



# Chemistry CPD for teachers



An extensive programme of professional development for teachers working in London schools

Free of charge to eligible schools

In collaboration with the STEM Education Centre London, Institute of Education

Supported by the Mayor of London's London Schools Excellence Fund



SUPPORTED BY  
**MAYOR OF LONDON**



# The CPD Programme

## Chemistry for Non-Specialists (4-day course)

29 January, 30 January, 19 March and 12 May 2015

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A four-day course designed to provide teachers with the confidence, flair and enthusiasm to teach chemistry at KS3 or KS4. It is specifically aimed at those who are not chemistry specialists.

The first two days take place on consecutive dates and are followed by one-day events some weeks later to allow teachers to reflect and practise the skills and learning gained. About 50% of the course is practical-based. You will take away an extensive booklet of support materials.

## Developing Expertise in Practical Chemistry – for Newly and Recently Qualified Chemistry Teachers

4 November 2014 or 25 February 2015 or 14 July 2015

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A one-day course aimed at supporting newly and recently qualified chemistry teachers of 11-18 year olds. You will try out and evaluate a variety of practical activities and demonstrations to improve your confidence and expertise. We will introduce relevant health and safety aspects and integrate them throughout the course.

## Developing Expertise in Teaching: a series of short, practical workshops

These short modules run from 2.15 pm to 5.30 pm. They focus on specific topics encountered in the chemistry curricula and are appropriate for KS4 and post-16.

### Structure and Bonding

14 October 2014 or 6 May 2015

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- Bonding: challenging the models – practical activities and relating these to models
- Exploring the nature of bonding – it's all electrostatics!
- Taking it further – periodic trends, 'spectrum of bonding', relating structure and properties

### Organic Chemistry

26 November 2014 or 29 April 2015

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- Free radical substitution – practical activities
- Introducing mechanisms – how can we get the ideas across?
- Nucleophilic substitutions – practical activities
- Review of experiments and resources

### Quantitative Chemistry

17 December 2014

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- Moles and masses – practical activities and related calculation work
- Introducing the mole – possible teaching approaches
- Moles, gases and solutions – practical activities linking 'macro' and 'micro'
- Moles in action – demonstrations to grab the attention and challenge thinking

## Acids and Bases

23 February or 4 June 2015

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- Interpretation of the reactions of acids and bases linked to bonding and the periodic table
- Bronsted-Lowry theory; strong and weak acids
- Equilibrium and weak acids as indicators and buffers

## Energy and Change

5 March 2015

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- Exploring energy changes in chemistry – practical activities
- Introducing energy changes in chemistry – possible teaching approaches
- Practical activities to explore understanding of enthalpy changes and Hess's Law – introducing a new approach using K diagrams
- Taking it further – practical activities

## Analytical Techniques

16 March 2015

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- Using the properties of substances for identification and separation of mixtures
- Approaches used in teaching analysis, eg spectroscopic methods
- Using fundamental principles eg to derive the spectrochemical series

## Equilibria

21 April 2015

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- Developing understanding of equilibria systems – examining, thinking, modelling
- Making sense of le Chatelier – circus of practical activities
- Equilibrium, temperature and applying ideas
- Equilibrium and entropy

## Rates of Reaction

17 June 2015

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- Kinetic theory and rates through experimental work
- Collision theory from KS3 to post-16, the Maxwell-Boltzmann distribution and role of catalysts
- Demonstration experiments to support understanding and motivation of students

## Redox

2 July 2015

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- Exploring redox reactions – student practicals and teacher demonstrations
- Introducing redox chemistry – possible teaching approaches
- Keeping track of electrons – practical activities to explore understanding
- Taking it further – redox in action! – student practicals and teacher demonstrations



**The Royal Society of Chemistry is working with the STEM Education Centre London to offer an extensive programme of CPD to teachers working in London schools. This programme is generously supported by the Mayor of London's London Schools Excellence Fund and is free of charge to eligible schools.**

The programme offers a range of models (a four-day course, a one-day course, a series of half-day workshops) and covers a wide variety of topics. The focus is on gaining confidence in using practical work to enhance and extend students' understanding, with an emphasis on techniques, scientific enquiry and problem-solving. All trainers are carefully chosen by the organisers and endorsed by the Royal Society of Chemistry.

The courses take place at the STEM Education Centre London, Institute of Education, in high-quality teaching and laboratory facilities. Participant/trainer ratios are approximately 12/1.

This is an excellent opportunity to experience CPD from trusted providers with a strong record in offering effective support for chemistry teaching. STEM Education Centre London has 10 years' experience in providing CPD programmes in STEM subjects, including its work for the national network of Science Learning Centres (as Science Learning Centre London). The Royal Society of Chemistry is the world's leading chemistry community and the largest non-government supporter of chemistry education in the UK.

- The programme aims to offer support to as many teachers as possible so at this stage, you are invited to book one event only. You can express an interest in a second event. Your second event will only be confirmed four weeks prior to the event if places are still available.
- When allocating people to courses, we will give priority to teachers who have not previously attended any other Royal Society of Chemistry teachers' CPD workshops supported by the London Schools Excellence Fund..
- No teacher will be able to attend more than two events over the lifetime of the programme, which runs from March 2014 to July 2015.
- All teachers working in Greater London schools and colleges are eligible.



# Booking form

## Participant details

Title	First name
Surname	
Job title	
Career stage NQT <input type="checkbox"/> 2-3 years <input type="checkbox"/> 3+ years <input type="checkbox"/>	
Email	

## School/College details

School or college name	Postcode
Access/dietary special requirements	
Booking authorised by	

## Choice of course

### Chemistry for Non-Specialists (4-day course)

29-30 Jan, 19 Mar and 12 May 2015

### Developing Expertise in Practical Chemistry – for Newly and Recently Qualified Chemistry Teachers

4 Nov 2014 or  25 Feb 2015 or  14 July 2015

### Developing Expertise in Teaching: a series of short, practical workshops

**Structure and Bonding**  14 Oct 2014 or  6 May 2015

**Organic Chemistry**  26 Nov 2014 or  29 Apr 2015

**Quantitative Chemistry**  17 Dec 2014

**Acids and Bases**  23 Feb or  4 June 2015

**Energy and Change**  5 Mar 2015

**Analytical Techniques**  16 Mar 2015

**Equilibria**  21 Apr 2015

**Rates of Reaction**  17 June 2015

**Redox**  2 July 2015

### Submit by email

stemed@ioe.ac.uk

### Submit by post

STEM Education Centre  
London,  
Institute of Education,  
20 Bedford Way,  
London WC1H 0AL

Call for enquiries  
020 7612 6325



The Royal Society of Chemistry will store the information you supply in its electronic records in order that information about its activities, products and services may be sent to you by mail or email. If you DO NOT wish to receive information, please put a tick in the box



**STEM Education Centre London**  
**Institute of Education**  
**20 Bedford Way**  
**London WC1H 0AL**  
**Tel: 020 7612 6325**  
**Email: [stemed@ioe.ac.uk](mailto:stemed@ioe.ac.uk)**

## **Terms and Conditions**

1. Where a delegate needs to cancel, there will be no charge provided at least seven days' written notice is given. If insufficient notice is given, or the delegate fails to attend on the day, we will levy a cancellation charge of £50 to the school.
2. This programme of chemistry CPD in collaboration with the Royal Society of Chemistry and fully funded through the support of the Mayor of London, is only available to delegates from schools and colleges in the Greater London region.
3. Delegates can only attend a maximum of two CPD events in the lifetime of this fully funded Royal Society of Chemistry programme of CPD (March 2014 – July 2015).
4. We reserve the right to amend or cancel any course and will endeavour to give adequate notice.
5. We will hold the delegate's details on our mailing list to receive information about future Institute of Education courses and events. Please let us know if you would prefer not to receive such information from us.
6. In booking a place and as a condition of funding, delegates will be required to complete evaluation forms. These and certain personal contact details will be supplied to the Royal Society of Chemistry and Greater London Authority for evaluation purposes and in order to provide information about other Royal Society of Chemistry activities and resources. Delegates can opt out of marketing communications but not out of their data being used for evaluation purposes.

