

## Toughing it out

What would you say is the toughest animal on the planet? The tiger? The great white shark? The rhinoceros? Well, our vote goes to the emperor penguin!

We might see penguins as cute, cuddly, and slightly comical with their waddling walk and habit of tobogganing across the ice on their bellies. But every day, these flightless birds cope with some of the harshest conditions on the planet. In March, while other creatures leave the area for warmer places further north, emperor penguins head south – the only animal to spend the bitter winter on Antarctica's open ice.

## Historic survivors

"I don't believe anything on Earth has a worse time than an emperor penguin," said the British explorer, Apsley Cherry-Gearard. He was among the first people to see the world's largest penguins up close, as part of Captain Scott's ill-fated expedition to the South Pole 98 years ago. Apsley was so impressed with the super-tough penguins, he collected three of their eggs and kept them safe all the way back home. And they're still in the collection of London's Natural History Museum today!

## Impressive penguins

Present-day visitors to Antarctica are just as amazed by the birds' survival skills. "The emperor penguins make it look so easy," says Dr Gerald Kooyman, a research professor from the University Of California, USA, who has spent four decades studying the penguins and their habitat.

"After watching them for a while, you almost forget how incredible they are – then the wind suddenly slices through you." That quickly reminds you of what these brave birds endure in their icy world.

Almost 60 times the size of the UK, Antarctica's vast wilderness is, for most of the year, covered in a layer of ice, which can be more than 4.5km thick. But Dr Kooyman is so potty about the emperor penguins, he regularly camps out there for months. *Brrr!*

## Fighting the freeze

Using clever devices, like tiny film cameras nicknamed 'crittercams', Dr Kooyman has made some amazing discoveries about the ways the emperor penguins have adapted to their environment. We now know that they're the world's deepest diving birds, reaching depths of more than 500m. They can also stay under water for about 20 minutes. Wow!

The Emperor penguins' plumage is also vital to their survival. Denser than any other bird's – they have 15 feathers for every square centimetre of skin – the short feathers have fluff down (smaller, softer feathers) close to the base. This creates a double layer of insulation, which bristles up to trap air. Warmed by the bird's body, the air acts like a puffa jacket, keeping the penguins toasty!

## 5 feathery FACTS

P-p-pick up these egg-stremely cool emperor p-p-penguin facts...

**1** They are the largest of all the penguin species, growing up to 115cm tall – about the same height as a five-year-old kid!

**2** Emperor penguins can live for 20 years or so, and in some cases even reach 40!

**3** Every summer, the birds moult, replacing all their feathers with nice new ones. This process takes just over a month.

**4** Each emperor penguin has a unique call, so that it can be found among thousands of others by its mate or parent.

**5** The penguins may walk slowly, at just 2.7kmph, but they're super swimmers, reaching speeds of up to 14.4kmph in the sea. *Whoosh!*



Huddling together helps to keep the chicks cosy in the icy Antarctic

**Did you know...?**  
The Antarctic Treaty of 1959 made it illegal to hunt any of the precious penguin pals. Yay!