

**Pre-course information – Science**

**Professional Association:**

Association for Science Education [http://www.ase.org.uk/home/,](http://www.ase.org.uk/home/) browse through the resources on the website.

If you want to join, you will need to pay for this, but there is a student rate and there are lots of resources and training opportunities.

**Subject knowledge: Science Subject Knowledge**

Invest time in ensuring that you are confident in your personal knowledge and understanding to prepare you to teach science in the National Curriculum. This should be up to GCSE in all sciences.

Go through a GCSE subject revision guide, a GCSE text book or the resources on the exam board website for your own subject to get a flavour of the level required. If these look easy, then look at A-Level.

The OCR GCSE Science Gateway specification can be found here:

[GCSE - Gateway Science Suite - Combined Science A (9-1) - J250 (from 2016) - OCR](https://ocr.org.uk/qualifications/gcse/gateway-science-suite-combined-science-a-j250-from-2016/)

You may want to complete the higher specimen exam papers for the new GCSE specification, giving yourself time to complete these in full and mark them using the mark schemes provided:

[GCSE - Gateway Science Suite - Combined Science A (9-1) - J250 (from 2016) - OCR](https://www.ocr.org.uk/qualifications/gcse/gateway-science-suite-combined-science-a-j250-from-2016/assessment/)

Start with your own subject and then move to the other subjects. Mark up your answers as Green (easy), Amber (needs a bit of work) and Red (help!)

**Recommended reading, books, journals that are subject specific:**

Wellington, J and Ireson, G (2012) Science Learning, Science Teaching, Abingdon: Routledge NB This is the Third Edition

ASE provide a range of books about teaching and learning in science. If you want a book to give you ideas about how to teach particular topics, then look at the Teaching Secondary Science series available from ASE (discount for members).

**Please see the separate document on recommended reading**

**Exam boards:**

**Examination specification link past papers:**

**AQA**

<http://www.aqa.org.uk/subjects/science>

<https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464/assessment-resources>



**OCR**

<http://www.ocr.org.uk/qualifications/by-subject/science/>

<http://www.ocr.org.uk/i-want-to/downloadpast-papers/>

**WJEC**

<http://www.wjec.co.uk/qualifications/science/>

<http://www.wjec.co.uk/students/past-papers/>

Familiarise yourself with the National Curriculum for Key Stages 1-4 (i.e. up to GCSE):

<https://www.gov.uk/government/collections/national-curriculum>

And the programme of study for science for Key Stages 1-4:

<https://www.gov.uk/government/publications/national-curriculum-in-england-science-programmes-of-study/national-curriculum-in-england-science-programmes-of-study>

\*Millar, R. & Osborne, J. (eds) (1999) Beyond 2000: Science Education for the Future.

London: King’s College London. PDF available at:

[http://www.nuffieldfoundation.org/beyond-2000-science-education-future.](http://www.nuffieldfoundation.org/beyond-2000-science-education-future)

Osborne, J. & Dillon, J. (eds) (2010) Good Practice in Science Teaching: What Research has to

say, Milton Keynes: Open University Press.

Hollins, M. (ed.) (2011) ASE Guide to Secondary Science Education. Hatfield: Association for

Science Education.

Black, P. & Harrison, C. (2004) Science inside the Black Box. London: GL-Assessment.

Osborne, J.F. & Freeman, J. (1989) Teaching Physics: a Guide for the Non-specialist, Cambridge: Cambridge University Press. Out of print but some copies are still available

through on-line booksellers.

Reiss, M. (2011) Teaching Secondary Biology (2nd edition), London: Hodder Education.

Sang, D. (2011) Teaching Secondary Physics (2nd edition), London: Hodder Education.

Taber, K. (2012) Teaching Secondary Chemistry (2nd edition), London: Hodder Education. Wellington, J. & Osborne, J.F. (2001) Language and Literacy in Science Education,

Buckingham: Open University Press.

**On wider issues in education:**

Adey, P. & Dillon, J. (Eds) (2012) Bad Education: Debunking myths in education. Maidenhead:

Open University Press

Dillon, J. & Maguire, M. (2011) Becoming a Teacher, Maidenhead: Open University Press. This book is required reading for the Studying Policy and Professional Practice (S3P) module.