Review of A-levels

We had hoped to bring you news of the next A-level revision in this newsletter. The Department for Education initiated a review of A-levels earlier in 2012 and Ofqual carried out a consultation over the summer. Despite Ofqual initially indicating that the outcomes of the review would be published early in the autumn of 2012, little information has so far been forthcoming. In particular, there is as yet no firm date for the introduction of new specifications.

A key strand of the review is that government would like to see a closer involvement of universities in the development of A-level specifications and assessment. However, the consultation responses of universities, learned bodies and other stakeholders apparently raised issues relating to how this could be implemented. Ofqual have not yet indicated any date by which they expect to resolve these issues.

So far, there has been just one announcement. In November 2012, it was announced that January exam sessions for AS and A-level would be discontinued from September 2013. So students currently in the AS year will not have the option of sitting exams in January 2014 in their A2 year. The AS level will still remain as a separate qualification, either as a staging post en route to a full A-level or as an exit point after one year of study. See http://www.ofqual.gov.uk/news/ofqual-announces-changes-to-a-levels/

Some centres will regret the removal of January exams as it means fewer resit opportunities and removes the option of a mid-year confidence-boost or a wake-up call. But a possible benefit to SHAP is a greater flexibility in the teaching order. You could, for example, choose to teach HFS in the autumn term of AS, and defer EAT and SUR until later in the year when students would revisit and build on some of the HFS content.
Top SHAPs 2011

SHAP students continue to do well in the current ‘converged’ Edexcel A-level physics exams. In June 2011 (along with a similar number from non-SHAP centres) ten SHAP students scored 590 or more UMS:

Top equal-highest scores
David Buckley, John Leggott Sixth Form College, Scunthorpe
Christopher Lark, The King’s School, Canterbury

Next equal-highest
Lucy Ford, Sutton Coldfield Grammar School for Girls
Sean Guggiari, Caistor Grammar School, Lincolnshire

The rest of the top-ten SHAP students, listed in alphabetical order of surname:
Christopher Richard Bramley, John Cabot Academy, Bristol
Christopher Mark Draper, Howard of Effingham School, Leatherhead
Nicholas Charles Elliott, John Leggott Sixth Form College, Scunthorpe
Alexander J Ferrier, Rooks Heath College, Harrow
Alistair Charles Godley, John Leggott Sixth Form College, Scunthorpe
Ronald James Rodgers, Chelmer Valley High School, Essex

Several of the top ten have been in touch with the SHAP office at York to tell us what they are doing now. Between them, they are studying physics, Earth sciences, natural sciences, zoology and maths, at the universities of Oxford, Cardiff and Cambridge.

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

SHAP awards 2011

In November 2011, awards were made to five SHAP students and a SHAP teacher at the Salters’ prize-giving held in Salters’ Hall.

2011 was the first year of the new SHAP AS Unit 3 prize, sponsored by the Horners Company and Tata Steel Europe, which was awarded to Magdalena Pekacka from Caistor Grammar School, Lincolnshire. For her Unit 3 work, Magdalena visited to a gas-fired power station then carried out an experimental investigation of burner efficiency. The judges were impressed by the flair and skill that she demonstrated in both parts of the assignment.

The 2011 SHAP teacher prize, also sponsored by the Horners Company and Tata Steel Europe, was awarded to Angus Gregson of St Mary Redcliffe and Temple School, Bristol for his outstanding work as a SHAP teacher. In the upper photograph, Angus is flanked by Iain McGregor of Tata and Master Horner David Williams.

The prizes were presented by the Rt Hon David Willets MP, shown in the lower photograph with the Master Horner and SHAP prize-winner David Buckley. David received an award for his outstanding score in the 2011 A-level exams, as did Christopher Lark, Lucy Ford and Sean Guggiari. Lucy was unable to attend the ceremony. Christopher is on the left of the upper photo, with Magdalena and Sean on the right.

Visiting the past

A few years ago SHAP students at St Thomas More Catholic Academy, North Shields, and their teacher Ian Coulson, visited Bede’s World at Jarrow for their AS coursework. They enjoyed it so much that it has become part of the school’s regular SHAP programme.

Guided by museum staff, SHAP students explore the museum, church, farm and park and discuss what different geophysical methods can reveal about archaeological remains and why certain methods work better in certain environments and for different types of archaeological feature. They look at both ground-penetrating radar (GPR) and resistivity plots for the park (which would have been part of the monastery) and see if they can spot any potential archaeological features. They also visit the chancel of St Paul’s church and see what they can spot from vertical GPR transects and talk about what this might mean. All of this is put into a social context, noting that archaeological excavation is both expensive and essentially destructive and geophysical methods can be extremely useful in deciding whether to excavate and where to put a trench.

A visit such as this can really help bring physics to life, and there are plenty of opportunities for linked practical work – the most obvious being resistivity measurement.

If you are based in the NE of England, Bede’s World education team leader Jane Gosling (jane.gosling@bedesworld.co.uk) would be pleased to hear from you and to arrange a visit. And wherever you are, there is almost certainly a museum or archaeological excavation near you, so why not give them a call?
**Top SHAPs 2012**

In the 2012 Edexcel A-level physics exams, of four students who scored the maximum possible 600 UMS, three were from centres that use a wholly or partially SHAP approach:

Rachel Barrett, The Becket School, West Bridgford, Nottingham
Rachael Martin, John Leggott College, Scunthorpe
Rebecca Harwin, Kendrick School, Reading

Hard on their heels were three students scoring 597 or above – and two of them were SHAPers:

Alice Waterhouse, King Edward VII School, Sheffield
Shona Wood, Howard of Effingham School, Surrey

Rachel is now at Cambridge studying maths, Rachael is studying physics at Oxford, Rebecca and Alice are both at Cambridge studying natural sciences, and Shona is at Kent studying English language and linguistics, where her physics background is proving invaluable for a module on phonetics and phonology.

All these five students were awarded prizes by the Salters and the Horners at a ceremony where the guest of honour was Princess Sumaya bint Al Hassan of Jordan. The upper photograph shows Rebecca with the princess and Master Horner Georgina Scott, and the lower photograph shows (left to right) Rachel Barrett, Alice Waterhouse and Shona Wood. Rachael Martin was unable to attend the prize giving.

In previous years we have been able to name and congratulate the top ten SHAP students. This year, data protection issues meant that Edexcel was unable to release a full list. However, we do know that the top ten overall Edexcel A-level physics students included at least two more from SHAP centres.

Congratulations to all of our high fliers, and to all those who gained their A-level physics in 2012 using SHAP.

**2012 Unit 3 prize**

The judges for the 2012 SHAP AS Unit 3 award were impressed by a study of viscosity carried out by Lauren Rofe at the City of London Freemen’s School in Surrey. Lauren researched the relevant scientific principles, which she related to several applications where viscosity is a crucial factor, then carried out a careful and well-designed experiment to determine the viscosity of hair gel. The judges noted that the work was sound experimentally and statistically, and they were particularly pleased by the strong links between the purpose, experimental work and conclusions.

Lauren was presented with a cheque and a drinking horn at the Salters’ prize-giving, where the guest of honour was Princess Sumaya bint Al Hassan of Jordan. The photograph shows Lauren with the princess and Master Horner Georgina Scott. Lauren is currently studying for her A2s and is applying for history degree courses – she has a particular interest in the history of science.

The SHAP AS Unit 3 award is sponsored by the Horners company and is open to students from any centre using the SHAP materials within Edexcel AS-level physics.

**Book Grants**

Are you planning to introduce SHAP into your AS/A-level teaching next September?

Are you already using SHAP and teaching a growing number of students?

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

The **Horners** offer grants of up to £250, with priority given to centres preparing to teach SHAP for the first time in September 2013. Applications close 14th June 2013.

For further details and to download an application form, go to the SHAP website: www.york.ac.uk/org/seg/salters/physics and choose ‘support’ from the main menu.

The **Salters** offers grant of up to £500 to established SHAP centres as well as to those setting up SHAP from scratch. Applications close 30th April 2013.

To find out more and to send in an application, visit the Salters website: www.saltersinstitute.co.uk
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 notepaper 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 documents relating to AS/A-level physics can be found at: http://www.edexcel.com/quals/gce/gce08/physics/Pages/default.aspx

Edexcel AS and A-level physics assessment is looked after by Richard Hammond. Simona Ondruskova is responsible for coursework, including the Coursework Consultancy (see below). To contact Richard or Simona please email: gce.sciences@pearson.com

Ask the Expert (ATE)
This service directs subject-specific enquiries to the senior subject team at Edexcel. To access the service please go to: http://edexcel-5571.custhelp.com Please specify the subject, level (GCE) and unit.

Coursework consultancy
Edexcel operates a free online coursework consultancy service where you can get advice about Units 3 and 6. For further details, including answers to FAQs, please go to: http://www.edexcel.com/quals/gce/gce08/physics/Pages/default.aspx and select Teacher Support Materials.

Edexcel Subject Advisors
This service exists to provide 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: teachingscience@pearson.com

Awards for technicians

Good technicians are worth their weight in gold, and often they are the unsung heroes and heroines behind successful science teaching.

The Salters’ National awards for Science Technicians recognise and reward the vital contributions that technicians make to the success of school and college 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.

For further information and a nomination form please visit the Salters website: www.saltersinstitute.co.uk