

The secrets of camouflage

The animal world is full of amazing survival tricks, including disguise, mimicry of other animals and special coloration that confuses or distracts predators. Let's take a look — although you may have to look twice ...

The astonishing examples of animal camouflage that you can see here didn't appear overnight — they evolved slowly over millions of years. How does that work? Well, over generations, tiny random differences in color, pattern or behavior appear within a species. If one animal's camouflage helps it survive longer, it's more likely to have babies that inherit that feature. Bit by bit, those helpful traits build up in the population. This slow process — in which nature “chooses” the individuals best suited to survive — is called natural selection, and it's how the animal kingdom's masters of camouflage came to be. Let's explore the main types of camouflage and meet some incredible animals that have perfected each one.

This caterpillar looks like a snake!



MIMICRY

Mimicry is camouflage by imitation — where animals pretend to be other creatures. They often imitate creatures that are dangerous or unappealing, like the caterpillar above that mimics a dangerous snake to stay safe from hungry predators. Some mimics copy other animals to fool their prey, as we'll see.

Margay cat

In the rainforests of South America, the margay cat, pictured below, uses an extraordinary trick to catch monkeys. This small wild cat can mimic the high-

pitched distress cries of a baby tamarin monkey — piercing “help me!” sounds that adult monkeys can't ignore. When the concerned adult monkeys rush toward the noise to investigate, they often find the margay crouched in the branches, ready to pounce. Scientists think the margay learns these calls by listening to real baby monkeys, then turns the monkeys' family alarm into its own special weapon for hunting.



The margay cat is an expert mimic of monkeys!

HUMAN CAMOUFLAGE

Humans use camouflage, too. Hunters, photographers and wildlife watchers wear patterned clothing and face paint to blend into forests, deserts or snow so animals are less likely to spot them. In the military, camouflage helps soldiers and vehicles stay hidden. Uniforms, tanks and even tents are painted with colors and

patterns that match their surroundings. Some soldiers wear ghillie suits (pictured right), which are shaggy, leaf-and-grass-colored outfits covered in strips of fabric (and sometimes real plants) that break up their outline and make them almost invisible among bushes and tall grass.



Sharks use countershading to blend in underwater.

COUNTERSHADING

Countershading is common in animals that swim or dive underwater, such as sharks, dolphins and penguins. It's why these animals are often dark on top and light underneath. When seen from above, the dark back merges with the deep water below; when seen from underneath, the pale belly blends with the bright surface above. This can help conceal them from predators and prey approaching from any direction.



A photographer wearing a ghillie suit.

DISGUISE

Disguise camouflage doesn't just hide an animal — it helps it pretend to be something else. The animal's aim is to be ignored, not because it's invisible, but because it looks like something too ordinary, or unappetizing, for a predator to even bother with.

Stick insect

A fantastic example of animal disguise is the stick insect. Its long, twig-like body, knobby legs and bark-brown color make it look like part of a branch. Some species even sway gently as they walk, just like a twig in the breeze. For a hungry bird searching for something to eat, the stick insect can look just like part of a plant, helping it stay safe.



A disruptive “eye mask”.

frilly, leaf-shaped fins that look just like drifting algae. The seadragon moves gently with the current, blending so well with the swaying ocean plants that even keen-eyed predators can't spot it.

DISRUPTIVE COLORATION

Disruptive coloration is camouflage that works by breaking up an animal's outline. Instead of blending

in completely, the animal uses strong stripes, spots or blocks of color that make it harder to recognize its true shape. A predator or prey might see movement but still

struggle to figure out what it is, how large it is, or even which end is the head!

Using “eye masks”

A clever variation is the “eye mask,” which is a dark stripe or band of color that

Leafy seadragon

Below the waves, another animal has perfected the art of disguise: the leafy seadragon, pictured above. This relative of the seahorse lives among underwater forests of seaweed off the coast of Australia. Its entire body is covered in

Badgers also use “eye masks” for camouflage.



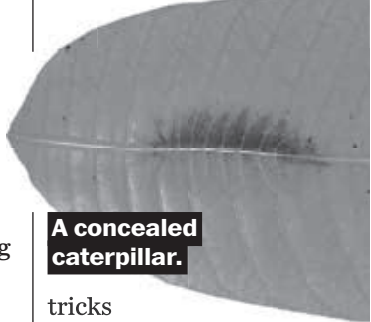
‘SMELLY’ CAMOUFLAGE

Not all types of camouflage depend on sight. Some animals use the sense of smell to hide instead. This is called olfactory camouflage (olfactory means “related to smell”). These clever creatures change their scent by masking it or copying that of another animal. The California ground squirrel, pictured below, has developed one of the strangest methods of olfactory camouflage. It chews up dry flakes of skin shed by a rattlesnake, mixes them into a paste and rubs it on its fur and tail. Suddenly, the squirrel smells like a snake!



A master of smelly disguise!

crosses an animal's eye. Eyes are easy to spot because they're round and dark, so hiding them inside a darker-colored stripe or pattern



A concealed caterpillar.

tricks predators into looking past them. The vermilion flycatcher bird and the badger (pictured left and below left) both use eye masks to make them harder to spot.

CONCEALING COLORATION

Concealing coloration is camouflage at its simplest. Also called background matching, it's when an animal looks so similar to its surroundings that it almost disappears into them, like the green caterpillar on the green leaf above. In the Arctic, polar bears and snowy owls blend into ice and snow with pale fur or feathers — a built-in disguise that works best in cold, white landscapes. Other species are able to adjust their camouflage to match their environment. On the seabed, flatfish can darken, lighten and speckle their skin to match the sand beneath them.

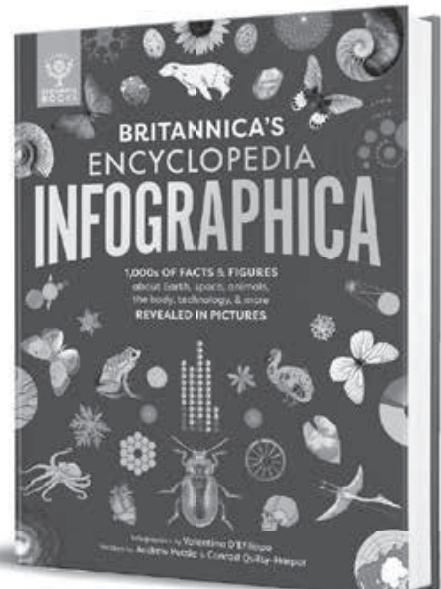
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