

Sussing out science

Worried that your scientific experiments are not producing the right results? Help, says the IOE's **Jane Maloney**, is at hand...

P primary science subject leaders must feel rather disorientated at the moment; it's as if their satnav has temporarily lost its satellite connection. Many schools are on course with preparations for a more cross-curricular approach in line with the Rose curriculum and, although we know that this route has been officially abandoned, were not sure which direction we are supposed to be going in yet. If you were heading for Assessing Pupils Progress (APP) you're also in for an interesting journey as the focus for assessment procedures is also being recalculated.

But you don't have to rely on a satnav to get where you want as long as you're clear about your destination – a science curriculum that:

- provides children with opportunities to satisfy their natural curiosity in the world around them
- nurtures children's interest in finding rational explanations of what they observe
- stimulates and develops children's enthusiasm for science.

You now have some breathing space to think how these aims can be achieved.

The leadership role

Tara Mawby gives some practical advice to new coordinators about what the role entails in her article 'Starting out as a science coordinator' in *Primary Science* no. 109 September/October 2009. For example, the monitoring, audits and reviews that you'll need to organise are listed along with ideas on how to fit them into the busy teaching year. But the role of science

leader is not just a list of tasks; a leader must provide the vision for science within the school to ensure that the profile for science is high.

Quality control

Continuing Professional Development (CPD) will be a priority for the leader and its impact will be seen in the teaching of science throughout the school. It's really important to seek out CPD opportunities for yourself, individual colleagues and the whole staff. In one primary school I know, the young subject leader organised five CPD sessions for the whole staff in one year in an effort to raise the profile of science. One of the school's most experienced teachers told me: "After having taught for over 20 years I thought my science teaching was good and that these INSETs would be a waste of time for me. How wrong I was! I've really changed the way I teach science now." Needless to say, science has a high profile in this school and progression and continuity are well planned and coordinated.

Science should be valued by the children, their families and the community. Science weeks or days can be a great way to include a wider audience and organising them is an important part of your role. Science clubs also provide opportunities for children to think about, talk about, and do science. Science weeks and science clubs can also promote STEM (Science, Technology, Engineering and Maths) activities to enrich and broaden children's experience and inspire the scientists of the future.

Monitoring the quality of teaching may be a daunting prospect. It's important that all the staff have a

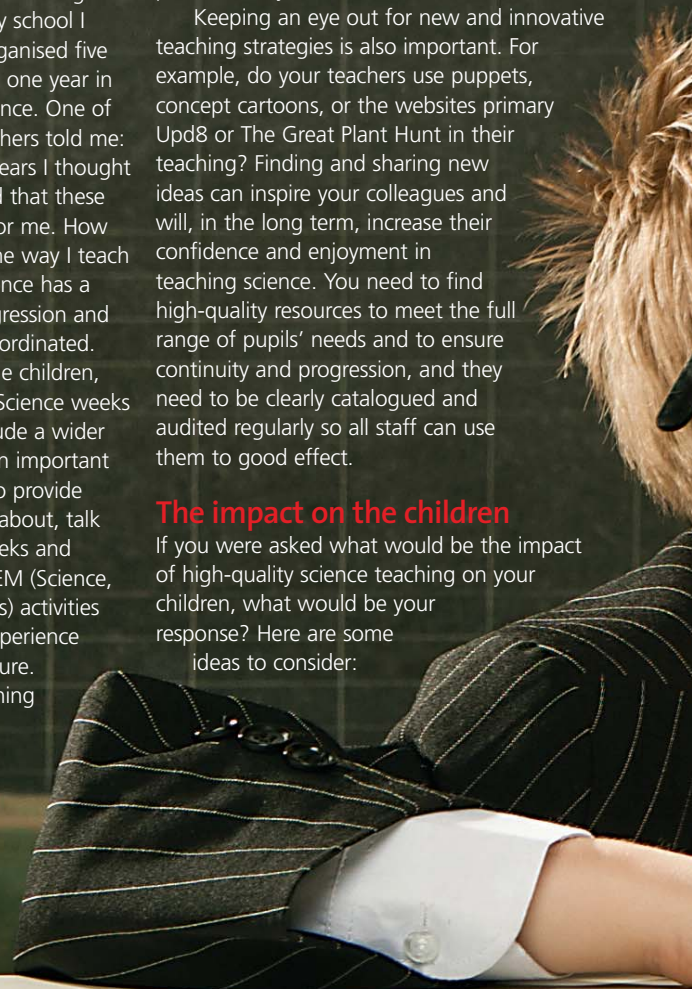
shared view of what's meant by high-quality science teaching. Science teaching in your school should provide an excellent range of learning opportunities that involve pupils in scientific enquiry, practical work, fieldwork, use of ICT, individual and group work and discussions. The context in which science is taught needs to be relevant to the children's lives and also reflect current scientific issues.

The monitoring process needs to be well-organised and its aims and purpose shared with the staff. Findings need to be shared with the relevant staff and action taken where necessary. Identifying the CPD needs of individuals as well as the whole staff is a sensitive but essential part of a subject leader's role.

Keeping an eye out for new and innovative teaching strategies is also important. For example, do your teachers use puppets, concept cartoons, or the websites primary Upd8 or The Great Plant Hunt in their teaching? Finding and sharing new ideas can inspire your colleagues and will, in the long term, increase their confidence and enjoyment in teaching science. You need to find high-quality resources to meet the full range of pupils' needs and to ensure continuity and progression, and they need to be clearly catalogued and audited regularly so all staff can use them to good effect.

The impact on the children

If you were asked what would be the impact of high-quality science teaching on your children, what would be your response? Here are some ideas to consider:



The children are able to...

- think for themselves and raise their own questions about science
- can take the initiative in planning and carrying out their own scientific investigations
- use their scientific knowledge to give explanations or solve problems
- work constructively with others
- have a sense of passion and enthusiasm about science

Pupils should experience a good balance of subject knowledge and understanding with the skills of scientific enquiry. They should be encouraged to engage in science beyond the classroom, doing fieldwork, visiting museums and connecting with science in their own homes.

So that's OK, then – easily done! But with the day-to-day responsibilities it's easy to forget that you're not on your own and there's great support out there for primary science.

Support for primary science

Association for Science Education (ASE):

With a £92.00 per year ASE membership your school will receive many benefits, including the

journal *Primary Science*. It's worth making every effort to attend the ASE's annual conference as you can find out about so many resources and new ideas. You'll also get a generous discount for primary Upd8 (see page 96).

Science Learning Centres (SLC) provide CPD, and many of their courses include financial support. Your regional SLC may be able to run a session in your school for INSET days or twilight sessions. The National Science Learning Centre runs a course for experienced science subject leaders, which has an award covering the costs of the fees, travel and supply cover, plus a contribution towards costs to support follow-up activities. Your regional science learning centre runs a course for new science subject leaders which has an Impact Award (until March 2011) which covers the fees and a contribution towards supply costs.

Primary Science Quality Mark (PSQM) is an award scheme to develop and celebrate the quality of science teaching and learning in primary schools. Teachers who have taken part report that the PSQM has been of great benefit to them and the school. One subject leader said it had given her "clear direction on how to move forward".

The British Science Association runs a UK-wide award scheme called CREST Investigators, which enables children to solve scientific problems through practical investigation.

The activities focus on thinking about, talking about and doing science. They're designed to be used primarily outside of class time (e.g. in a science club).

Dr Jane Maloney is the primary programme manager at Science Learning Centre London, which is based in the Institute of Education.

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