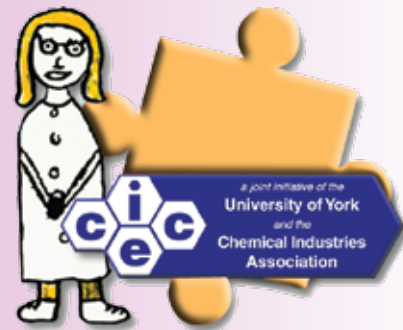


# PSEP

Supported by the Gatsby Charitable Foundation

Welcome to our Summer 2010 edition of the *CCI/PSEP* newsletter. As I write, the sun is actually shining and it is warm. I hope the summer colours of this edition will encourage the good weather to stay with us. This will be the last edition of the *CCI/PSEP* newsletter, as the Autumn/Winter edition will be re-named the *CIEC* newsletter. As you probably know, *CCI* and *PSEP* are two of our key programmes available to teachers. However, we have worked on many other science education and industry initiatives over the years, and we continue to do so. Therefore, we'd like to share these initiatives with you through this newsletter. We have started to do this here, with one page being dedicated to some of our non-*CCI/PSEP* work, and we do hope you will be interested in learning about this work, and possibly expanding your involvement with us.

Joy Parvin, Co-director, *CIEC*



THE UNIVERSITY of York

Summer 2010



Highly Commended National Training Awards 2009

## The joint newsletter for Children Challenging Industry and the Primary Science Enhancement Programme

### NORTH WEST

## Victoria School Visit to Deeside Power Station



Victoria Road Juniors in the control room at Deeside Power

Victoria Junior School, Wrexham have been taking part in a project called *Children Challenging Industry*. We were focusing on *Water for Industry* and learnt all about filtering water correctly, cooling water and sealants to stop a leaking pipe! Our investigation involved experimenting with different materials, solutions and completely new ideas!

After all the work in the classroom, we were ready to visit a real power station. We travelled to Deeside where we met Mr Barlow who was going to be guide for the day. We were split into two groups, one went on a tour around the power station, and the other went with Mr Barlow to extend their knowledge on fixing leaking pipes. It certainly was an exciting day.

This is what some people thought:

"Very exciting, because we got to see things in more detail".

Samantha, Year 6

"The experience was an excellent one. The children enjoyed the practical elements of the lessons and were very interested in the power station. The knowledge gained was invaluable for the children's view of industry and they certainly gained some new science skills along the way!

Mr J Jones, Year 6 class teacher



by Megan, Year 6

### NORTH WEST

Hunts Cross Primary School have only recently become involved with *CCI*:

You have revitalised science at Hunts Cross. The teachers came to the staff meeting last Thursday tired (it was the second staff meeting in 2 days) and not knowing what to expect. SATs had taken all the fun out of science.

Within a very short space of time, the teachers were bubbling with enthusiasm about the variety of stimuli for investigations, the practical activities and the wealth of resources available. As you are aware, they are very keen for you to return to Hunts Cross to deliver further staff training in the autumn term.

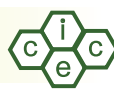
Putting investigations into context is crucial. Linking them to industry has so many benefits, giving the children further insight into the world of work and raising their own personal expectations.

By Judy Jackson, Hunts Cross Primary School, Liverpool



The *Chemical Industry Education Centre* is a joint venture between the Chemical Industries Association and the University of York. The aims of the *CIEC* are to enhance effective science teaching, create enthusiasm for science in children and improve understanding between schools and the chemical industry.

# Children Challenging Industry



## NEW CIEC web site launched

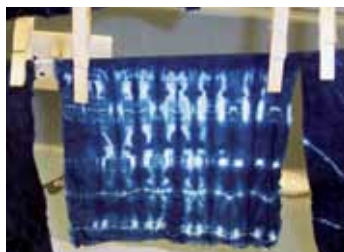
Did you know that steering wheels can be made from carrots? Look at the new CIEC site plants4products to find out more. The website is aimed at Key Stage 2 teachers and their pupils.

You can find it at [www.plants4products.org.uk](http://www.plants4products.org.uk)

A fascinating look at how plants can be used in so many ways – and none of them as food!



## Visit by Swedish students results in a valuable inter-departmental programme



Samples of tie-dye fabric using the indigo dye method made by the Perstorp students

The Chemical Industry Education Centre recently hosted a visit for post-16 students from Sweden. Perstorp Gymnasium is sponsored by the large chemical company Perstorp, and the visit formed part of their three-year course in industrial technology.

The programme included a day at the National Science Learning Centre where the ethos and facilities particularly impressed the visitors. Annie Hodgson (Chemistry) led an applied chemistry session, making indigo dye and later tie-dyeing fabric. Annie was "... delighted by

the enthusiastic, studious way the students tackled the practical work; particularly impressive as they were working in a foreign language!"

The Green Chemistry Centre of Excellence invited students to compare the green potential of a range of plant extraction techniques. Dr. Andrew Hunt said, "The study group had the opportunity to see unfamiliar extraction methods and to consider the many possible applications for plant extracts such as the cosmetic industry."

Gayle Pook, co-director of CIEC who organised the tour, summed up the visit, "The co-operation between CIEC, Chemistry and the NSLC meant the students had experienced a wide range of some of the best departments at the University."

## PROJECT NEWS



## Essential Chemical Industry



The ENSUS plant at Wilton produces ethanol from wheat. The process is described in the ECI unit on Biofuels. Photo Marc Thorneycroft and ENSUS

The 5th edition of the *Essential Chemical Industry* will be available for schools and industry to purchase later this term.

The *Essential Chemical Industry* is a unique resource book for schools, colleges, universities and industry, providing a detailed overview of the industry today. The book contains units

on **chemicals** (33 units), **polymers** (16 units) and **metals** (8 units) where uses, annual production and methods of manufacture are all described.

Also included are some exciting new components with detailed units on new materials such as nanomaterials and composites, processes such as catalysis and chemical reactors and units on biofuels, biotechnology and biorefineries.

The *Essential Chemical Industry* will cost £30 with a substantial 25% discount on orders of 10 or more. Please contact CIEC for more information.

## Schools go for PSQM Gold!



The Primary Science Quality Mark award scheme has been piloted for the last two years by the Association for Science Education, the national network of Science

Learning Centres and Barnet Local Authority, and is now rolling out nationally.

The award scheme develops and celebrates the quality of science teaching and learning in primary schools. The advisory team at CIEC are all trained hub leaders.

Hub leaders support 8-10 schools in a local area and at the end of the year, schools achieve a bronze, silver or gold award. Sue Andrews, CCT's North West advisory teacher, recently led a training day for her hub schools. Governors, two head teachers and a teaching assistant attended together with the science subject leaders. All left enthused.

"Hi Sue, Just a quick note to thank you for Friday. I came away buzzing and after our initial audit we've decided to go for gold! I really want the quality mark to have an impact on teaching and learning!"

Helen Hewitson, Advanced Skills Teacher, Blackburn with Darwen



## National award for Children Challenging Industry

We are delighted to announce that the *Children Challenging Industry (CCI)* received 'highly commended' at the IChemE 2009 Annual Awards which took place on 3rd November in York.

The IChemE awards are highly regarded throughout the international chemical, process and biochemical engineering community. Now in their 16th year, the 2009 awards attracted a record 127 entries from over 20 countries.

*Children Challenging Industry's* North East team had been shortlisted for the Innovation and Excellence in Education and Training Award sponsored by Cogent, and was thrilled to be recognised as highly commended, with the category award going to Imperial College London.

## Get planting!

If you plant sunflower seeds in the school garden in the summer term you will have sunflowers in early September in readiness to complete the Crops for all Purposes activity in the new *CIEC* resource *Renewables don't run out*.

See the flyer inside this newsletter or contact *CIEC* at [ciec@york.ac.uk](mailto:ciec@york.ac.uk) for information about the *Renewables don't run out* resource – price £6.50 (plus 10% p&p).



## CCI and PSEP Merger

*Children Challenging Industry (CCI)* and the *Primary Science Enhancement Project (PSEP)* have had, for a number of years, their own individual identities, but have shared the same philosophy: the teaching of science through practical activities based in a real-world context.

The *CCI* website ([www.cciproject.org](http://www.cciproject.org)) includes information about the project, access to research reports, and examples of children's work; the *PSEP* website ([www.psep.org](http://www.psep.org)) has long been the resting place for training material, teaching resources, and the *PSEP* Club, which provides additional activities for children to complement the *CCI/PSEP* topics.

Over the coming year these two identities will be merged, with the web material being revised and updated. One exciting outcome of this is that if all goes to plan, from the Summer Term 2011 all material currently on the *PSEP* site, including staff development, teaching resources and the Club activities, will become freely accessible to all. In the meantime if you wish to access the log-in section of the *PSEP* site, a username can be obtained for a one off payment of £15



## Shortlisted for the CIA's Dow Reputation Award

The *CIEC's* Children Challenging Industry programme has been shortlisted for the Chemical Industry Association's prestigious Dow Reputation Award. This is a great accolade, as it recognises the achievements of the *CCI* team in heightening children's and teachers' awareness of the chemical industry, the careers therein, and the important role that science plays within this sector.

The Awards Ceremony takes place at St George's Hall, Liverpool, on 24 June, so keep your fingers crossed!



## Figures for all CCI regions September 08 - September 09

	Yorkshire and Humber	North West	North East
Number of <i>CCI/PSEP</i> schools	37	27	31
Number of <i>CCI/PSEP</i> children	1086	1202	691
Staff INSET/ <i>PSEP</i> training or INSET	19	27	18
Number <i>CCI/PSEP</i> teachers	244	285	220
*Number of additional teachers trained	253	69	105
Number of <i>CCI/PSEP</i> site visits	18	17	20
Number of ambassador led talks/visits/sessions	4	19	2
Number of industry training sessions	2	5	16
Number of site personnel	3	24	39
Number of ambassadors trained	7	15	3
Number of Ambassadors Trained	0	7	0
Number of Ambassador led talks/visits/sessions	0	75	0
Number of Pupils (ambassador)	0	1681	0

\*Additional training offered to teachers includes: LA courses/co-ordinator meetings, NSLC & SLC courses and Millgate House



## What do soap, bubbles and bread have in common?



Soap making is serious work

Recipes! Holy Cross Deanery School explain what they learned about scientific recipes for soap and bubble mixture, before visiting a bakery to see large

scale production on bread. Some Year 6 children explain:

*We learnt a lot of things while we did this topic. We learnt all the six dangers Toxic, Irritant, Explosive, Corrosive, Harmful and Flammable. We made a bar of soap each. We also did an experiment on which mix of ingredients will make the largest bubble. We also discovered which detergent was the best out of Ariel, Tesco Powder, and Tesco Liquid.*

*The science project was very enjoyable because we learnt a lot but still had fun. Our favourite activity was making the soap.*

*On Wednesday 20th January, we went to Fosters Bakery. We were shown how to make bread and how all the ovens and machines work. They even let us make our own buns to take home! They also kindly gave us all a free gingerbread man. It was a really fun day, and all of the children who went really enjoyed it.*



In March, Aesica Pharmaceuticals in Cramlington, Northumberland kindly hosted a full day's PSEP training for local primary and middle school teachers. The teachers visited the production facilities where ingredients for medicines are made. They then discussed how the various manufacturing activities could be linked to Key Stage 2 science topics. As a result of this training, the teachers are keen to work with local companies – either by visiting manufacturing companies with their classes or by inviting an 'ambassador' into their schools to take part in science sessions. Companies wishing to host PSEP training can contact CIEC.

### PROJECT NEWS



## CCI continues to have a very positive effect

The CIEC has published its latest research into the impact of the CCI on pupils and their teachers ([www.cciproject.org/research.htm](http://www.cciproject.org/research.htm)). We are pleased to have our efforts recognised in responses to a series of questions posed in pre- and post-participation questionnaires. CCI aims to increase children's enjoyment and engagement in science; and 97% of children questioned stated they had learned something new, 85% enjoyed the investigative classroom activities, and 92% enjoying learning about industry. 82% of the children also stated that they enjoyed science more after taking part in CCI!

Another aim of the programme is to provide in-school training for primary teachers, to support the teaching of science, and also to enhance their knowledge of the links between science and industry. 98% of these teachers rated the training they received as either 'excellent' or 'good', and as a result of participation, they were more likely to be positive about the career opportunities available in industry.

So well done to all our team, and also to the many companies that help us achieve this through their site visits, helping children appreciate what industry in the 21st century is all about.

### PROJECT NEWS



## Prize Draw Purchases

All schools who return their completed questionnaires (which are used to evaluate and improve CCI and PSEP) are entered into a termly prize draw. By returning your questionnaires promptly you could win £50 to spend on science equipment.

This is how some of the Prize Draw winners announced in the last newsletter spent their prize money.

Lesley Ward from Saighton Primary School, Chester said, "The staff were so impressed with the way Sue Andrews delegated individual roles to members of the group (during CCI activities) that the staff wish to purchase name badges for each child in each class. The roles will be related to science (e.g. resource manager) at a cost of £95. Your contribution is most welcome and will impact on the way science is taught at our school."



Laura Kilvington and Sarah Millar of Welton Primary school, Hull, were also inspired by the CCI activities, "We intend to spend our prize draw money on some

children's lab coats so they feel like 'proper' scientists!"

### NORTH EAST



## Warburtons welcome Preston Primary School



Bakers of the future at Warburtons' bakery in Stockton

Preston Primary School in Stockton walked to the nearby Warburtons bakery, where they were shown how a variety of products, including bread and crumpets, are produced.

In preparation for the visit, the children did practical science activities in the classroom. They learned how to follow a recipe to make soap, devise a recipe to make bubbles and use equipment to make everything from bars of soap to baking bread buns.

During the bakery tour, the children learned how science is used in industry, starting with measuring and mixing the correct quantities of ingredients. Sophie, aged 8, said: "I really liked walking around the bakery and watching the fresh dough go into the tins ready for baking and then the baked bread being wrapped up ready for the shops."

Shirley Winters, head teacher, noted that it had been fantastic to visit a local manufacturer and for the children to see each of the processes involved. "The visit to Warburtons bakery has really helped to bring the theoretical aspects taught in the classroom to life. We're very grateful to everyone at Warburtons for making us feel so welcome."



## Dow Haltermann in Middlesbrough have a well established link with CCI

*We are delighted when our partners from industry, Michelle Bell of Dow Haltermann in this case, wish to share the success of their CCI site visits.*

So far we have had 10 CCI annual visits by local primary schools to our Middlesbrough site.

We have particularly close relationships with Breckon Hill Primary and North Ormesby Primary schools as Dow Haltermann's site leader, Martyn Bainbridge chairs the Quarterly Community Liaison Panel Meetings and several of the Dow Haltermann staff have also held positions as Governors at these schools.

This year, children from Breckon Hill Primary School visited All Saints Refinery and had the opportunity to learn about what is made at the Middlesbrough site, how and why cooling towers are used here and what jobs are associated within industry. We finish with a competition to spot 10 different water signs which can be found on site before handing out the well-filled goodie bags and certificates for each child.

Getting kitted up!



Breckon Hill Primary school visit All Saint's Refinery



## North East ambassador brings industry to life



Colin Stainsby, Lucite, in his role as CCI ambassador

We have been working with A4e, Tees Valley STEMPOINT, to identify industrial ambassadors for local primary schools. Colin Stainsby from Lucite in Billingham, has worked in two local schools.

Colin visited Oxbridge Lane Primary school where Jan Crane (class teacher) was impressed by Colin's engagement with the children. He also joined Joanne Warner, Year 5 teacher at Hemlington Hall Primary School, during a session on *Water for Industry*, bringing examples of pipes and photographs with him. Joanne said "It really bought it to life for the children. It was an extremely worthwhile experience." Colin also enjoyed the session. "It was interesting to hear the children's reasons why they believed certain materials would be able to join cans together. They also asked very pertinent questions for their ages."

*Amanda Olvanhill – Manager of Tees Valley STEMPOINT explained the benefits of partnership with CCI:*

***"CCI have a fantastic primary programme and the earlier we can link children with industry the better; they gain a real understanding of how what they are learning in the classroom is linked to the 'world of work.' Colin is a fantastic Ambassador for Lucite and has also supported a number of secondary programmes."***



## MP visits CCI pupil scientists

The CCI project continues to attract attention from schools, industry and even the House of Commons. Recently, an article in the *Northwich Guardian* featuring CCI's *Water for Industry* work in a Northwich school caught the eye of local MP Mike Hall. He was so fascinated by the idea of primary children helping industry to solve real problems such as filtering incoming water or preventing pipelines from leaking, that he wrote to the school requesting a visit to see for himself the work being done by the children (see abridged version of the letter below). During his visit, the children eagerly demonstrated their ideas for cooling water, mending leaky pipes using various sealants and filtering muddy water.



Mike Hall, former MP for Frodsham and Weaver Vale, during his visit to Witton Church Walk CE Primary School, helping Year 6 pupils with their *Water for Industry* investigations



Dear Mrs Downing,

I was very interested to read about the activities of your Year 6 pupils, and their involvement in the 'Children Challenging Industry' programme.

I understand they have been conducting filtration experiments to help engineers at Deeside Power station. This is a really imaginative way to engage children in the practical aspects of science and I am sure they have been enthusiastic about recording their results.

I would be pleased to come and visit you to see the work being done on this interesting project.

Meanwhile please pass on my best wishes to your budding scientists.

Yours sincerely,  
Mike Hall



## Full Power at Roosecote



Chris Sadler and his new 'team'

Dear Chris,

Thank you for showing me and my group around the power station. I already knew a tiny bit about the power station from my cousin who works there but you taught Year 6 a lot more! Mrs Johnson really enjoyed the trip as well. I enjoyed the presentation and learnt a lot. Thank you for giving us the tour and the juice and biscuits.

Yours sincerely,  
Rebecca  
Roose School.

In December, Roose School in Barrow had a brilliant morning at Roosecote Power Station thanks to the hard work of Chris Sadler, shift engineer, and his team. The children looked at various aspects of the power station including the turbine hall, cooling water treatment and the site lab. The children reported that it "was the best trip ever" and that they "enjoyed the control room because it was quiet and had computers." This was the first primary school visit to the site after the team had some input from Jonathan Barton the advisory teacher for Cumbria. Prior to the site visit Jonathan had worked with the children in the school on investigations connected with the power station. The school took part in the project as part of funding received by the Sir John Fisher Foundation. Mrs Johnson, the class teacher, was impressed by the children's reaction to all of the activities, and felt the site visit was an extremely valuable component of the project.

Courtney wrote to thank Nicky Waller following her CCI work at Breckon Hill School:

Breckon Hill Primary School  
Middlesbrough  
19th March 2010

Dear Miss Waller

I am writing to say thank you for coming to teach our class about industry.

My favourite activity was the one where we had to seal two pipes together with different tapes. I couldn't believe we were doing what workers do in industry but on a smaller scale! Before you came in to teach us we thought industry was really bad and caused lots of pollution. I now know the real facts. I also thought I should mention how much I enjoyed my visit to Dow Chemicals. It was one of the best experiences of my life.

I hope other schools have the pleasure of you coming to teach because they will definitely enjoy it. Our school has been so lucky and I hope other children can share that experience too.

Yours sincerely  
Courtney, Year 6

### Primary science courses, conferences and other events

If you are interested in attending any of these courses or events, please contact [ciec@york.ac.uk](mailto:ciec@york.ac.uk) or 01904 432523, or for Science Learning Centre courses, visit [www.sciencelearningcentres.org.uk](http://www.sciencelearningcentres.org.uk)

#### PSEP training

26 May 2010 – Training at Cliff House and Shepley Spring for Kirklees teachers, Huddersfield

16 June 2010 – INSET session, Beaconside School, Penrith

29 June 2010 – INSET session, North Lakes

#### Regional Science Learning Centres (Yorkshire and Humber)

24 May 2010 – Subject leaders update, Sheffield

9 June 2010 – Annual Primary Conference, Ripon

4 October 2010 – Subject Leader Update Meeting, Sheffield

7 October 2010 – Subject Leader Update Meeting, Hull

2 November 2010 – Subject Leader Update Meeting, Leeds

11 November 2010 – Annual primary Regional Conference, Woolley Hall

TBC – Annual primary Regional Conference, East Riding

#### National Science Learning Centre

10-11 May 2010 – Science and the creative arts (Booking closed)

12-13 May 2010 – Extending Gifted and More Able Pupils in Primary Science

19-21 May 2010 – Let's investigate the Outdoor Classroom

26-28 May – Extending the role of the Science support Leader (Booking closed)

11 June 2010 – PSQM Train the Trainers

14 June 2010 – Science Conference (renewable Workshop)

14 June 2010 – Annual conference

16-18 June 2010 – Let's investigate the Outdoor Classroom

5-7 July 2010 – Teaching the Tricky Bits

5-6 July 2010 – Science and the Creative arts

7-8 October 2010 – Teaching Assistants Taking the Lead RP1

15-17 November 2010 – Extending the role of the Science Subject Leader RP3

#### Other events

12 May 2010 – Regional CCI committee meeting, jb

18 May 2010 – Sellafield event, Jb

19 May 2010 – Sellafield event, Jb

20 May 2010 – Sellafield event, jb

20 May 2010 – Chemicals North West Awards Dinner, Midland, Manchester

10 June 2010 – D&T course, Telford

25 June 2010 – D&T festival, Daresbury

5 July 2010 – CCI Annual Celebration, Catalyst, Widnes

6 July 2010 – Merseyside science conference, Aintree Racecourse

8 July 2010 – North East Annual Event, Wilton

12 November 2010 – Primary science & the Industrial outdoor classroom, Crown Paints, Darwen

#### Contacts

If you would like to know more about Children Challenging Industry or the Primary Science Enhancement Programme, contact:

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