

Pupil POWER

The Sellafield Education Newsletter

January 2009 Issue 2

Welcome to Pupil Power

Welcome to the second issue of Pupil Power covering some of the activities which the Sellafield Education Team and our Science and Engineering Ambassadors have been involved in over the autumn term. This time we've also included news from the Yottenfews Project (see centre pages).

As well as workshops at Yottenfews and events to boost interest in science, technology, engineering and maths (the STEM subjects) we can also consider applications for financial support for appropriate educational projects. More information can be obtained from me or Pauline Farrell (see contact numbers below).

We look forward to seeing you at workshops and events throughout the year.

Eileen Turner
Corporate Responsibility Manager (Education)



Education Team left to right: Millie Clarke, Eileen Turner, Liz Temple, Pauline Farrell, Louise Tyson, Corrin Nicholls



On-line educational resources

Our educational resources are available on our website (www.sellafieldsites.com) and can be found in the 'Succeeding with Science' section under Educational Support, within the Corporate Responsibility page. Coordinated by Pauline Deans from our Risley office they are produced for us by teachers for teachers and fit precisely into the National Curriculum.

The latest is the Health and Safety Reporters pack which develops Key Stage 3 student's understanding of health and safety issues. Coming up are 'Lift-off with Ziggy' - a sci-fi game developing problem-solving and thinking skills in 7-9 year-olds, and 'The Insides Story' - an interactive virtual body allowing 14-19 year-olds to see the effects of smoking, drinking excessive alcohol and other lifestyle choices.

Another useful educational resource for older students are the Sellafield Ltd podcasts which give an insight into some of the main plants at Sellafield. (These can be found in the video library section of the media page).



Inside this issue

- page 2 Engineering Careers
- page 3 Material Science & Skills Fair
- page 4&5 Yottenfews News & planner
- page 6 Engineering Education & Japanese Links
- page 7 Oscar steals the show & Lab Lorry!
- page 8 Feedback form

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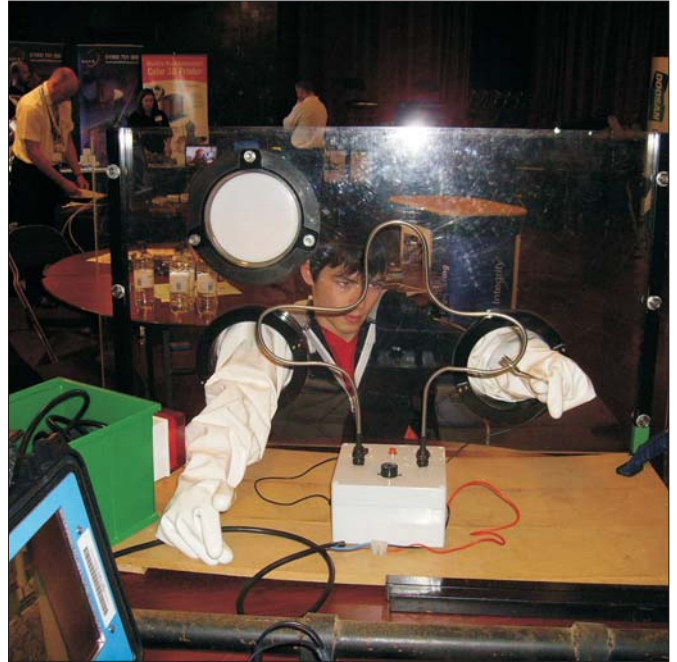
A Career in Engineering

Strong engineering skills will be an essential prop to the future economic well-being of West Cumbria and of the UK as a whole. We were therefore delighted to help St Benedict's Specialist Engineering School at their fourth Engineering Awareness Day.

Over 200 young people and their parents went to Whitehaven Civic Hall on a wet and windy Saturday in October. There they met enthusiastic engineers and Science and Engineering Ambassadors from Sellafield and other companies who discussed their jobs, suitable subject choices, and routes into engineering careers.

Sellafield Education's Pauline Farrell said: "Our young graduates and (sometimes less young) engineers met a steady stream of visitors all keen to try out the glove box, the flexible camera which can look into pipework in radioactive areas, and to examine the precise engineering of a mock-up Mixed Oxide Fuel assembly.

"Perhaps more important was the sound advice which we could give to the young people and their parents and we look forward to continuing our involvement with this successful event for many years to come. Well done St Benedict's."



Concentration: Intricate work inside a glove box

Engineering your future

Seventy sixth form students were given insights into careers in mechanical, civil, electrical, chemical and nuclear engineering at a full day event at the Sellafield Centre in October.

Organised by the West Cumbrian branch of the Institution of Mechanical Engineers and Cumbria Stemcentre. Practical and interactive sessions were given by members of the IMechE, Institute of Physics, and the Royal Society of Chemistry amongst others. Students and teachers alike rated the day as enjoyable as well as informative. The careers 'marketplace' was particularly valuable and 72% of the students said the day had helped them in making their career choices. Many would recommend friends to attend future events.

Sellafield Commercial Manager, John Sidney, told the students: "There are huge opportunities available in a wide range of engineering disciplines. If you choose one of these careers you will be at the forefront of technology and help to drive the country's future success."



IMechE Mini Engineering Day

Following the success of the main engineering day, two hundred 10 and 11 year-olds were introduced to job possibilities in science and engineering at a day-long event at the Lakes College in November. This again was organised by the West Cumbrian branch of the Institute of Mechanical Engineers with whom we have a long and happy working association. Many of their members work at Sellafield and actively support our educational activities.

The primary school children spent a packed day building a mini buzzer game challenge, exploring aerodynamics by making and flying paper aeroplanes, launching rockets and building bridges out of KNEX material.

Linda Shields, Regional Affairs Co-ordinator with Sellafield Public Affairs said: "I do a lot of work with the Scouting organisation but this was my first event as a Science and Engineering Ambassador. I was a bit nervous at first but it was great to see the level of enthusiasm from the pupils who were all delighted to be able to take their finished project home."

A Recipe for success

Take 90 students, some polystyrene, bubble wrap, a piece of tape – add a selection of raw eggs, agitate nicely and what have you got

A smashing day during which pupils learned the importance of material science in everyday life, thanks to the help of Dr Diane Aston, Education Co-ordinator, IOM3 (Institute of Materials, Minerals and Mining).

Year 9/10 (13 - 15 years old) students arrived at Sellafield's Learning and Development centre on 14 November knowing nothing more than that they had been invited to a Material in Action day.

On arrival Diane gave the students a presentation pointing out that everything around us comes from the earth's crust. We source valuable natural resources which Materials, Minerals & Mining engineers help us to harness.

The pupils were then mixed into teams

and given their kit – pieces of sponge, polystyrene and bubble wrap, a length of tape, packing 'wotsit' shapes, a pair of scissors and one pre-weighed, numbered fresh egg. They had to design a body suit to protect the egg when it was dropped from a height, using as much, or as little, packaging as they chose.

Much thought was given to the team names – Sam 'n' Ella, Eggy Eggbert, Eggsplatives and Sunny-Side-Up to name just a few.

The teams cracked on and created several imaginatively designed eggs before Diane re-called them all to re-weigh the eggs before the drop test. Sellafield Science and Engineering Ambassadors were on hand to cut open the egg bodysuits after impact to check whether it was all a bad 'yolk' or whether an eggcellent result had been achieved.

Surprisingly few bit the dust. The majority had been well protected by the eggspertly constructed suits. *(That's enough egg jokes Pauline!)*

A great day was had by all, Debs Hayman-Start, a member of IOM3 and organiser of the event said: " The Materials in Action day gave students from local schools the opportunity to become material scientists for the day and to take on a design, build and test challenge."



The egg packers hard at work

Skills Fair



Lovely bashed cornflour

Undaunted by the prospect of nine-hundred 13 to 14 year-olds descending over two-and-a-half days, a team of enthusiastic volunteers beavered away to ensure that the skills fair held at the Sellafield Centre on 26 to 28 November was yet again a resounding success.

Partners from the Cumbria 14-19 Partnership, Connexions, Lakes College, Aim Higher and Cumbria Stemcentre worked with our education team and Science and Engineering Ambassadors, and with many other companies, to deliver 14 career-based workshops.

Ambassadors from Sellafield Ltd and the National Nuclear Laboratory delivered sessions on careers in science, manufacturing, engineering, business and enterprise and land based careers. Others covered topics such as hospitality, sport, public services and construction.

The Science session entailed bashing cornflour mixtures with a hammer, testing the pulling power of Velcro and microscope

work. The Manufacturing group introduced students to workshop conditions, producing paper aeroplanes to time, specification and cost.

Finished products were approved or rejected by our very own Russian Admiral, Ben Lanigan of Manufacturing Support who said: "The exciting and innovative 14-19 diplomas promise to bring great benefits to students and employers alike. Employers will have the opportunity to bring on board new employees with a sound skills base appropriate to their particular work sector."

The event also included a 'Who Wants to be a Millionaire' style manufacturing quiz which was keenly contested. First prize went to West Lakes Academy student Reid Thompson who won an Ipod.

Breathing a sigh of relief Pauline Farrell said: "All the hard work and effort behind the scenes was worth it to see students becoming so involved and getting so much out of the sessions. I would like to thank everyone who gave their time to design and deliver the activities."



'Admiral' Lanigan

Waberthwaite Forest School

Waberthwaite School is lucky enough to be part of the Forest Schools initiative, a national education project designed to help children of all ages discover their natural environment. Along the way they develop multiple skills which include problem solving, risk assessment and learning appropriate boundaries of physical and social behaviour.

Members of the Sellafeld Education Team were invited to join in the forest activities on a damp day back in November. Wrapped in warm coats, hats, scarves, gloves and over-trousers the infant and primary children identified winter twigs in the hedgerow, experimented with different base shapes to build a twig tower and, after a hot drink, enjoyed a 'Woodland Workout' warm up – not that anyone appeared to be cold, just totally absorbed in their afternoon.

Yottenfews Project Manager Millie Clarke said: "We were very impressed by the cooperative way in which the children worked and the extent to which they communicated with and listened to each other.

"We've learned a lot from this visit and

are itching to take some of the ideas back to our Yottenfews Project. We're so grateful to teacher Lesley Bain for inviting us and to the teachers and children for making us so welcome. It's great that other local schools are now developing their own Forest School and we now intend to join the initiative ourselves."



In the pink. Learning about nature (with thanks to Lesley Bain, Waberthwaite School)

Rocks and Soils Workshop



Pupils carry out permeability tests on soil

Rocks and Soils workshops are now taking place at Yottenfews. They run from November to March and are designed for Year 3 children (7-8 years) and tailored to the National Curriculum.

Groups carry out permeability tests on different rocks collected from just outside the Yottenfews barn. They also test chalk and collect soil to examine and test for permeability. Fair testing, accurate timing and measuring make this a very busy visit with the emphasis on hands-on activity.



Collecting rocks and soils at the Yottenfews Project

Deck the Halls

An education workshop with a difference took place at Yottenfews just before the Christmas break. Guided by qualified forest schools practitioner Helen Elvin, pupils from St Mary's School at Kells in Whitehaven were able to make some wonderful Christmas wreaths and stars from dried willow twigs.

Millie Clarke, Yottenfews co-ordinator, said: "Helen is a local crafts person who trained our team and then worked alongside us on the day. Willow weaving is a good example of a local, traditional craft which uses sustainable materials."

The willow, similar to that grown at Yottenfews, was cut a year in advance and then soaked in water for about a week before the workshop took place.

Commenting on the workshop Mrs Sibbald, a teacher at St Mary's, said: "What a fantastic workshop. The children have thoroughly enjoyed creating wreaths and stars and they are very proud of their end products.



St Mary's pupils show off their work

"This willow workshop has really enriched the art, design and technology and science curriculum for my class. Thank you."

Alice, one of the St Mary's pupils said: "The hardest bit was trying to bend the

sticks without breaking them. I'm going to take mine home and hang it up."

"It was awesome getting to make them. I'm going to put mine on the Christmas tree, and give it to my mum as an early Christmas present," added Curtis.

Yottenfews Planner

Year	Main themes
Rec	First hand experience, observation, sensory beds, listening, woodland trail, looking in pond trays.
KS1	Comparing seasons, animals & plants in the environment, mini beast hunt and use of tally to record, looking in pond trays or short pond dip, woodland trail, work on materials.
Y3	Rocks & soil - permeability of soils, permeability test on rocks, look and collect various rock types, accurate timing & measuring water, fair testing. Runs from 15th November to 1st March.
Y4	Habitats including food chains, detailed study of wood and pond dipping, keys available, various habitats large and small such as orchard, logs, grassland, hedge, wall, wild flowers, herb bed.
Y5/6	Investigating rivers - including mans influence and historical aspect, middle and lower course visited with meanders, river mouth, confluence, erosion and deposition etc.

Beaver Scouts at Sellafield

Fourteen Beavers from Wigton, along with their adult helpers, visited the Yottenfews Project in October to achieve their Experiment Badge.

The group carried out a series of experiments on senses, magnets, testing acid and alkali with litmus paper, air pressure, light and static electricity. The hard science was followed by a treasure hunt where the unearthed 'treasure' was used to build an animal's home in the woods at Yottenfews.

Sellafield Education programme also supports the Brownies Wildlife Explorer Badge and the Cub Scout Science Badge.



Launching Engineering Education

This year's Engineering Education Scheme got off to a flying start at the scheme launch day held at Sellafield in October.

Fifty-six sixth form students from seven Cumbrian schools were matched with engineers from industry and given briefs on real-life engineering problems. Once they had been able to explore the projects with the engineers each team of students gave a presentation on their particular project.

The Engineering Education Scheme is just one of the schemes delivered by the Engineering Development Trust. It involves students in an intensive learning programme running from the launch in October to the celebration and

assessment day at Newcastle University in April. There they present their work and answer questions in front of an audience which includes VIP guests from industry and academia.

Another exciting part of the project is the three-day residential programme at Newcastle University where students and engineers work alongside North East teams (no rivalry there of course!) and university staff. There was also time to enjoy a Christmas party with their North East colleagues. Guest speakers at a formal dinner reinforced the importance of engineering to society.

Since the launch day engineers have visited the schools each week to work with the students and, where possible, students visit the site to see the problem in situ. Teams from St Benedicts, Millom and St Bees schools are being supported



by engineers from Sellafield, whilst Risley engineers are supporting teams from Deanery High School and Priestley College schools. Projects include designing a system to remove the THORP shear pack through wall camera tubes and the separation of uranium lumps and powder collected during maintenance activities.

Picture perfect

'Aspects of Life' was the theme of this year's picture exchange – a hands-across-the-sea project involving schools in Japan and West Cumbria. Fifty children from local schools created images of their families and friends, hobbies, and English customs. At the same time children from the Tokai and Tsuruga districts of Japan were busy producing artwork which showcased their own lives and customs.

Artwork from both countries was exhibited at the opening ceremony at the Lakes College in October before being shipped for exhibition in Japan. Special guests at the ceremony were Mr Hiroyuki Ono from the Japan Atomic Power Company and his wife. They were welcomed by Shirley Williams, Head of Public Affairs at Sellafield and Danny Braithwaite, Head of Faculty at Lakes College. Mr Ono expressed his delight at the hard work done by all the children and the insight it gave into the lives of children in both countries.

The pupils, from St Marys Harrington, Victoria Junior, Westfield Nursery and Primary, Distington primary and Beckstone primary schools, were kept amused by the Party Science Show put on by



Corrin hosts the Party Science show



Mr and Mrs Ono exchange gifts with Shirley Williams

Sellafield's Corrin Nichols and Louise Tyson before being presented with gifts from Japan and England.

After the event Shirley Williams said: "Although this is the ninth picture exchange we have arranged with our friends from the Japan Atomic Power Company, it's the first year we've worked in partnership with the Lakes College. The enthusiasm and expertise of their art, graphic design, marketing and catering students and the support of their staff has been superb and I'd especially like to thank the art students who worked with the children and our Education team. This has been a great example of all age groups working well together across two communities."

Oscar steals the show

December's Sellafield Suppliers Forum saw over 300 people from a wide variety of companies through the doors of the Sellafield Centre. We took the opportunity to explain to them the many ways in which business can help schools, including using the Science and Engineering Ambassadors Scheme.

Our old friend Oscar the robot made a special guest appearance for the day, with Pauline Farrell from Sellafield and Dominic Rhodes from the National Nuclear Laboratory in supporting roles. The visitors found some of the props and gadgets we use intriguing and a big hit was the go-kart designed and built by

one of the teams from this year's St Benedict's race day.

After the day Oscar wanted us to send you his own impressions:

"Hi readers you missed a great day. Not only did I mingle with suppliers, but I came across some of the new management team. Although humanoids aren't up to my standards these seemed OK. They have big plans for the company and I'm sure that will include educational events like the robotics days (not that I'm biased towards robots you understand).

"As ever, Pauline was on hand to boss me about when things got busy. I even



heard a rumour that her education stand was up for best stand - think that was for having to put up with me! We even found time to run a competition from our stand, with first prize being a relative from my mother's side - a Roboraptor with attitude!"

Lab in a Lorry

On the wettest, windiest two days in November fifty-three 12-14 year olds from the Westlakes Academy, Netherhall School and Whitehaven School braved the elements to visit the Lab In A Lorry, parked at Sellafield.

Inside the lorry, jointly funded by the Institute of Physics and The Schlumberger Foundation, Dr Dayna Mason of the Institute of Physics and volunteers from Sellafield took students through physics-based experiments.

In the reluctant oil well syringes and pots of green goo were used to mimic how to extract oil from underground.

The students also found out why the sky is blue (only very occasionally in West Cumbria) in the scattering experiment and saw the effect of sound frequencies on different sized wine glasses.

This was the second visit by Lab in a Lorry to Sellafield and it was again hailed a great success by all who came along, with both teachers and pupils commenting on how much fun the visit had been.



The reluctant oil well

A year in Industry - Fast-Track to a career

University bound sixth formers attended a showcase event at Sellafield in November organised by Anna O'Rourke of the Engineering Development Trust.

The day was designed to raise awareness of the Trust's Year in Industry scheme which provides high-quality, paid industrial placements for students before or during their degree course.

During the morning representatives from participating companies were on hand to chat to students about how the scheme works and what would be expected from them should they gain a placement.

Students were also able to talk to current Year in Industry students at Sellafield, Jonathan Wilson and Chris Wilson, about their work projects and their experiences on site.

The afternoon was dedicated to sharing information amongst existing and potential industry partners in the scheme. The business case for participating was clearly drawn for the audience by Mike Edmondson from the National Nuclear Laboratory.

His comments were reflected by Sellafield Graduate and Student Recruitment Manager Jackie McClintock. She said:

"The Year in Industry scheme brings many benefits which we value highly. It allows us to identify future graduate trainees. It enables the further development of our existing workforce through the coaching and mentoring of young people. It is also an important strand in encouraging young people to recognise the nuclear industry as an excellent employer of graduates in science, engineering and maths."

For further information on the scheme log onto www.yini.org.uk



We hope you have enjoyed this edition of Pupil Power.

If you have any ideas for educational projects or would like to find out more about becoming a Science and Engineering Ambassador contact Pauline Farrell on 019467 71651 or email her: Pauline.j.farrell@sellafieldsites.com.

To find out more about primary science or to book a visit contact Millie Clarke or the team on 019467 71787. For primary science visits contact Liz Temple or Corrin Nichols on 019467 85847.

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Feedback form

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1. Have you found Pupil POWER Newsletter:

Very Useful Useful Not useful

2. What did you like or dislike about it?

3. What else would you like to receive information about on a regular basis?

Please return completed form to Eileen Turner, B923, Sellafield, Seascale, Cumbria, CA20 1PG, or email comments to eileen.turner@sellafieldsites.com

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