



UK CENTRE FOR

bioscience



Resources for New Lecturers



Advice and Support

From August 2011 support for Bioscience Teaching and Learning in Higher Education will transfer from the UK Centre for Bioscience to the Higher Education Academy (HEA). The HEA will provide generic and discipline specific support for those involved in teaching and supporting learning in higher education. During a transition period August - December 2011 the UK Centre for Bioscience will still be available to help.

You can contact us on 0113 343 3001; heabioscience@leeds.ac.uk

The Higher Education Academy can be contacted on 01904 717500; enquires@heacademy.ac.uk

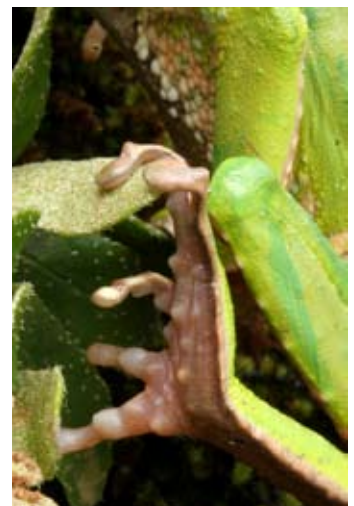
Support that will be available through the HEA includes:

- Discipline specific support
- A programme of professional development workshops
- Funding schemes to support teaching development
- A range of national networks which are support and developed
- Bioscience Education from January 2012 this peer reviewed journal will move from the UK Centre for Bioscience to the Higher Education Academy

Taking part in one or more of these activities could count towards the Higher Education Academy's Professional Recognition Scheme www.heacademy.ac.uk/professional-recognition or gain recognition from your institution towards an accredited course.

Bioscience Mentors

Bioscience Mentors aims to provide support and advice in career development and gaining recognition and reward for excellence in Learning and Teaching. The principal mechanism for this is an e-mentoring scheme where members, irrespective of the stage they are at within their career, offer mentoring and advice to other members in distinct areas of career development/Learning and Teaching. To find out more contact Dave Lewis: d.i.lewis@leeds.ac.uk



July 2011



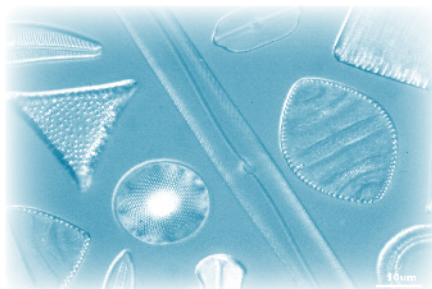
How to use this folder!

We have put together some tips and information that people who currently teach in the biosciences find useful. We have also included a list of references and websites under different headings of where to go for further information on each topic. We have purposefully kept things brief to keep the resource accessible for you to dip in and out of during a coffee break.

The folder is designed so you can supplement the information with documents you find useful, so with time you will have a personalised resource of information. More information for new lecturers is available from our website at www.bioscience.heacademy.ac.uk/network/newlecturer.aspx, including further bibliographies and an education acronym list.

Contents at a glance:

- Lectures
- Tutorials
- Labwork
- Fieldwork
- Assessment
- Feedback
- Plagiarism
- Inclusion
- Induction, Transition and Retention
- Other Useful Resources



Lectures

Things to consider:

When preparing:

- Sit-in on lectures given by other lecturers in your department – see what does and doesn't work first hand;
- Check how many students you will have, where the lecture theatre is, what facilities it has, how the projector works etc.;
- If you're using PowerPoint print out your slides; should the projector fail you'll be prompted for what to say!
- Talk to other lecturers for advice. Ask a lecturer to sit in on one of your lectures early on;
- Find out about the students, what is their previous experience etc.;
- Prepare information for the VLE and upload content before the lecture;
- Make handouts to support your lecture. These can take many forms; again look at what colleagues produce for ideas - consider leaving space for students to write down ideas, so they have 'ownership' of the handout; and
- Consider setting up a text wall and ask students to text questions at set times during lectures. Avoids any embarrassment students may feel asking questions in front of large groups and gives you feedback as to the understanding of your students.

At the lecture:

- Check students can hear you and see the slides;
- Take enough handouts for the students and handouts from previous lectures; and
- Give students your contact details so they know when and how to get in touch outside the lecture if they have any questions.

Further information

Chalmers, C. and Green, C. (2011) **Using mobile phones to encourage interaction in large lectures.** Effective Learning in the Biosciences conference proceedings. John McIntyre Centre, Edinburgh. www.bioscience.heacademy.ac.uk/bioconf/index.aspx

McClean, S., Hagan, P. and Morgan, J. (2010) **Text Messaging for Student Communication and Voting.** *Bioscience Education* 16 www.bioscience.heacademy.ac.uk/journal/vol16/beej-16-4.aspx

Perkins, J., Marston, P. and Preston, S. (2008) **Preparing to Teach – Don't Forget The Student Response System.** *Bioscience Bulletin* 23, p3. www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin23.pdf

Race, P. and Brown, S. (2002) **Lecturing: a practical guide.** London, Kogan Page. Some of the information in *Lecturing: a practical guide* can be found in **Smarter Lectures**, a collection of things for both you and your students to do in lectures. <http://phil-race.co.uk/downloads>

Willmott, C. (2006) **Never again shout, "that WOULD have been useful for my teaching!" at the TV.** *Bioscience Education* 7. www.bioscience.heacademy.ac.uk/journal/vol7/beej-7-C1.aspx An interesting account of the tools available to find suitable broadcasts for use in lectures.

UK Centre for Bioscience **ImageBank.** A collection of over 7000 copyright-cleared images and diagrams for use in bioscience teaching and learning. www.bioscience.heacademy.ac.uk/imagebank/



Tutorials

Things tutees will expect you to know:

- How to find out their timetable;
- Key deadlines;
- Exam time tables;
- Assignment information;
- Credits for modules;
- Who are module managers/contributors; and
- How to get extensions.

Additional things it would be useful to know about:

- University Counselling Service;
- Careers centre;
- Accommodation office;
- Library information;
- University Medical centre;
- The Student Union; and
- Disability services.

Useful generic topics for discussion/work:

- What is plagiarism?
- How to write an essay;
- How to assess a website;
- How to evaluate a journal article;
- How to search for literature e.g. Web of Knowledge, Intute;
- Relevant news items; and
- Bioethics e.g. xenotransplantation, stem cells, genetically modified crops.

Further information

Small Group Teaching (2011). Short Guide produced by the UK Centre for Bioscience. www.bioscience.heacademy.ac.uk/ftp/resources/shortguides/smallgroup.pdf

King, N. (2010) **Support for Essay Writing in Biosciences**. *Bioscience Bulletin* 31, p5

Van Damme, M-P. (2004) **Tutorless Tutorials**. *Bioscience Bulletin* 12, p12 www.bioscience.heacademy.ac.uk/ftp/newsletters/ltsn12.pdf

Bioethics Briefings, a series of short briefings intended to help teachers in higher education deal with various ethical topics. The briefings contain a balance of scientific and ethical input, case studies and examples of ethics news items. www.bioscience.heacademy.ac.uk/resources/ethicsbrief.aspx

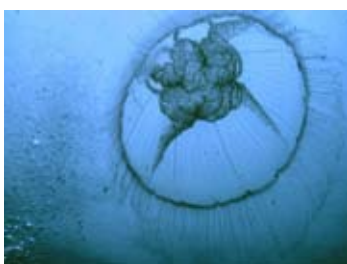
Leadbeater, W.E. (2010) **Supporting Final Year Undergraduates when Critically Reviewing Scientific Literature**. Case study describing tutorials in which final year students learn how to critically review different types of scientific literature. The case study is available at www.bioscience.heacademy.ac.uk/ftp/casestudies/linktr_WEL.pdf and the tutorial handout at www.bioscience.heacademy.ac.uk/ftp/casestudies/WELHandout.pdf

Teaching matters and resources, for use in small group teaching and tutorials, from the University of Otago, New Zealand. <http://hedc.otago.ac.nz/magnolia/td/for-tutors-demonstrators/teaching-matters-and-resources.html>

Resources for your students

Short Guides for Students, from the Centre including 'Advice for Students Starting Their Bioscience Course' and 'A Bioscience Degree - Why and What Next?' www.bioscience.heacademy.ac.uk/resources/shortguides.aspx#students

Bittante et al. (2010) **Essay Writing Guide by Students, for Students**. University of Exeter. Available from www.bioscience.heacademy.ac.uk/ftp/resources/essayguide.pdf



Labwork

Things to consider:

- The intellectual engagement students have with the exercise – are they just following recipes on auto-pilot? Practical work should prepare students for final year projects and being independent researchers;
- Risk assessments take a long time to fill in and get approved;
- The Equality Act 2010 (see Diversity section) - is the practical accessible to all students?
- Provide handouts and encourage students to read them before the practical so they know what they are going to be doing. Perhaps introduce a pre-lab test or assignment which requires students to have read the schedule;
- Consider the previous knowledge and skills of the students; and
- Meeting demonstrators before the practical so they know what is expected of them and have an opportunity to ask you any questions about the practical.



Further information

Collis, M., Gibson, A., Hughes, I., Sayers, G., and Todd, M. (2008) **The Student View of 1st year Laboratory Work in the Biosciences – score gamma?** *Bioscience Education* 11. www.bioscience.heacademy.ac.uk/journal/vol11/beej-11-2.aspx

Crocker, K., Andersson, H., Lush, D., Prince, R. and Gomez, S. (2010) **Enhancing the Student Experience of Laboratory Practicals Through Digital Video Guides** *Bioscience Education* 16 www.bioscience.heacademy.ac.uk/journal/vol16/beej-16-2.aspx

Hughes, I. (2004) **Coping strategies for staff involved in assessment of laboratory write-ups.** *Bioscience Education* 3. www.bioscience.heacademy.ac.uk/journal/vol3/beej-3-4.aspx

Luck, M. (2008) **Student Research Projects - Guidance on Practice in the Bioscience.** UK Centre for Bioscience, Higher Education Academy. www.bioscience.heacademy.ac.uk/resources/guides/

MacKenzie, J. and Ruxton, G. (2006) **Experimental Design Skills.** *Bioscience Bulletin* 18, p10. www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin18.pdf

McClellan, S. and Hagan, P. (2009) **Labs, Camera, Action!** *Bioscience Bulletin* 27, p9. www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin27.pdf

Pannell, J.R. (2010) **Putting Data Ahead of Theory in Biology Practicals.** *Bioscience Bulletin* 31, p 4. www.bioscience.heacademy.ac.uk/ftp/newsletters/Bulletin31.pdf

Bioscience Bulletin Special Issues on Practical Work. *Bioscience Bulletin* 33 (2011) www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin33.pdf and *Bioscience Bulletin* 26 (2009) www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin26.pdf

Resources for your students

Barnard C., Gilbert, F. and McGregor, P. (2007) **Asking Questions in Biology: A Guide to Hypothesis Testing, Experimental Design and Presentation in Practical Work and Research Projects** 3rd ed. Benjamin Cummings.

Jones, A., Reed, R. and Weyers, J. (2007) **Practical Skills in Biology. 4th ed. Essex: Longman.** OR Reed, R., Holmes, D., Weyers, J. and Jones, A. (2007) **Practical Skills in Biomolecular Sciences. 3rd ed.** Upper Saddle River, NJ: Prentice Hall.

Student Short Guide: Making the most out of practical work from the Centre, gives students hints and tips on how they can get the most from their time in the lab or the field. www.bioscience.heacademy.ac.uk/ftp/resources/shortguides/practical.pdf



Fieldwork

Things to consider:

- Time - of year/weather/tides/nesting birds not to be disturbed etc.;
- Risk assessments take a long time to fill in and get approved;
- First aiders - to satisfy Health and Safety, more qualified first aiders are sometimes needed than expected;
- Accessibility of the site (see the Inclusion section) - if the site is not accessible to all students what can be done about this?
- Contacting land owners - agree what work will happen, even if no input is required from them; and
- Brief students well in advance and remind them of times and equipment/clothing they should bring with them.

Things to take with you:

- List of students and separate list of those with asthma, allergies etc.;
- Departmental phone number (and out of office number if applicable);
- Phone numbers of staff/demonstrators coming with you for when they or you are running late;
- Coach company phone number;
- Mobile phone (charged);
- Camera;
- Clothes for all weather;
- First aid kit; and
- Spare equipment.



Further information

An Interactive Laboratory and Fieldwork Manual for the Biosciences. This pilot project brings together resources and includes materials for flexible re-use including slides, videos, question banks and websites, freely available for use in your teaching. www.bioscience.heacademy.ac.uk/resources/oer/

Maskall, J. and Stokes, A. (2008) **Designing Effective Fieldwork for the Environmental and Natural Sciences.** Support and ideas for academic and technical staff engaged in the design and delivery of fieldwork. www.gees.ac.uk/pubs/guides/eesguides.htm

Baggot, G. (2009) **Fieldwork: E-Learning Benefits The Part-Time Student.** *Bioscience Bulletin* 26, p3. www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin26p3.pdf

Cullen, R., Langan, M. and Sen, R. (2009) **Using Learner Response Systems for Ecological Fieldwork.** *Bioscience Bulletin* 26, p 6-7. www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin26p6+7.pdf

Scott, G. and Goulder, R. (2009) **Making the Most of Fieldwork: Doing less to achieve more!** *Bioscience Bulletin* 27, p10. www.bioscience.heacademy.ac.uk/ftp/newsletters/Bulletin27page10.pdf

Gravestock, P. and Healey, M. (eds.) (2002) **Six Web-based Guides on Learning Support for Disabled Students Undertaking Fieldwork and Related Activities.** Gloucestershire: Geography Discipline Network. <http://resources.glos.ac.uk/ceal/gdn/publications/disability/index.cfm>

Enhancing Fieldwork Learning. A Higher Education Academy NTFS Project looking at maximising learning in the field by adapting the use of emerging technologies. www.enhancingfieldwork.org.uk

How to make your field trips more sustainable. One of a series of "How to" sheets with pointers and tips on making aspects of your teaching more sustainable and introducing sustainability concepts to your students. www.bioscience.heacademy.ac.uk/resources/esd/howto.aspx



Assessment

Things to consider:

- Ensure the different types of elements in the learning objectives are reflected in the assessment (e.g. knowledge, understanding and skills);
- Try to make sure there are a variety of assessment methods used during the course. A single type of assessment may disadvantage some students;
- Ensure the assessment methods are appropriate for the teaching style. If the course is primarily taught using problem-based learning it would be inappropriate for the assessment to wholly test factual knowledge; and
- Is the assessment timely with relation to assessments in other modules? Ensure the totality of the assessment experienced by students is reasonably distributed and does not all take place in an unreasonably short period.

Further information

The **Assessment Briefing** 2009 from the UK Centre for Bioscience brings together resources and references on assessment in the biosciences and includes sections on: assessing practical and fieldwork; question and assessment design; and resources for students. www.bioscience.heacademy.ac.uk/resources/briefings/assessment.aspx



Cann, A., Calvert, J. E., Masse, K. L. and Moffat, K. G. (2006) **Assessed Online Discussion Groups in Biology Education**. *Bioscience Education*. Volume 8. www.bioscience.heacademy.ac.uk/journal/vol8/beej-8-4.htm

Klappa, P. **Assessment of Practical Skills**, Teaching Development Fund project. www.bioscience.heacademy.ac.uk/resources/projects/klappa.aspx

Orsmond, P. (2011) **Self- and Peer-Assessment: Guidance on Practice in the Biosciences**. (2nd Ed.) UK Centre for Bioscience, Higher Education Academy. www.bioscience.heacademy.ac.uk/resources/guides/selfpeerassess.aspx

Assessment Audit, designed to facilitate development of assessment within a course. www.bioscience.heacademy.ac.uk/resources/audit.aspx

The **Managing Effective Student Assessment** (MESA) practical tool aims to give staff insight into assessment issues along with ideas and tools to enable them to improve student learning and reduce the burden on staff. www.heacademy.ac.uk/resources/detail/ourwork/assessment/MESATool_Resource_Form

Assessing Students' Work, from the series Learning to Teach by David and Carole Baume, is designed to support new teachers as they plan and review effective teaching and learning sessions, mark graduate students' work and give useful feedback to students. www.brookes.ac.uk/services/ocslid/books/learning_to_teach/assessing_work.html



Effective Practice with e-Assessment (2007) brings together case studies illustrating how e-assessment has been used effectively in further and higher education and a glossary of terms for those new to e-assessment. www.jisc.ac.uk/publications/publications/pub_eassesspracticeguide.aspx

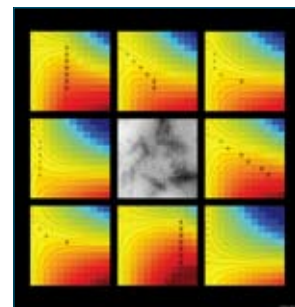
Resources for your students

Student Short Guide on Assessment (2010). Advice and guidance for students on assessment in higher education biosciences, from thinking about assessment criteria and what assessment might be of, to who could be assessing their work and avoiding plagiarism. www.bioscience.heacademy.ac.uk/ftp/resources/shortguides/assessment.pdf

Feedback

Things to consider:

- Think about the timing: aim to get feedback to students quickly. The longer students have to wait, the less likely they are to do something constructive with it. At least provide feedback to students before they submit their next piece of work – so they can implement it;
- Feedback should be constructive, so students can improve. Remember to highlight any omissions as well as errors;
- Avoid criticism of the person; focus on the work being assessed;
- Words such as 'appalling' and 'disastrous' don't help students improve;
- Words like 'unimprovable' don't help outstanding students to develop either; and
- Consider writing exemplar answers. It is sometimes easier to show students what is expected of them than to tell them.



Further information

Crook, A. and Park, J. (2010) **The Use of Video for Feedback Provision: Moving on from the ASSET Project.** *Bioscience Bulletin* 30, p 2

Glover, C. and Brown, E. (2006) **Written Feedback for Students: too much, too detailed or too incomprehensible to be effective?** *Bioscience Education*. Volume 7. www.bioscience.heacademy.ac.uk/journal/vol7/beej-7-3.htm

The **UK Centre for Bioscience Bulletin Special Issue on Feedback and Feed-forward.** Bulletin 22 (2007). Includes: Sally Brown, Feedback and Feed-forward; Stephen Merry and Paul Orsmond, Feedback via mp3 audio files; and Janice Harland, Feedback to large practical classes. www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin22.pdf

Engage in Feedback from the University of Reading brings together a variety of tools and resources to enhance student feedback. www.reading.ac.uk/internal/engageinfeedback/efb-Home.aspx

Freestone N. (2009) **Instant Feedback via Peer Assessment.** *Bioscience Bulletin* 26 p2 www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin26.pdf

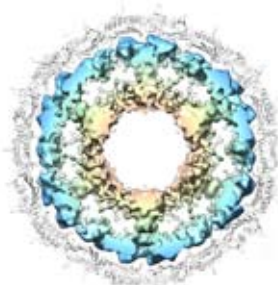
McLaughlin, P. **A system to deliver oral and visual feedback on-line, personal to each student,** piloted the use of screen recording with an audio track to summarise for a student why an assignment got the mark it did and how it might be improved. www.bioscience.heacademy.ac.uk/resources/projects/mclaughlin.aspx

The **Student Enhanced Learning through Effective Feedback (SENLEF)** project, from the Higher Education Academy, is a resource for practitioners wishing to improve their feedback practice or get some exciting new ideas. www.heacademy.ac.uk/assets/York/documents/resources/resourcedatabase/id353_senlef_guide.pdf

ASke (Assessment Standards Knowledge exchange) has a series of '**1,2,3'** leaflets which highlight practical ways in which teaching staff can improve their students' learning. Those related to feedback include: Feedback - Make it work for you!; How to make your feedback work in three easy steps!; Using generic feedback effectively; Using Turnitin to provide powerful formative feedback; and Making peer feedback work in three easy steps! www.brookes.ac.uk/aske/resources.html

Resources for your students

Student Short Guide on Feedback (2010). **Feedback - Making it work for you.** www.bioscience.heacademy.ac.uk/ftp/resources/shortguides/feedback.pdf



Plagiarism

Plagiarism will never be eliminated completely, but course and assessment design alongside educating students as to what plagiarism is, can go a long way towards reducing it.

Some simple ways to avoid plagiarism:

- Ensure students are clear as to what constitutes plagiarism;
- Use different questions each year;
- Explain how to reference other people's work; and
- Collect drafts or plans of work (these don't have to be marked) before the submission date, so students don't panic copy at the last moment.

Questions that ask students to detail a concept could easily be copied from the Internet or books. More creative questions are less likely to already exist. For example 'state the arguments for and against genetic engineering' could easily be copied. If however, you give students four texts on genetic engineering and ask them to compare and contrast the views expressed in these, the likelihood of thinking and learning increases.

Further information

Preventing and Designing out Plagiarism (2008). Short guide produced by the UK Centre for Bioscience. www.bioscience.heacademy.ac.uk/ftp/resources/shortguides/plagiarism.pdf

Plagiarism Advice provides generic advice and guidance on all aspects of plagiarism prevention and detection to institutions, academics and students. www.plagiarismadvice.org

Badge, J. L., Cann, A. J. and Scott, J. (2007) **To cheat or not to cheat? A trial of the JISC plagiarism detection service with biological sciences students.** *Assessment and Evaluation in Higher Education*, 32(4), 1-7

Carroll, J. (2007) **A Handbook for Deterring Plagiarism in Higher Education** (2nd ed). OCSLD, UK.

Dawson, M. M. and Overfield, J. A. (2006) **Plagiarism: Do Students Know What It Is?** *Bioscience Education*, volume 8. www.bioscience.heacademy.ac.uk/journal/vol8/beej-8-1.aspx

Tierney, A. (2006) **Tackling Plagiarism in the Level One Biology Class.** *Practice and Evidence of Scholarship of Teaching and Learning and Higher Education*. 1:13-21

Willmott, C. J. R. and Harrison, T. M. (2003) **An exercise to teach bioscience students about plagiarism.** *Journal of Biological Education*. 37, 139-140

Resources for your students

University of Leicester's **online tutorial on avoiding plagiarism.** www2.le.ac.uk/offices/ssds/slc/resources/writing/plagiarism/plagiarism-tutorial/

Using Sources, from Ofqual, gives guidance on finding, evaluating, using and referencing sources. www.ofqual.gov.uk/files/2009-12-24-plagiarism-students.pdf



Inclusion

With the student population becoming increasingly diverse it is now likely that within student groups there will be disabled students, international students, mature students and students from a wide range of different social and cultural backgrounds. The Equality Act 2010 (www.ecu.ac.uk/publications/equality-act-2010) requires not just to eliminate discrimination, but to advance equality of opportunity and foster good relations between staff and students from different equality groups.

The application of good practice and making curricula more accessible supports everyone in higher education. In many cases making teaching more accessible to all can simply be a case of following good practice. For example:

- When giving a lecture facing the audience and not speaking if you turn away to write on a board;
- Making handouts available electronically so students can change font sizes and format if needed;
- Making sure everyone in a lecture, practical group, tutorial group etc. can hear you and understands any instructions you give;
- Trying not to use colloquialisms and not assuming everyone understands specific cultural references; and
- Explaining new terminology and vocabulary in lectures, tutorials and practical sessions.

Further information

Our Website contains more information on student diversity including; disability and accessible curricula; religious and cultural diversity; internationalisation; and educational background. www.bioscience.heacademy.ac.uk/resources/themes/diversity.aspx

Supporting inclusive learning and teaching in the biosciences (2008) Short guide from the UK Centre for Bioscience. www.bioscience.heacademy.ac.uk/ftp/resources/shortguides/inclusivelandt.pdf

Nine guides for staff supporting disabled students and one for disabled students, published by the Geography Discipline Network under the Inclusive Curriculum Project (ICP). www2.glos.ac.uk/gdn/icp/gdlist.htm

The **TechDis Accessibility Essentials** guides give practical information and advice on making electronic documents and presentations more accessible. www.jisctechdis.ac.uk/techdis/keyinitatives/organisationaleffectiveness/enablingtechnology/accessibility_essentials

Doyle, C. and Robson, K. (2002) **Accessible Curricula: Good Practice for All**. Cardiff: UWIC Press. Each section includes pointers and checklists and individual student experiences are presented. Sections 5 and 6 focus on lab work, placements and fieldtrips. www.jisctechdis.ac.uk/techdis/resources/detail/investinyou/accessible_curricula

Faith Guides, from the Philosophy and Religious Studies Subject Centre give guidance on supporting students with a variety of religious beliefs. www.prs.heacademy.ac.uk/publications/faith_guides.html

Carroll J. (2002) **Suggestions for teaching international students more effectively**. www.brookes.ac.uk/services/ocsd/2_learnit/briefing_papers/international_students.pdf

Schmitt, D. (2007) **Sitting exams in a second language**. Guidance which aims to ensure you are testing a student's knowledge rather than their ability to understand exam questions. www.brookes.ac.uk/services/hr/eod/guides/exams



Induction, Transition and Retention

Supporting your students in the transition from school to higher education, between levels, and ultimately on the transition into employment can increase their confidence, improve their skills and make them more likely to complete their course.

As each institution and department is unique, the approaches around a successful transition for students can also be varied, however you might consider:

- Finding out about your students previous learning experiences – did they do A-levels or a Foundation Degree? Did they study biology, or chemistry and physics?
- Finding out about the type of assessments they may have experienced previously;
- Having activities to familiarise new students with the institution, such as library and lab tours;
- Giving feedback to students early on about their progress; and
- Making sure students are aware of what they will need to do to succeed on their course.

Further resources

Transition to Higher Education (2008) Short guide produced by the UK Centre for Bioscience. www.bioscience.heacademy.ac.uk/ftp/resources/shortguides/transition.pdf

Our website contains more information on induction, transition and retention. www.bioscience.heacademy.ac.uk/events/themes/itr.aspx

The **STAR project** (Student Transition and Retention) focused on the transition of students into and between levels in higher education. The outputs of the project include the STAR booklets, which contain a range of case studies highlighting transition practice, many examples of which are in the biosciences. www.ulster.ac.uk/star/index.htm

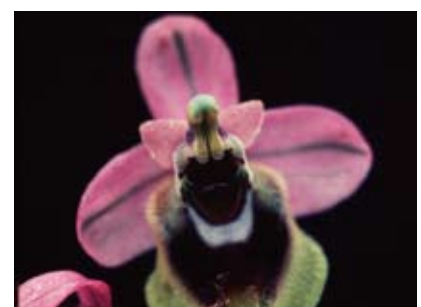
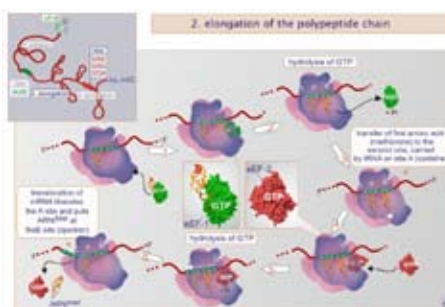
Understanding the UK Mathematics Curriculum Pre-Higher Education – a guide for Academic Members of Staff, outlines what students with given qualifications in maths are likely to know and be able to do. www.bioscience.heacademy.ac.uk/ftp/resources/pre-university-maths-guide.pdf

Yorke, M. and Longden, B. (2008) **The first-year experience of higher education in the UK**, Higher Education Academy. This report looks at the reasons behind students leaving higher education before starting the second year of their course. www.heacademy.ac.uk/assets/York/documents/resources/publications/exchange/FYEFinalReport.pdf

The Scottish Enhancement Themes publication **Staying There: Transition and the First Year** includes the characteristics of an 'ideal' induction programme. www.enhancementthemes.ac.uk/themes/Guide_Staying_There_Home.asp

Scott, J. and Graal, M. (2007) **Student Failure in First Year Modules in the Biosciences: An Interview Based Investigation**. *Bioscience Education*, volume 10. www.bioscience.heacademy.ac.uk/journal/vol10/beej-10-c2.aspx

Grundy, S. (2008) **Successful Transition**. *Bioscience Bulletin* 23, p2. www.bioscience.heacademy.ac.uk/ftp/newsletters/bulletin23p2.pdf



Other useful resources

The BEN portal is from the American Association for the Advancement of Science. It provides a single access point to resources held by all member organisations. Registration is required to gain free access and it contains over 10,000 resources. www.biosciencednet.org/portal/

BIODIDAC is a bank of digital images, diagrams, video, and animations that can be used and adapted for teaching biology. <http://biodidac.bio.uottawa.ca/>

Bioscience Horizons is a free online journal from Oxford University Press publishing the best undergraduate bioscience research from the UK. <http://biohorizons.oxfordjournals.org/>

The **Engage in Research** website is an interactive resource for bioscience students designed by the Centre for Excellence in Teaching and Learning in Applied Undergraduate Research Skills. Intended to help undergraduates with the most important aspects of scientific research it includes topics on: Getting Started in Science; Reviewing Literature; Planning Your Research; Step-by Step Statistics; Writing Scientifically; Presenting Science; and Going Professional. www.engageinresearch.ac.uk/

Effective Learning in the Biosciences international conference 2011 website with links to conference abstracts and presentations. This international conference organised by the UK Centre for Bioscience focused on how we can inspire all bioscience students to realise their full potential. www.bioscience.heacademy.ac.uk/bioconf/index.aspx

EvidenceNet promotes evidence-informed practice in learning and teaching in Higher Education. Users can search and browse through evidence spanning a number of key themes including assessment and feedback and personal development planning. As well as journal articles and book chapters it also contains case studies and project reports giving users the choice to narrow down searches by discipline or by key learning and teaching themes. www.heacademy.ac.uk/EvidenceNet

The **Higher Education Academy's website** contains a wide variety of generic teaching and learning resources. The Supporting Learning section contains resources and information grouped into themed areas such as assessment, student support and employability. www.heacademy.ac.uk/

MERLOT Multimedia Education Resource for Learning and Online Teaching is a resource of links to online learning materials, annotated with peer reviews, and example student assignments and comments on how individual resources have been employed. NB: some materials in MERLOT are free whereas others have usage restrictions or costs. www.merlot.org/merlot/index.htm

Race, P. (2006) **The lecturer's TOOLKIT: A Practical Guide to Learning, Teaching and Assessment** (3rd Ed). London, Routledge. This book is developed around detailed, practical guidance on the core elements of effective teaching in HE and contains accessible advice and common sense.

The vitae website has a number of **pages for PhD supervisors** from establishing relationships to completion and beyond. www.vitae.ac.uk/14862/Supervising-a-doctorate.html

UK Centre for Bioscience Teaching Guides:

- Orsmond, P. (2011) **Self- and Peer- Assessment:** Guidance on Practice in the Biosciences. (2nd Ed.) UK Centre for Bioscience, Higher Education Academy.
- Stefani, L. (2006) **Effective Use of IT:** Guidance on Practice in the Biosciences. UK Centre for Bioscience, Higher Education Academy.
- Luck, M. (2008) **Student Research in the Biosciences.** UK Centre for Bioscience, Higher Education Academy.

Find out more at: www.bioscience.heacademy.ac.uk/resources/guides/



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