



## CELLULOSE: FROM TREES TO TREATS

The same molecule that keeps mighty trees standing also led to the first multicellular life forms – and can even be used to make sweet treats.

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## EDITORIAL

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The new academic year is in full swing. You have welcomed back your students and familiarised yourself with new faces. Now we would like to welcome you back with this issue of *Science in School* – and to say hello to new subscribers who have joined us over the summer.

It was a pleasure to meet both our new and long-standing readers and contributors at the international Science on Stage festival at the end of June, when teachers from all over the world came together to exchange ideas about science teaching. Your enthusiasm and innovation was incredibly motivating, and highlighted the importance of us helping you to share ideas with your peers across Europe.

In this issue, we take a closer look at the natural world. Below the waves, we discover the secrets of shark skin and how it is inspiring new technologies, including a swimsuit (page 19). On land, we consider Earth's most abundant large molecule, cellulose (page 8). And in the air, we answer the simple question 'how do birds fly?' with a hands-on dissection of a chicken (page 38).

On a smaller scale, we investigate the element molybdenum (page 30). Essential for living organisms, it is also thought to have been crucial to the 'last universal common ancestor' – taking us back billions of years to the earliest stage of evolution. To watch evolution more directly, we explore a unique experiment that has tracked the changes in *E. coli* over 67 000 generations – the equivalent of some one million years in human reproduction (page 24).

Much as monitoring populations of microbes can tell us about the evolution of other species, the tiny fruit fly can help answer fundamental questions about animal development. For researcher Isabel Palacios, however, this valuable model organism is key to connecting researchers in Africa to the rest of the global scientific community (page 35).

In the broadest sense, the natural world encompasses our entire Universe. So why not calculate the distance between Earth and the Moon using radio signals (page 44), build your own particle accelerator (page 49) or learn about the ripples in space-time caused by gravitational waves (page 13)?

Finally, we wish you all the best for the year ahead, and look forward to hearing how you use these articles in your lessons. Send us an e-mail to tell us (editor@scienceinschool.org) – we always welcome your feedback.

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