



The Royal Academy  
of Engineering

# Engineering Engagement Project

Supporting teaching and learning in schools

Issue 1 November 2010

Welcome to the first newsletter of the 2010 academic year for the Engineering Engagement Project (EEnP).

The EEnP aims to widen participation in science, technology, engineering and mathematics (STEM) by supporting teaching and learning in these areas at Key Stage 3. Involvement in EEnP helps teachers illustrate the role of engineering in society and enables students to learn about the roles of engineers, what they create and how their ideas and expertise shape our world and improve our lives.

The project is now up and running and with almost 40 schools across the UK involved, things are really starting to happen - we want you and your school to get involved.



In this issue:

- Look at a new STEM resource based on the sport of bob skeleton
- Info about new engineering resources to help start up a STEM Club
- Local CPD courses for Design & Technology teachers – dates coming up (very soon!) near you
- How to register for a chance of having the BAE Systems Road Show at your school

STEMNET

Science, Technology, Engineering and Mathematics Network



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## Chance to trial a new STEM resource in your classroom

The Academy has been working hard designing a STEM based resource for use in the classroom which truly highlights engineering and how it complements maths, science and even physical education.

The sport of bob skeleton hit the headlines in February 2010 when British athlete Amy Williams won gold at the Winter Olympics in Canada. The sled used by Amy was an example of how hi tech engineering can help British athletes win medals. But how much of her and the team's success is down to the bob skeleton sled?



Amy Williams on her sled



Students attach Barbie to the sled to see the affect she has on the sled's performance

A curriculum resource is being developed that aims to answer this question through practical, mathematical and scientific activities.

In order to find out if the athlete or the sled has more impact on success in the bob skeleton event, the resource asks KS3 learners to investigate factors such as, weight, friction and aerodynamics. Learners are given the opportunity to use their

practical skills to make a scale model of a bob skeleton sled that can be launched using air pressure from a hand pump.



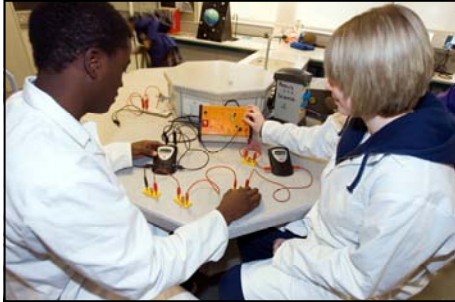
Air pump used to launch the sled

By learning about the physics of the bob skeleton event and working through equations for energy and force, the resource aims to develop and apply learners' mathematical and scientific skills and understanding.

***Would you like to trial this resource in your school?***

**We're looking for 5 schools to trial this resource and let us know what you think of it. Your feedback will help us make sure the resource really meets teachers' needs.**

## Need inspiration for a STEM Club?



Often, new (and old) Club Leaders worry about offering interesting sessions for their attendees. After several teacher focus groups, we have begun development of a series of *activity and support resources* to help take this worry away, and help you highlight **engineering and technology**.

The *activity resources* are being designed as inspirational starting points that are easy and inexpensive to include in your club. If your club members like the activity there are plenty of extra suggestions to help develop extended projects. The activities are hands-on and link to the curriculum and careers. The *support resources* are being developed to help you tackle issues such as careers and diversity in your club.

### Activity Resources

- **The Right Switch** - take a look at how quantum mechanics can help shape today's engineering through the use of Quantum Tunnelling Composite
- **The Whole Package** - just how smart is our shopping? Use this activity to investigate how modern food packaging might be designed and manufactured to make our lives easier
- **Moving House** - try this new take on an old club favourite. Just how good are your club members at being civil, structural and architectural engineers?



### Support Resources

- **Diversity** – engineering is everywhere, and we need engineers from all backgrounds. This resource provides information to help Club Leaders engage with all their club members and introduces some interesting role models (STEM Ambassadors)
- **The Engineering Message** – Just what is 'Engineering'? Use this resource to find out

***Would you like to trial one of these resources in your club?***

**We're looking for 10 schools to trial one of these five resources. This could be a great way to start up a club in your school or if you've got a club already, you could trial it with your students to see what they think.**

## Teaching Tomorrow's Designers and Technologists Today

We're working closely with the national network of Science Learning Centres and the D&T Association to deliver CPD for D&T teachers. The project, 'Teaching Tomorrow's Designers and Technologists Today', is an inspiring, high quality programme of CPD that has been developed to stimulate greater interest in D&T and encourage students to continue studying the subject at KS4.



There are three courses available:

1. [Let's make it Move](#) - based around actuators
2. [Let's make it Work](#) - looking at electronics and microprocessors
3. [Collaborative Learning in Science and Design & Technology](#) - to encourage collaboration between the two subjects

	November 2010	December 2010
<b>Let's Make it Move</b>	12 - <a href="#">South West</a> 16 - <a href="#">East of England</a> 22 - <a href="#">South East</a> 25 - <a href="#">East Midlands</a> and <a href="#">West Midlands</a>	
<b>Let's Make it Work</b>	22 - <a href="#">West Midlands</a> 24 - <a href="#">East Midlands</a> 25 - <a href="#">North West</a>	06 - <a href="#">South East</a>
<b>Collaborative Learning and Design &amp; Technology</b>	19 - <a href="#">North West</a> 24 - <a href="#">South East</a> 30 - <a href="#">West Midlands</a>	

These courses qualify for an Impact Award worth **£200 per day**. Any teacher, lecturer or technician from a maintained school can apply. The money awarded can be put towards course fees, supply cover or to implement your ideas once back in the classroom.

Further courses are in development, including an online version of 'Let's Make it Move'.

### ***Would you like to trial this online CPD course in early 2011?***

**We're looking for 3 teachers to help trial the online course and help shape the CPD so it meets teachers' needs. You can also register your interest in the on-line CPD for when it launches by emailing [k.bloom@nationalstemcentre.org.uk](mailto:k.bloom@nationalstemcentre.org.uk)**

## Fancy having an engineering road-show at your school?

The EEnP is working hard to provide the tools to help you illustrate real world engineering to your school but there are many other excellent engineering activities you could also access for your school.

These include the BAE Systems Engineering Road-show; a half-day programme designed to inspire, entertain and enthuse young minds. Run during a morning or afternoon in school, a team of actors use high-energy drama to show children that engineering can be much more fun and diverse than they often realise.

After the theatre show, up to 60 children are given the chance to take part in hands-on workshops to explore engineering themselves.

***Would you like to register your interest in the roadshow?***

**Just visit the BAE Systems Education website at [www.baesystemseducationprogramme.com](http://www.baesystemseducationprogramme.com) and register your school.**

That's about it for the first issue of the EEnP newsletter. We would like to hear your thoughts on the newsletter and about the whole EEnP too. Is there anything we're not doing that you'd like to see in your school? Are you doing something at your school you'd like to share? We'd love to hear from you.

Coming up in the next newsletter:

- Inspiring role models – linking up with local industry via your local STEM Ambassador network
- Invitation to join in focus groups to develop the next STEM curriculum resource
- Setting up a club – CPD for Club Leaders coming to a school near you

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