3 A checklist for using ICT

Please don't be offended if the following advice seems obvious and patronising - we all suffer from occasional 'common sense failure' when confronted with ICT!

Choose *appropriate* ICT resources

- How will ICT contribute to the learning?
- Will the ICT be used as a thinking tool, a microworld or as a didactic tool?
- Who will be choosing whether or not to use the ICT?
- Which ICT resources will be available: an interactive whiteboard, data projector, graphical calculator projected on to a whiteboard, one standalone computer, a suite of computers, or a class set of graphical calculators?
- What software can I choose from?

Moving the whole class to an ICT lab is disruptive – and inevitably moves the focus of a lesson away from the maths and towards the hardware. Ideally, pupils should come to see ICT as part of their everyday mathematical toolkit. This is not easy, given limited resources.

- If you *do* have computers, graphic calculators or other ICT resources available in the mathematics classroom, try to ensure that they are available to any pupil (who can make a reasonable case for their use) when working on unstructured problems. Don't just wheel them out for lessons which "need" them – this applies to other, non-ICT resources as well.
- If pupils have home PCs but are prevented from using them for maths because of the cost of suitable software (such as spreadsheets or interactive geometry), remember that there are often good, free alternatives available.

Prepare the room

- How will the ICT be used? Who will operate it?
- How will you arrange the room so that pupils have the space to discuss, and record their work, and so that you can monitor what they are doing?

Some school computer suites leave little desk space for writing – yet many ICT-based investigations are almost impossible without paper for notes and rough work. When recording, especially when using mathematical symbols and diagrams, word processors are no substitute for clipboards and paper.

Test the ICT resources

- Have you installed and tested the software on *pupils'* computers – not just your home machine or one reserved for staff use?
- If your school has a network, have you made sure that your software works when you are logged in as a *pupil*?
- What replacement activity will you use if there is, for example, a power cut?

Check the system requirements for your software, and whether anything needs to be installed before use. Some software requires "installation" to ensure that files are copied into specific places – you might need IT support to achieve this on a school network or computers with strict security settings.

Many educational "microworlds" and "applets" – can be run online, or just by opening a file, but they may also require specific "plug-ins" or "players" such as Flash Player, Adobe Reader, Java or QuickTime. These are usually free downloads – but will need installing. Even if you already have them, there may be a newer version available – worth checking if you are having problems.

Some "interactive" web sites – or other software that runs in a web browser can be blocked by security settings on your computer. Usually you will be offered an "allow blocked content" button – or similar.

Plan the types of output required

- How will pupils save their work?
- How will pupils share their work with yourself and others?
  Can they project their work so that others may see and discuss it?
  Will they be able to use presentation software?

Both you and the pupils will want some record of their work. In some cases, this may just be written notes, in others a completed document in a word processor or spreadsheet. Some software might generate custom reports or printouts. Otherwise: Do pupils know how to capture "screen shots" and paste them into a word processor or presentation program to record their work? Saving files for later use can be a problem on school computers – find out from your IT support staff what the rules are at your school and make sure pupils follow any file naming conventions and save things in the correct place. If pupils are printing out to a shared printer, remind them ad nauseum to make sure that everything they print includes their name, and allow sufficient time for this.

Plan the lesson itself=

- How will you group pupils?
- How and when will you work with the whole class?
  How and when will you work with small groups/ individuals?
- How will you support/challenge pupils who need extra help/find the work too easy?
- How will you discourage blind trial-and-error approaches?
- How will you enable pupils to present and share their work?

Time in the ICT lab will always be limited – try and make the most of it.

- Avoid taking time on "housekeeping" (collecting/returning homework, announcements) at the start or end of the lesson – can it wait?
- Try and ensure that the *previous* lesson is "wrapped up" on time so it doesn't spill over into the ICT time.

As soon as pupils get into the ICT room their attention will be drawn to the computers, so it is not a good environment for conventional teaching. Some Bowland case studies have one or more conventional lessons as preparation for an ICT session – allow *plenty* of time for this the first time you try the case study.

For further advice on planning to use ICT, we suggest reading the DCSF publication: *Integrating ICT into mathematics in Key Stage 3: 2003.* This is available from:

http://www.standards.dfes.gov.uk/secondary/keystage3/all/respub/ma_integrate_ict