



WHEN THINGS DON'T FALL: THE COUNTER-INTUITIVE PHYSICS OF BALANCED FORCES

Intrigue your students with some surprising experiments – it's a great way to challenge their intuitions and explore the laws of mechanics.

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EDITORIAL

Eleanor Hayes
Editor-in Chief
Science in School
editor@scienceinschool.org

Spring is in the air: the first flush of green, that unmistakable springtime smell and, of course, the rising temperatures. Why not take this opportunity to discuss climate change – and its effect on our oceans (page 12)? These vast bodies of water respond to temperature changes in complex and sometimes counter-intuitive ways.

Counter-intuition is also key to one of the activities in this issue, an investigation of the physics of balanced forces (page 36). You could follow this up by challenging your students to use Newton's laws of motion to perform some impressive tricks (page 45). Your students could then video some of these tricks to use as 'hooks' for science lessons (page 55).

In Germany, the *Foehn* – a dry, warm wind commonly associated with springtime – is often blamed for any number of complaints, including tiredness. Perhaps now is the time for you and your students to investigate the science of energy drinks (page 48)? Whereas the 80 mg of caffeine found in an average can of energy drink might wake you up, pure caffeine is toxic and should be prepared only in very small quantities for the experiments. Similar considerations of toxicity drove one Hungarian teacher to develop a novel idea for microscale chemical reactions – in hydrogel balls (page 31).

From the very small scale to the very large: from the safety of your classroom, you could investigate celestial distances using parallax (page 40) or learn how gravitational waves allow astronomers to 'listen' to the Universe (page 8). To detect other signals from space, some scientists even choose to work deep underground (page 16).

We hope that you enjoy these and the other articles in this issue of *Science in School*. Perhaps they'll inspire you to submit your own article?

Eleanor Hayes

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your own article? See:
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