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SSR in Depth

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Contributing to *SSR in Depth*

We welcome contributions for all sections of *SSR in Depth*. For reference, a full page of A4 text in the journal is about 800–850 words; including two small figures on a page would bring that down to about 600 words. Articles should be no longer than 4000 words in total, including references.

Authors wishing to submit an article to *SSR in Depth* should visit www.ase.org.uk/SSR-submission-guidelines and click the 'Submit Your Article' button in the *SSR in Depth* section. Alternatively, for assistance with your article or idea for an article, please contact sreditor@ase.org.uk

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Health & Safety

For all practical procedures described in *SSR in Depth*, we have attempted to ensure that:

- the requirements of UK health & safety law are observed;
- all recognised hazards have been identified;
- appropriate precautions are suggested;
- where possible procedures are in accordance with commonly adopted model risk assessments;
- if a special risk assessment is likely to be necessary, this is highlighted.

However, errors and omissions can be made, and employers may have adopted different standards. Therefore, before any practical activity, teachers and technicians should always check their employer's risk assessment. Any local rules issued by their employer must be obeyed, whatever is recommended in *SSR in Depth*.

Unless the context dictates otherwise it is assumed that:

- practical work is conducted in a properly equipped laboratory;
- any mains-operated and other equipment is properly maintained;
- any fume cupboard operates at least to the standard of CLEAPSS Guide G9;
- care is taken with normal laboratory operations such as heating substances or handling heavy objects;

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- eye protection is worn whenever there is any recognised risk to the eyes;
- good laboratory practice is observed when chemicals or living organisms are handled;
- fieldwork takes account of any guidelines issued by the employer;
- pupils are taught safe techniques for such activities as heating chemicals or smelling them, and for handling microorganisms.

Readers requiring further guidance are referred to:

Safeguards in the School Laboratory, 12th edn, ASE, 2020.

Be Safe! Health and Safety in School Science and Technology for Teachers of 3- to 12-year-olds, 4th edn, ASE, 2011.

Topics in Safety, ASE, latest version on the ASE website:

www.ase.org.uk/resources/topics-in-safety (login required).

Hazcards, CLEAPSS, latest version, and other relevant publications, on the CLEAPSS website: www.cleapss.org.uk (almost all schools, colleges and teacher training establishments in the UK outside Scotland are members, as are many overseas).

Hazardous chemicals database, SSERC, latest version on the SSERC website: www.sserc.org.uk/health-safety/chemistry-health-safety/hazchem_database-2/ (schools, colleges and teacher training establishments in Scotland).

Preparing Risk Assessments for Chemistry Project Work in Schools & Colleges, SSERC, 2020.

Editorial

Fiona Williams, SSR Content Editor



Welcome to the July issue of SSR.

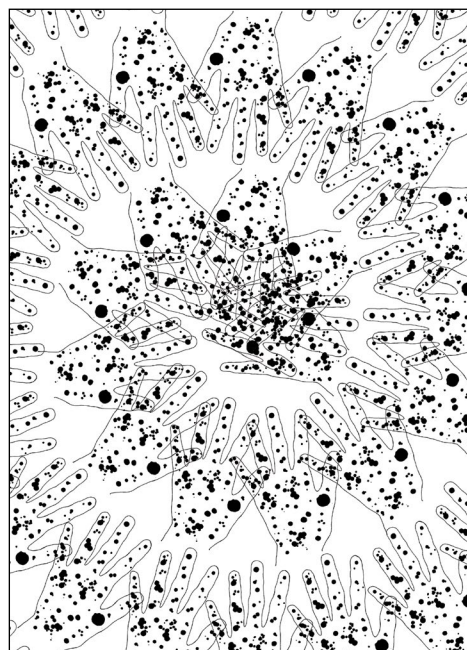
The topic of teacher recruitment and retention is of ongoing concern. In *SSR in Depth*, Mark Whalley and Ian Horwell share their study of the experiences of physics teachers in England in the first five years of their teaching careers. In the next issue, a follow-up article from Mark will explore the reasons why physics teachers have left the profession.

Examples of different teaching and learning opportunities are always welcome and there are some great examples of these in this issue of *SSR in Practice*. Chris Graham looks at 'kitchen classification' to engage students with the topic of classification in biology. Meanwhile, Simon Lewis gives an insight into running an after-school genetics club and the opportunities that can be gained for both students and teachers. Articles from technicians Laura Smith and Katrina Cornell also provide examples of further learning opportunities. Laura shares a collaboration between art and science in a STEAM project that uses the microbiology technique of environmental swabbing. Katrina shares her experience as a STEM Ambassador, what this has involved and some potential benefits.

In *SSR in Depth*, Laura Hobbs, Carly Stevens and Rowena Fletcher-Wood share findings from their study into the effects of COVID-19 on UK environmental science projects.

Maths skills in science can be a tricky area for some science teachers. With this in mind, we hear from Rachael Benson who shares her experience as a science teacher. She also introduces her doctoral research, which focuses on creating resources and CPD to enhance teacher competence and student performance in maths skills. Allied to this, in *SSR in Practice*, Sarah Denison writes about using ratio tables to support the understanding and use

of maths in science. This approach is part of the Maths for Teachers of A-level Biology professional development course (<https://amsp.org.uk/events/maths-for-teachers-of-a-level-biology>).



Integrating art and science – see Laura Smith's article on page 26 of *SSR in Practice*

There are increasing numbers of students with English as an Additional Language (EAL). In *SSR in Practice* Sheila Hopkins, a trainer for the Bell Foundation, writes about her knowledge and experience in supporting EAL students with the language of science.

Inclusion is an important area of focus and as a companion article to one published in the latest edition of *Primary Science*, in *SSR in Practice* Romaiza Naseem and Nasima Hassan describe some ways to introduce global perspectives in science education.

This is just a taste of the array of articles in this issue; I hope that you find them interesting and useful.

Read more in *SSR in Practice*

SSR in Practice is available at: www.ase.org.uk/ssr-in-practice/issue-391