



Although this is only the first issue of 2014, the academic year is already starting to draw to a close. By the time this issue reaches you, spring will have

sprung and preparations for the end of year, and those dreaded exams, will be well underway. Spring, however, is a season of renewal – a new start – and for *Science in School* that is very apt. With two new staff members in the office, we're

full of enthusiasm for the coming year and beyond. There are many plans for new projects and improvements, but this issue demonstrates that we are still committed to producing a wide variety of articles – from the cutting-edge research involved in developing fusion power (p 2) to the modern techniques used to look back hundreds of years to the Black Death (p 7). New years and new beginnings are also a time to look back and take stock. As well as local assessments and national league tables, teachers and students today are also subjected to the Programme for International Student Assessment (Pisa), the results of which were recently released. Pisa is one way for those working in education to see how different teaching and learning styles can affect learning outcomes, and we at *Science in School* will be coming back to that question, probably more than once, over the next few issues. Although it is tempting to look at the Pisa rankings as absolute, we must remember our scientific training. Averages can hide many variations in the data.

In an increasingly technological world, science is relevant to almost every part of our lives. As science teachers, it is you who are able to equip the next generation for that world. Not every child will discover the next blockbuster drug (p 40) or send a portable laboratory to Mars (p 12), but every child will be affected by those discoveries. Providing students with an understanding of how we interrogate and understand the world around us cannot fail to help them in later life, whether it is by teaching them to calculate fundamental physical properties of energy (p 28) or to ask more questions next time they go to the doctor (p 50).

A century ago, Max von Laue received the Nobel Prize in physics for showing that X-rays could be scattered by crystals. Today, this technique is more important than ever and it is hard to see areas of science that crystallography hasn't touched. It is because of this importance that Unesco has declared this year the International Year of Crystallography. With a variety of educational resources on offer, this is yet another way of showing your students how simple observations and experiments can have a wide impact. Whether you inspire the next von Laue or just help your students appreciate their discoveries, we hope that our journal can also, in some small part, help you to make a difference.

Laura Howes

Co-Editor of *Science in School*

editor@scienceinschool.org

www.scienceinschool.org



To learn how to use this code, see page 57.



About *Science in School*

The European journal for science teachers

Science in School is the **only** teaching journal to cover all sciences and target the whole of Europe and beyond. Contents include cutting-edge science, teaching materials and much more.

Brought to you by Europe's top scientific research institutes

Science in School is published and funded by EIROforum (www.eiroforum.org), a partnership between eight of Europe's largest intergovernmental scientific research organisations.

Inspiring science teachers worldwide

The *Science in School* website offers articles in 30+ languages and is read worldwide. The free quarterly journal is printed in English and distributed across Europe.

Advertising: tailored to your needs

Choose between advertising in our print journal, or on our website. For maximum impact, reach our entire readership with an advertorial (online and in print). Online and in print, we have a total of over 120 000 readers per quarter.

- The majority of our readers are secondary-school science teachers.
- Our readership also includes many primary-school teachers, teacher trainers, head teachers and others involved in science education.
- The journal reaches significant numbers of key decision-makers: at the European Commission, the European Parliament and in European national ministries.

For more information, see www.scienceinschool.org/advertising or contact advertising@scienceinschool.org

Subscribing

Register free online to:

- Subscribe to the e-newsletter
- Request a free print subscription (limited availability)
- Post your comments.

How can I get involved?

Science in School relies on the involvement of teachers, scientists and other experts in science education.

- Submit articles or reviews
- Join the referee panel
- Translate articles for publication online
- Tell your colleagues about *Science in School*
- Make a donation to support the journal.

See www.scienceinschool.org or contact us.

Contact us

Laura Howes / Isabelle Kling

Science in School

European Molecular Biology Laboratory

Meyerhofstrasse 1

69117 Heidelberg

Germany