

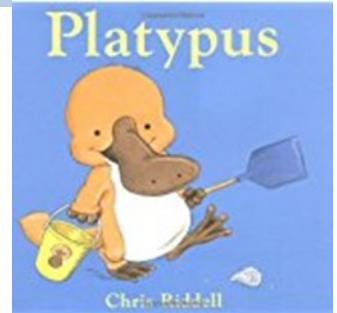
# Science through picture books

This selection is limited to stories, so mostly fiction, although a few biographies have slipped in. There is a sprinkling of old favourites and plenty of more recent publications.

## Scientific methods and attitudes

Chris Riddell, *Platypus* – first published 2001

Platypus likes collecting. He adds a shell to his collection. The shell disappears from the collection, is recaptured, and escapes once more before Platypus realises it is home to a hermit crab. Platypus apologises and returns the crab to the sea, and checks that the next shell he collects is quite empty. This simple and charming story disarmingly incorporates some of the big ideas of science (animal homes and habitats, properties of materials, characteristics of living things) along with scientific methods and capabilities (collecting, close observation, classifying, investigating and problem solving, being systematic and discriminating) and scientific attitudes (curiosity, persistence, exploration, sustained thinking).



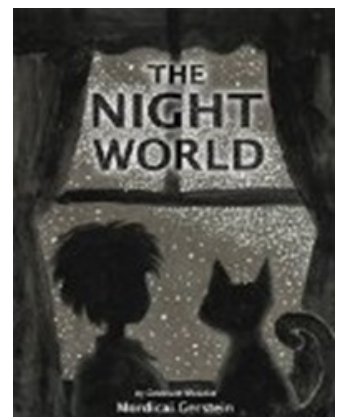
Some favourite biographies also reveal scientific methods and attributes: Jeanette Winter, *The watcher: Jane Goodall's life with the chimps* (2011); Laurence Anholt and Shiela Moxley (ill.), *Stone girl, bone girl; the story of Mary Anning* (1999); Jennifer Berne and Vladimir Radunsky (ill.), *On a beam of light: a story of Albert Einstein* (2013).

## Light and dark; Night and day; Time, Earth and Space

Mordicai Gerstein, *The night world*      Bob Graham, *How the sun got to Coco's house*

Two beautiful picture books, both published in 2015, treat the coming of the dawn from contrasting perspectives. Graham tracks the dawn's progress across the globe, featuring a pale lemon sunlight and soft pink tinged sky, until the sun reaches Coco's bedroom window. "After such a dash, the sun had time on its hands. So did Coco! So did Coco's friends. But for a few passing clouds, they spent the whole day together."

Gerstein's illustrations are black and grey for the majority of his book. A little boy is woken by his cat before dawn, and together they explore the shadowy night world as the birds and animals gradually awaken to greet the dawn and life, light and colour intensify across the final few pages.



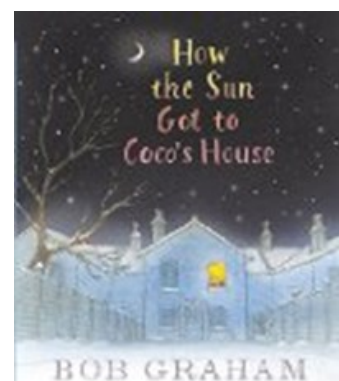
Other favourites:



Ella Burfoot, *Darkness slipped in* (2008).

Robie H. Harris and Patrick Benson (ill.), *Shadow* (2012).

Suzy Lee, *Shadow* (2010).



## Ourselves and other animals

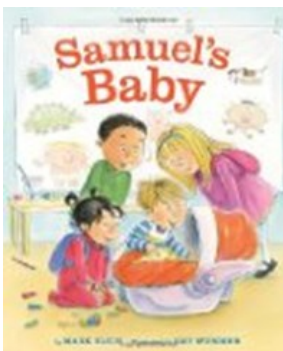


A very funny book for 'ourselves', about body parts, habits, communication and control is Quentin Blake and André Bouchard, *Daddy lost his head* (2008). Eric Carle's *From head to toe* (1998) depicts body movement and animal mechanics with simple words and rich graphics, and would be excellent for getting your class moving.

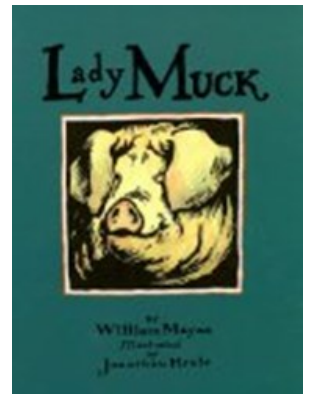
Contrasting treatments of growth and change, rites of passage are found in Bob Graham's modern fairy tale: *April Underhill, tooth fairy* (2010), and two frank and funny picture books from Babette Cole, *Mummy never told me* (2003) and *Hair in funny places* (1999).

Different approaches to the topic of babies, and where babies come from, are taken by Mark Elkin and Amy Wummer (ill.), *Samuel's baby* (2010); Babette Cole, *Mummy laid an egg* (1993); and Michael Rosen and Neal Layton, *Rover* (1999).

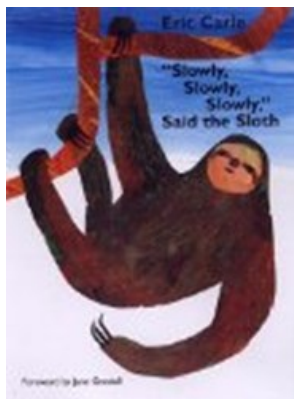
Characteristics of living things, especially the senses are explored in William Mayne and Jonathan Heale (ill.), *Lady Muck* (1997). This is a book for older, more confident readers, or would make a great read-aloud. The illustrations, particularly the woodcuts, are fabulous, and the rich, rolling, inventive wordplay evokes hunger and greed, smell and taste and the happiness that pigs derive from these sensations.



Two books exploring synaesthesia are Tim Hopgood's *Here comes Frankie* (2008) - experiencing music as colour, shape and smell, and Alborozo's *Let's play* (2014) - experiencing music with properties of colour, shape and sensation.



For metamorphosis, cycle of life, growth and change, inheritance, read Jeanne Willis, *Tadpole's promise* (2003), a story of love thwarted by metamorphosis, with a biting funny, dark twist. Another good book for metamorphosis, inheritance and the variety of life is Julia Donaldson and Axel Scheffler (ill.), *Monkey puzzle* (2000).



Hibernation, characteristics of living things, the variety of life and animal behaviour are beautifully depicted in Kate Messner and Christopher Silas Neal (ill.), *Over and under the snow* (2011). Rich, descriptive language and striking retro-style block print and mixed media illustrations in a limited palette of calm, winter colours reveal animals hunting, resting, and eating.

Two books starring sloths which both use strong, vivid images and humour to develop aspects of living things, environment and habitats are Eric Carle, *"Slowly, slowly, slowly," said the sloth* (2002) and Fran Preston-Gannon, *Sloth slept on* (2014).

## Gardening, plants and food

Food is a perennially engaging topic in the classroom, and most children love to grow things. Three classics from Vivian French, illustrated by Alison Bartlett: *Oliver's vegetables* (1995), *Oliver's fruit salad* (1998), and *Oliver's milkshake* (2000) beautifully follow food from source to plate. Nick Butterworth and Mick Inkpen (ill.), *Jasper's beanstalk* (first published 1992, but still in print) and Eric Carle, *The tiny seed* (1997) would enrich any topic involving growth and change.

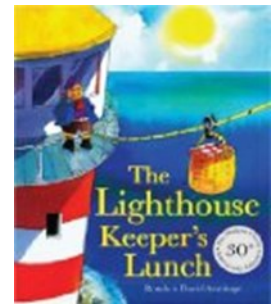
Jo Readman and Ley Honor Roberts (ill.), *The world came to my place today* (2002) brings an international dimension with colour and verve. Aimed at younger readers, the simple, accessible storyline is supplemented by pithy information panels. Also focusing on interdependence and on the importance of nature for people to thrive, Nicola Davies, *The promise* (2013) is for older readers, and has a powerful environmental message.

Sarah Garland, *Eddie's kitchen* (2007) - with vegetarian recipes—features the warm, capable, single-parent and her family familiar from many Garland stories.

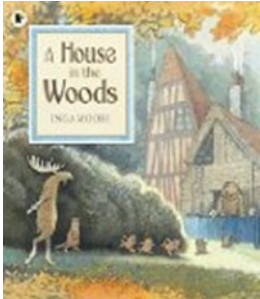


## Materials, forces and structures, energy

A classic, but still in print, is Ronda and David Armitage, *The lighthouse keeper's lunch* (first published 1977). This used to be a firm favourite with teachers, as a funny, nicely illustrated and well-told tale that demonstrates problem solving, trial and error, and mechanics, notably the usefulness of pulleys. As the storyline revolves around the greed and persistence of snack-thieving seagulls, it chimes with our experience at Falmer, and is well worth revisiting.

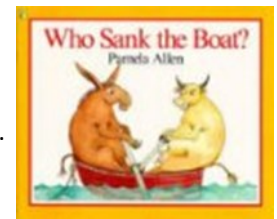


Gillian McClure, *We're going to build a dam* (2013) is the story of two boys and a dog on the beach, involving construction, materials and teamwork.



Inga Moore, *A house in the woods* (2012) is a lovely, gently humorous tale of friendship and teamwork, beautifully illustrated in soft, warm autumnal colours, with plenty of science around construction, materials, houses and homes.

Two early books from the talented, creative, exuberant Pamela Allen are *Mr Archimedes' bath* (first published in 1980), illustrating displacement, and *Who sank the boat?* (1982) for mass, floating and sinking. Allen's *The pear in the pear tree* is out of print, but available in public and school libraries, and well worth picking up second-



hand, for a graphic description of Newton's laws of motion: inertia, force, movement and momentum.

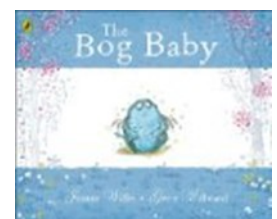
The pacy, rhyming text of Vivian French and cheerful drawing style of Tim Archbold in *Pig in love* (2006) concerns romance and happiness, energy and movement, structures and forces, transport and flight — and a flight of fancy.

## Environment, habitats, earth science

In Max Velthuijs, *Frog and the treasure* (2002), Frog and Little Bear get into a scrape digging for treasure, and are rescued by their friends. Disappointment at mission-failure is turned to joy and wonder when Rat explains that a stone dug up by Frog and Little Bear is a hundred million years old.

An environmental tale of conservation, endangered animals and habitats under threat is beautifully illustrated by Frann Preston-Gannon: *The journey home* (2012). Preston-Gannon worked on this book while staying in Connecticut with the great children's book author/illustrator, Maurice Sendak, as the winner of a Sendak Fellowship.

Jean Willis and Gwen Millward (ill.), *The bog baby* (2008) centres on two girls who find a bog baby. They capture him, care for him and love him, but he falls sick and the only remedy is to return him to his rightful environment. It's a story about the ethical care of wildlife and the appropriate habitats for wild creatures.



Mama Miti, the 'mother of trees' is the honorary name for Wangari Maathai who founded the Green Belt Movement, an African grassroots organization that has empowered many people, especially women, to mobilize and combat deforestation, soil erosion and environmental degradation. As a result, more than 30 million trees have been planted throughout Kenya. In 2004, Maathai became the first African woman to win the Nobel Peace Prize. She has inspired these four beautifully illustrated biographies:

Donna Jo Napoli and Kadir Nelson (ill.), *Mama Miti* (2010)

Jen Cullerton Johnson and Sonia Lynn Sadler (ill.), *Seeds of change* (2010)

Jeanette Winter, *Wangari's trees of peace* (2008)

Franck Prévot and Aurélia Fronty, *Wangari Maathai: the woman who planted millions of trees* (2015)



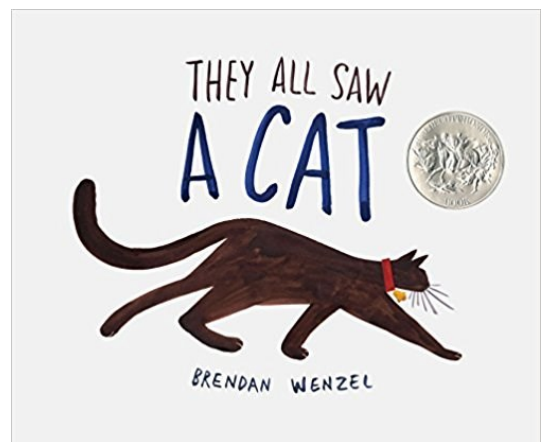


Julia Donaldson, *The snail and the whale* (2003)

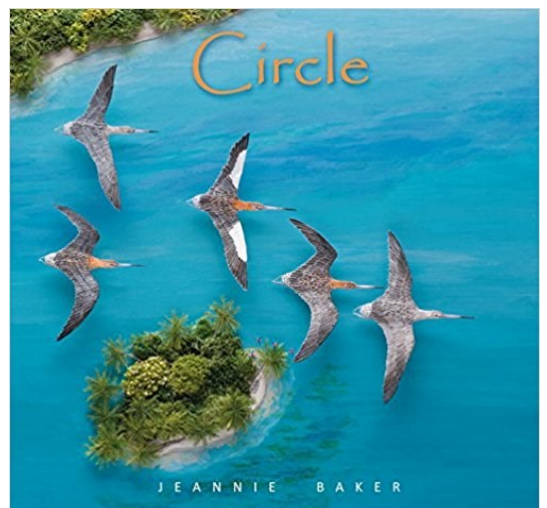
There is a rich feast of science in this book, carried lightly along by Donaldson's strong rhythm and rhyme and Scheffler's bold illustrations. Biodiversity is highlighted by the contrast between the size and the geographic range of the snail and the whale, and enriched by portraits of many more animals from land, sea and underwater. Further contrasts come with varying habitats and weather patterns, and with the sweep and force of sea and tide. The power of the whale is contrasted with his vulnerability when stranded, and the destructive impact of adult human activity is balanced by small children taking a leading role in the whale's rescue. Remarkable characteristics of living things (whale song for communication; slimy snail secretions for locomotion) provide the detail for an overarching message about the interdependence of life on earth.



Brendan Wenzel, *They all saw a cat* (2016) is about vision and sense perception from different physiological and psychological perspectives. The text is simple and repetitive: the complex layers of meaning are in the illustrations. Different animals see the same cat through contrasting sensational and emotional filters. There is a lot of science – vision, optics, hierarchies of senses, echolocation in bats, compound eyes and the complex vision system of bees, vibration – and a lot of social and emotional awareness. None of this is forced or shoehorned: it's a deep and complex message hidden in a joyful, playful narrative.



Some beautiful picture books straddle the story book/ non-fiction divide – such as Jeannie Baker's *Circle* (2016), in which the migratory pattern of godwits is told through one particular life.



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