Supporting Materials Education in Schools

Dr Diane Aston
Education Manager
INSPIRE • INFORM • INFLUENCE

• Suite of activities to support learners and educators at all stages of compulsory education
• Focus of activity changes as learners get older
• Based at The Boilerhouse in Grantham
• Activities delivered nationwide
Support for primary education

School years 1 and 2, age 5 to 7, Key Stage 1
School years 3 to 6, age 7 to 11, Key Stage 2
Igniting the spark...

At this age our activities are designed to develop children’s love of learning and investigation. Activities bring the curriculum to life and highlight the importance of STEM subjects to everyone.
Resources for primary schools

- Can you make it?
  - Supports materials teaching at KS2
  - Includes handling collection, six worksheets, extension activities and additional information
- Worksheets to support KS1 Science
- Worksheets to support magnets at KS2
Support for secondary education

School years 7 to 9, age 11 to 14, Key Stage 3
School years 10 and 11, age 14 to 16, Key Stage 4
School years 12 and 13, age 16 to 18, ‘Key Stage 5’
Keeping the fire burning...

Throughout 11 to 18 education our activities are designed to:

- Enrich and enhance the curriculum
- Highlight career opportunities
- Signpost next steps

Resources include conferences, competitions, literature and the Schools Affiliate Scheme.
Schools Affiliate Scheme

- Running since 1999 and re-launched in September 2012.
- Scheme aims to:
  - Provide support and resources to enrich the teaching of the materials topics in the 11-19 curriculum
  - Provide teachers with the knowledge and understanding needed to teach these areas with confidence and enthusiasm
  - Provide links to other organisations, members and universities that can give additional support
- Membership is split between science and D&T teachers from a wide range of different schools
## Membership options

<table>
<thead>
<tr>
<th>Standard</th>
<th>Premier</th>
<th>Premier Plus</th>
</tr>
</thead>
</table>
| • Free of charge and web-based  
• Membership on an individual basis  
• Unlimited number available  
• May book and pay for additional resources subject to availability | • Annual fee of £150  
• Membership on a school basis  
• Limited to 30 at any one time  
• Guaranteed access to some additional resources | • Annual fee of £500  
• Membership on a school basis  
• Limited to 15 at any one time  
• Guaranteed access to all additional resources |
Membership benefits

Web-based resources
• Newsletters, support literature, magazines and journals
• Presentations
• Local societies and MIS

Additional resources
• School visit
• Discovery Box
• Conference
School visits

- Spoken to over 75,000 young people around the UK
- Talks tailored to any age group and any size group
- Talks can be used to support the teaching of a particular topic or as more general STEM activities
- Charge to schools ensures sustainability; tried to keep as reasonable and realistic as possible
- Diary normally books up a term in advance
- On average about 70 slots available each year
Materials Discovery Boxes

- Created to give teachers access to unusual examples of material that they can use themselves.
- Samples supported by information sheets, detailed notes, presentations, curriculum links.
- Schools asked to fill in detailed evaluation.
- Schools borrow for one week.
- Costs £40 plus a £200 refundable deposit.
- Approximately 450 bookable slots per year.
Engineering Extravaganza

- One day conferences for up to 150 12-13 year olds to highlight opportunities in engineering
- Run at venues in Yorkshire and Humber in March and November
- Collaboration with ICE, IMechE, IET, STEM Learning and Tomorrows Engineers
- Delegates take part in four different activities
Magic of Materials

- Free three day residential courses for 24 students in year 10 (age 14/15)
- Run in collaboration with St Paul’s School, London
- Highlight careers in materials
- Chance to explore materials science beyond the curriculum
- Running since 2015
Materials Matter

- One day careers conferences for up to 100 sixth formers
- Run at venues around the UK twice a year
- Speed networking to chat to young professionals
- Highlight importance of transferrable skills
Sixth Form Materials Prize

• Run on behalf of the Armourers and Brasiers’ Company and Tata Steel
• Competition for students aged 16-17 studying at least one post-16 STEM course
• Designed to encourage students to develop a sustained interest in materials science just before they make their university choices
• Significant prizes for students and their schools
Support for teachers

Improving teachers’ knowledge and understanding in order to promote more confident and enthusiastic teaching is crucial to improving student outcomes.
Annual SAS conference

• Free one day conference for teachers
• Topics have included surface engineering, smart materials, nanotechnology, modern materials, materials in sport and the fundamentals of materials science
• Bursaries for teacher travel or cover are available.
Polymer Study Tours

- Free four day conferences for teachers
- Include lectures, lab classes, workshops and company visits
- Focus on plastics and the polymer industry
- Run by Horners’ Company, BPF, IOM3 and host centres
- Bursaries for teacher travel or cover are available.
Other teacher CPD

• Attend Association for Science Education Annual conference and selected regional events
• Give lectures on Salters’ Festivals of Chemistry
• Run sessions with ITT providers
How can you help?

- Make local schools aware of us and encourage them to join the Schools Affiliate Scheme
- Sign up as a STEM Ambassador and join our List of Willing Speakers
- Contribute to the SAS newsletter
- Assist in the development of support materials
- Develop a resource that can be delivered to students at careers events
Summary

• Developing a set of resources which span the whole school experience
• Trying to inspire the next generation of scientists and engineers
• Getting through to teachers is of primary importance
• We need your help to be able to achieve this