

Section 3: Sources for Chemistry Clubs

This section contains references to a range of resources that you may find useful for your chemistry club activities.

The importance of industrial contacts to a successful Salters' Chemistry Club

As a chemistry teacher you have the great advantage of working in a laboratory which can be an exciting, even theatrical, place.

However, there are some aspects of chemistry for which you need to establish links with practising scientists in research and industry.

Through such industrial contacts you can:

- acquire up to date facts and figures,
- give your pupils an idea of the economic importance and environmental impact of chemistry in the modern world,
- promote chemistry as an activity which can improve standards of living worldwide by providing cleaner water, more food and better drugs for fighting disease.

Young scientists are naturally curious and creative. If you can give them opportunities, through a **Salters' Chemistry Club**, to do experimental work with an input from you and your colleagues and inventive and expert people from industry, the results can be very rewarding.

If you're lucky such contacts may lead to other spin-offs such as loans or gifts of apparatus, but beware of accepting items which may not be safe for school science or for which you do not have an immediate use. However it is the meeting of minds and the sharing of information that is really important.

Making contact with industry

The best sources of help for your **Salters' Chemistry Club** are probably going to be those companies which employ numbers of chemists or chemical engineers. These companies may have sufficient staff to consider releasing employees to help with school projects and will certainly wish to promote chemistry as a career.

You may find that the very large companies have well developed school-link schemes but that their resources are concentrated in schools close to their sites. If you are not within their catchment area then smaller, more local companies might be willing to help.

Don't forget, however, that chemistry graduates can be found in a wide range of careers outside the mainstream chemical and pharmaceutical industries. If your school is a long way from any company involved in chemical research and development consider contacting other places where chemists are employed e.g. hospitals, water companies and food manufacturers.

Experience shows that contacts with industry are likely to be more successful if there is an existing entry through a parent or governor.

The Chemical Industry Education Centre (CIEC) produces information on forming links with industry (see page 97 for address). Further information about industrial contacts can also be obtained from the professional bodies and information services listed under 'Helpful organisations' (page 96).

When you register as a **Salters' Chemistry Club**, the Club may be able to suggest an industrial contact in your area. Please write or fax the Administrator of the **Salters' Chemistry Club** at Salters' Hall. The address is on the inside front cover of this Handbook.

When writing to an industrial organisation try to identify a named individual. Otherwise address your letter to The Education Liaison Officer.

A suitable letter could read as follows.

XXXX School Salters' Chemistry Club

We are writing to ask if you would be prepared to contribute to the success of a new initiative to promote chemistry in this school, the formation of a **Salters' Chemistry Club**.

The Club will provide opportunities for our pupils to enjoy practical, bench-top chemistry outside normal lesson times and we intend to enter a team in the regional **Salters' Festival of Chemistry** which will take place at

It would be helpful to have support and encouragement from a local company/organisation/institution. It would be very useful, for example, if one or more of your staff were available to come into school and tell us about the work of your company. This would encourage our pupils to improve their skills and promote an awareness of the importance of chemistry.

However we would be very grateful for *any* help you can give us, for instance financial support or the gift of chemicals or equipment.

If you would like further information on what your possible involvement might entail, please contact(Teacher's name and contact numbers - *ensure that you can be easily contacted at any telephone number quoted*).

If I may, I will telephone you next week to follow up this letter.

We hope you will be able to support our **Salters' Chemistry Club** and look forward to hearing from you.

Salters' mentor scheme

Many teachers have become involved with the **Salters' Chemistry Club** since it was started. A number are willing to offer advice on setting up a new club. If you register for a **Salters' Festival of Chemistry** the Club may be able to put you in contact with an experienced teacher in your area. Please write or fax The Salters' Chemistry Club Administrator at Salters' Hall. The address can be found on the inside front cover.

Helpful organisations

An Roinn Oideachais provides safety guidelines for schools in The Republic of Ireland in the form of two manuals: Safety in School Science and Safety in the School Laboratory (both produced by the Inspectorate of the Department of Education).

Contact: An Roinn Oideachais, Post Primary Administration Section, Hawkins House, Hawkins Street, Dublin 2

Tel: (01) 873 4700 Fax: (01) 677 7342

The Association of the British Pharmaceutical Industry (ABPI) represents approximately 100 companies that research, develop and manufacture prescription medicines in Britain. The Association believes that developing better medicines can only be achieved through careful scientific enquiry. One of its aims is to provide young scientists with materials which enable them to increase their knowledge and understanding of science, because today's young scientists are tomorrow's researchers. As well as providing curriculum resource materials for schools, the Association helps member companies to develop local education liaison activities.

For colour brochure and order form contact: Publications Dept., ABPI, 12 Whitehall, London SW1A 2DY

Tel: 0207 930 3477 Fax: 0207 747 1411

web site: www.abpi.org.uk

The Association for Science Education (ASE) is the professional association for teachers of science and technicians and the largest subject teaching association with members in primary and secondary schools, and colleges of further and higher education.

Contact: ASE, College Lane, Hatfield, Herts. AL10 9AA

Tel: 01707 283000 Fax: 01707 266532

e-mail: ase@asehq.telme.com web site: www.ase.org.uk

British Association for the Advancement of Science (BA) promotes an understanding of science and technology and includes a programme for young people in the youth section, BAYS. A BAYS day takes place annually in London in March and many regional events are also organised.

Contact: BAYS, 23 Savile Row, London W1X 2NB

Tel: 0207 973 3060/1 Fax: 0207 973 3051

BA web site: www.britassoc.org.uk

The Biochemical Society founded in 1911, is a learned society with an international membership of over 9000 scientists working in academia and industry. Together with its publishing company, Portland Press, it produces learning resources for 11+ students - guidance notes, videos and textbooks. The Society's regional section network provides contacts for students with industry and higher education, as well as running schools' lectures and taking part in major careers fairs for school pupils. The Society also compiles statistics on employment and vacancies and provides information on careers in the molecular life sciences.

Contact: The Education Officer, The Biochemical Society, 59 Portland Place, London W1B 1QW

Tel: 0207 580 5530 Fax: 0207 637 3626

e-mail: genadmin@biochemistry.org web site: www.biochemsoc.org.uk

Chemical Industries Association (CIA) is a trade association representing the interests of large and small chemical companies. The Association actively pursues policies designed to support the teaching of science and technology and encourages local chemical companies to develop education/business partnerships. The CIA together with the University of York set up the Chemical Industry Education Centre (CIEC).

Contact: The Chemical Industries Association, King's Buildings, Smith Square, London SW1P 3JJ
Tel: 0207 834 3399 Fax: 0207 834 4469 web site: www.cia.org.uk

The Chemical Industry Education Centre (CIEC) is a joint venture by the University of York and the Chemical Industries Association. It is dedicated to the effective teaching of science and technology and to encouraging partnerships between schools and the chemical industry. It offers a specialist research and consultancy service to industry and provides advice and information to teachers and schools throughout the UK. CIEC produces a wide range of teaching resources which are the product of partnership between professional teachers and industrial scientists.

Contact: Chemical Industry Education Centre, University of York, Heslington, York, YO10 5DD
Tel: 01904 432523 Fax: 01904 434460
e-mail: ciec@york.ac.uk

Consortium of Local Education Authorities for Provision of Science Services (CLEAPSS) School Science Service Publishes *Hazcards* and other model risk assessments, *Student Safety Sheets* and runs a telephone HelpLine providing advice about procedures, resources and safety (including special risk assessments). These services are only available to members, however this includes 99% of LEAs together with approx. 1700 foundations and independent schools.

Contact: CLEAPSS School Science Service at Brunel University, Uxbridge UB8 3PH
Tel: 01895 251496 Fax: 01895 814372
e-mail: science@cleapss.org.uk web site: www.cleapps.org.uk

Creativity in Science and Technology (CREST) provides opportunities for students to experience scientific and engineering research at first hand and to couple this with an opportunity for national accreditation via Bronze, Silver and Gold Awards.

Contact: Crest Awards, 23 Savile Row, London W15 2EZ
Tel: 0207 973 3309 Fax: 0207 973 3051

Science, Engineering, Technology and Mathematics Network (SETNET) was formed in 1996 to develop a framework of policy and collaboration within which existing centres, schemes, systems and services can work more effectively to enhance the teaching and learning of engineering-related subjects, principally mathematics, science and technology, and to promote good experience of industry for the advancement of education for the public benefit.

Contact: SETNET, 37 Queen Anne St, London W1G 9JB
Tel: 0207 636 7705 Fax: 0207 636 7706 Free teacher helpline: 0800 146415
e-mail: setnetwork@aol.com web site: www.setnet.org.uk

Science and Technology Regional Organisation (SATRO) is a network covering the United Kingdom that consists of 36 independent Science and Technology Regional Organisations to help create the competitive scientific, engineering, technological and mathematical community of tomorrow. SATROs act as local and regional delivery agents for a number of UK wide programmes including CREST awards and the British Association's Young Investigators and Science Clubs.

Contact: The SATRO Network, c/o The Birmingham SATRO, The University of Birmingham, School of Electronic and Electrical Engineering, Edgbaston, Birmingham B15 2TT
Tel: 0121 414 4318 Fax: 0121 414 4291
e-mail: satro@bham.ac.uk

Scottish School Equipment Research Centre (SSERC) performs a similar function to CLEAPSS (above) for Scottish schools.

Contact: SSERC, St Mary's Building, 23 Holyrood Road, Edinburgh EH8 8AE
Tel: 0131 558 8180 Fax: 0131 558 8191
e-mail: sts@sserc.org.uk web site: www.sserc.org.uk

The Pupil Researcher Initiative (PRI) is a science curriculum development project established to support the teaching and learning of science in the 14 -16 age range. It is funded by the Engineering and Physical Sciences Research Council (EPSRC) and the Particle Physics and Astronomy Research Council (PPARC) and is coordinated by a team at the Centre for Science Education at Sheffield Hallam University. The PRI produces pupil research briefs for investigative work, gives advice and small grants for schools organising School Science Fairs and provides access to PhD placements free to schools.

Contact: PRI, Centre for Science Education, School of Education, Sheffield Hallam University, Howard St, Sheffield S1 1WB

Tel: 0114 225 4880 **Fax:** 0114 225 4872

e-mail: n.a.fuller@shu.ac.uk **web site:** www.shu.ac.uk/pri

The Royal Society, founded in 1660, is a wholly independent and self-governing learned society for the promotion of natural and applied sciences. As the UK academy of science it operates both nationally and internationally.

Contact: The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG

Tel: 0207 839 5561 **Fax:** 0207 930 2170

e-mail: info@royalsoc.ac.uk **web site:** www.royalsoc.ac.uk

The Royal Society of Chemistry (RSC) is the UK's learned society for chemistry and the professional body for chemists. It is concerned with advancing chemistry as a science, disseminating chemical knowledge and developing applications of chemistry. The Education Department produces a wide range of teacher support and careers material and runs many INSET courses for teachers. See Bibliography for useful publications.

Contact: Education Department, The Royal Society of Chemistry, Burlington House, Piccadilly, London W1V 0BN

Tel: 0207 437 8656 **Fax:** 0207 437 8883

e-mail: education@rsc.org **web site:** www.rsc.org

Suppliers of unusual items

B&H Liquid Crystal Devices Ltd 7 Hardwicks Way, London SW18 4AW

Tel: 0208 877 1233 **Fax:** 0208 877 0784

Develop colour changing cards, stickers, moulded plastic items and light reactive inks, heat sensitive mouse mats and liquid style thermometers.

Capricorn Chemicals (Glowbug Division) Lisle Lane, Ely, Cambs. CB7 4AS

Tel: 01353 664974 **Fax:** 01353 668801

Supply luminescent colours and fluorescent pigments, including UV reactive ones.

Fibre crafts, Old Portsmouth Rd, Peasmarsh, Guildford GU3 1LZ

Tel: 01483 565800 **Fax:** 01483 565807

Supply dyes (including madder and logwood), specialist books and equipment for dyeing.

Gordon Elliott, Stone Cottage, Tickerage Lane, Blackboys, E Sussex TN22 5LX **Tel:** 01825 890491

Supplies reasonably priced toys, badges using liquid crystals, holograms and microlenses.

Scientific Explorer, 2802E Madison, Suite 114, Seattle WA 98112 USA

Produce kits such as Make your own perfume, Greek Science etc. Available from the Science Museum, London, and other museum shops.

Sigma Aldrich Chemical Co. The Old Brickyard, New Road, Gillingham, Dorset SP8 4XT

Tel: 0800 717181 **Fax:** 0800 378538 **Sales line:** 0800 378785

Supply a wide range of chemicals (including luminol) and also have periodic table mouse mats, mugs and laboratory equipment. Advice available from Technical Services Dept.

Bibliography

Books

- Chemical Curiosities* - a compilation of spectacular experiments and quotes, (translated from German). HW Roesky and K Mockel, VCH Publishers ISBN 3-527-29414-7
- Chemical Demonstrations Handbooks for Teachers of Chemistry; Volumes 1-4*
B Shakhshiri. Published and distributed by the University of Wisconsin.
Department of Chemistry, 1101 University Avenue, Madison WI53706-1396 USA
ISBN 1-870-342387 Dept. Chemistry e-mail: ICE@chem.wisc.edu
- Chemical Magic* - fun experiments for a range of abilities. Leonard Ford, Dover Publications. ISBN 0-486-67628-5
- Classic Chemistry Demonstrations* - 100 tried and tested experiments published and distributed by The Royal Society of Chemistry. ISBN 1-870343-387. See 'Helpful organisations' for RSC address.
- In Search of More Solutions* - more ideas for problem-solving activities. Published and distributed by The Royal Society of Chemistry. ISBN 1-870343-35-2 See 'Helpful organisations' for RSC address.
- Problem Solving at the Bench* - 100 mini-projects in chemistry. Robert Hadden. *Further Problem Solving at the Bench* - 50 midi-projects. Robert Hadden. Published and distributed by Centre for Science Education, The University of Glasgow. ISBN 0-85261-3741
- The Extraordinary Chemistry of Ordinary Things* - many good examples of everyday chemistry and some worthwhile demonstrations. Carl Snyder. John Wiley. ISBN 0-471-31042-5

Journals / Magazines

- Catalyst* - aimed at GCSE students. Philip Allan Publishers Ltd. Market Place, Deddington OX15 0SE
Tel: 01869 338652
- Chemistry 13 News*, *Chemistry Matters*, *Education in Chemistry*, *Chemistry in Action* and others available through The Schools Publication Service, Education Department, Royal Society of Chemistry (address etc. under 'Helpful organisations'). (The Schools Publication Service provides a wide range of material from all around the world for a modest subscription.)
- Chemistry Review* - aimed at A level students. Philip Allan Publishers Ltd. (See *Catalyst* entry above.)

Guides

- Bringing Science to Schools* produced by the Committee for Public Understanding of Science (COPUS). Contact COPUS at The Royal Society (see 'Helpful organisations') for address etc.
- Making that Link* a practical guide to scientist-school liaison. Biotechnology and Biological Sciences Research Council (BBSRC), Polaris House, North Star Avenue, Swindon, Wilts. SN2 1UH
Tel: 01793 413302 Fax: 01793 413382
- Scientific Research in Schools* a compendium of practical experience. E Albone, N Collins and T Hill.
Contact: The Clifton Scientific Trust, 49 Northumberland Road, Bristol BS6 7BA
- Scientists talking to secondary schools* produced by the Medical Research Council (MRC). Contact the Education Officer, MRC, 20 Park Crescent, London W1N 4AL Tel: 0207 636 5422 Fax: 0207 436 2665
- The Young Scientist's Guide to Giving Talks* a booklet providing useful help and guidance for youngsters on making presentations and giving talks. Available from PRI (see 'Helpful organisations' for address).

Other web sites

<i>National Curriculum Science</i>	www.schoolscience.co.uk
<i>American Chemical Society</i>	www.acs.org/
<i>Anglia MultimedialBT</i>	www.angliacampus.com
<i>Chemists Art Gallery</i>	www.csc.fi/lul/chem/graphics.html
<i>The Royal Society of Chemistry</i>	chemistry.rsc.org/rsc/
<i>Science Museum</i>	www.sciencemuseum.org.uk
<i>Journal of Chemical Education</i>	jchemed.chem.wisc.edu
<i>Element Tables, atomic numbers and physical data</i>	www.cs.ubc.ca/elements/
<i>Web Elements</i>	www.shef.ac.uk/~chem/web-elements/
<i>List of resources</i>	www-hpcc.astro.washington.edu/scied/science.html
<i>Frequently asked questions</i>	www.yahoo.com/computers_and_internet/internet/world_wide_web/
<i>NGfL: puzzles, games, experiments</i>	www.creative-chemistry.org.uk
<i>Molecule of the Month</i>	www.bris.ac.uk/Depts/Chemistry/MOTM/motm.htm
<i>Classic papers from the history of chemistry</i>	dbhs.wvusd.K12.ca.us/Chem-History

Other sources of information

Science Line offers members of the public the opportunity to obtain, over the telephone, authoritative answers to their scientific questions.

Tel: 0345 600444 4.30pm - 6.30pm.

The Royal Society of Chemistry (Local Sections) can provide the titles of lectures and names of lecturers.

Advertising your Club

Displaying Posters

- There are a number of posters available from the Administrator of **The Salters' Chemistry Club** (address on the inside cover of this Handbook) which could be used to advertise the Club around the school.
- The Royal Society of Chemistry (RSC) publishes a wide range of posters which are free and could be used to raise the profile of chemistry in school. See RSC address under 'Helpful organisations'.

Contacting the Media

A personal call to the editor of your local paper will raise awareness of Club activities. There are samples of press releases available from **The Salters' Chemistry Club** (address etc. on inside front cover of this Handbook).