As autumn turns to winter and the year nears its end, we often start to think about the coming new year. In this issue, we look ahead and consider some advances in science and technology that could mean a better future for all of us.

Starting with our news section, we highlight a powerful new technology for diagnosing diseases: full-colour X-rays (page 4). We also report on how tomorrow’s biology textbooks may need updating in light of a remarkable new discovery about the early embryo (page 4). In other articles, we look at how a potential new biomass resource – nutshells – might provide a more sustainable source of energy (page 31), and how thermophiles – microorganisms that thrive at hot temperatures – are finding new applications across technology and industry (page 12). And while the SI system of units may seem fixed and timeless, we review the upcoming changes and improvements to the formal definitions of several basic units, due in May 2019, and outline some of the arcane science that underlies these redefinitions (page 8).

Continuing the futures theme, we meet a sociologist who is trying to find better ways to ensure the survival of rhinos and other threatened species (page 23), and a teacher who is intent on finding new uses for old technology – including building a Christmas tree solely from cast-off electronic components (page 27).

Finally, we end the issue with a bang – or a slam, as we give details of how to hold a ‘science slam’ in your school (page 43), which brings not poetry but lively presentations of science topics to the stage, with voting to decide the winners.

We hope you have a lively and successful end to the year, and a great start to 2019. We at Science in School send you best wishes for the holiday season, and we look forward to reading and sharing more brilliant ideas for science teaching from across Europe – do keep them coming.

Susan Watt