



Science
LEARNING CENTRES

A course for new and aspiring Heads of Faculty and Principal Teachers Curriculum

CONTINUING PROFESSIONAL DEVELOPMENT
Teaching in Scotland

IMPROVING ACHIEVEMENT IN SCIENCE

Develop your confidence and competence in leading and managing a constantly improving faculty or department

Limited to 30 places
See the SSERC website for Information leaflet and first call for notes of interest and applications (pdf, 560K, see address below)

Offered through the Scottish Science CPD Partnership in collaboration with the UK National Science Learning Centre located at the University of York

Three days scheduled for the 6th - 8th of November 2007, at the Glasgow Marriott Hotel with a two day follow up in May 2008

www.sserc.org.uk/members/SafetyNet/bulls/221/A3HoSCrse_2007_6_Press.pdf

Rationale - A number of Scottish schools and education authorities have moved to new organisational structures for the management of school courses and curricula. Others are considering such a move. These new structures often involve groupings of science specialisms and even a linking of the sciences with related subjects in faculties.

Audience - To cater for such changes, new middle management posts have been created at Head of Faculty or Principal Teacher (Curriculum) level. This course is mainly intended for the holders of these posts or those who aspire to hold such a post. The course may also appeal to those aspiring to hold other kinds of promoted or 'middle management' posts in science education. Some preparation and training for such posts may well be provided through generic courses. Leading and managing faculties and developing a new science curriculum also require some specific kinds of knowledge and skills.

Course description - The course will draw on the content and adopt many of the approaches used for the "Heads of

Science" Course developed by the UK National Science Learning Centre in York. Control over the detailed design and delivery plans, however, is largely in the hands of a practitioner group based in Scotland. Delegates in the first cohort for this course said:

"A very enjoyable and practical course . . ."

"Should be open to all PTs/Faculty Heads".

"This is how to ensure you're up-to-date."

Coverage

- learning and teaching with emphasis on innovative approaches to motivation and improving classroom relationships so broadening and enhancing achievement
- leading teams and managing change
- departmental/faculty issues and policies
- sensible and balanced approaches to health and safety
- curricular issues and course development with particular reference to the 3 - 18 review of science as part of a Curriculum for Excellence

- reference to HMIe reports such as Improving Achievement in Science

Quality Assurance

Course development and delivery will follow quality assurance procedures based on those of the UK National Science Learning Centre.

Commitment

Participants will be expected to carry out an agreed action research task, or a similar exercise, in school between November 2007 and the recall days in May 2008.

Costs

Admission to the course is dependent on nomination by your school or local authority and on submission of a satisfactory application. Successful applicants will be supported through the NSLC Impact Award scheme - when the total direct cost (i.e. all fees and accommodation but excluding travel and staff cover) will be £500.

Something old, something new, something borrowed, something ?...

This is advance notice of a number of two part CPD courses, for teachers of Primary, Biology, Chemistry and Physics, which are to be run in support of the implementation of a *Curriculum for Excellence*. The courses are being organised by SSERC and its partners in the *Support for Science Education through CPD* project.

Teaching approaches and resources to support learning will be key features of these courses. Using equipment supplied on the course, participants will be encouraged to undertake a collaborative, classroom-based project. During the second part of the course, SSERC Bulletin 221 Summer 2007

they will have an opportunity to share their good practice based on the project work. Part 1 (in the Autumn term) will run from a Thursday evening until Saturday lunchtime, part 2 (in the Spring term) from a Friday until Saturday mid-afternoon. The venue will be SSERC in Dunfermline and local hotels in Fife.

For initial enquiries, please contact *Sheila* on sheila.maclellan@sserc.org.uk

Further information, including dates and details of how to register, will be distributed to schools and Local Authorities in August 2007.



Support for Scottish Science Education through CPD

A partnership project sponsored and part-funded by the Scottish Executive

Information will be available shortly on the SSERC website: www.sserc.org.uk

No. 221 Summer '07 Contents

- 2 Biology/Safety - Face masks (cover story)
- 2 Biology - Wonderful wizardry of finding a gene
- 4 Biology - Enzyme specificity - or is it?
- 5 Chemistry - Ion migration - copper(II) chromate(VI)
- 6 Science/ICT - Using tapeless video cameras in Science
- 7 ICT - Digital video cameras - a comparison
- 8 Physics - Back to the '70s with ammeters & voltmeters
- 9 Physics - Radioactive sources in schools
- 10 Physics - Obtaining an absolute measure of atmospheric pressure
- 11 CPD News - Advance notice of Heads of Faculty course and courses for teachers of Primary, Chemistry, Physics & Biology in support of a Curriculum for Excellence.
- 12 Annual Conference & AGM date announced.
- 12 SSERC Shop - surplus

The *SSERC Bulletin* is published by SSERC, 2 Pitreavie Court, South Pitreavie Business Park, Dunfermline KY11 8UB
Telephone: 01383 626070 Fax: 01383 842793 E-mail: sts@sserc.org.uk Web: www.sserc.org.uk

SSERC Annual Conference & AGM 2007

Breaking down barriers

We are pleased to announce that the SSERC Annual Conference & AGM at the Glasgow Science Centre, Glasgow on 30th November 2006.

If you want to make sure of a place please contact *Sheila* on sheila.maclellan@sserc.org.uk

We hope to feature workshops as part of this year's programme. Keep an eye on the SSERC website for details.

SSERC Shop - Surplus

Prices do not include VAT. It will be added to your order. Schools will be able to reclaim this input VAT. Postage and packing, will be charged for. Please don't send cash with an order, but wait for us to bill you with an advice note then pay on that. Official orders may be used. Please order at least £10 worth of goods to minimise the proportion that is p & p costs.

- | | |
|---|---|
| 614 Miniature motor: 3 V to 6 V d.c. No-load current: 220 mA at 9600 r.p.m. and 3 V. Stall torque 110 mN m. Body: 30 mm x 24 mm dia. Shaft: 10 mm x 2 mm dia. 45p | 690 MES lamp, 6 V, 150 mA..... 10p |
| 593 Miniature motor: 1.5 V to 3 V d.c. No-load current: 350 mA at 14800 r.p.m. and 3 V. Stall torque 50 mN m. Body: 25 mm x 21 mm dia. Shaft: 8 mm x 2 mm dia. 30p | 866 Lens-end lamps, MES, 1.2 V. |
| 621 Miniature motor: 1.5 V to 3 V d.c. Open construction, ideal for demonstration. Dimensions: 19 x 9 x 18 mm. 8-tooth pinion on output shaft..... 25p | 691 MES battenholder. 20p |
| 839 Solar motor: 12 mm long by 25 mm dia. Shaft: 6 x 2mm dia. (see also Item 838 - solar cell)..... £1.70 | 730 Battery holder: AA-type cell, holds 4 cells, PP3 outlet..... 20p |
| 773 Tachometer (ex equipment) £2.25 | 835 Battery holder: AA-type cell, holds 2 cells, PP3 outlet..... 15p |
| 893 Zinc rods: Length 125mm, supplied packs of 10 (per pack).. £2.70 | 729 Battery connector: PP3 type, snap-on press-stud, also suitable for items 692 and 730. 5p |
| 801 Propeller: 3 blades, each 62 mm. Fits 2 mm shaft 35p | 358 Capacitor, electrolytic: 28 µF, 400 V..... £1.00 |
| 165 Bimetallic strip: Original type, length 10 cm. High expansivity metal: Ni/Cr/Fe - 22/3/75. Low expansivity metal: Ni/Fe - 36/64 (invar). 15p | 615 Thermocouple wire: Type K, 0.5 mm dia., 1 m of each type supplied: Chromel (Ni Cr) and Alumel (Ni Al); for making thermocouples, (Bulletins 158 and 165). £3.10 |
| 166 Ditto, but 30 cm length..... 40p | 640 Disk thermistor: (substitute type) resistance of 15 kohm at 25°C, $\beta = 4200$ K. Means of accurate usage described in Bulletin 162. 30p |
| 861 Bimetallic strip: (new type - won't rust after exposure to Bunsen flame, hence higher price) 10 cm length. 30p | 838 Solar cell: 100 x 60 mm, 3.75 V per cell max..... £2.10 |
| 862 Ditto, but 30 cm length..... 80p | 507 Optical fibre: Plastic, single strand, 1 mm dia. Applications described in Bulletin 140 and SG Physics Technical Guide Vol.1. Priced per metre. 50p |
| 837 Ring magnet: 40 mm o.d., 22 mm i.d. 35p | 508 LEDs: 3 mm, red. Price per 10. 50p |
| 823 Ceramic block magnets: Poles at ends, 10 x 6 x 22 mm. 12p | 761 Ditto, yellow. Per 10. 60p |
| 723 Microswitch: Miniature, SPDT, lever operated. 40p | 762 Ditto, green. Per 10..... 60p |
| 354 Reed switch: SPST, 46 mm long overall, fits RS reed operating coil Type 3. 10p | Light Shaping Diffuser - As described in SSERC Bulletin 216, page 6. Supplied in 35mm slide holder, two types: |
| 738 Relay: 6 V coil, DPDT, contacts rated 3 A, 24 V d.c. or 110 V a.c... 75p | 894 Elliptical cross-section beam. 40° x 0.5°..... £4 |
| 688 Croc clip: Miniature, insulated, red..... 5p | 895 Round cross-section beam. 10°..... £4 |
| 759 Ditto, black. 5p | 883 Convex meniscus lens: Focal length = 500 mm, dia. = 50 mm. APPLICATION: Demonstration of large scale, circular, interference fringes with laser radiation. Manufactured specially for SSERC with generous grant from EPSRC.£7.00 |
| 789 MES lamp, 3.5 V, 0.3 A 10p | Latest Equipment Offers available online on the SSERC website :-
http://www.sserc.org.uk/members/equipoff.htm |