.uk/ty214)

## MATHEMATICS

### RESOURCING THE NEW SECONDARY MATHEMATICS CURRICULUM

Explore resources designed to support improved teaching of the new curriculum with hand-on activities.

- Activity fee: £40 (ex VAT)
- 10 Feb 2016 York
- 27 Jun 2016 York

■ [www.stem.org.uk/my202](http://www.stem.org.uk/my202)

### USING RESOURCES TO DEVELOP PROBLEM SOLVING SKILLS IN SECONDARY MATHEMATICS

Develop students problem solving skills in your lessons with hand-on activities and resources.

- Activity fee: £40 (ex VAT)
- 1 Mar 2016 York
- 9 Jun 2016 York

■ [www.stem.org.uk/my203](http://www.stem.org.uk/my203)

### USING 'MANIPULATIVES' TO ENHANCE UNDERSTANDING IN THE KEY STAGE 3 MATHEMATICS

Manipulatives including counters, interlocking cubes, Cuisenaire rods, tiles, multi-base blocks have long been used to aid understanding in secondary mathematics.

- Activity fee: £40 (ex VAT)
- 9 Mar 2016 York
- 11 Jul 2016 York

■ [www.stem.org.uk/my204](http://www.stem.org.uk/my204)

### INTENSIVE SUBJECT-SPECIFIC CPD

Accommodation and meals included

#### NEW AND ASPIRING LEADERS OF MATHEMATICS

Inspirational, intensive CPD for new and aspiring leaders of mathematics, provides the skills required for outstanding learning and leading of a mathematics department.

- Your school receives: £1,600 ENTHUSE Award
- Activity fee: £1,400 (ex VAT)
- 25 Feb 2016 (6 days over 2 periods)

■ [www.stem.org.uk/my200](http://www.stem.org.uk/my200)

## SCIENCE

### BBC MICRO:BIT IN SCIENCE AND DESIGN AND TECHNOLOGY – THE MICRO:BIT STEM ROADSHOW

Practical ideas for using the BBC micro:bit in design and technology lessons. Developed in partnership with the IET.

- Your school receives: £194 Impact Award
- Activity fee: £150 (ex VAT)
- 26 Feb 2016 Bury St Edmunds
- 1 Mar 2016 Sheffield
- 3 Mar 2016 Altrincham
- 8 Mar 2016 Reading
- 9 Mar 2016 Yeovil
- 15 Mar 2016 Dunfermline
- 16 Mar 2016 Belfast
- 21 Mar 2016 Cardiff

■ [www.stem.org.uk/tv200](http://www.stem.org.uk/tv200)

### BEHAVIOUR MANAGEMENT

Identify your classroom style and learn how to manage the challenging situations that may arise because of the range of potential distractions and hazards in a science laboratory.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 26 Jan 2016 Halesowen
- 28 Jan 2016 Spalding

■ [www.stem.org.uk/rp222](http://www.stem.org.uk/rp222)

### CAREERS IN STEM

Develop your understanding and support students in signposting career options.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 16 Mar 2016 Crewe

■ [www.stem.org.uk/rp226](http://www.stem.org.uk/rp226)

### DELIVERING THE LATEST SCIENCE CURRICULUM

Identify the key issues arising from the new curriculum and consider how to audit and adapt existing schemes of learning to accommodate the changes.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 22 Jan 2016 Altrincham
- 29 Jan 2016 Oldham
- 9 Feb 2016 Crewe
- 12 Feb 2016 Keele
- 9 Mar 2016 Shrewbury

■ [www.stem.org.uk/rp223](http://www.stem.org.uk/rp223)

### ENHANCING LITERACY SKILLS IN SCIENCE

Supporting participants in responding to the increased literacy demands in examinations and help to provide students with the skills to be effective, independent learners.

#### Afternoon session:

- Your school receives: £42.50 Impact Award
- Activity fee: £85 (ex VAT)
- 28 Jan 2016 Crewe

#### One day course:

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 20 Jan 2016 Sheffield
- 5 Feb 2016 Keele
- 11 Feb 2016 Bradford

■ [www.stem.org.uk/rp212](http://www.stem.org.uk/rp212)

### ENHANCING NUMERACY SKILLS IN SCIENCE

Supporting you in exploring ways in which numeracy skills can be enhanced through science teaching.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 21 Jan 2016 London
- 26 Feb 2016 Telford

■ [www.stem.org.uk/rp217](http://www.stem.org.uk/rp217)

### MAKING A DIFFERENCE THROUGH EFFECTIVE FEEDBACK

Trial a range of strategies for gathering and using data, explore the research behind assessment for learning, and develop and test your own techniques in the classroom.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 28 Jan 2016 Preston
- 2 Feb 2016 Shrewbury
- 4 Feb 2016 Stoke-on-Trent
- 26 Feb 2016 Oldham
- 15 Mar 2016 Lancaster
- 18 Mar 2016 Keele

■ [www.stem.org.uk/rp203](http://www.stem.org.uk/rp203)

### MATHEMATICS IN THE SCIENCE CLASSROOM

Exploring the use and failure to use mathematics in science. It looks at typical weaknesses in mathematical that hinder students' ability to understand and solve scientific problems.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 9 Mar 2016 Swindon

■ [www.stem.org.uk/rp210](http://www.stem.org.uk/rp210)

### PREPARING STUDENTS FOR LINEAR EXAMINATIONS

Helping teachers in developing effective strategies for supporting students as they prepare for exams.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 11 Feb 2016 Bradford
- 2 Mar 2016 Preston
- 17 Mar 2016 Blackburn

■ [www.stem.org.uk/rp211](http://www.stem.org.uk/rp211)

### RESOURCING THE NEW SECONDARY SCIENCE CURRICULUM

Develop a great awareness of the National STEM Centre, the resources available and become familiar with how to use the eLibrary to increase subject knowledge.

- Activity fee: £40 (ex VAT)
- 9 Feb 2016 York
- 28 Jun 2016 York

■ [www.stem.org.uk/ny239](http://www.stem.org.uk/ny239)

### RESPONDING TO STUDENTS' NEEDS IN SCIENCE

Develop strategies which personalise the science curriculum, in order to engage students of all abilities, widen engagement and participation, and increase progression to further science study.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 4 Feb 2016 Lincolnshire

■ [www.stem.org.uk/rp220](http://www.stem.org.uk/rp220)

### TEACHING ASSISTANTS SUPPORTING SCIENCE

This CPD activity gives teaching assistants the chance to explore this, and plan how they can support most effectively.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 2 Feb 2016 Southampton

■ [www.stem.org.uk/rp228](http://www.stem.org.uk/rp228)

### TOWARDS OUTSTANDING

Secure knowledge of what outstanding practice looks like strengthens the ability to support colleagues, for the benefit of themselves and their students.

#### One day course:

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 9 Feb 2016 Liverpool
- 21 Mar 2016 Louth
- 22 Mar 2016 Liverpool
- 27 June 2016 Northampton

#### Two day course:

- Your school receives: £215 Impact Award
- Activity fee: £430 (ex VAT)
- 16 Mar 2016 Hereford

■ [www.stem.org.uk/rp215](http://www.stem.org.uk/rp215)



### TRACKING AND IMPROVING PROGRESS IN SCIENCE

In response to demand from teachers, this CPD activity is for those wishing to improve their students' progress and attainment in science.

- Your school receives: £107.50 Impact Award
  - Activity fee: £215 (ex VAT)
  - 4 Feb 2016 Durham
  - 9 Feb 2016 Keele / Lincolnshire
  - 11 Feb 2016 Barrow-in-Furness
  - 3 Mar 2016 Sheffield
- [www.stem.org.uk/rp213](http://www.stem.org.uk/rp213)

### WORKING SCIENTIFICALLY

Explore the new ideas embedded in the curriculum around students working scientifically.

- Your school receives: £107.50 Impact Award
  - Activity fee: £215 (ex VAT)
  - 3 Mar 2016 Bishop's Stortford
- [www.stem.org.uk/rp207](http://www.stem.org.uk/rp207)

### INTENSIVE SUBJECT-SPECIFIC CPD

Accommodation and meals included

### BEHAVIOUR FOR LEARNING

This CPD Activity will be interactive and provide lots of practical ideas that can be translated directly back to the classroom.

- Your school receives: £681 ENTHUSE Award
  - Activity fee: £581 (ex VAT)
  - 10 Feb 2016 (2 days)
  - 30 Jun 2016 (2 days)
- [www.stem.org.uk/ny228](http://www.stem.org.uk/ny228)

### CERN STUDY VISIT AND FOLLOW-UP CONFERENCE

This study visit is a unique opportunity for UK science teachers to visit CERN and have its facilities, functions and operation explained by the scientists and engineers who work at CERN.

- Your school receives: £1,200 ENTHUSE Award
  - Activity fee: £300 (ex VAT)
  - 15 Feb 2016 (5 days over 2 periods)
- [www.stem.org.uk/NV200](http://www.stem.org.uk/NV200)

### DIFFERENTIATION: VISIBLE PROGRESSION FOR ALL

Supporting you in providing differentiation for all students and ensuring that they can demonstrate progress in learning.

- Your school receives: £777 ENTHUSE Award
  - Activity fee: £897 (ex VAT)
  - 16 May 2016 (3 days)
- [www.stem.org.uk/ny237](http://www.stem.org.uk/ny237)

### HEALTH AND SAFETY

Learn how to implement essential and effective health and safety planning with a pragmatic, risk based approach.

- Your school receives: £518 ENTHUSE Award
  - Activity fee: £581 (ex VAT)
  - 27 Apr 2016 (2 days)
- [www.stem.org.uk/ny253](http://www.stem.org.uk/ny253)

### LAB DESIGN: FUTURE SCIENCE ACCOMMODATION FOR TEACHING AND LEARNING

Well-planned, imaginative and practical science spaces in schools and colleges can create outstanding learning environments for both students and teachers.

- Your school receives: £777 ENTHUSE Award
  - Activity fee: £816 (ex VAT)
  - 25 Apr 2016 (2 days)
- [www.stem.org.uk/ny211](http://www.stem.org.uk/ny211)

### NEW AND ASPIRING HEADS OF SCIENCE

New to the role of head of science or looking for your next challenge? This CPD Activity will provide you with strategies and techniques to be successful in your role.

- Your school receives: £3,106 ENTHUSE Award
  - Activity fee: £2,806 (ex VAT)
  - 24 Feb 2016 (9 days over 3 periods)
- [www.stem.org.uk/ny200](http://www.stem.org.uk/ny200)

### NEW TO A LEVEL BIOLOGY

Through the development of new practical techniques, use of ICT activities and context based learning strategies, this CPD will provide a foundation for those with little experience of teaching A level biology.

- Your school receives: £1,348 ENTHUSE Award
  - Activity fee: £1,162 (ex VAT)
  - 8 Feb 2016 (4 days over 2 periods)
- [www.stem.org.uk/ny250](http://www.stem.org.uk/ny250)

### OUTSTANDING SCHEMES OF WORK

You will have opportunities to develop your schemes of work so they are fit for purpose, as part of outstanding teaching and learning in science.

- Your school receives: £1,156 ENTHUSE Award
  - Activity fee: £1,222 (ex VAT)
  - 12 Apr 2016 (4 days over 2 periods)
- [www.stem.org.uk/ny205](http://www.stem.org.uk/ny205)

### PREPARING FOR NEW GCSE SKILLS

This CPD Activity explores teaching and learning in science from a practical perspective.

- Your school receives: £1,156 ENTHUSE Award
  - Activity fee: £1,102 (ex VAT)
  - 25 Apr 2016 (4 days over 2 periods)
- [www.stem.org.uk/ny256](http://www.stem.org.uk/ny256)

### SPACE AS A CONTEXT FOR TEACHING SCIENCE: THE GAIA SPACECRAFT MISSION TO MAP THE MILKY WAY

Learn from the scientists and engineers involved in one of the most important space missions to be launched this decade.

- Your school receives: £1,156 ENTHUSE Award
  - Activity fee: £1,153 (ex VAT)
  - 13 Jun 2016 (5 days over 2 periods)
- [www.stem.org.uk/SV202](http://www.stem.org.uk/SV202)

### SUMMER SCHOOL FOR NEWLY AND RECENTLY QUALIFIED TEACHERS

This summer school will provide time and space to reflect upon your practice working in highly supportive and stimulating environments.

- Your school receives: £1,445 ENTHUSE Award
  - Activity fee: £1,529 (ex VAT)
  - 18 Jul 2016 (5 days)
- [www.stem.org.uk/ny255](http://www.stem.org.uk/ny255)

## LEADERSHIP

### ESSENTIAL SKILLS FOR NEW AND ASPIRING SCIENCE LEADERS

Working with an experienced science leader, you will develop your vision and leadership skills to enable you to lead an effective and vibrant science team.

#### One day course:

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 12 Feb 2016 Preston

#### Two day course:

- Your school receives: £215 Impact Award
  - Activity fee: £430 (ex VAT)
  - 4 Mar 2016 Darlington
- [www.stem.org.uk/rp206](http://www.stem.org.uk/rp206)

### LEADING EFFECTIVE PROFESSIONAL DEVELOPMENT IN SCIENCE

Helping you to identify the principles, strategies and resources that can be used to develop a programme valued by colleagues and demonstrates impact in the science classroom.

- Your school receives: £107.50 Impact Award
  - Activity fee: £215 (ex VAT)
  - 30 Jun 2016 Milton Keynes
- [www.stem.org.uk/rp204](http://www.stem.org.uk/rp204)



**INTENSIVE SUBJECT-SPECIFIC CPD**  
Accommodation and meals included

**AIMING FOR PROMOTION AND PREPARING FOR YOUR FIRST LEADERSHIP ROLE**

Designed and timed for science teachers early on in their careers, looking to take on some responsibility at their first post-qualification career move.

- Your school receives: £660 ENTHUSE Award
- Activity fee: £897 (ex VAT)
- 25 Feb 2016 (3 days)

■ [www.stem.org.uk/ny218](http://www.stem.org.uk/ny218)

**BIOLOGY**

**ACTIVE APPROACHES AT A LEVEL BIOLOGY**

Providing opportunities to explore the acknowledged benefits of active, collaborative and 'minds-on' approaches to learning at advanced level.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 21 Mar 2016 Stoke-on-Trent

■ [www.stem.org.uk/rp506](http://www.stem.org.uk/rp506)

**CONTEMPORARY A LEVEL BIOLOGY**

Discussing the wider implications and applications of biology and exploring some tools for teaching and learning, will broaden and deepen your repertoire of practical activities and teaching approaches.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 6 Feb 2016 Kendal

■ [www.stem.org.uk/rp509](http://www.stem.org.uk/rp509)

**GETTING TO GRIPS WITH A LEVEL BIOLOGY**

Supporting teachers in developing higher level thinking with their students through the use of practical work, demonstrations and modelling activities.

- Your school receives: £215 Impact Award
- Activity fee: £430 (ex VAT)
- 26 Jan 2016 Sheffield
- 4 Feb 2016 Keele

■ [www.stem.org.uk/rp501](http://www.stem.org.uk/rp501)

**STRENGTHENING PRACTICAL WORK IN BIOLOGY**

Explore strategies for teacher topics across the biology curriculum and how practical work can be made more effective.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 18 Apr 2016 Crewe

■ [www.stem.org.uk/rp200](http://www.stem.org.uk/rp200)

**INTENSIVE SUBJECT-SPECIFIC CPD**  
Accommodation and meals included

**A LEVEL PRACTICAL ENDORSEMENT: BIOLOGY**

Faced with the challenge of the new practical endorsement in biology A level? If you want ideas for new practical techniques, this is the CPD for you.

- Your school receives: £574 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 7 Mar 2016 (2 days)

■ [www.stem.org.uk/ny246](http://www.stem.org.uk/ny246)

**CHEMISTRY**

**ACTIVE APPROACHES AT A LEVEL CHEMISTRY**

Providing opportunities to explore the acknowledged benefits of active, collaborative and 'minds-on' approaches to learning at advanced level.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 24 Feb 2016 Durham
- 9 Mar 2016 Crewe
- 11 Mar 2016 Birmingham

■ [www.stem.org.uk/rp504](http://www.stem.org.uk/rp504)

**DEVELOPING EXPERTISE IN TEACHING ACIDS AND BASES**

This activity provides hands-on opportunities for teachers to explore effective strategies for teaching acids and bases.

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)

■ [www.stem.org.uk/rp262](http://www.stem.org.uk/rp262)

**DEVELOPING EXPERTISE IN TEACHING ANALYTICAL TECHNIQUES (PRE-16)**

Develop techniques to understand the underlying properties of elements and compounds that enable us to separate and identify them.

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)
- 26 Feb 2016 Keele

■ [www.stem.org.uk/rp261](http://www.stem.org.uk/rp261)

**DEVELOPING EXPERTISE IN TEACHING ANALYTICAL TECHNIQUES (POST-16)**

Focussing on the underlying properties of elements and compounds that enable them to be separated from a mixture and to identify them.

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)
- 8 Feb 2016 Keele

■ [www.stem.org.uk/rp266](http://www.stem.org.uk/rp266)

**DEVELOPING EXPERTISE IN TEACHING DEVELOPING AND USING MODELS**

The focus throughout this course is developing and understanding of how chemists use models to try and explain their observations.

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)

■ [www.stem.org.uk/rp269](http://www.stem.org.uk/rp269)

**DEVELOPING EXPERTISE IN TEACHING ENERGY AND CHANGE**

Explore common misconceptions associated with this topic and review a range of strategies for dealing with these misconceptions.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 16 Feb 2016 Hertford

■ [www.stem.org.uk/rp269](http://www.stem.org.uk/rp269)

**DEVELOPING EXPERTISE IN TEACHING EQUILIBRIA CHEMISTRY**

Focusing on understanding what happens during a chemical reaction on a macroscopic and microscopic level.

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)
- 26 Feb 2016 Keele

■ [www.stem.org.uk/rp259](http://www.stem.org.uk/rp259)

**DEVELOPING EXPERTISE IN TEACHING MATERIALS CHEMISTRY**

Develop an understanding of how a range of different teaching activities can be used to strengthen students' grasp of how and why the use of materials has changed.

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)
- 12 Feb 2016 Keele

■ [www.stem.org.uk/rp260](http://www.stem.org.uk/rp260)

**DEVELOPING EXPERTISE IN TEACHING ORGANIC CHEMISTRY (POST-16)**

Introducing participants to the key chemical ideas needed to understand how organic mechanisms work.

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)
- 1 Feb 2016 Keele

■ [www.stem.org.uk/rp258](http://www.stem.org.uk/rp258)

**DEVELOPING EXPERTISE IN PRACTICAL CHEMISTRY FOR NQT'S**

Develop your own practical skills and understanding of how to teach practical chemistry to secondary aged students.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 4 Feb 2016 Crewe

■ [www.stem.org.uk/rp251](http://www.stem.org.uk/rp251)



The Royal Society of Chemistry has created a series of bursary funded CPD courses that help both specialist and non-specialist chemistry teachers improve their subject and pedagogical knowledge, and confidence. The courses cover a wide range of topics at secondary level and are suitable for teachers at all career stages.

We are pleased to be able to offer Royal Society of Chemistry member **10% off** most of our courses. See website for details.

■ Enter the code **RSC1510** when you apply: [www.stem.org.uk/ms/rsc](http://www.stem.org.uk/ms/rsc)

### DEVELOPING EXPERTISE IN TEACHING QUANTITATIVE CHEMISTRY

Explore how to make calculations more approachable through a 'hands-on' opportunity for teachers to explore effective strategies for teaching quantitative chemistry, at both pre-16 and post-16 levels.

#### Half day course:

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 15 Feb 2016 Hertford

■ [www.stem.org.uk/rp270](http://www.stem.org.uk/rp270)

#### One day course:

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)
- 11 Feb 2016 Malmesbury
- 2 Mar 2016 London

■ [www.stem.org.uk/rp253](http://www.stem.org.uk/rp253)

### DEVELOPING EXPERTISE IN TEACHING RATES OF REACTION

Develop an understanding of kinetic theory and rates through experimental work, with practical investigations forming the essential core of the face to face workshop.

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)
- 21 Mar 2016 Malmesbury
- 4 Apr 2016 Hertford

■ [www.stem.org.uk/rp263](http://www.stem.org.uk/rp263)

### DEVELOPING EXPERTISE IN TEACHING REDOX CHEMISTRY

Develop an understanding of redox in terms of electron transfer, using both practical and non-practical approaches to addressing this area of chemistry.

#### Half day course:

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)
- 29 Feb 2016 London

#### One day course:

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 5 Apr 2016 Hertford

■ [www.stem.org.uk/rp254](http://www.stem.org.uk/rp254)

### DEVELOPING EXPERTISE IN TEACHING STRUCTURE AND BONDING (PRE-16)

Critically assess models used to teach chemical bonding, to help participants address student misconceptions.

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)

■ [www.stem.org.uk/rp255](http://www.stem.org.uk/rp255)

### DEVELOPING EXPERTISE IN TEACHING STRUCTURES AND BONDING (POST-16)

Support in teaching the topic of structures and bonding post-16 including opportunities to explore effective teaching strategies.

#### Half day course:

- Your school receives: £62.50 Impact Award
- Activity fee: £125 (ex VAT)
- 25 Jan 2016 Keele

#### One day course:

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 26 Jul 2016 Hertford

### DEVELOPING EXPERTISE IN TEACHING STRUCTURE AND BONDING; AND CARBON CHEMISTRY

This CPD activity critically assesses models used to teach chemical bonding, to help delegates address student misconceptions.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 17 Feb 2016 Hertford

■ [www.stem.org.uk/rp267](http://www.stem.org.uk/rp267)

### GETTING TO GRIPS WITH A LEVEL CHEMISTRY

Improve confidence in subject knowledge and skills appropriate to post-16 chemistry through the exploration of key ideas common to all specifications.

- Your school receives: £215 Impact Award
- Activity fee: £430 (ex VAT)
- 19 Jan 2016 Birmingham
- 3 Mar 2016 Durham
- 21 Jun 2016 Milton Keynes

■ [www.stem.org.uk/rp502](http://www.stem.org.uk/rp502)

### STRENGTHENING PRACTICAL WORK IN CHEMISTRY

Through hands-on activities you will undertake new and established strategies and practical techniques to make students' learning more effective.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 29 Jan 2016 London
- 22 Mar 2016 Crewe

■ [www.stem.org.uk/rp202](http://www.stem.org.uk/rp202)

### INTENSIVE SUBJECT-SPECIFIC CPD

Accommodation and meals included

### A LEVEL PRACTICAL ENDORSEMENT: CHEMISTRY

Experience and develop chemistry activities to meet the new assessment regimes, working alongside examiners, teachers and technicians, to help your school or college implement the new changes.

- Your school receives: £574 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 7 Mar 2016 (2 days)

■ [www.stem.org.uk/ny247](http://www.stem.org.uk/ny247)

### CHEMISTRY FOR NON-SPECIALISTS

Providing teachers with the confidence, flair and enthusiasm to teach chemistry at all levels.

- Your school receives: £1,685 ENTHUSE Award
- Activity fee: £1,478 (ex VAT)
- 18 Apr 2016 (5 days over 2 periods)

■ [www.stem.org.uk/ny243](http://www.stem.org.uk/ny243)

### INSPIRING A LEVEL CHEMISTRY

Reconnect with the frontiers of chemistry and the teaching of it by engaging in a wide variety of stimulating sessions.

- Your school receives: £1,036 ENTHUSE Award
- Activity fee: £1,162 (ex VAT)
- 9 Mar 2016 (4 days over 2 periods)

■ [www.stem.org.uk/ny500](http://www.stem.org.uk/ny500)

## PHYSICS

### ACTIVE APPROACHES AT A LEVEL PHYSICS

Explore the acknowledged benefits of active, collaborative and 'minds-on' approaches to learning at advanced level.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 21 Jan 2016 Birmingham
- 23 Feb 2016 Durham
- 7 Mar 2016 Keele
- 15 Mar 2016 Manchester

■ [www.stem.org.uk/rp505](http://www.stem.org.uk/rp505)

### CONTEMPORARY A LEVEL PHYSICS

Explore the acknowledged benefits of active, collaborative and 'minds-on' approaches to learning at advanced level.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 18 Jan 2016 Kendal
- 29 Jan 2016 Bishop's Stortford
- 9 Jun 2016 Birmingham

■ [www.stem.org.uk/rp507](http://www.stem.org.uk/rp507)

### GETTING TO GRIPS WITH A LEVEL PHYSICS

Develop subject knowledge, confidence and skills primarily through the exploration of key demonstrations and practicals common to all specifications.

- Your school receives: £215 Impact Award
- Activity fee: £430 (ex VAT)
- 21 Jan 2016 Skipton
- 27 Jan 2016 Sheffield
- 10 Feb 2016 Keele

■ [www.stem.org.uk/rp503](http://www.stem.org.uk/rp503)

### PHYSICS FOR NON-SPECIALISTS

Develop your understanding of key physics principles and the skills and strategies needed to teach physics effectively.

#### One day course:

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 8 Feb 2016 Preston

#### Two day course:

- Your school receives: £215 Impact Award
- Activity fee: £430 (ex VAT)
- 19 May 2016 Birmingham
- 4 Jul 2016 London

■ [www.stem.org.uk/rp208](http://www.stem.org.uk/rp208)

### STRENGTHENING PRACTICAL WORK IN PHYSICS

Explore a range of ideas for teaching topics across the physics curriculum and develop an understanding of how practical work can be made more relevant and effective.

- Your school receives: £107.50 Impact Award
- Activity fee: £215 (ex VAT)
- 19 Jan 2016 Sheffield
- 23 Feb 2016 London
- 28 Apr 2016 Crewe
- 24 Jun 2016 Birmingham

■ [www.stem.org.uk/rp201](http://www.stem.org.uk/rp201)

### INTENSIVE SUBJECT-SPECIFIC CPD

Accommodation and meals included

#### A LEVEL PRACTICAL ENDORSEMENT: PHYSICS

Working with examiners, teachers and technicians we have developed CPD that helps schools provide students with the practical skills to ensure a complete understanding of what is required.

- Your school receives: £574 ENTHUSE Award
- Activity fee: £551 (ex VAT)
- 10 Feb 2016 (2 days)

■ [www.stem.org.uk/ny248](http://www.stem.org.uk/ny248)

#### INSPIRING A LEVEL PHYSICS

We have worked alongside research scientists, teachers and examiners to practise new activities, approaches and experiments which will help you inform and alter your classroom practice.

- Your school receives: £1,036 ENTHUSE Award
- Activity fee: £1,162 (ex VAT)
- 16 Mar 2016 (4 days over 2 periods)

■ [www.stem.org.uk/ny502](http://www.stem.org.uk/ny502)

#### PHYSICS FOR NON-SPECIALISTS (11-16)

Designed to focus on the key principals needed to teach physics effectively through the use of stimulating practical activities and demonstrations.

- Your school receives: £1,685 ENTHUSE Award
- Activity fee: £1,478 (ex VAT)
- 21 Mar 2016 (5 days over 2 periods)

■ [www.stem.org.uk/ny201](http://www.stem.org.uk/ny201)

## TECHNICIANS

### INTRODUCTION TO THE ROLE OF SCIENCE TECHNICIAN

Understand the role of a technician, general health and safety, policies and procedures, technician skills and working in a science department.

- Your school receives: £92.50 Impact Award
- Activity fee: £185 (ex VAT)
- 4 Mar 2016 London
- 21 Jun 2016 Walsall

■ [www.stem.org.uk/rp601](http://www.stem.org.uk/rp601)

### LEADERSHIP, TRAINING AND MANAGEMENT FOR SENIOR TECHNICIANS

Designed to enhance leadership and management skills, through examining the role of senior technicians, managing an effective technical service, creating and contacting local groups and training other technicians.

- Your school receives: £92.50 Impact Award
- Activity fee: £185 (ex VAT)
- 17 Mar 2016 London

■ [www.stem.org.uk/rp602](http://www.stem.org.uk/rp602)

### TECHNICIANS SUPPORTING A LEVEL BIOLOGY

Developed in collaboration with CLEAPSS, giving technicians an opportunity to learn skills and techniques specifically tailored to supporting advanced level biology.

- Your school receives: £92.50 Impact Award
- Activity fee: £185 (ex VAT)
- 20 Jan 2016 Keele

■ [www.stem.org.uk/rp603](http://www.stem.org.uk/rp603)

### TECHNICIANS SUPPORTING A LEVEL CHEMISTRY

Developed in collaboration with CLEAPSS, giving technicians an opportunity to learn key skills and techniques required for the effective support of post-16 chemistry.

- Your school receives: £92.50 Impact Award
- Activity fee: £185 (ex VAT)
- 27 Jan 2016 London
- 24 Feb 2016 Keele

■ [www.stem.org.uk/rp604](http://www.stem.org.uk/rp604)

### TECHNICIANS SUPPORTING A LEVEL PHYSICS

Developed in collaboration with CLEAPSS, giving an opportunity to learn skills and techniques specifically tailored to supporting advanced level physics.

- Your school receives: £92.50 Impact Award
- Activity fee: £185 (ex VAT)
- 3 Feb 2016 London
- 2 Mar 2016 Keele

■ [www.stem.org.uk/rp605](http://www.stem.org.uk/rp605)

### TECHNICIANS SUPPORTING TRIPLE SCIENCE

Gain hands on experience of effective and engaging practical ideas in biology, chemistry and physics.

- Your school receives: £92.50 Impact Award
- Activity fee: £185 (ex VAT)
- 20 May 2016 Keele

■ [www.stem.org.uk/rp776](http://www.stem.org.uk/rp776)

### INTENSIVE SUBJECT-SPECIFIC CPD

Accommodation and meals included

#### APPRENTICE TECHNICIANS: HOW TO EFFECTIVELY LEAD AND MANAGE THEM

Through an interactive session, you will explore the processes and skills involved in effectively training and managing an apprentice, from starting in the role to becoming an experienced and self-leading technician.

- Your school receives: £220 ENTHUSE Award
- Activity fee: £250 (ex VAT)
- 12 Feb 2016 (1 day)

■ [www.stem.org.uk/ny613](http://www.stem.org.uk/ny613)

#### EXPERIENCED TECHNICIANS PROGRAMME: BIOLOGY

Examine and explore: microbiology, biotechnology, genetics, dissections, ecology, microscopy and working with animals and plants.

- Your school receives: £777 ENTHUSE Award
- Activity fee: £852 (ex VAT)
- 9 May 2016 (3 days)

■ [www.stem.org.uk/ny604](http://www.stem.org.uk/ny604)

#### EXPERIENCED TECHNICIANS PROGRAMME: PHYSICS

Examine and explore electricity, electronics, sound, light, radioactivity, forces, heat transfer, space, astronomy and electromagnets.

- Your school receives: £777 ENTHUSE Award
- Activity fee: £852 (ex VAT)
- 22 Feb 2016 (3 days)

■ [www.stem.org.uk/ny606](http://www.stem.org.uk/ny606)

#### SENIOR TECHNICIANS ACCREDITED CO-LEADERS IN SCIENCE

Providing you with the strategies and ideas for leading and running a science department technical service, to deliver an effective service, support engaging practical work and keep abreast of changes within the profession.

- Your school receives: £3,707 ENTHUSE Award
- Activity fee: £3,327 (ex VAT)
- 18 Jan 2016 (11 days over 3 periods)

■ [www.stem.org.uk/ny600](http://www.stem.org.uk/ny600)

#### SKILLS FOR NEW TECHNICIANS

Suitable for those new to the role within a school or college, this CPD Activity provides a thorough grounding in the science technician profession.

- Your school receives: £1,813 ENTHUSE Award
- Activity fee: £1,924 (ex VAT)
- 2 Mar 2016 (7 days over 2 periods)

■ [www.stem.org.uk/ny601](http://www.stem.org.uk/ny601)

### TECHNICIANS ENRICHING STEM EDUCATION

Enhance STEM education in your school and improve your subject knowledge and increase your pupils' engagement with STEM subjects.

- Your school receives: £1,445 ENTHUSE Award
- Activity fee: £1,478 (ex VAT)
- 13 Apr 2016 (5 days over 2 periods)

■ [www.stem.org.uk/ny615](http://www.stem.org.uk/ny615)

### ONLINE

#### ASSESSMENT FOR LEARNING

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.

- Activity fee: Free
- 22 Feb 2016

■ [www.stem.org.uk/ms/online-cpd](http://www.stem.org.uk/ms/online-cpd)

## Getting the best from industry collaboration

STEM Learning is pleased to release a targeted report detailing best practices for schools and STEM employers to increase meaningful links between science education and STEM careers.

The report is based on findings from the pan-European InGenious project, a wide-ranging and rigorous study which worked with 26 schools across Europe trialling a range of industry interventions to see which had the most impact on students awareness and interest in pursuing STEM careers.

STEM Learning Ltd played a pivotal role in the study evaluation.

- Summaries of the report are available to download at [www.stem.org.uk/ms/ingenious](http://www.stem.org.uk/ms/ingenious)



## Triple Science Support Programme

The Triple Science Support Programme (TSSP) is funded by the Department for Education to support schools across England successfully offer separate science GCSE courses to students.

The National STEM Centre has a dedicated area for the TSSP including resources, eBooks and online communities.

■ [www.stem.org.uk/ms/triple-science](http://www.stem.org.uk/ms/triple-science)

#### TRIPLE SCIENCE NETWORK OF EXCELLENCE

This network will consider what effective teaching and learning of the triple science extension modules could look like.

■ See website for details and information: [www.stem.org.uk/rp793](http://www.stem.org.uk/rp793)



## FOOD SECURITY

Explore how we are moving towards sustainable global food production.

■ [www.stem.org.uk/rp464](http://www.stem.org.uk/rp464)

## SUSTAINABLE DESIGN

Find out how we can develop a sustainable global future via renewable energy, using alloys, polymers and recycling.

■ [www.stem.org.uk/rp465](http://www.stem.org.uk/rp465)

## WEARABLE TECHNOLOGIES

How technology we wear from smart watches to clothing is developing e.g. carbon chemistry.

■ [www.stem.org.uk/rp466](http://www.stem.org.uk/rp466)

## FUTURE ENERGY

How we can develop a sustainable global future via renewable energy using areas like thermodynamics and green chemistry.

■ [www.stem.org.uk/rp467](http://www.stem.org.uk/rp467)

## DRUG DEVELOPMENT AND DISCOVERIES

Learn about cutting edge developments in medicine and the impact on the real world.

■ [www.stem.org.uk/rp468](http://www.stem.org.uk/rp468)

## NEW MATERIALS

We take a look at the science behind the development of new smart materials.

■ [www.stem.org.uk/rp469](http://www.stem.org.uk/rp469)

## FORENSIC ANALYSIS

Discover how forensic science works, including forensic chemistry.

■ [www.stem.org.uk/rp471](http://www.stem.org.uk/rp471)

## DISASTER RELIEF AND DETECTION

Find out the latest on how science impacts on disaster relief and detecting disasters.

■ [www.stem.org.uk/rp473](http://www.stem.org.uk/rp473)

## BIODIVERSITY

Learn more about how we are predicting the future via modelling.

■ [www.stem.org.uk/rp475](http://www.stem.org.uk/rp475)

## ITERATIVE DESIGN

Find out more about how new technologies develop and evolve.

■ [www.stem.org.uk/rp477](http://www.stem.org.uk/rp477)

## GENETICS (GENOMICS)

You will explore developments in genetics for health.

■ [www.stem.org.uk/rp479](http://www.stem.org.uk/rp479)

## LIFESTYLE AND HEALTH

Together we learn more on how to maintain a healthy lifestyle.

■ [www.stem.org.uk/rp481](http://www.stem.org.uk/rp481)

## PERFORMANCE AND SPORT

Discover the latest in how science enhances performance e.g. smart materials.

■ [www.stem.org.uk/rp482](http://www.stem.org.uk/rp482)

## MEDICAL BIOLOGY AND PHYSICS

Discover developments in medical imaging, treatments and technologies.

■ [www.stem.org.uk/rp483](http://www.stem.org.uk/rp483)

## PARTICLE PHYSICS

Discovering how ideas from CERN can be adapted to take place in MRI machines e.g. interaction of particles and materials.

■ [www.stem.org.uk/rp484](http://www.stem.org.uk/rp484)

## ASTROPHYSICS

The latest on telescope (SKA) development and how we use technology to view the universe and predict the past and future.

■ [www.stem.org.uk/rp485](http://www.stem.org.uk/rp485)

# Bringing Cutting Edge Research into the Classroom

Designed to deliver the latest cutting edge research, knowledge, new contexts and practical activities to support teachers in delivering the curriculum in an accessible, enjoyable and stimulating way for students.

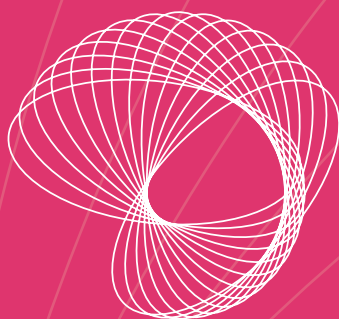
Delivered at venues across the UK, leading researchers and scientists will explain the recent advances in the field and provide an insight into their own current research, linking cutting edge science with today's classroom.

Thanks to funding from the Research Councils UK (RCUK), all CPD which is part of the Bringing Cutting Edge Research into the Classroom programme qualifies for a bursary of up to £180 per day.



Find out more or book your place at:  
[www.stem.org.uk/rcuk](http://www.stem.org.uk/rcuk)





# PROJECT ENTHUSE

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

Project ENTHUSE is a unique partnership of government, charities and employers that have come together to bring about inspired STEM teaching, through the continuing professional development of teachers, technicians and support staff across the UK. The ENTHUSE Partners are the Wellcome Trust, the Department for Education, BAE Systems, Biochemical Society, BP, Institution of Engineering and Technology, Institution of Mechanical Engineers, Rolls-Royce and the Royal Society of Chemistry.

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## 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. See our full CPD listing on page 18.

■ [www.stem.org.uk/ms/enthuse](http://www.stem.org.uk/ms/enthuse)

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## 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/ms/intensive-enthuse](http://www.stem.org.uk/ms/intensive-enthuse)

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## ENTHUSE PARTNERSHIPS

£12,000 for groups of between four and eight primary schools located in England, working together to address local issues of underachievement in science/STEM subjects.

■ [www.stem.org.uk/ms/enthuse-partnership](http://www.stem.org.uk/ms/enthuse-partnership)

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## TEACHER INDUSTRIAL PARTNERS' SCHEME TEACHER ACADEMIC PLACEMENT SCHEME

To ensure that your students are informed for the next academic or industrial phase of their lives, it is crucial that teachers keep up-to-date with both modern career options and routes into academia. Being part of the Teacher Industrial Partners' Scheme or the Teacher Academic Placement Scheme provides the perfect opportunity for STEM teachers to step out of the classroom and experience the world of industry or a cutting edge biochemistry department. The skills learned from the scheme will enable teachers to better advise students, create partnership links with industry or a university and support the contextualised teaching of the STEM curriculum.

Placements happen throughout the year with universities and employers across the country. To support with the cost of your teacher leaving the classroom, a generous bursary is available to state funded schools, academies and colleges.

■ [www.stem.org.uk/ms/tips](http://www.stem.org.uk/ms/tips)

■ [www.stem.org.uk/ms/taps](http://www.stem.org.uk/ms/taps)

# Excitement. Amazement. Awe

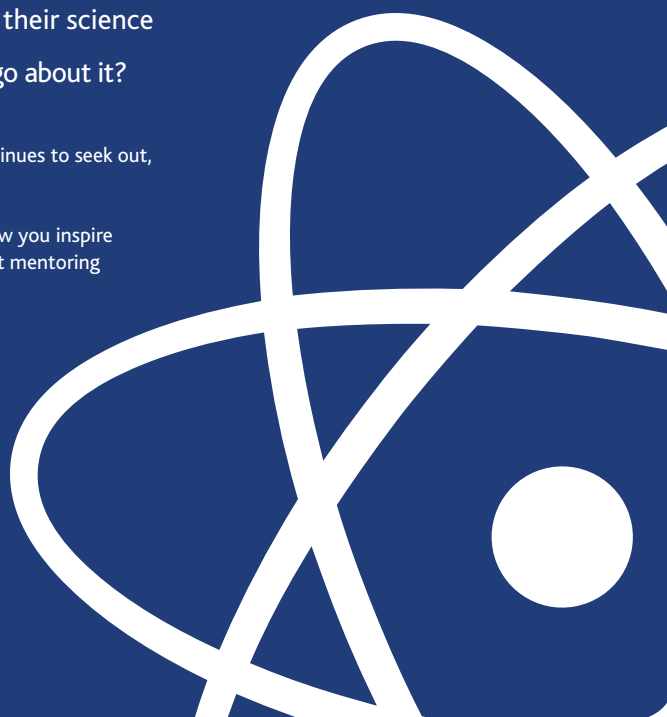
That's the kind of reaction teachers aim to get from their science and mathematics students, every day. So how do you go about it?

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](http://www.rolls-royce.com/scienceprize)

## Rolls-Royce Science Prize



## 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.

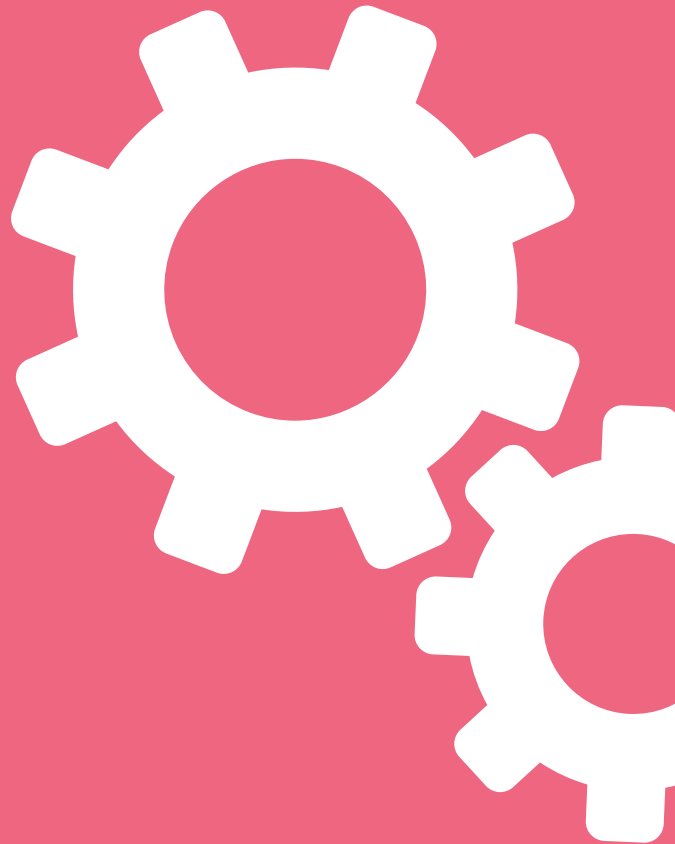
We have a proven track record of highly evaluated, impactful professional development and a wealth of experience in supporting teachers, technicians and support staff in all aspects of STEM education.

■ [www.stem.org.uk/ms/bespoke-cpd](http://www.stem.org.uk/ms/bespoke-cpd)

# CPD designed by technicians, for technicians

We have created an academic year planner to highlight when our technician CPD will be running during 2015-16, all of which have been created to enhance the effective delivery of technical support in schools.

■ You can download it at: [www.stem.org.uk/ms/technicians](http://www.stem.org.uk/ms/technicians)



principia  
mission

esa

UK  
esero

UK SPACE  
AGENCY

## 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
- TimPix – this project will run radiation detectors in schools and on the ISS, and students will be able to access the information produced
- Earth Observation Detective – your chance to get a photograph taken of Earth from the space station to use with your students

■ And many more! To explore the full range of free, STEM related resources visit [www.stem.org.uk/ms/timpeake](http://www.stem.org.uk/ms/timpeake)

# Explore our new website

## Join our community

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

## Personalise your experience

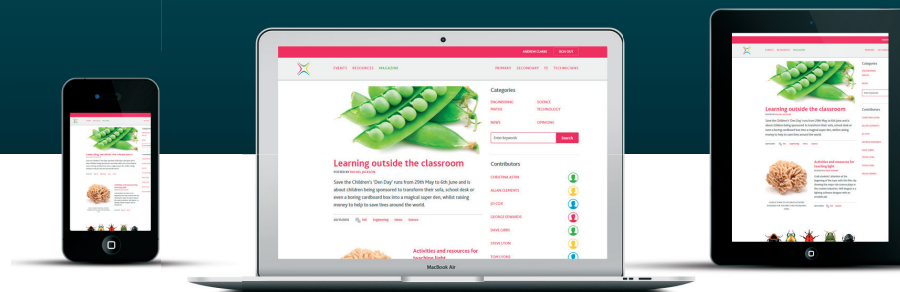
Use your dashboard to find and store information tailored to your interests

## Book CPD activities

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

## Access resources

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



[www.stem.org.uk](http://www.stem.org.uk)