

EDUCATION

making science sexier

Rolls-Royce has put large amounts of time and money into helping schools, colleges and universities bring science education to life for students. It hopes the effort will also benefit its employees and contribute to enhanced relationships with local communities

As a global employer of scientists and engineers, Rolls-Royce knows that the future supply of skills needed in its industry is at least partly dependent on the quality of science teaching in schools, colleges and universities.

Research published in March 2006 by The Royal Academy of Engineering showed that more than a third of engineering businesses in the UK believe engineering graduate shortages and skills deficiencies are costing them money through delays in new product development and additional recruitment costs. The study revealed that the number of students opting for engineering courses in the UK has remained static over the past decade at 24,500 per year, and that the proportion of engineering students at university has dropped from 11 per cent to less than eight per cent. Part of the solution, says the Academy, is ‘to start in schools, where we need to encourage more students to choose maths and physics’.

Nurturing young scientific talent at school level, then, is a natural focus for Rolls-Royce’s corporate social responsibility programme: not only a high-profile way for the company to address the skills shortage, but a logical – and hopefully reputation enhancing – way to put something back into the communities in which it is based. As a result, the company is now heavily involved in projects across the US, UK and Europe that aim to get pupils more fired up about science subjects – and has been spending more than £500,000 (\$920,000) a year on such programmes.

One of its newest initiatives is the Rolls-Royce Science Prize, established by the company in 2004 and designed to promote fresh science teaching ideas and contribute to the continuing professional development of teachers.

Open to schools and colleges across the UK and Republic of Ireland, the scheme distributed £75,000 to 39 winning schools in its first year, with £100,000 earmarked for this year.

Teachers of pupils aged three to 19 are invited to form Rolls-Royce Science Teams and submit proposals for improving science teaching in their school or college. The teams of between three and

the company

Rolls-Royce is an aerospace, marine and energy company that supplies power systems and services to nearly 600 airlines, 160 armed forces and more than 2000 marine customers, including 70 navies. It employs around 36,000 people, of which 22,000 are in the UK, 5000 in the rest of Europe and 8000 in North America. Annual sales total £6.6 billion. It:

- n was placed first in its business sector in the Business in the Environment index of corporate environmental management in 2005
- n includes work on community projects as an integral part of its training programme
- n works with The Prince’s Trust charity to help young people living near some of its UK sites to boost their confidence, motivation and skills – and to provide grants and loans to 18–30 year olds who want to start their own business
- n requires all its main suppliers to comply with social and environmental standards set out in the company’s *Advanced business relationship manual*

the quality and quantity of practical science work in school has improved as a direct result of the scheme

six people, led by a teacher, then submit more detailed objectives, implementation plans and ways of evaluating the work.

Nine short-listed teams are awarded £5000 each to put their teaching strategies into practice over a period of 24 weeks, supported by a mentor. The winning and runner-up teams receive a further £15,000 and £10,000 respectively to invest in their school or college’s science programmes. As a bonus, the winning team also gets to spend a day with the Red Arrows, the Royal Air Force aerobatics team – something in itself that may spark interest in working for a jet-engine maker like Rolls-Royce.

The Science Prize complements Rolls-Royce’s existing work with schools. Its Science Alliance project was initially developed as a small scale pilot in 1998 by the company’s Naval Marine business based in Derby. Now fully fledged, Science Alliance has lent out the skills and experience of around 60 of the company’s engineers to more than 50 classes of primary school children – about 1300 pupils in all – to cultivate an interest in science at an early age through practical study of engineering. An evaluation of the scheme in 2003 found that both the quality and quantity of practical science work by pupils had improved as a direct result – and that results for Key Stage 3 National Curriculum Tests in science had shown sustained gains. The company’s



Rolls-Royce programmes, including this one at Crown Woods School in Eltham, south east London, have tried to make science more engaging and exciting for primary, secondary and college pupils

engineers can also improve their employment prospects by registering their work as part of the National Schools Associate Programme, which offers formal accreditation for industry-related education.

Rolls-Royce encourages its staff to become more informally involved in engineering education outreach work in primary and secondary schools, and also in universities. ‘Working directly with young people in schools puts engineers in a very different environment from their normal working life, and being involved in the planning and delivery of education outreach activity has helped many of them develop valuable new skills,’ says Emma Medd-Sygrove, Rolls-Royce’s head of CSR communications. ‘It’s no coincidence that our initiatives involve employees; it not only makes the presentation of science more interesting, but also gives our staff a career development opportunity by applying their skills in a new way, or by giving them a chance to develop new ones.’

Through 15 ‘university liaison teams’ in the UK, Rolls-Royce staff at all levels are encouraged to deliver guest lectures at universities and to run skills workshops on campus. Again, this helps the students while developing Rolls-Royce employees’ project management and communication skills and raising the profile of the company among prospective employees. In a related initiative in the US, Rolls-Royce has been working with the Indiana state Department of Education to offer internships for students and teachers at Rolls-Royce facilities – and has found that 98 per cent of those involved with the project who take up an engineering degree course go on to complete it successfully.

Duncan Forbes, Rolls-Royce executive vice president of marine engineering and technology, says companies like Rolls-Royce wage a constant battle to create a big enough pool of talented prospective employees – even though many surveys

show that job satisfaction is high among those who eventually do go into engineering. ‘We desperately need teachers and lecturers to enthuse young people and help nurture the talented scientists and engineers of the future,’ he says. ‘So we firmly believe that companies like ourselves have a vital role to play in re-stimulating interest in the sciences in our schools, and by bringing the subjects to life through showing their relevance and value to our everyday lives. Of course there’s a lot of self-interest involved, but at the same time we’re helping to serve the needs of society as a whole – and we’re also engaging with other stakeholders. What we’re doing creates goodwill in many spheres, and it gets our employees out into the wider community, where they can enhance their own skills and widen their horizons. That’s why we think these initiatives are among the most important things that we do.’

Further information: www.rolls-royce.com and www.rolls-royce.com/scienceprize

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Companies frequently are heard to complain of skills shortages that education initiatives are failing to meet. Here is an example of a company actively doing something to help itself and to create an interest in science and engineering in young people. This is a win-win type opportunity. The results mentioned demonstrate the benefit to students and their teachers of participating in the Rolls-Royce Science Prize. They also show the benefit to employees who take part in the company’s outreach programme in schools.

features of note include:

- companies actively participating in education can bring benefits to all those involved
- relatively small investment has longer term payback in education
- the programme is sustainable and demonstrates the company’s commitment to the communities in which it operates

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