

Key Stage 3 Strategy: The science strand

About the Key Stage 3 Strategy

The Strategy aims to raise standards by strengthening teaching and learning across the curriculum for all 11 to 14 year olds. Over 200 science departments and more than 1500 science teachers piloted the science strand from September 2000 to April 2002. By September 2002 there will be five strands: English, mathematics, science, ICT and foundation subjects.

All strands promote these features of good teaching:

- **high expectations** and **clear objectives** conveyed to pupils in simple language: 'What I am looking for is pupils who can ...';
- **structured lessons**, with an engaging starter, new skills and ideas introduced in well-planned stages in the main part of the lesson, and a summary of the lesson in a concluding plenary;
- **challenging and engaging activities and tasks** to interest both girls and boys;
- **manageable differentiation** based on work common to all pupils in a class, with targeted support to help those with less experience, and genuine challenge for the more able;
- **interactive teaching** of whole classes, small groups and individuals, using a combination of exposition, demonstration, modelling, instruction and dialogue;
- **effective questioning**, giving pupils time to think, air views and hear the views of others, and to explain and justify their reasoning and decisions;
- **time for pupils to reflect** on their learning and progress, and evaluate their own and other pupils' work.

The Framework for teaching science: Years 7, 8 and 9

The Framework is a key document for science teachers and every science teacher needs their own. It was developed during the science pilot and can help you to:

- plan the teaching of scientific enquiry (pages 11–13);
- understand the five key scientific ideas that underpin Key Stage 3 science (pages 14–22);
- ensure progression (pages 22–30);
- teach effective lessons (pages 37, 41–47);
- get to grips with assessment (pages 49–53);
- include all pupils in science lessons (pages 55–63);
- introduce scientific vocabulary more systematically (pages 73–77).

Key activities for science teachers in the summer and autumn

- Use the Strategy's audit documents to complete a self-review of Key Stage 3 science.
- Visit local primary schools to observe lessons, look at pupils' work, and talk to pupils and their teachers about Key Stage 2 science.
- Get feedback on the core training from the head of science and another teacher of Key Stage 3 science; study what is on offer in the way of optional training and choose teachers to attend.
- Start to review your scheme of work for Key Stage 3 science against the Framework.

- Try to arrange to see a demonstration lesson or, failing that, watch and discuss one or two of the video lessons provided by the Strategy.
- Review your teaching style and assess whether any principles outlined in the Strategy could be usefully incorporated.

What help will science teachers get?

- The audit or self-review of Key Stage 3 science includes an analysis of pupils' performance, teaching and learning and the professional development needs of staff. It will help departments to identify action points for Key Stage 3 science, to incorporate in the school's own improvement plan.
- The Key Stage 3 science consultant will help teachers to plan lessons and will provide training, demonstration lessons, coaching and other in-class support.
- The LEA will provide core and optional professional development for all Key Stage 3 science teachers over the next few years. Teachers choose from the optional programme to suit their needs. All supply cover is funded at £145 per day.
- Local leading science teachers and departments will provide opportunities to observe good teaching and share good practice.

Some myths about the Key Stage 3 Strategy

It's compulsory. It's not! But you have to be confident that you have something just as strong and detailed, particularly on progression. Indeed, there are benefits in committing yourself to the development of your own detailed curriculum. But the Strategy's materials are well-researched, and the support of consultants and training make it attractive. Take the views of the whole department: a decision not to implement will affect them when they move to new posts.

It expects the earth tomorrow. It doesn't. It expects a commitment to improve and realistic action points to bring it about. The package of materials is substantial, but you are invited to select what you need. It was designed specifically to avoid teachers sitting through training they already have under their belts. A piecemeal strategy is unlikely to work. What you are offered is an approach that takes in planning, pedagogy, practice and management.

They think we're doing a bad job. No one thinks that. But education badly needs a way of identifying, sharing and supporting the best practice. An honest look at the videos and training will tell you that the ideas represent the best practice in schools that get great results, even in challenging situations.

It's all political – just a way of making the targets. Targets refer to numbers of pupils who improve, so it may be no bad thing to have them. It's true that education enjoys political priority at the moment, and there is money to raise standards. That's why we have to be quick in getting the best practice into the system. The Strategy is not run by politicians but by professional staff, every one of whom has been a teacher. Their task is target-getting rather than target-setting.

It's prescriptive. It's not. Schemes of work prescribe what goes on in classrooms, but this is not what the Strategy does. The Strategy offers scaffolds for planning in the form of frameworks. It offers training on the principles and practices that are known to work, and consultants to help you to tailor and interpret the ideas in your own school.

We have to teach to a formula. You don't! Use your professional judgement to determine the activities, timing and organisation of each part of the lesson to suit its objectives. In the main part of the lesson, in particular, there is scope for considerable variety and creativity, with a different interplay of work with the whole class, groups, pairs and individuals in different lessons.