

Increasing pupils' rates of progress in ICT: key messages

This leaflet is for ICT teachers who were unable to attend the national training *Increasing pupils' rates of progress in ICT* and for senior leaders in school. It summarises the main points and is best used in conjunction with the course handbook *Increasing pupils' rates of progress in ICT* (DfES 0649-2004 G). Other Key Stage 3 National Strategy materials are available on the website at www.standards.dfes.gov.uk/keystage3

Aims and outcomes of the course

This course is part of the core ICT training for schools in 2004–05 and is run in parallel to similar events in English, mathematics and science. It builds on 2004 core training *Progression into and through Year 9* and *Year 7: transfer and progression in ICT*. In particular this course focuses on how to teach the yearly teaching objectives for Years 7, 8 and 9 by identifying some of the major steps in pupils' learning through the key concepts and the ICT-related thinking skills.

The intention of this course is to help schools increase rates of progress for pupils in ICT by developing an understanding of the next steps and planning to include ICT-related thinking skills within the delivery of the sample teaching units.

The sessions aim to:

- ensure that all ICT departments have clear expectations for pupils' progress through Key Stage 3;
- demonstrate specific strategies for increasing rates of progress in ICT, leading to higher proportions of pupils improving by two levels;
- provide an overview of how existing ICT materials can support improvements in pupils' learning.

The Key Stage 3 Strategy has helped many schools to ensure that teaching in Years 7 to 9 is better targeted to build on pupils' prior learning; there are fewer unproductive lessons and less concentration on skills at the expense of developing capability. In many schools pupils improve on average by one and a half levels in ICT through Key Stage 3. In some schools pupils improve on average by two levels through Key Stage 3. Nationally we need to ensure that this becomes more common in *all* schools.

A range of materials is provided in the course handbook to support teachers in exploring strategies to increase rates of progress and implement some of the suggested teaching approaches.

Increasing rates of progress: key messages

Data from QCA shows that level 5 **and** level 6 results in core subjects at the end of Key Stage 3 are a crucial indicator of pupils' chances of success at GCSE.

- 55% of pupils at level 5 in English, mathematics and science achieve 5+ A*–C GCSEs.
- 79% at level 6 in English and two level 5s achieve this standard.
- The figure increases to 97% for pupils with all three subjects at level 6.

While we have less data for ICT, common sense tells us that similar inferences can be made.

Points to discuss in school

- Using the average of English and mathematics core data as a starting point, how do our current conversion rates of two or more levels of progress compare to the national figures?
- How do we set suitable targets for pupils based upon their prior attainment?

Key concepts and ICT-related thinking skills

Each subject has its key concepts and key patterns of reasoning; it helps if teachers focus on these concepts and make the links within and between them explicit to their pupils in order that they can see the progression through the levels.

In ICT, examples of key concepts include:

- the importance of structure in ICT solutions: this requires an appreciation that the way an outcome is structured will affect how users access the solution. If there is more than one intended user the structure will need to be developed in order that there are different routes through the solution making it suitable for the range of intended audiences and purposes;
- the knowledge that all solutions have an input, process and output. In some solutions the output is given, for example traffic lights in a control solution. In other solutions the inputs are given, for example the funding in a financial model. Planning to break down the elements of the solution enables pupils to approach the problem and develop more complex solutions, for example in control and monitoring to develop subroutines within the overall solution.

Emphasising the key concepts in ICT can help pupils to:

- grasp a better overview of the subject;
- build new learning on secure foundations;
- see links and patterns in new learning situations, tasks and problems;
- develop the confidence and capacity to transfer their learning more effectively;
- become more independent and motivated learners.

Pupils grasp key concepts and ICT-related thinking skills most effectively when objectives are linked together and connections are made within and between ICT topics.

Points to discuss in school

- How familiar are we with the notion of key concepts and ICT-related thinking skills?
- How confident are we that our own scheme of work identifies the key concepts clearly and makes explicit the links within and between topics?

Teaching approaches and classroom activities

The course illustrates a variety of teaching approaches and activities intended to meet the aims identified above. These include:

- teachers planning for differentiated group work aimed at developing pupils working from level 3 to level 4, level 4 to level 5 and higher;
- guided group teaching, including modelling thought processes to support pupils planning and developing the skills to critique their work;
- working with groups of pupils in an ICT room;
- developing an understanding of the progression in concepts in ICT and planning to teach these;
- identifying the thinking skills related to ICT and planning to develop these across the sample teaching units;
- developing pupils' skills in peer and self-assessment.

Resources to support these are provided in the course handbook.

Points to discuss in school

- How well does our current teaching support and exploit the potential of guided group work?
- How good are our pupils at developing criteria against which they can judge their own achievements?
- How are we exploiting the potential of thinking skills related to ICT to support teaching and learning?

Following the course

During the course participants consider the approaches and activities presented in the light of their present scheme of work and delivery of the sample teaching units. They are supported in understanding the progression in the levels and the key concepts in ICT, specifically in control and monitoring and in models and modelling. They use these key concepts and the ICT-related thinking skills to review how planning and evaluation can be embedded throughout their scheme of work.

What is included in the course materials?

Participants attending the course receive:

- a course handbook containing guidance notes, activities and copies of the training slides including:
 - the levelness statements to include all levels from 3 to 7 (this develops from the work in the Year 9 Boosting achievement in ICT leaflet);
 - a route map through the sample teaching units;
 - a table illustrating the application of thinking skills in the ICT curriculum;
 - progression guide for control and monitoring;
 - progression guide for models and modelling;
 - progression in evaluation: audience and purpose;
 - progression in enquiry: planning;
- a DVD including:
 - lessons from sample teaching unit 7.6 and case study 9.3;
 - departmental meetings discussing planning for progression.