



Guidelines for developing and evaluating resources and other activities with or for schools

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This Guide

In this document the Engineering Education Alliance (**EEA**) focuses on best practice guidelines. These guidelines are particularly aimed at those within the Science, Design & Technology, Engineering and Mathematics community who are considering developing, or assessing for continuation, **any activity** that falls under any heading on page three of this leaflet, which seeks to involve schools, teachers or pupils.

The guide is also intended to give schools a check-list for evaluating:

- activities on offer
- their own responsibilities in relation to partnerships

The Engineering Education Alliance (EEA)

was formed in early 2002 following consultation with the engineering institutions and related organisations. The alliance provides a forum for discussing the education-related needs, concerns and possible joint actions of its membership and, in particular, is seen to act independently of any one organisation or agenda. Membership includes the Professional Engineering Institutions and Professional Affiliates, Engineering Council UK, Engineering and Technology Board (etb), Royal Academy of Engineering, EEF, the manufacturers' organisation, SEMTA and SETNET.



Institution, Organisation or Company needs

Schemes should:

- Strengthen links with education
- Present a positive image of engineering to young people, be exciting and rewarding
- Involve teachers and improve their understanding, both of the engineering sector and engineering as a career
- Involve the whole ability range of students
- As far as possible, look to be sustainable over a period of time (commensurate with the initial cost)
- Demonstrate that involvement has a positive effect within the organisation itself and raises the organisation profile and image in the local or national community
- Have the interest and support of employees at different levels
- Provide opportunities for company staff to develop their own skills and learning
- Where appropriate, be useful in piloting management training programmes for staff, possibly gaining accredited continuing professional development for them
- Where appropriate, generate recruiting opportunities through a greater awareness of student capabilities in relation to company prospects

Schools and businesses working in partnership share the risks and rewards. Schools are therefore urged to be equally clear about their aims, objectives and other responsibilities in making partnerships work.

The key question for all is: do the educational benefits of the partnership outweigh the potential disbenefits?

Best practice principles

First Steps

Any company / organisation or Institution thinking of starting a new, or assessing for continuation, any STEM activity is strongly encouraged to:

- first refer to the SETNET website www.setnet.org.uk
- and
- consult a local SETPOINT Manager (see SETNET website)

in order to establish whether, for example, collaboration with an existing scheme/programme might be more appropriate, and to ascertain where to seek educational and schools-interface advice and support.

The Engineering Education Alliance (eea@setnet.org.uk) might also be consulted on collaborative proposals.

Educational Value and Content

- Activities should engage the imagination of the student and encourage a wider interest in the subject - not just be task oriented.
- Any activity involving teachers or other adults in classrooms should seek to encompass support of:
 - subject knowledge
 - teaching knowledge (how people learn, how to support learning, organisation of learning)
 - school knowledge (how schools operate, how to bring about and sustain change)
- Impact must be evaluated, especially in terms of influence on children's learning; and there is a need for some qualitative as well as quantitative data. The results of the evaluations should be fed back to sponsoring organisations so that they are aware of shortcomings and possibilities for improvement.
*(See examples of ways of evaluating at: www.setnet.org.uk including the DfES guide *How to Assess Education Initiatives*)*

- Where activities seek to link areas of the curriculum, or for example, theory and application, particular attention should be paid to ensuring that linkages are appropriate, relevant, even-handed and likely to be made in practice.

- Activities should be relevant and crucially add educational value to teaching and learning. This must include attention to inclusion and progression issues.

- Ensure that activities do not, even inadvertently, encourage unhealthy, unsafe or unlawful activities.

- The company / organisation / institution should clearly state its purpose in providing the activity and the aims and objectives of that activity.

- The company / organisation / institution should ensure that all information supplied is accurate and current materials should be dated, especially where the information or resource is time-sensitive and reference should be made to authors involved.
- Expressions of opinion should be distinguished from statements of fact.
- Explicit sales (including career-related) messages should be avoided.
- Any specialist resources required by schools to utilise or demonstrate the activity must be highlighted from the outset, as must a clear statement of expected commitment in terms of time and other effort by staff, students and any other people involved.
- Materials and other activities should respect diversity of gender, race, disability and cultural issues and reflect contemporary UK society.

Branding & compliance

- The level of branding should be appropriate to the activity. Branding is acceptable but should not be excessive.
- Resources should comply with the British Codes of Advertising and Sales Promotion and other relevant legislation.
- There should be a method of updating the resource to ensure continuing compliance with the British Codes of Advertising and Sales Promotion and other legal requirements.

Development, Consultation and Piloting

- Anything that a company, organisation or institution intends to do that is related to schools, pupils or teachers should be developed in partnership with teachers, pupils, parents and educationalists. It should be piloted as widely as possible, with independent evaluation and improvement, before launching.
- If the resource or other activity is intended to be used nationally or regionally, research, development and testing should reflect variations in the education system (including, for example, differing curriculum models in England, Scotland, Wales and Northern Ireland).

Distribution of Material

- A company / organisation or institution should not send unsolicited resources to schools.
- The resource should be carefully labelled and should specify both source and target audience.
- The company / organisation / institution should not impose any restrictions on the school in return for the distribution of the resources e.g. data collection of pupils; restricted use of suppliers.



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The Institute of Materials, Minerals & Mining



INSTITUTE of HIGHWAY INCORPORATED ENGINEERS



THE BRITISH COMPUTER SOCIETY



From sustainable programmes to one-offs

In developing these guidelines the Engineering Education Alliance realised that people have very different understandings of the sorts of activities we were addressing. We concluded that the guidelines should cover all types of engineering, design and technology, science and mathematics related activities with schools.

It is often said that schools' STEM (Science, Design & Technology, Engineering and Mathematics) support consists of at least 1,500 initiatives. However, very many are one-off 'resources', 'initiatives', 'activities', 'competitions' and 'celebrations'. These terms are frequently used interchangeably with 'schemes' or 'programmes'. Our attempt to distinguish categories may therefore be of help:

Schemes, programmes

These terms are used to describe opportunities for schools to enhance and enrich the formal curriculum (Early Years, National Curriculum and post-14) or informal curriculum (clubs, visits, work or community experience, exchanges, etc.) by involving teachers, other adults and pupils in educational activity. They usually have in common some face-to-face activity with teachers and students (so, for example, often include sustained teacher and other adult professional development and support), and are of substantial scale. National schemes support individual initiatives as well as celebrations. They are embedded in school plans and are sustained.

Initiatives

'Initiatives' is often used to describe either a small-scale or initial pilot of a scheme / programme, or a one-off 'activity'. It can be at national, regional or local levels.

Activities

'Activities' as a term is used both to describe elements of schemes / programmes (regular activity days / summer schools, etc.) or 'one-offs'. Some will be designed to support enhanced learning opportunities, others will not. The former, if sustained, are in effect, 'schemes' or 'programmes'.

Resources

'Resources' is often used as a term to describe materials (printed, CD, web-based, video, etc) intended to support and enhance teaching and learning in the formal or informal curriculum. It is also often used to describe equipment, components, materials, kits and so forth, as well as people resources.

Materials

'Materials' includes career-related materials, often designed tenuously or not at all to support teaching and learning. Curriculum support materials, people and equipment resources developed for sustained support of teaching and learning are directly related to 'schemes' or 'programmes', where as career-related and other resources are not.

Celebrations and competitions

These are found at national, regional and local level. Those which are purposefully designed to consistently support educational enhancement are effectively 'schemes' or 'programmes'. Others are not.

Person to person

The saying that 'unless a resource is accompanied by a warm blooded person, it will be dead on arrival in schools' is perceptive. Essentially, categories above that fit securely under sustainable 'schemes' or 'programmes' which support enhanced teaching and learning usually include face-to-face professional development and on-going support.

- Not all STEM 'schemes' or 'programmes' are exemplary, or fulfil a need. It is acknowledged that some need to be critically reviewed.

These guidelines have taken into account the needs of professional engineering institutions, engineering-related organisations and companies as well as schools and are based heavily on the more extensive "**Guidelines of Good Practice for Commercial Activities in Schools**" Incorporated Society of British Advertisers (ISBA), the Consumers' Association and the DfES. The full guide can be found at:

www.isba.org.uk/publications/downloads.html

The **Engineering Education Alliance** acknowledge and fully support, the 2001 guidelines.



Institute of **Physics**



IAgrE





A message from the Chairman of the EEA

The Engineering Institutions Education Alliance (known as the EEA) was founded in 2002 to bring together the Professional Engineering Institutions and Affiliates, EEF, the manufacturers' organisation, the Royal Academy of Engineering, SEMTA and SETNET, with membership of the Engineering Council UK and the Engineering and Technology Board (etb). All with the aim of providing a co-ordinated, simplified and consistent approach to the promotion of engineering initiatives in schools.

One of our early projects was to research and publish a set of guidelines to be used in assessing the many initiatives and externally initiated projects involved in the promotion of 'engineering' in schools.

It was unanimously felt that establishing these guidelines could be of great help to the often overburdened teaching staff in schools, as well as giving guidance and valuable endorsement to outside bodies, particularly the business world. All can benefit by having a clear set of guidelines and standards supported by the engineering institutions and associated bodies, on which to focus and direct the approach to this important educational area.

This document with its recommendations has been developed by a working-group of the EEA, to provide guidelines and standards which have been unanimously endorsed by the membership of the EEA.

I have no hesitation, given such comprehensive endorsement, in recommending these guidelines for adoption by all those involved in developing engineering initiatives and special projects in schools. I believe this document is a significant step forward in providing clear direction for raising the credibility and interest in 'engineering' as well as simplifying the relationship of education with outside bodies including the business world, whose support is so important.

Professor Merrick Taylor OBE

Acronyms

EEA	Engineering Education Alliance	SETPOINTS	Local arms of SETNET - Provide a 'one-stop shop' for support and information about science, engineering, technology and mathematics
STEM	Science, Design & Technology, Engineering and Mathematics (including ICT - Information Communications Technology)	SEMTA	Sector Skills Council for Science, Engineering and Manufacturing Technologies (including Mathematics)
SETNET	Science, Engineering, Technology and Mathematics Network		

For further information, including sources of information to support implementation of the guidelines:

www.setnet.org.uk

E mail: eea@setnet.org.uk