Secondary Science PGCE at the University of Roehampton

Useful information to build your pedagogical content knowledge before starting the course

Congratulations on your offer to study PGCE Science at Roehampton. We very much look forward to welcoming you in September on what will be an exciting and busy year. If you have any questions, please feel free to contact the subject tutors: steve.abrams@roehampton.ac.uk Nicklas.lindstrom@reohampton.ac.uk

Use your subject knowledge audit (completed prior to interview but a blank one is attached here) to help you identify key and address key gaps in order to get ready for the course. Here are some suggestions:

1. Look at the national curriculum KS2, 3 and 4 across the science to get a better idea of what you will be teaching: https://www.gov.uk/government/publications/national-curriculum-in-england-science-programmes-of-study/national-curriculum-in-england-science-programmes-of-study
2. Use these online resources to revisit, revise key and test yourself: https://mathsmadeeasy.co.uk/gcse-science-revision/ https://app.senecalearning.com/courses?Price=Free&text=science
3. Familiarise yourself with the latest science exam board specs and past papers: AQA GCSE and A level: https://www.aqa.org.uk/subjects/science and OCR Edexcel: https://qualifications.pearson.com/en/qualifications/edexcel-gcses/sciences-2016.html
4. Visit the professional association for your specialism to find out the latest news and resources: https://www.rsb.org.uk/ https://www.rsc.org/ https://www.iop.org/
5. Listen to some science podcasts such as the infinite monkey cage or others here: http://www.bbc.co.uk/podcasts/category/scienceandnature
6. Build your awareness of science current affairs by reading online magazines such as: https://www.science.org/

Science Pre-Course Reading

Read the highlighted texts and in addition choose one or two from each list. A wider reading list will be provided once the course begins. All these works are available on Amazon and/or in the library at Roehampton. There will be a library orientation tour towards the start of the course to familiarise you with the facilities and services available.

Subject knowledge:

Bryson, B. (2004) *A Short History of Nearly Everything*, London, Black Swan

Bryson, B. (2019) *The Body: A Guide for Occupants*, London, Doubleday

Dawkins, R. (ed) (2008) *The Oxford Book of Modern Science Writing*, Oxford, OUP

Driver, R. (1989) Students' conceptions and the learning of science, *International Journal of Science Education*, 11(5), 481-490

Goldacre, B. (2008) *Bad Science*, London, Fourth Estate

Gribbin, J. (2002) *Science a History*, London, Penguin

McComas, W. (2017) Understanding how science work: The nature of science as they foundation for science teaching and learning, *School Science Review,* 98(365) 71-76

Podcast: Infinite Monkey Cage - What makes science a science?
https://www.bbc.co.uk/programmes/b036twt5

Teaching and learning:

Cullingford, C. (2010) *The Art of Teaching*, Abingdon, Routledge

Dweck, C. (2012) *Mindset: How you can fulfil your potential* London, Robinson

James, G. (2016) *Transforming Behaviour in the Classroom*, London, Sage

Harlen, W (2010 and 2015) *Principles and big ideas of science education*:
https://www.ase.org.uk/bigideas

Toplis, R (2015) *Learning to teach science in the secondary school* London, Routledge

William, D. (2011) *Embedded formative assessment* Bloomington: Solution Tree

Willingham, D. (2010) *Why don't students like school?* London, Jossey Bass

Wright, T. (2008) *How to be a Brilliant Trainee Teacher* Abingdon, Routledge