

In the last two editions of *SSR*, the volume of theme materials has allowed little room for unsolicited articles. This non-theme edition allows us to catch up with these articles, and gives an interesting overview of the wide variety of subject matter of concern to our members.

The new specifications for GCSE (examination at age 16) sciences in England will have been occupying the thoughts of many teachers this year. By the year 2000, the education system had endured many revisions over more than a decade, which had resulted in a feeling of instability. Once this became recognised, the cry was 'No more changes'. However, following the 14–19 green paper in 2003, the QCA was asked by the DfES to revise the key stage 4 programme of study for science, resulting in a new range of science GCSEs from 2006. These aim to ensure that

- pupils will be studying science that is relevant and up to date; and
- there is choice in the courses which pupils take to prepare them for different career routes post-16.

So, teachers now need to develop the new, briefer, programme of study for themselves. Directly relevant to the new GCSE specifications is the article '*How science works: what do we do now?*' (page 119).

More help, direct and indirect, is provided in this edition of *SSR*. We start in teacher training with an article addressing the problem of biology graduates who may be required to teach physics and chemistry.

An article following on from the March 'Outdoor science' theme outlines the many educational and social values of residential fieldwork. These values are difficult to measure and cannot be used to enhance scores in league tables. But fieldwork is well worth the effort, despite the reams of risk assessment needed.

Back in the classroom, an article offers some alternatives to practical work, pointing to the restrictions which often face teachers and giving some 'authentic' and motivating examples. An intriguing article uses the liturgy metaphor to look at the teaching technique of a highly successful physics teacher.

TCSS, the Test Construction Support System, is introduced as a computer tool for formative assessment, especially useful in large classes.

Results of research into children's ideas about micro-organisms highlight their often contradictory and non-scientific views and have some interesting implications for teaching. One aim of the new GCSE sciences is to educate pupils to make judgements about items (particularly scare stories) in the media. Another article looks at how the coverage of the various sciences in the newspapers might lead to changes in the way some parts of physics and chemistry are taught.

An article about pupils' knowledge of British birds questions the level of ecology teaching but shows how both pupils' and parents' knowledge improved following a pupil survey of garden birds. Another article, which should help to keep alive country sayings about the weather, looks at the scientific evidence behind them and suggests some investigations.

Related to the June 'Ideas and evidence' theme, an article questions pupils' 'knowledge' gained from science lessons. Another twist on evidence asks us to reconsider the accepted (and taught) model of the structure of DNA in the 50 years since this discovery was published.

And just before the various Reviews, there are some helpful practical ideas for using digital cameras to make observations of motion and the subsequent analysis.

The Science Notes contain a similar variety. A self-proclaimed real hardcore science lover, a student (aged 12 at the time of writing) challenges us to '*put a bit of spice back into chemistry*' and then '*while you've got our attention, hit us with the facts*'. We also find useful practical ideas, which require some construction work, a plea from a mycologist and a discussion of risk and hazard.

Within your *SSR* 'packet', you will find a CD-ROM from ExxonMobil which gives a virtual tour of the Fawley Oil Refinery. There is a review of it in ICT reviews (page 140).

The random mixture of items in this edition is provided by a range of authors from professors and teachers and technicians to students. Enjoy reading them!

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