

## 'How Science Works' A Course for Technicians

### Meeting the Spirit of the New GCSE

The new GCSE Science is offering science education a unique challenge and opportunity to make the delivery of science in schools and colleges relevant, interactive and illuminating.

This new hands-on course, designed in collaboration with [ASE Inset Services](#), follows on from the successful 'Technicians Update' courses run in the summer term 2006. The day will be equally suitable for all technicians whether inexperienced or experienced.

The day will give a comprehensive coverage of the types of activities that could be encountered during the new GCSE courses. The course will also give an insight into the 'How Science Works' theme and how technicians can support the teaching of this important part of the new specifications.

#### How (Micro) Biology Works

- **Thursday 25 January 2007, University of Leicester, 9.45am-4pm**
- **Thursday 1 February 2007, Bishop Grosseteste University College, 9.45am-4pm**
- **Thursday 8 February 2007, University of Nottingham, 9.45am-4pm**

This very relevant course will demonstrate the application of how science works in the real world of medicine, industry and everyday life. Led by [Malcolm Ingram](#), delegates will examine the techniques that scientists employ to isolate and identify microbes, as well as the methods used to control their spread.

The many practical ways of using microbes for our benefit and looking at a number of exiting and challenging investigations that students can carry out at KS4 and above will also be covered. The course will concentrate on the practical side of working with microbes, emulating the practice of the medical profession technicians in pathology labs around the country, as well as the microbiology laboratories in industry.

## How to book

All our courses are available on a first come, first served basis. The fee for a whole day course covers a buffet lunch and refreshments throughout the day plus all course materials. Additional discounts are available in some circumstances e.g. there will be a reduction of £25 if more than one technician from the same school books on the same course. Travelling costs of up to £20 will also be reimbursed.

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Course title	Venue	Date(s)	Full Fee	No. required	Sub. Fee*	No. required
How (Micro) Biology Works	Leicester	25/01/07	£225	.....	£105	.....
	Lincoln	01/02/07	£225	.....	£105	.....
	Nottingham	08/02/07	£225	.....	£105	.....

### Invoice details:

Invoice contact name.....

Delegate name(s).....

School/College .....

Address.....

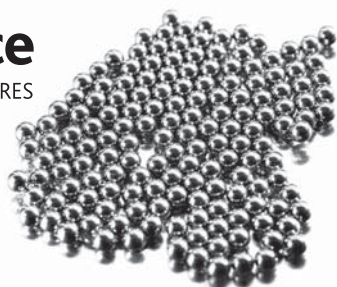
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Telephone .....Date.....

### Please return to:

Science Learning Centre East Midlands, University of Leicester, School of Education, 21 University Road, Leicester LE1 7RF

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## 50% Discount

If you attend 4 of our courses in an academic year you can have 50% off your next course! Contact us for further details.

### Full or Subsidised fee?

All maintained or state funded secondary schools can take advantage of our subsidised fees.

The national network of Science Learning Centres is a joint initiative by the Department for Education & Skills and the Wellcome Trust. Science Learning Centre East Midlands is run by a consortium of the University of Leicester, the University of Nottingham and Bishop Grosseteste University College Lincoln.

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# Introducing Interactive Whiteboards to Science Teaching

- **Wednesday 7 February 2007, University of Nottingham, 4pm-7pm**
- **Tuesday 27 February 2007, University of Leicester, 4pm-7pm**

Using an interactive whiteboard can deliver many things. They can:

- Motivate
- Free up thinking time
- Increase engagement with tasks
- Add flexibility and interaction to the development of data & its storage

This course, first run in the Autumn and Spring terms 2005/6, designed and led by **Chris Bonam**, takes place in a twilight session and is aimed at those who have yet to incorporate interactive whiteboards into their teaching and those who support the teaching of science in secondary school or college.

A needs analysis will be sent to each delegate in advance of the course so the content of the session can be geared to those attending. There will be plenty of hands-on experience and delegates will have the opportunity to try a range of different applications with the whiteboard in a friendly and supportive atmosphere. These will include:

- Using PowerPoint to 'drag and drop' and annotating slides
- Experimenting with modelling using commercial software
- Processing class results using Excel
- Using 'object management' to move objects around the screen
- Brainstorming and saving via the interactive whiteboard as an aid for lesson progression

'Great! I learnt a huge amount and can now make much better use of my whiteboard.'

*Caroline Chisholm School, Northamptonshire*

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Course title	Venue	Date(s)	Full Fee	No. required	Sub. Fee*	No. required
Introducing Interactive Whiteboards to Science Teaching	Nottingham	07/02/07	£95	.....	£55	.....
	Leicester	27/02/07	£95	.....	£55	.....

\* Subsidised fees are applicable for all maintained schools in England.

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# Surely it's Banned.... Banned Chemistry Experiments, Safer Chemicals, Safer Reactions

- Tuesday 24 April 2007, University of Leicester, 4pm-6.30pm

This twilight session talk for teachers and technicians will deal with the requirements that employers and teachers have to fulfil with regard to the health and safety of chemical reactions in schools as a result of the *Control of Substances Hazardous to Health (COSHH) Regulations*.

Led by **Bob Worley** from **CLEAPSS**, the session will be illustrated with a number of demonstrations to show that the thinking behind the legislation, which has often been blamed for stifling the teaching of school chemistry, should not result in a form-filling exercise. It is still possible to do practical work within a safe context.

The session is suitable for all those who teach and support chemistry to GCSE or A level, including newly qualified and beginning teachers and any who are wary about dealing with hazardous chemicals and dangerous procedures.

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Course title	Venue	Date(s)	Full Fee	No. required	Sub. Fee*	No. required
Surely it's Banned....Banned Chemistry Experiments, Safer Chemicals, Safer Reactions	Leicester	24/04/07	£40	.....	£25	.....

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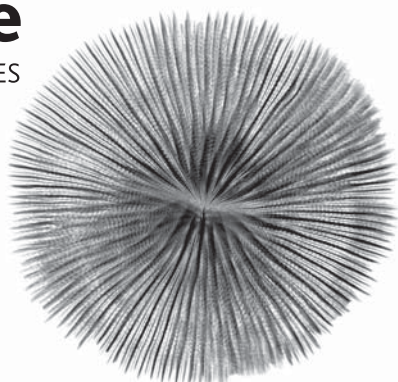
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# Hints & Tips for Science Technicians

- Thursday 3 May 2007, John Cleveland College, Hinckley, 10am-4pm

This new and exciting one-day course has been devised and will be led by [Dave Corbett](#), [Sue Cure](#) and [Phil Leach](#), Science Technicians at John Cleveland College.

With many years of experience in the role of school science technician, the team have designed a practical hands-on day to share their experience, skills and good practice. The day will be equally suitable for both inexperienced and experienced science technicians.

The day will comprise 3 workshops with activities in biology, chemistry and physics to illustrate the diverse nature of the role and how to support some of the more difficult practical procedures that take place in a large science department. Delegates will attend all of the sessions giving a comprehensive coverage of the three scientific disciplines. In addition they will have plenty of opportunities to ask questions, try out practical procedures and hone their skills in each of the workshops.

The workshops will cover:

- Hints & tips in biology, chemistry & physics
- What works...and what doesn't!
- Maintenance of science equipment
- Can I make it? Or should I buy it?
- Areas of potential difficulty
- Ideas of demos & practicals to use on Open Evenings.

In addition the individual workshops will include:

- Chemistry

Delegates will have the opportunity to try a number of techniques including; titration (both simple & advanced); using colorimeters; electrolysis (including galvanic cells) and using ion exchange resins.

- Biology

Making a potometer involves several skills useful to technicians. Delegates will make their own potometer and be provided with all the necessary instructions as well as details of suppliers of the individual parts so they can repeat the process if they wish.

- Physics

Delegates will be given advice on how to calculate resistance, power, voltage & current; how to wire up simple circuits; fault finding using a multimeter; how to make bulb holders using drain pipes; simple soldering techniques; calibrating a signal generator and setting up ripple tanks.

Each delegate will be supplied with a range of materials that will be of immediate use when back in school or college, to take away with them.

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Hints & Tips for Science Technicians	Hinckley	03/05/07	£100	.....	£50	.....

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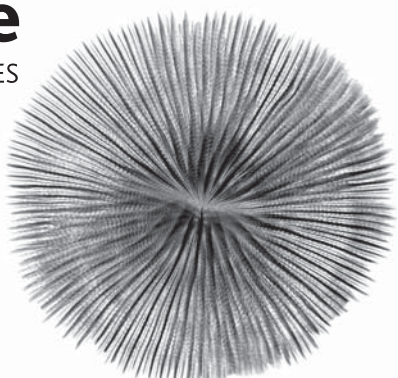
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# Basic Practical Microbiology for Secondary Schools

- **Tuesday 5 June 2007, University of Leicester, 9am-5pm**

This accredited, comprehensive, one day course for secondary teachers and their technicians will provide basic training in the techniques needed to carry out interesting microbiology investigations safely in school or college. The course is suitable for both complete beginners and those wishing to 'brush up' their practical microbiology skills.

The course will be led by **Dr John Grainger**, Chairman of MISAC and **Dr John Schollar** from the National Centre for Biotechnology Education. The Society for General Microbiology also aims to give delegates the opportunity to keep up-to-date with current issues and research in microbiology, within the context of the National Curriculum and examining body specifications.

The day will be comprised of a number of short presentations and plenty of hands-on activities. Safety in all aspects of microbiology practice will be emphasised throughout the day. The course will conclude with a short answer theory test of 20 questions and a practical examination, in order to gain accreditation (from the Society for General Microbiology). In addition to course materials that accompany the activities, each delegate will receive a set of factsheets and Microbiology for Secondary Schools - a set of 21 investigations for use back in school or college.

The day will cover a range of microbiological techniques and processes including:

- An introduction to microbiology, aseptic technique and safety
- Preparation: risk assessment and good microbiological laboratory practice
- Resources: equipment, apparatus and materials
- Media, equipment and sterilisation
- Basic practical techniques
- Microbiology in action:
  - Testing sensitivity to antibacterial substances
  - Staining bacteria and yeasts
- Examination for certification
  - Theory examination
  - Practical examination (preparing a streak plate; transferring culture from tube to tube by loop; transferring measured volume of sterile solution from bottle to bottle by pipette)

The Science Learning Centre East Midlands is pleased to announce that the SGM will be supporting this course further by offering £100 towards supply cover costs for all teachers completing the course and achieving the standard required in the examination. In addition, should delegates' schools be members of SGM the course cost will be discounted by a further £10.

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Course title	Venue	Date(s)	Full Fee	No. required	Sub. Fee*	No. required
Basic Practical Microbiology for Secondary Schools	Leicester	05/06/07	£60	.....	£40	.....

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