

post-16 and FE (stem) LEARNING

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Building a successful network

We've got some top tips for how to create a network and how to get the most from it.

Get in touch...

We would welcome your feedback on our new magazine: feedback@stem.org.uk



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/mf/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 on to one of our activities soon.

Yvonne Baker

YVONNE BAKER, CHIEF EXECUTIVE, STEM LEARNING LTD

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The challenge

By JENNY PHILLIPS

Educational Consultant
and Trainer

With government intentions to rationalise the further education sector through area reviews, there has probably never been a better time for practitioners to re-evaluate their skills. Demands on practitioners are ever-increasing and students deserve the best teaching and training they can get. However, with developments in science and technology progressing at a rate of knots and criticisms repeatedly raised by government, the job is a tough one.

LOOKING AHEAD

The FE sector is being squeezed more than ever before, with further funding cuts, the expectations of Ofsted through its latest framework and skills gaps in teaching as well as learning.

The Ofsted annual report is due to be published shortly but we can already anticipate where the skills gaps lie from inspections and OECD reports showing how well we fair in comparison with competing nations.

SURVIVAL OF THE FITTEST

The area reviews are likely to have a massive impact on the FE sector. Merges and closures are muted and it will be survival of the fittest. The government has voiced its intentions to consolidate education and training over recent years. The time is now here where duplications of provision and overlaps are being scrutinised for impact.

PLAN OF ACTION

So what can we do to stay at the top of our game? What students want more than anything is to achieve and fulfil their aspirations. We have the energy, enthusiasm and experience, but what if we also had up-to-date skills and knowledge of the latest delivery methods and technological advances in our subject area?

Think of the hard-to-teach topics, we all have them. But worse still, they are the hard-to-learn topics. What if they became the most exciting and inspirational topics? The topics which students grab by scruff of the neck; whether in a classroom or out in the workplace on a vocational course. Imagine the excitement and the boundaries we could all push.

Developing our skills and using this knowledge to bring lessons to life will ultimately inspire our learners, improve their understanding and help them fulfil their ambitions.

TAILOR MADE CPD

Find out more about the range of support we can tailor to your college or department with our bespoke offer at:
 ■ www.stem.org.uk/mf/bespoke

BRINGING CUTTING EDGE RESEARCH INTO THE CLASSROOM

The Cutting Edge Research programme brings together a fantastic collection of resources and CPD activities, covering a huge range of fascinating topics, such as: astrophysics; genomics (genetics); and nanotechnology. It delivers the latest cutting edge research, knowledge and new contexts along with practical activities to support teachers in delivering the curriculum in an accessible, enjoyable and stimulating way for students.

■ Find out more at:
www.stem.org.uk/mf/RCUK

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 institution.

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 science students, 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 institutions like this that have the capacity to sustain their effectiveness.

Award schemes provide a great opportunity to do this. They push you 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 More offered Richard Rich 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 science departments across the UK.

The Space Education Quality Mark (SEQM) is given to schools and colleges 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



Have you ever thought how useful it would be to be able to share ideas, problems and knowledge with other technicians? Or be able to draw on the expert of a network of professionals? Setting up a technicians' network provides a wonderful opportunity to do all this and more. We've got some top tips for how to create a network and how to get the most from it.

Building a technician network

by DR KATHERINE FORSEY and SUE CHURM
@Dr8iol / @HEaTEDsue

Membership and Network Managers, STEM Learning



GETTING THE WORD OUT

There are lots of ways of identifying nearby colleges who might have technicians – you might already be working with some of them informally, or your heads of departments might have connections they could share. On our website you can also access a virtual community of technicians across the UK – join a group for your local area and you can post details of meetings and events. Once you've got the contacts, create an email list and share agendas and events.

WHY SHOULD YOU CREATE A NETWORK?

Taking the initiative to start a network of technicians can be daunting. However, if you decide to take the plunge it shows a commitment to your institution as well as organisational and leadership skills. Making a bold move like this can be positive, showing your line manager that you are not afraid of responsibility and it can also be used as evidence when applying for professional registration.



GET HELP BUILDING

A HANDY GUIDE

The National Science Learning Network have produced an excellent guide to setting up technician networks in schools – but it's just as useful for those working in post-16 and further education institutions.

■ Download the guide today at www.stem.org.uk/rxdb9

JOIN IN

HEaTED, a dedicated scheme for technicians working in further and higher education, has fantastic, free networking events run across the country to help you meet and share ideas with technicians in your area.

■ Find an event near you www.stem.org.uk/mf/heated-networking-events

GET REGISTERED

Professional registration acknowledges your existing skills and can provide a huge boost to your career. There are lots of options and HEaTED have created a dedicate webpage to help you find more information.

■ Discover more: www.stem.org.uk/mf/heated-registration

CPD FOR YOU

We've got a wide selection of CPD activities available to attend, or that can be brought to you. Both the National Science Learning Network and HEaTED can create tailor-made courses based on your network's needs.

■ Browse the course listings or visit



PLANNING YOUR FIRST MEETING

A network meeting is very similar to an internal meeting with your colleagues – it just needs a little extra planning. Think how often your group will meet, and what you'd like to cover in these meetings and where would be best to meet. Once you've got a location and date, it's a good idea to book some refreshments and write a rough agenda. Then get inviting!

WHERE TO START

First things first – get leaders in your institution on board. Your head of department and senior leadership team can become champions of your cause if you get them involved.





My favourite job

by **STEVE LYON** Mathematics Specialist, National STEM Centre
@SteveJLyon

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 and preparing to lead the department through the next series of changes.

With even more pressure being placed on the mathematics department – new accountability

“ Rather than being the end of a journey, this was very much the beginning. 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. ”

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 heads of mathematics at schools and colleges 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 and a time I look back on as being the most satisfying of my career.

GET AHEAD >

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

• www.stem.org.uk/mf/group-mathematics

Be inspired with our dedicated mathematics resource packages:

• www.stem.org.uk/mf/resources-FE-maths

New and aspiring leaders of mathematics

• www.stem.org.uk/my200

Resourcing the new mathematics curriculum

• 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?

I delivered assemblies on my TIPS placement and the future of science with engineering. 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?

Career opportunities 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?

Very important. Given the current economic climate, it is difficult to let staff out of the classroom. This allowed us to secure a high quality supply teacher, students' education wouldn't be affected.

Would you recommend the scheme to other institutions?

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/mf/tips

■ www.stem.org.uk/mf/taps

Back to the future of physics

by **ADAM LITTLE**
@SecretPhysicist

Professional Development Leader, National STEM Learning Centre

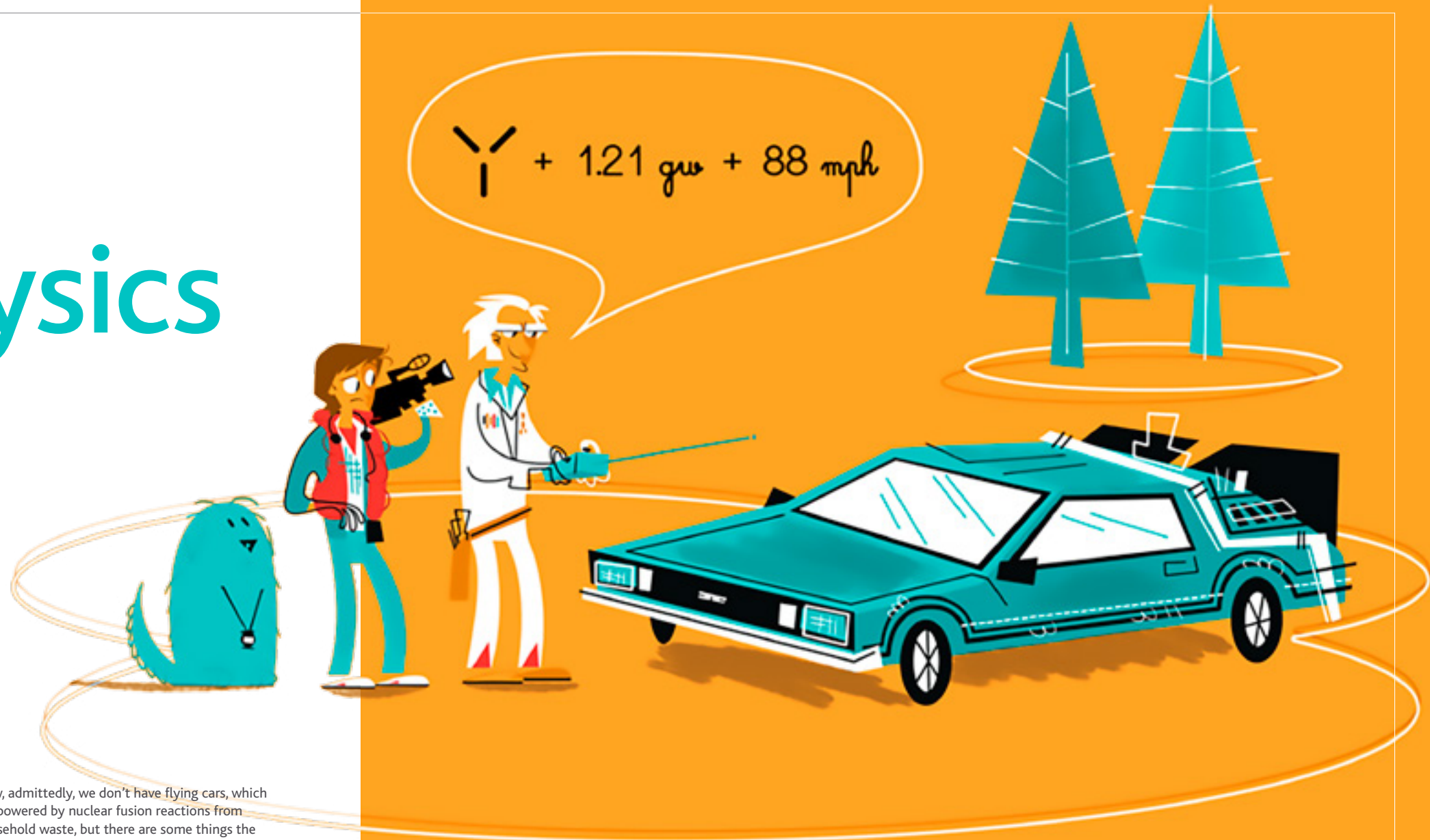
2015 was the year that sparked my love for physics and science. The strange thing is that this occurred before the end of the 1980's. Confused? *Back to the Future 2* had just come out and when Marty McFly, Doc Brown and the flying DeLorean travelled to 2015, I saw what the future could hold. I became 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,

$$Y + 1.21 \text{ gw} + 88 \text{ mph}$$



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.

If you were also hooked by *Back to the Future* and are looking for new ways to inspire your students and bring physics to life in the classroom we have a range of resources and support to help.

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/mf/bespoke-cpd

HEaTED

Are you a post-16 or FE technician looking to support students? HEaTED is a scheme dedicated to supporting technicians in further and higher education through networking, resources and CPD activities.

- Find out more at: www.stem.org/mf/HEaTED

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

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/mf/recognition

FEBRUARY 2016

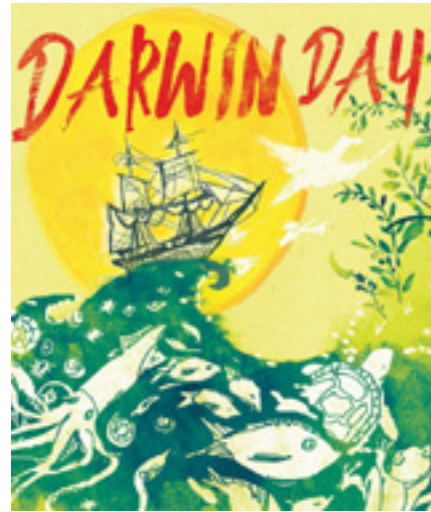


LIBRARY LOVERS MONTH FEBRUARY

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



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/mf/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/mf/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

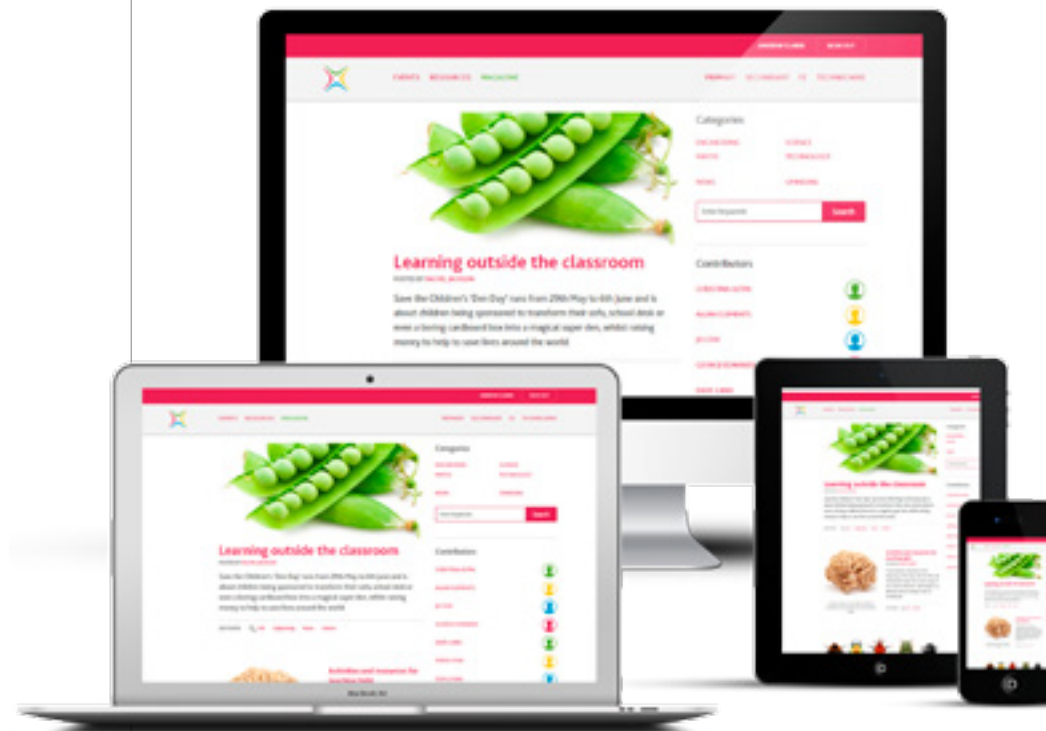


WORLD PI DAY 14 MARCH

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

Join in at: www.stem.org.uk/mf/world-pi-day

Our new website is here!



We have now launched our brand new website, incorporating the National Science Learning Network, National STEM Centre, HEaTED 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 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

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

@NtlSTEMCentre
Followers: 15.2k

@ScienceVoice
Followers: 4764

@HEaTEDtechs
Followers: 381

@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



@istonline #ISTConf - listening to HEaTED spread the word about professional development @HEaTEDtechs



@MelLeitch Great to meet colleagues in Stirling today to promote professional registration. Thanks @HEaTEDtechs and @valgordon7 for the invitation.

Follow us @STEMLearningLtd 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, college 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/mf/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/mf/impact-awards

All fees and award values are valid for state funded schools and colleges 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.

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."

- Science Teacher, 2015

We work with over **76,800** teachers and technicians 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

DESIGN TECHNOLOGY

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

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

MATHEMATICS

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

SCIENCE

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

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

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

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

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

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

INTENSIVE SUBJECT-SPECIFIC CPD
Accommodation and meals included

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)
- 22 Feb 2016 (5 days over 2 periods)

■ www.stem.org.uk/nv200

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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/rp264

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

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

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

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

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

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.

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

■ www.stem.org.uk/rp270

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

■ 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



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 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/mf/rsc

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

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

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

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

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

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

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

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

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

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

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

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

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

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: £162 (ex VAT)
- 16 Mar 2016 (4 days over 2 periods)
- www.stem.org.uk/ny502

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

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

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

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

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

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

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

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

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

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

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/mf/ingenious



SCIENCE MARK

Science Mark coming 2016

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

■ Find out more at www.stem.org.uk/science-mark

FREE ONLINE CPD

Assesment 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.

- Start date: 22 Feb 2016
- www.stem.org.uk/mf/online-cpd





Welcome to the HEaTED CPD listing

HEaTED a UK-wide scheme, dedicated to supporting the professional development of technicians in further education.

We do this by:

- providing high-quality professional development activities
- supporting networks of technicians across the UK with free events and online groups
- giving access to resources and information about career development and professional registration

Our CPD listing is packed with practical and innovative courses, designed especially for technicians. We can also create courses tailor-made for you and bring them to your institution.

Find out more by visiting www.stem.org.uk/heated.

“ The course provided was excellent with a very professional and knowledgeable instructor. ”

Become a member

We offer both individual and institution memberships. If your institution is already a member, then all technical staff are automatically enrolled. This opens the door for staff to access a range of member benefits specifically aimed at meeting their specialist training and development needs.

■ Visit www.heated.ac.uk for more information.

COMPUTING

3DS MAX 201: GREEN BELT

Develop your skills and abilities with modelling, lighting, animation and rendering in 3Ds Max.

- Members fee: £897.30
- Non-Members fee: £997
- 1 Feb 2016 London (5 days)
- www.stem.org.uk/HC322

AFTER EFFECTS 101: YELLOW BELT

Learn the essential tools necessary to construct your own complex motion graphics and enhance your video projects.

- Members fee: £627.30
- Non-Members fee: £697
- 15 Feb 2016 Manchester (3 days)
- www.stem.org.uk/HC032

AFTER EFFECTS 301: BLACK BELT

Master the most complex aspects of Adobe After Effects including advanced expressions, particles, 3D lights, cameras, and more.

- Members fee: £627.30
- Non-Members fee: £697
- 15 Feb 2016 London (3 days)
- www.stem.org.uk/HC034

AFTER EFFECTS JUMPSTART: ZERO TO HERO

Go from learning the basics of Adobe After Effects, such as creating basic animations and title sequences, to combining CG elements with real life footage.

- Members fee: £897.30
- Non-Members fee: £997
- 15 Feb 2016 Manchester (3 days)
- www.stem.org.uk/HC035

AUTOCAD 101: YELLOW BELT

Learn professional 2D drawing, design, and drafting using AutoCAD and AutoCAD LT.

- Members fee: £627.30
- Non-Members fee: £697
- 1 Feb 2016 Glasgow (3 days)
- www.stem.org.uk/HC037

CAPTIVATE 201: GREEN BELT

Gain the ability to design webpages using next-gens technology of CSS3 for modern, mobile and future browsers.

- Members fee: £627.30
- Non-Members fee: £697
- 24 Feb 2016 Glasgow (2 days)
- 24 Feb 2016 London (2 days)
- www.stem.org.uk/HC041

CINEMA 4D 301: BLACK BELT

Learn how to control and create more complex animations using Cinema 4Ds advanced features, producing more time-effective workflows and impressive results.

- Members fee: £627.30
- Non-Members fee: £697
- 7 Mar 2016 Manchester (3 days)
- www.stem.org.uk/HC341

FLASH 101: YELLOW BELT

In just two days gain a good grasp of Flash animation and interactivity.

- Members fee: £447.30
- Non-Members fee: £497
- 29 Feb 2016 Manchester (2 days)
- www.stem.org.uk/HC051

HTML 101: YELLOW BELT

Gain with the concepts and skills to use HTML effectively with basic coding for web design, beginning with HTML and advancing to more complex HTML5 fundamentals.

- Members fee: £627.30
- Non-Members fee: £697
- 28 Mar 2016 Manchester (3 days)
- www.stem.org.uk/HC056

HTML5 - 201: GREEN BELT

The HTML5 green belt will give you first-hand experience with all the new HTML5 features so that you can start using it in your projects right away.

- Members fee: £447.30
- Non-Members fee: £497
- 14 Mar 2016 London (2 days)
- www.stem.org.uk/HC058

ILLUSTRATOR 101: YELLOW BELT

Produce an exciting graphic project using Illustrator and leave with the ability to create and incorporate vector graphics for different projects.

- Members fee: £447.30
- Non-Members fee: £497
- 22 Feb 2016 Glasgow (2 days)
- www.stem.org.uk/HC059

INDESIGN 301: BLACK BELT

Learn advanced design techniques, including: how to create interactive PDFs with tables of contents; navigation elements; and so much more.

- Members fee: £627.30
- Non-Members fee: £697
- 21 Mar 2016 Manchester (3 days)
- www.stem.org.uk/HC065

INDESIGN JUMPSTART: ZERO TO HERO

Imagine being able to create documents of many types, from single page advertisements and flyers, to complex multi-page colour - attend this activity for all this and more.

- Members fee: £897.30
- Non-Members fee: £997
- 15 Feb 2016 Glasgow (5 days)
- www.stem.org.uk/HC066

JAVASCRIPT 101: YELLOW BELT

This hands-on course provides an intensive introduction to the features provided by JavaScript and Dynamic HTML.

- Members fee: £627.30
- Non-Members fee: £697
- 7 Mar 2016 London (3 days)
- www.stem.org.uk/HC320

MUSE 101: YELLOW BELT

You will learn to use Master pages, incorporate images, set up navigation, and publish your website with Adobe Muse in this two day class.

- Members fee: £447.30
- Non-Members fee: £497
- 2 Mar 2016 Manchester (2 days)
- www.stem.org.uk/HC334

PHOTOSHOP 201: GREEN BELT

Learn how to use Photoshop in a professional context and enhance your productivity, creativity, and efficiency.

- Members fee: £627.30
- Non-Members fee: £697
- 10 Feb 2016 Glasgow (3 days)
- 17 Feb 2016 London (3 days)
- www.stem.org.uk/HC071

PHOTOSHOP ACA JUMPSTART: ZERO TO HERO

This course provides you with the concepts and skills to use Adobe Photoshop effectively. You will learn layer basics, photo retouching and image editing.

- Members fee: £897.30
- Non-Members fee: £997
- 29 Feb 2016 Manchester (5 days)
- www.stem.org.uk/HC073

PREMIERE PRO ACA JUMPSTART: ZERO TO HERO

Understand and work with advanced concepts and features of Adobe Premiere Pro. You will run through a typical series of steps for creating, editing and fine-tuning a series of video pieces.

- Members fee: £897.30
- Non-Members fee: £997
- 14 Mar 2016 London (5 days)
- www.stem.org.uk/HC076

**RAPID PROTOTYPING
(3D PRINTING)**

A practical, one-to-one course that provides candidates with experience in fundamental 3D printing.

- Members fee: £120
- Non-Members fee: £180
- On demand Durham (1 day)
- www.stem.org.uk/HC132

SKETCH UP 101: YELLOW BELT

Learn to create quick and accurate two and three dimensional models with Trimble SketchUp.

- Members fee: £447.30
- Non-Members fee: £497
- 17 Feb 2016 Glasgow (2 days)
- 17 Feb 2016 Manchester (2 days)
- www.stem.org.uk/HC411

**CREATIVE ARTS
AND MEDIA****COLD CASTING AND MODEL
MAKING FOR LIFE SCIENCES**

This course will enable you to manufacture models or components out of various materials and is ideal for biological or workshop technicians.

- Members fee: £240
- Non-Members fee: £300
- On demand St Andrews (2 days)
- www.stem.org.uk/HC146

**ELECTRONICS AND
CONTROL SYSTEMS****INTRODUCTORY CNC MILLING -
PROTRAK CONTROL**

This one-to-one, practical course will provide you with hands-on experience in fundamental CNC milling.

- Members fee: £120
- Non-Members fee: £180
- On demand Durham (1 days)
- www.stem.org.uk/HC130

INTRODUCTORY TIG WELDING

A practical, one-to-one course introducing TIG welding, covering: welding mild steel; stainless steel; and aluminium.

- Members fee: £120
- Non-Members fee: £180
- On demand Durham (1 day)
- www.stem.org.uk/HC131

HEALTH AND SAFETY**ABRASIVE WHEELS**

A practical introduction to the use of work equipment as well as relevant legislation and responsibilities under the Health and Safety at Work Act.

- Members fee: £156
- Non-Members fee: £234
- On demand UK wide (1 day)
- www.stem.org.uk/HC151

**ACCIDENT, INCIDENT AND
OCCUPATIONAL DISEASE
TRAINING WORKSHOP**

In everyday life it is inevitable that someone in your workplace will have an accident. Get an overview of accident and incident management.

- Members fee: £75
- Non-Members fee: £110
- On demand UK wide (3 hours)
- www.stem.org.uk/HC374

ASBESTOS AWARENESS UKATA

Obtain a clear understanding of how to recognise and deal with asbestos at work.

- Members fee: £944.40
- Non-Members fee: £1,180.50
- On demand UK wide (1 day)
- www.stem.org.uk/HC442

**BIOHAZARD TRAINING
WORKSHOP**

Understand the risks biohazards pose in the workplace and how to create a platform to safely and effectively manage biohazards in the workplace.

- Members fee: £75
- Non-Members fee: £110
- On demand UK wide (3 hours)
- www.stem.org.uk/HC375

**CARRIAGE OF DIAGNOSTIC AND
INFECTIOUS SUBSTANCES BY AIR**

Based on International Air Transport Association regulations, this course covers packaging requirements, labelling and documentation of infectious substances being carried by air.

- Members fee: £275
- Non-Members fee: £412.50
- On demand UK wide (1 day)
- www.stem.org.uk/HC156

**COMBINED LABORATORY AND
CRYOGENIC GASES SAFETY
AWARENESS FOR UNIVERSITIES**

Comprehensively cover the safe use of gas cylinders, cryogenic liquids and associated equipment in a college or university environment.

- Members fee: £1,450
- Non-Members fee: £2,500
- On demand UK wide (5 days)
- www.stem.org.uk/HC133

**COSHH FOR CHEMICALS IN A
TECHNICAL WORKPLACE (FULL
COURSE)**

Thoroughly covering the background information, skills and knowledge around COSHH and enables these skills to be put into practice in a workplace that uses chemicals.

- Members fee: £105
- Non-Members fee: £160
- On demand UK wide (1 day)
- www.stem.org.uk/HC171

CRYOGENIC GAS USER WORKSHOP

Cryogenic liquids are particularly hazardous and can present a serious risk of asphyxiation. Explore the key safety issues involved in the handling, storage or use of cryogenic gases.

- Members fee: £1,125
- Non-Members fee: £1,250
- On demand UK wide (3 days)
- www.stem.org.uk/HC157

**FIRE AND EMERGENCY
EVACUATION TRAINING
WORKSHOP**

Organisations have a duty to provide fire and emergency support - get straight-forward guidance on fire and emergency management in your workplace.

- Members fee: £75
- Non-Members fee: £110
- On demand UK wide (3 hours)
- www.stem.org.uk/HC377

IOSH WORKING SAFELY COURSE

Introducing the essentials of health and safety to provide an understanding of safe working practice.

- Members fee: £944.40
- Non-Members fee: £1,180.50
- On demand UK wide (1 day)
- www.stem.org.uk/HC443

**MANUAL HANDLING TRAINING
WORKSHOP**

Gain a good understanding of the regulations related to manual handling, risk assessment and best practice in manual handling techniques.

- Members fee: £75
- Non-Members fee: £110
- On demand UK wide (3 hours)
- www.stem.org.uk/HC373

**NOISE IN THE WORKPLACE
TRAINING WORKSHOP**

Get a straight-forward overview of regulations associated with noise in the workplace and how to minimize the effect of exposure to excessive levels of noise.

- Members fee: £75
- Non-Members fee: £110
- On demand UK wide (3 hours)
- www.stem.org.uk/HC379

**OCCUPATIONAL HEALTH
AND SOCIAL CARE TRAINING
WORKSHOP**

Covering best practice, this course will encourage you to feel competent and confident when carrying out their duties in a wide range of health and social care settings.

- Members fee: £75
- Non-Members fee: £110
- On demand UK wide (4 hours)
- www.stem.org.uk/HC462

RISK ASSESSMENT WORKSHOP

Apply key principles of the risk assessment process and how to evaluate the risks relating to your working environment.

- Members fee: £55
- Non-Members fee: £70
- 5 Apr 2016 Leeds (2 days)
- www.stem.org.uk/HC383

VIBRATIONS IN THE WORKPLACE

Gain an overview of the Control of Vibration at Work Regulations and how to apply them in your workplace.

- Members fee: £75
- Non-Members fee: £110
- On demand UK wide (4 hours)
- www.stem.org.uk/HC460

WORK AT HEIGHT

Discover the key requirements and control measures you need to know when working at height.

- Members fee: £75
- Non-Members fee: £110
- On demand UK wide (4 hours)
- www.stem.org.uk/HC461

LEADERSHIP**ASSERTIVENESS**

Explore the spectrum of assertiveness, from the basic principles and theories to the application of these methods in your workplace.

- Members fee: £45
- Non-Members fee: £50
- On demand Online (1 hour)
- www.stem.org.uk/HC450

**COACHING AND MENTORING
SKILLS FOR TECHNICIANS**

Develop coaching and mentoring skills to support workplace development and contribute to the CPD cycle within your organisation.

- Members fee: £200
- Non-Members fee: £250
- 18 Mar 2016 London (1 day)
- www.stem.org.uk/HC008

**CONTROLLING THE SUCCESS OF
YOUR CAREER**

Organisational change can provoke uncertainty and anxiety. Explore ways to cope with change through interactive exercises and discussion.

- Members fee: £45
- Non-Members fee: £50
- On demand Online (1 hour)
- www.stem.org.uk/HC451

**DEVELOPING AN APPRENTICESHIP
PROGRAMME**

Be empowered to develop a cost effective apprenticeship scheme that will address your future technical skill shortages.

- Members fee: £225
- Non-Members fee: £275
- On demand Liverpool (1 day)
- www.stem.org.uk/HC006

**LEADERSHIP AND MANAGEMENT
SKILLS FOR TECHNICAL STAFF
(MODULE ONE)**

Explore theories of leadership and management alongside workplace experiences in this holistic and tailored learning experience.

- Members fee: £200
- Non-Members fee: £250
- 29 Feb 2016 Birmingham (1 day)
- www.stem.org.uk/HC002

**LEADERSHIP AND MANAGEMENT
SKILLS FOR TECHNICAL STAFF
(MODULE TWO)**

Module two expands on theories of leadership and management alongside workplace experiences in this holistic and tailored learning experience.

- Members fee: £200
- Non-Members fee: £250
- 1 Mar 2016 Birmingham (1 day)
- www.stem.org.uk/HC003

TIME MANAGEMENT

Discover a wide range of personal effectiveness techniques to help you meet the demands on your time.

- Members fee: £45
- Non-Members fee: £50
- On demand Online (1 hour)
- www.stem.org.uk/HC452

SCIENCE**FUNDAMENTAL HPLC**

Explore high performance liquid chromatography (HPLC) analysis, including: hardware basics; modes of analysis; basic troubleshooting; and column chemistry.

- Members fee: £178
- Non-Members fee: £194
- 1 Mar 2016 London (1 day)
- www.stem.org.uk/HC284

**INTRODUCTION TO FLOW
CYTOMETRY THEORY**

Explore the theory of flow cytometry instrumentation and experimentation. Compensation is also covered in great detail, including software demonstrations.

- Members fee: £120
- Non-Members fee: £180
- On demand UK wide (1 day)
- www.stem.org.uk/HC482

**INTRODUCTION TO
IMMUNOHISTOCHEMISTRY**

Work through the theory and principals of immunohistochemistry, including the staining, examining and studying of supplied sections.

- Members fee: £95
- Non-Members fee: £190
- On demand Glasgow (1 day)
- www.stem.org.uk/HC199

INTRODUCTION TO MICROTOMY

Build hands-on skills and experience in microtomy techniques utilising formalin fixed paraffin embedded tissue in this practical workshop.

- Members fee: £216
- Non-Members fee: £270
- 19 Apr 2016 Lincoln (1 day)
- www.stem.org.uk/HC430

**PRACTICAL GC TROUBLESHOOTING
AND MAINTENANCE**

Explore a logical approach to GC troubleshooting and maintenance as well as commonly encountered problems and best practices.

- Members fee: £680
- Non-Members fee: £744
- 21 Apr 2016 Glasgow (2 days)
- www.stem.org.uk/HC294

**PRACTICAL GC-MS FOR THE
CHROMATOGRAPHER**

Get the maximum benefit from gas chromatography (GC) with a mass spectrometric detector (MSD) with this introduction to quadrupole mass analysers.

- Members fee: £680.74
- Non-Members fee: £744
- 8 Mar 2016 Glasgow (2 days)
- www.stem.org.uk/HC295

FOOD SECURITY

Explore how we are moving towards sustainable global food production.
■ 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

WEARABLE TECHNOLOGIES

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

DRUG DEVELOPMENT AND DISCOVERIES

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

FORENSIC ANALYSIS

Discover how forensic science works, including forensic chemistry.
■ 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

BIODIVERSITY

Learn more about how we are predicting the future via modelling.
■ www.stem.org.uk/rp475

ITERATIVE DESIGN

Find out more about how new technologies develop and evolve.
■ www.stem.org.uk/rp477

GENETICS (GENOMICS)

You will explore developments in genetics for health.
■ www.stem.org.uk/rp479

LIFESTYLE AND HEALTH

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

MEDICAL BIOLOGY AND PHYSICS

Discover developments in medical imaging, treatments and technologies.
■ 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

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

NANOTECHNOLOGY

You will look at the uses of nanotechnology like QKD and viruses for wires.
■ www.stem.org.uk/rp470

HUMANITARIAN ENGINEERING

Designing solutions that enhance peoples lives and capabilities e.g. anti-malarial compounds.
■ www.stem.org.uk/rp472

BIOMIMICRY

Explore how science takes ideas from nature and uses them to enhance our lives.
■ www.stem.org.uk/rp474

CLIMATE CHANGE

How climate change is monitored e.g. carbon capture, storage and processing, and the social science of environmental change.
■ www.stem.org.uk/rp476

BIG DATA REVOLUTION

Learn how researchers collate data and bring it together, potentially considering the internet and energy efficient computing.
■ www.stem.org.uk/rp478

BRAIN AND PERCEPTION

We delve into understanding how the brain works, e.g. neurodegeneration including dementia.
■ www.stem.org.uk/rp480



PROJECT ENTHUSE

Supporting state funded schools and colleges 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.

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/mf/enthuse

INTENSIVE ENTHUSE AWARDS

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

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/mf/tips
■ www.stem.org.uk/mf/taps

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

Excitement. Amazement. Awe

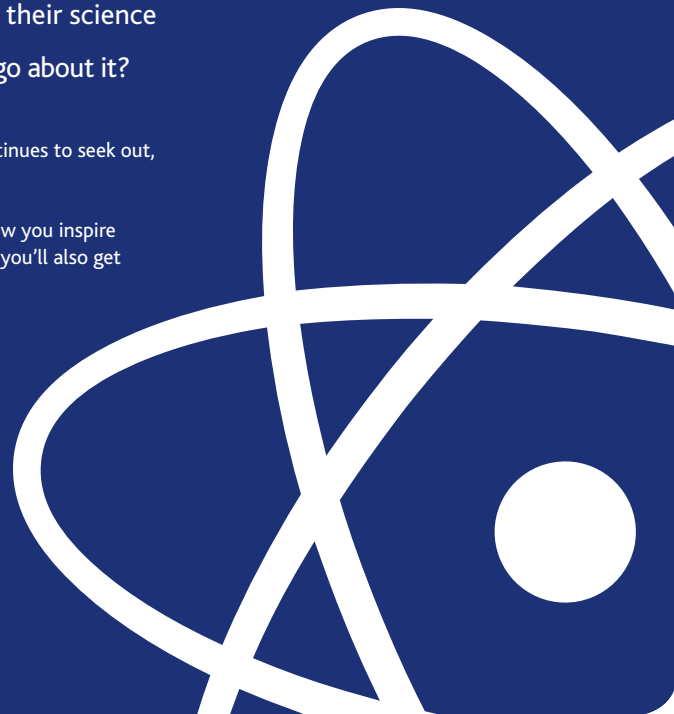
That's the kind of reaction teachers aim to get from their science and mathematics students, every day. So how do you go about it?

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 students. Not only could your school or college 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

Rolls-Royce Science Prize



Become part of a growing community working to support technicians across the UK



You also gain access to a range of member benefits, including:

- discounts on CPD activities, including our bespoke activities
- exclusive online courses
- free access to a range of resources on soft skills and professional development

■ Find out more www.stem.org.uk/mf/heated-membership

Bespoke CPD tailored to your needs

Our comprehensive range of support can be requested as a bespoke offer for your department or network. We can make the CPD more effective and tailored to the specific challenges and needs your institution 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/mf/bespoke-cpd



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UK SPACE
AGENCY

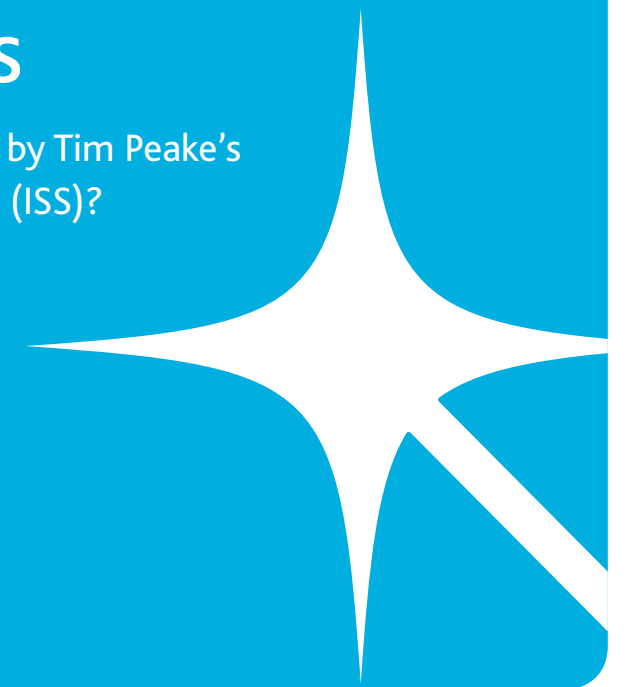
Tim Peake inspires

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 colleges 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/mf/timpeake



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Access resources

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



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