What is camouflage?

KS2 KS3 Ages 7-14 ⏰ 3 min read

Camouflage is any adaptation that helps an animal blend into its environment and avoid being seen. It's produced by evolution: animals that were harder to spot survived longer and had more offspring, gradually making entire populations better at hiding. It works both ways — predators use camouflage to sneak up on prey, and prey use it to hide from predators.

Types of camouflage

Background matching: The most common type. The animal's colour and pattern match its typical surroundings. Arctic hares are white in winter to match snow, brown in summer to match tundra. Flounder fish can match almost any seabed texture precisely.

Disruptive colouration: Bold patterns — like the stripes of a zebra — break up the animal's outline rather than blending with a specific background. In a herd of running zebras, the stripes make it hard for a predator to track a single individual.

Mimicry: Looking like something else entirely — a stick, a leaf, a rock. The leaf-tailed gecko looks exactly like a dead, veiny, brown leaf, right down to simulated bite marks and fungal patches. Stick insects are indistinguishable from twigs.

Camouflage is an arms race between two sets of eyes — predator and prey. As prey get better at hiding, predators evolve sharper vision and better pattern recognition. Better predator vision puts more selection pressure on prey to hide even better. Each improvement on one side forces improvements on the other, pushing the camouflage to ever more extraordinary lengths over evolutionary time. The stick insect that looks like a twig with bite marks didn't plan that — it's the result of millions of generations of "the less realistic ones got eaten."

The cuttlefish: the master of active camouflage

Most camouflage is fixed — the animal always looks the same. But cuttlefish (close relatives of squid) can change their skin colour, pattern, and even texture in milliseconds, actively adapting to match whatever surface they're resting on. They

have thousands of pigment cells (chromatophores) in their skin that expand and contract under neural control. A cuttlefish on a chessboard will display a chessboard pattern within seconds. Their brains have more neurons devoted to skin control than to almost anything else.