

Salters Horners Advanced Physics Newsletter

Autumn 2011

The SHAP project office

For enquiries about implementing and running the course, queries about course materials, and information about training workshops – and anything else if you are not sure who to ask – please contact the York project office.

The office is staffed by the project director Elizabeth Swinbank and administrator Joanna MacDONald. If we cannot help directly, we will put you in touch with someone who can.

elizabeth.swinbank@york.ac.uk

joanna.macdonald@york.ac.uk

Please note our slightly amended contact details below:-

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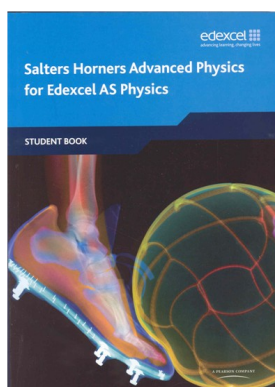
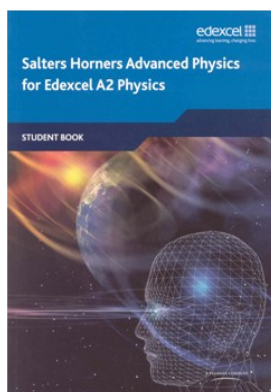
Book Grants

A few hundred pounds for books could make a big difference to your budget. Thanks to the generosity of our sponsors, there are now **two** book grant schemes for SHAP.

The Salters Company have a scheme for awarding grants of up to £500 towards the purchase of SHAP books. Grants are available to established SHAP centres with rising numbers of students as well as to those setting up SHAP from scratch.

The Horners Company offer grants for centres preparing to teach SHAP for the first time in September 2012. Grants of up to £250 are available.

Further details and application forms for both schemes can be found via the SHAP website. Choose 'support' from the main menu.



Awards for technicians

Technicians play a key role in SHAP. In 2012 The Salters' Institute is entering the ninth year of the **Salters' National Awards for Science Technicians** which are presented annually and provide public acknowledgment of the immense contribution that science technicians make to the well-being and success of schools and colleges and, in particular, to science departments.

The Awards are open to science technicians in schools and colleges catering for students up to age 18, and who have a total of 5 or more years' experience (full-time or part-time). If you know a technician who fits the criteria then please nominate him/her for an Award.

The closing date for nominations is **1 March 2012**. For further information and a nomination form:

Website www.saltersinstitute.co.uk

Tel: **020 7628 5962** ext. 260

Email : publicity@salters.co.uk

Practical SHAP – a date for your diary

The next Practical SHAP workshop for teachers and technicians will take place in York on 27-28 March 2012. Further details will be posted on the SHAP website and mailed to centres later this term.

German visit to SHAP

SHAP is far from being the only context-based physics course in the world. For the past two decades and more, teachers and curriculum developers throughout the world have been designing courses around contexts in order to engage students and to give a realistic picture of physics as a living discipline.

Along with the UK, Germany is one of the leading countries when it comes to context-led physics teaching. The Physik im Kontext (PiKo) project has been very influential in Germany, and there have been fruitful links between curriculum developers in the two countries since the early days of SHAP. One link is with physics educators in Dortmund, home of PiKoDo (Physik im Kontext Dortmund).

In October 2010, physics teacher trainer Tobias Kirschbaum brought a group of trainee teachers from Dortmund to York, where visiting two SHAP centres was a highlight. The visitors were made very welcome by Sion Peters-Flynn, Diane Smithson and colleagues at John Leggott College, Scunthorpe, and by Helen Ashton, Danielle Waller and colleagues at Notre Dame School, Sheffield.

The German group greatly enjoyed observing SHAP in action and meeting SHAP students and staff – they reported that they were still 'buzzing' some weeks afterwards.



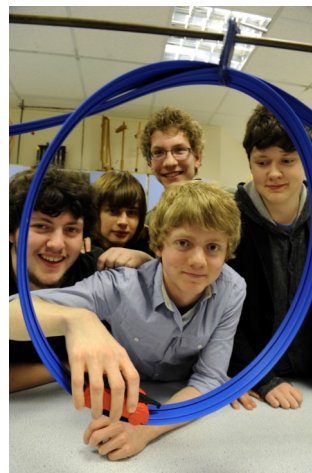
German visitors in a SHAP lesson where students investigated model ski-jumps

Top SHAPs 2011

News of the 2011 Top SHAP students, and the winners of the new SHAP AS Unit 3 prize and SHAP teacher prize will be in the next SHAP newsletter.

SHAP students reach the top

In February this year a team of five SHAP students from John Leggott College fought off strong opposition from Shrewsbury School to win the UK final of the International Young Physicists' Tournament.



IYPT is an opportunity to compete against and make friends with some of the brightest young minds from across the globe. Teams are invited to tackle a range of problems using a combination of mathematical modelling and practical investigation. During each 'fight' in the tournament a team member will present the results of their work in front of a jury panel of university researchers/lecturers as well as leading physics teachers. A member of the opposing team will then briefly present their critique of the presentation's content before a lively debate gets underway between presenter and opponent.

John Leggott College Head of Physics Sion Peters-Flynn said: "I am really proud of the students' achievements as they were tasked with solving problems which required in-depth knowledge as well as very strong analytical skills. The physics problems were largely based on everyday phenomena, but they encompassed some high level concepts and involved mathematics."

Problems set in the past include investigating how a flame responds to a strong electric field and the physics of removing adhesive tape. The problems are very much in the spirit of SHAP and it would be great to see more SHAP students taking part.

Photographs together with an account of the 2011 final held in Tehran are available at <http://iypt.ir/>

The final of IYPT 2012 will be held in Germany. The problems for this tournament can be found at <http://www.iypt.org/Problems#Problems>.

Schools and colleges interested in taking part in the regional round of the competition should contact John Balcombe at Shrewsbury school jb@shrewsbury.org.uk or visit <http://iypt.org.uk/index.html>.

Top SHAPs 2010

Summer 2010 saw the first students to gain their physics A-levels with Edexcel's new 'converged' specification. In total, 21 students scored over 590 UMS in the 2010 Edexcel physics A-level. The 14 students listed here are from schools and colleges that use a wholly or partially SHAP approach. The 7 students not listed were from other, non-SHAP, centres.

The three students with the highest scores received awards from the Salters and Horners:

| | |
|--------------------|---------------------------------------|
| Michael Thornton | Holy Cross College, Bury |
| Yuqi Song (Rachel) | John Leggott College, Scunthorpe |
| Vivienne Hay | The Lady Eleanor Holles School, Middx |

These are the other SHAP students who scored over 590 UMS, listed in alphabetical order of surname:

| | |
|--------------------|---|
| William Bonner | Northampton School for Boys |
| Rebecca Dawes | The Lady Eleanor Holles School, Middx |
| Thomas Garmeson | Alleyn's School, Dulwich |
| Tom Hadavizadeh | St Laurence School, Bradford on Avon |
| Ming Tao Ho | Rugby School |
| Nathan Lamb | John Leggott College, Scunthorpe |
| Isobel Ormiston | Rugby School |
| Sonam Shah | Watford Girls' Grammar School |
| James Thornton | Lawrence Sheriff School, Rugby |
| Christopher Turner | City of London Freeman's School, Surrey |
| Douglas Young | City of London Freeman's School, Surrey |

Congratulations to these students, and to all those who gained their A-level having used the SHAP course.

SHAP awards 2010

Three SHAP student and two SHAP teacher awards were presented at the Salters' prize-giving held in November 2010 at Salters' Hall.

Michael Thornton of Holy Cross College, Bury, was given an award for his outstanding score in the June 2010 exams and is pictured receiving a certificate, and a cheque and drinking horn presented, respectively, by Master Salter Christopher Anderson (left) and past-Master Horner David Beynon. Michael is now studying Natural Sciences at Trinity College, Cambridge.



Yuqi (Rachel) Song and Vivienne Hay were unable to attend as they were in the USA where both are studying Natural Sciences – Rachel at MIT and Vivienne at Yale. David Neal, physics teacher at John Leggott College, collected Rachel's award, while Vivienne's was collected by her father, Richard Hay.



Peter Dowsett of Trinity RC School, Nottingham, and Jan Hatherell of Hardenhuish School, Wiltshire, each received awards from the Horners' company and Tata Steel Europe (formerly Corus) in recognition of their outstanding work as SHAP teachers. (See the Autumn 2010 SHAP newsletter for more about Peter's and Jan's work with SHAP.) The picture shows Peter and Jan flanked by David Beynon (Horners) and Louisa Porter (Tata Steel).

SHAPShare

The SHAP website now has a page called SHAPShare, where SHAP teachers, technicians and examiners can share resources they have developed for SHAP.

Resources currently available through SHAPShare include diagrams and instructions for making LED-based Planck constant apparatus (with details of coloured LEDs that work well), notes on a real-life archaeological context for measuring resistivity of metal wires, a playlist of YouTube videos that link to SHAP chapters, and a spreadsheet for dice simulation of radioactive decay, as well as several PowerPoint presentations with links to video clips and applets.

To access SHAPShare, go to www.york.ac.uk/org/seg/salters/physics choose Resources from the main menu and follow links to SHAPShare.

The usefulness of SHAPShare will grow as more people contribute. So if you have developed a SHAP resource that you are willing to share, please email it to the York Project Office as a Word, PowerPoint or Excel file, with a covering email giving a brief description together with your name and that of your school/college.

Electronic support

Teachers

There is an email discussion group for SHAP teachers, which enables members of the SHAP community to exchange news and views and to receive announcements relating to SHAP. Joining the group is very easy and costs nothing. Just send a blank email to: shap-subscribe@pearson.com

Technicians

The Scitech group (established by a SHAP technician) provides email support relating both to SHAP and to more general tech issues. To join Scitech please contact:

Maz Dunn & Rob Copeland, 1 Chaucer Street, Hull, Yorkshire, HU8 8NA

They prefer applications on school headed noted paper stating the email you want to use. If you receive no response in 2 weeks, then please email: scitech_reg@yahoo.co.uk (underscore between scitech & reg)

Support from Edexcel

Edexcel AS and A-level physics assessment is looked after by Richard Hammond richard.hammond@edexcel.com

Simona Ondruskova is responsible for coursework, including the Coursework Consultancy.

simona.ondruskova@edexcel.com

Ask the Expert

This is a service provided by Edexcel examiners. Send an email to gcephysics@edexcelexperts.co.uk .

Please identify the unit and topic your query relates to in the subject box of the email.

Edexcel Subject Advisors

This service exists to provide you with a personal point of contact if you still have questions after exploring other contacts and the Edexcel website. Contact the science subject advisor team by phone on 0844 576 0037 or email

ScienceSubjectAdvisor@edexcelexperts.co.uk

Coursework consultancy

Edexcel operates a free coursework consultancy service where you can get advice from the moderators about Units 3 and 6. You can:

- check that your proposed visit or case study is appropriate
- check that your proposed Unit 3 practical task is appropriate
- check that your proposed Unit 6 experiment is appropriate
- send in up to 3 marked scripts for feedback on your marking.

Sample scripts need to be sent in well ahead of the submission deadline (15 May).

Contact Simona Ondruskova for further details.