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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.

These can be emailed to the content editor, ssreditor@ase.org.uk, or posted to the content editor, *SSR in Depth*, ASE, College Lane, Hatfield, Herts AL10 9AA. Detailed advice on the submission of articles and *Science notes* is available on the ASE website at: www.ase.org.uk/submission-guidelines.

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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;
- 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.

Health & Safety

Editorial

Fiona Williams, *SSR* content editor

Welcome to the June issue of *SSR* and hello from me, the new content editor for *SSR*, working alongside the commissioning editor, Helen Harden. I gained my doctorate from Leeds University and spent a few years as a postdoctoral researcher and then as a teaching fellow. I then moved into secondary teaching as a class teacher, later becoming Head of Chemistry. For family reasons, I left the classroom and now work part-time in initial teacher education.

I am excited to be the content editor for *SSR* and look forward to guiding authors through the peer review, editing and proof stages of getting their articles published in *SSR in Depth* or *SSR in Practice*. Thank you to all who have submitted articles and have been patient with me while I become familiar with the various processes and people involved with the journal.

Science education covers a broad range of topics across the different disciplines, which means that there should be something relevant to everyone in *SSR*.

Environmental chemistry and green technologies are areas of growth in both society and schools. In *SSR in Depth*, Averil Macdonald discusses the importance of hydrogen as a clean energy source and how it can be used in a safe, practical and affordable manner, while Pramila Tanwar provides a study into the awareness by Delhi pupils of their own carbon footprint. On a similar theme in *SSR in Practice*, Ravina Winch shares a case study on her use of an eco-STEM club as a vehicle for an embodied cognition approach to environmental education and Martha Neugarten describes her work with the Environment Agency and her journey to this.

Science stories or hinterland (real-world science) are often used as a hook to entice the learner or to enrich teaching. Within *SSR in Practice*, Richard Brock *et al.* introduce a research project into the potential benefits or harms of using science stories in teaching. Any year 12 or 13 pupil in England can take part in the project. The data obtained will help the team to offer guidance to teachers on using stories in teaching. Using caffeine as an example, Chris Graham shares a hinterland idea

for teaching evolution, and the links that can be made with other biology subject areas when doing so.

In the area of practical work, borne out of the frustration of trying to source affordable live bacteria cultures, Jon Hale shares a simple and cost-effective alternative method for a commonly required microbiology practical. There are two articles on microscale or reduced scale electrolysis: Maureen Wade offers a simple set-up for electrolysis using a Tic Tac box and Elsa Tilston approaches the topic from an inclusion perspective. On the theme of inclusion, we learn about the Inclusion in Schools programme through a case study from a school in Rotherham. Keith Ross explores some scales that use logarithms, and looks at how we help our pupils to understand the pH scale.

In *SSR in Depth*, Anna Koumara and Panagiotis Koumaras explore Newton's work on hydrostatics and suggest ideas for teaching hydrostatic pressure as guided by Newton's work. Models are, undoubtedly, an important tool in the teaching and learning of concepts in science. However, these models can sometimes be hard for pupils to interpret and can lead to alternative understanding of a concept. Daniel Tan *et al.* discuss some barriers to learning that can be faced by pupils learning about the particulate nature of matter.

This is your journal. As such, we want to read about, and share in, your knowledge and practice. If you have never written for *SSR* before and are unsure whether your article idea is suitable then please get in touch with Helen at helenhardenase@gmail.com.

Fiona Williams

Photography competition

We are excited to announce our first photography competition on the theme 'Light in the Natural World' (*SSR in Practice*, page 36). The closing date is early September so please take some pictures over the summer holiday and join in. We are looking forward to seeing the pictures and encourage everyone to participate.

Read more in *SSR in Practice*

SSR in Practice is available at: www.ase.org.uk/ssr-in-practice/issue-388