Built for the cold: answers

What your child practised: how polar animals keep warm with blubber, fur, small ears and huddling (Year 6 science).

Page 1 · Warm up

thick fur · small ears · a layer of blubber · bumpy, furry paws

Page 2 · Try it together

The hand in the empty bag feels cold first. The fat layer insulates: it slows heat leaving the hand, like blubber.

Page 2 · A. Match

white fur → creep up on seals unseen
black skin → soak up warmth from the sun
bumpy pads → grip slippery ice
huddling → share body warmth
plants growing low → stay out of the wind

Page 3 · B. Changing fur

It is camouflaged all year: brown-grey matches the rocks and plants in summer, white matches the snow in winter. It can sneak up on prey and hide from predators.

Page 3 · C. Huddling

A **behaviour**. Pressed together, the penguins lose less heat to the wind, and taking turns means everyone gets warm.

Page 3 · D. Foxes

Fox A (small ears): **Arctic**; small ears lose less heat. Fox B (big ears): **desert**; big ears let heat escape to keep it cool.

Page 3 · E.

Answers will vary, e.g. blubber, small ears, huddling.

Challenge: No. Big ears would let lots of heat escape, because heat is lost from parts that stick out. Small ears keep heat in, so they suit the Arctic.

Watch out for

- **"Big ears keep animals warm."** They do the opposite: they lose heat. Compare the two foxes side by side.
- **Polar bears and penguins together.** Polar bears live in the Arctic (north); penguins live in the southern half of the world.
- **White fur only for warmth.** Thick fur keeps the bear warm; its white colour is mostly camouflage.

Going further (5 minutes, no paper)

- **Human huddle:** on a cold day outside, stand close together. Do you feel warmer? Which way of keeping warm is that: a feature or a behaviour?
- **In the game:** Chapter 4, Ocean adaptations, dives into how sea animals breathe and move in water.