

EDUCATION

Pupils in the driving seat

Children are being encouraged to engineer solutions for a brighter future. **Anne Giacomantonio** reports

Engineering has an image problem. It's not that it's un-cool or ugly or boring; it's that it doesn't have an image at all. An example of this was demonstrated to me at the launch of The Big Bang, UK Young Scientists and Engineers Fair.

One of the speakers there, an engineer himself and head of a body that promotes engineering, said the hardest question to ask school children is: "Who is the most famous engineer in the UK in the last 50 years?" Or, for that matter, "Can you name a single famous British female engineer?" Ask them to name a sports person, someone from the world of entertainment or even a politician and they'll answer, but when it comes to engineering they draw a blank. So why does the subject remain faceless?

Alex Childs, engineer and mathematics teacher at Penair school in Cornwall, worked on the Airbus A380 before becoming a teacher. He now runs an after-school engineering club for year 8 children. "It gets the kids into what engineering actually means rather than the nuts and bolts and stuff," says Childs. "Some of the kids who started coming along just wanted to weld and

do design and technology, which is not really what it's about.

"For me, my maths teaching is always linked into engineering. Rather than just working on trigonometry, we work on engineering and science tasks as well. Engineering is problem solving, so it works really well."

The Institution of Mechanical Engineers (IMechE) recently ran a pilot discussion day at Penair called "Our World in 2050", which was designed to introduce and promote engineering to 12- to 13-year-olds.

Jadene Martin, a 13-year-old year 9 student, says she found the day very interesting despite her lack of exposure to engineering previously. "We discussed what it would be like in the year 2050, and then we split up into groups of four to design something that we would want or need. We tried to design something that would prevent global warming," says Martin.

Martin and her friends chose to design a range of cold-weather clothing that could also be used to recharge personal technology such as iPods. "We wanted to do something different because everyone was doing electrical stuff," she says. She adds that it was great to explore and discuss topics that

she and her fellow female friends don't usually get involved with.

Leigh Technology Academy in Dartford participates in the IMechE's Greenpower competition, which encourages schools to engineer an electric car that will race against other schools. Sam Hudson, 16, is in year 11 at Leigh and really enjoyed the whole process of designing, engineering, building and, hopefully, racing an electric car.

"We analysed how long the car can run on the tyres, on battery and on the driver's strength and endurance. We used the engineering skills we learnt in lessons to manufacture the parts and cooling systems. That was quite a challenge," says Hudson.

What does he think is the main engineering challenge for the future? Energy, he says, even if it's specifically related to motorsport. "I think we need greener fuels and more recycling in the motorsport industry," he says.

Higher up the engineering ladder, Lindsey Malcolm, a graduate in engineering and member of the IMechE's Young Engineers panel, does his part to improve the image of engineering by promoting it in schools. He believes that the most pressing issue is climate change. "We are at the stage now where



Clean sweep: Greenpower turns children on to low-emission motoring

people are starting to wonder whether mitigation and reduced carbon emissions are doing enough or whether we need to start looking at geo-engineering," Malcolm says.

With a higher profile there is a chance that the engineers of the future will be able to solve the big issues that affect our planet both today and tomorrow.

ENGINEERING NEWS IN BRIEF

Britain's got talent

Entry forms for the Manufacturing Excellence Awards programme need to be in by the end of February. Run by the Institution of Mechanical Engineers (IMechE), the awards - which include a category for Sustainable Business - attract entries from manufacturing businesses in all sectors. Because of the unique format of the Awards, every entrant receives a customised benchmark report rating their performance against best practice and highlighting areas for improvement. Business Minister Shriti Vadera comments, "Manufacturing is the unsung hero of the British economy. UK manufacturing companies are a global success story based on their productivity, innovation and specialist skills. Innovation will be key to maintaining their record in a fiercely competitive global market. The winners and finalists showcase the best of Britain's talent." The award ceremony for 2009 takes place on 25 June. For details, visit www.mxawards.org.



Bright spark: an apprentice at Cammell Laird shipyard GETTY IMAGES

team with a small single-seater racing car. This year, for the second time, the competition will include an alternative fuels category - otherwise known as Class 1A. For further information, see www.formulastudent.com.

A grand day out

Engineering Your Future - A Careers Awareness Day will take place on 6 March at IMechE in London. Now in its ninth year, Engineering Your Future has become a key date in the diary of Greater London secondary schools and sixth form colleges. This one-day informative and hands-on event provides an opportunity for 16- to 18-year-olds who are studying science, maths or engineering to see that engineering is a career worth pursuing. The day is split into five sessions providing insights into civil, electrical, mechanical and marine engineering; each of which

lasts approximately 45 minutes. For more information, visit www.eyf.org.uk.

Opportunity knocks

IMechE is making a growing number of volunteering opportunities available in which people are invited to get involved in any of the institution's key theme areas - environment, energy, transport and education. Whether you're looking for a one-off volunteering role or an ongoing commitment (eg. monthly), IMechE says it can find something for you. Participation in engineering-related events can often work towards charter-ship, developing competencies through categories including communication, management and leadership. Additional benefits include sharing best practice and gaining valuable experience and transferable skills. For further information, please email p_bosman@imeche.org.

Formula for fun

Formula Student 2009, Europe's largest student motorsport event, will take place at Silverstone from Thursday 16 to Sunday 19 July. Run by IMechE in partnership with well-known companies in the industry such as Airbus, Formula Student promotes careers and excellence in engineering, by challenging university students to design, build, develop, market and compete as a

RACING GREEN LOW CARBON RACE CARS ARE GO.

FORMULA STUDENT

Institution of
MECHANICAL
ENGINEERS

The Institution of Mechanical Engineers is racing to find the world's greenest eco-car.

Low carbon race cars are leading the way in developing technology to reduce carbon emissions. See them in action at Formula Student at Silverstone, 16-19 July 2009.

For further information about Formula Student Low Carbon please visit: www.formulastudent.com



Improving the world through engineering