

The Home Forum®

The animal masters of disguise

kid
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AS MARION LARSON walked down the dirt road, she saw little balls of brown- and black-speckled fluff moving around. "They were baby ruffed grouse!" she exclaims. As she got closer, mother grouse started clucking and pre-

tending her wing was broken, to lure Larson away from the chicks. "I moved toward her," Larson says, "but then I started back to the little ones." Mother grouse changed her tactics. She made a different cluck: Instantly, the young ones stood still.

"It was as though they'd disappeared," says Larson, Outreach Coordinator for the Massachusetts Division of Fisheries and Wildlife. "They were there in front of me one second. Then they were gone. They didn't run away; they just froze. All I could think of was, 'Wow, camouflage really works!'"

If you are a predator in the wild, such as an Arctic fox, camouflage helps you sneak up on prey. If you are a snowshoe hare, something a fox likes to eat, camouflage helps you avoid notice.

Here are some of the ways predators and prey disguise themselves:

Animals are 'amazing' decorators

Mother grouse thought Larson was a predator. When she couldn't distract her, she protected her chicks by telling them to freeze so they would blend into the environment.

They blended in because their coloration matched the colors of their surroundings - dirt, white birch logs, dead leaves, twigs, and weeds - so well. The many colors in their feathers help break up their body shape, Larson says. It's hard to see where the landscape ends and the bird starts.

Sandpipers are well-camouflaged all year long, even though they migrate from Arctic Alaska and Canada to the southernmost tip of South America.

When they arrive in the Arctic in the spring, their feathers are

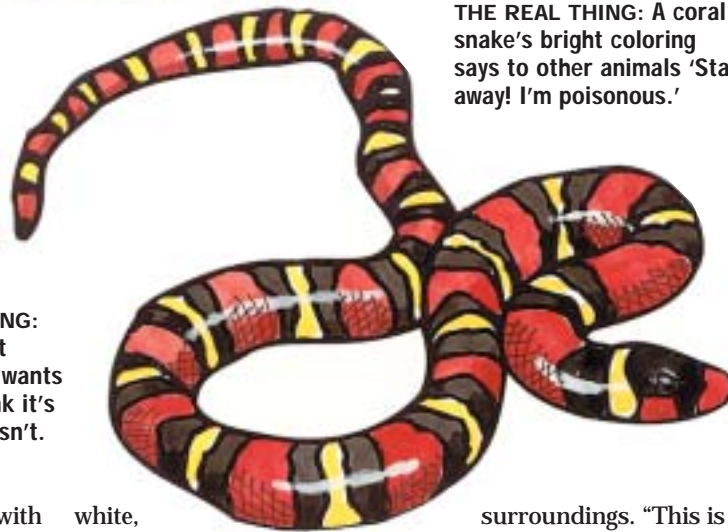


CONFUSING DESIGN:
The zebra's stripes make it harder for a lion to target a single animal in a herd.

WITHOUT USING MIRRORS OR MAKEUP, THEY BLEND IN, MIMIC, AND CONFUSE PREDATORS OR PREY.



THE REAL THING: A coral snake's bright coloring says to other animals 'Stay away! I'm poisonous.'



PRETENDING:
The scarlet kingsnake wants you to think it's deadly. It isn't.

speckled with white, brown, and black. That way, they can build their nests in the lichens and other plants of the tundra floor without being seen.

"They are amazing interior decorators," says Heather Johnson, a specialist at the United States Fish and Wildlife Service's National Conservation Training Center in Shepherdstown, W.Va. "They have no mirror to tell them what they look like," she says, "yet they instinctively nest and live in areas that match their feathers and coloring."

Their eggs, flecked with black and brown, also match their

surroundings. "This is important," Ms. Johnson says, "because they don't build an actual nest. Instead, they make a little scrape in the tundra and lay their eggs on the ground." The chicks, born fully feathered, also blend in. "You can be standing right on top of them and you won't see them until they move," she says.

Changing colors with the season

You probably already know about how chameleons change color depending on their surroundings. Snowshoe hares and Arctic foxes change from brown in summer to white in winter, to blend with the snow.

But birds change colors, too. The willow ptarmigan, an Arctic bird, lives all its life on the tundra in Canada and Alaska. "In the winter, they are as white as the snow and ice around them," Johnson says. But as the snow melts, they molt. Their white feathers slowly fall out and tan ones grow in, allowing them to feed and nest unseen among the bushes. As winter approaches, white feathers replace the tan ones.

When fish change color to match their background it's called "cryptic coloration." The flounder is king of this process. It changes color to match the bottom, where it rests.

Two colors hide them high and low

Many fish and marine mammals (porpoises, for instance) are two-toned. This is a form of camouflage called "counter shading."

"If you see a flat fish, like a halibut, they are white on the underside and dark on top," Johnson says. That way, if you're an underwater predator looking up toward the surface, the fish's belly blends in with the light streaming down from above. If you are a predator looking down on the halibut, the fish disappears into the bottom of the ocean.

Some sea birds have a similar coloring. The thick-billed murre has black feathers on its back and a white front. "They look like a little penguin," Johnson says. Like penguins, they are wonderful swimmers. Murres live 99 percent of their lives on the water. They aren't very graceful on land. Their legs are so far back on their bodies that they can't walk. They come to shore only to nest and breed.

Because they spend so much time in the water, with their white bellies submerged and their black backs exposed, this counter-shading keeps them from being seen.

Their coloring also helps them warm up and cool off, as needed. Black absorbs heat, and white reflects it. So the birds use their coloring as a way to regulate the temperature of their eggs during incubation. On cool days, the bird turns its back to the sun, to absorb heat to warm the eggs. When the temperature is warm, the bird turns its white chest toward the sun to reflect the heat.

Patterns aim to confuse predators

Zebras may not seem very camouflaged, with their black and white stripes against the brown savannah grasslands of Africa. That's because they rely on illusion for their defense.

It doesn't matter what color zebras are, because most zebra predators (lions and others) can't see in color. But lions can see shapes. "The zebra's wild pattern protects the animal by breaking up its body shape," Larson says.

Because zebras are herd animals, they don't need to blend in to their surroundings. They only need to blend in with each other. If they stand still in tall grass, their vertical pattern makes it almost impossible for a predator to distinguish individual animals.

If the herd runs, the predator can't tell the difference between a zebra's head, body, or legs, Larson says. "There is safety in numbers." Only when a zebra becomes separated from the herd is it in trouble. (Might spots on cows be similarly designed to confuse predators?)

Mimics: Not as nasty as they seem

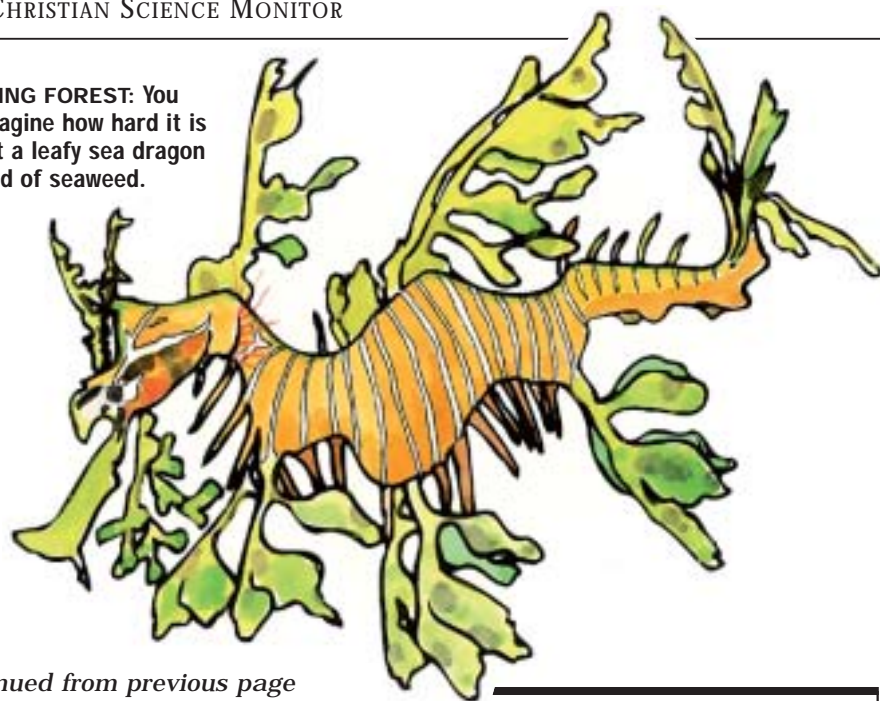
Spies love disguises. They allow spies to go anywhere without having to hide. Yet no one knows who they really are.

Animals use disguises, too. Smaller, weaker animals use them to look tough. The copycat animals are called mimics.

Take the coral snake and scarlet

Continued on next page

FLOATING FOREST: You can imagine how hard it is to spot a leafy sea dragon in a bed of seaweed.



Continued from previous page

snake, for example. The poisonous coral snake doesn't have to be camouflaged. Its red, yellow, and black stripes keep it safe. Bright colors in nature often are a signal that says, "Don't eat me, I taste bad," or "I am poisonous." Other animals know to leave it alone. The scarlet kingsnake is actually harmless. But it looks like the coral snake with red, yellow, and black stripes – but in a slightly different pattern.

Not wanting to take a chance, predators leave them alone as well. (You can know the difference by remembering this rhyme that refers to the order of stripes: "Red on yellow, kill a fellow. Red on black, won't hurt Jack.")

Some animals imitate objects in their environment. The giant swallowtail caterpillar looks almost exactly like a bird dropping. It rests motionless during the day and feeds at night.

The leaf insect looks so much like leaves that sometimes it is bitten by leaf-eating animals! Leaf insects mimic the shape, color, and texture of leaves. These 4-inch-long insects have extremely flattened, irregularly shaped bodies, wings, and legs. Their wings even have veins like leaves do. The insects scatter their eggs on the ground. When they hatch in the spring, the young resemble adults, except that they are reddish in color. As soon as they begin feeding, they change to the color of the leaves they eat.

The leafy sea dragon (a fish) resembles a little dragon with leaves growing out of its body. This close relative of the sea horse looks like a plant so it can hide among floating seaweed or kelp beds off the coast of Australia.

Leafy sea dragons feed by sucking up plankton, larval fishes, and shrimp-like crustaceans called mysids or sea lice in their small mouths. Their camouflage is so unusual, in fact, that they're attracting unwanted attention. People have captured so many of them to put in aquariums that the Australian government has declared the fish an endangered species. Sadly, much of their habitat has also been destroyed by water pollution.

Predators use camouflage, too

Sometimes, animals depend on camouflage to capture their prey. The polar bear's diet is almost exclusively seals. Polar-bear fur appears white, which helps them hide on the pack ice of the Arctic and

Animal tips for you

If you want to be the last person found when playing hide and seek, follow the example of well-camouflaged animals. Pay attention to your surroundings!

If you play at night, wear dark colors, keep your hands and face covered if you can, and hide in the shadows.

If you play on a summer's day, wear clothes with muted brown and green colors that match your yard. Avoid bright pinks or purples.

You can even play in the snow if you dress warmly – and bring a white sheet.

Most important, BE STILL. It's harder to see someone who doesn't move.

sneak up on seals. Their hair is actually transparent with a hollow core. Polar bears look white because the hairs reflect light from the ice. It's the same reason that snow appears white to us even though it is really made up of water ice. "[Polar bears] are well adapted to their environment because they always live on the ice in a place that is never ice-free," Johnson says.

The five-foot-long angel shark lives in the Pacific Ocean. It looks more like a sting ray than a shark, with its large fins resembling wings. Its coloration (gray with olive blotches) and flat shape help it hide on sandy ocean bottoms. The shark preys on other fish by burying itself in the sand and ambushing them as they swim by. It likes to eat small fish and squid. Though it's not very dangerous to humans, it may bite if

surprised or harassed.

Soldiers, spies, hunters, and hide-and-seek players have all learned quite a bit from animal camouflage.

Spies wear black to hide in the shadows. Soldiers and hunters wear clothing decorated with patches of muted greens, browns, and tans and paint their faces so they can hide in forests.

So the next time you take a walk in the woods, think about it: You may be surrounded by animals, birds, and insects and never know it!

Laurie Toupin

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TODAY'S ARTICLE ON CHRISTIAN SCIENCE

Bringing a spiritual perspective to daily life

What happened when I didn't help my friend cheat

I HAVE HAD experiences as an adult and as a kid when I was asked to do things I didn't feel right about doing. I knew the difference between right and wrong, but at the time I felt scared about saying no, especially when the situation involved people I wanted to like me.

Once my boss asked me to go look at dresses with her for a social function she was attending. At first I said yes, but when I heard her tell her boss we were going to look at towels for the place where we worked, I knew it wouldn't be right to go. It took courage to face her, and perhaps make her angry, but I asked if we could go on my lunch hour because I had work to do (which was true). She said that was fine, and that's what we did.

When I was younger and in school, a friend asked me to "lend" him my homework so he could copy it. I knew it was wrong to help another person cheat, and you aren't being a friend by doing so.

Here's what my prayer for guidance sounded like:

"Am I being selfish for not sharing my homework?"

"Do you care about your friend?"

"Yes."

"Then care enough about him to risk him not liking you."

"What does that mean?"

"You never help someone by doing something for them that is really their job to do. What if your friend had a test today on the very lesson that homework was about? Would he be ready for that test?"

"No."

"OK, then, love your friend enough to say no and don't be afraid of the consequences."

I didn't really like the answer to that prayer, because the easy way out was to let my friend have what he had asked for. I remembered that the guidance I got from my prayer mentioned loving my friend enough to say no. So I said to my friend, "Matt, I just don't feel right about letting you copy my homework. Instead, I'll stay here while you work on it and help you if there is something you don't understand. I bet

between us we can get it done before class."

Matt had a right to do the right thing and to be proud of finishing his own homework. How would he have felt if he had received a good grade on borrowed work? Relieved maybe, but not proud, not happy.

We all deserve to be happy we are reflecting God and His qualities, such as honesty and intelligence. Why would I ever want to deprive Matt of those gifts? We were still friends, even though I had to say a difficult no.

Matt learned a lesson about doing his own homework, and my own lesson was being at peace saying no to a friend. In a way, my homework was having the courage to do what I knew was right and honest.

The woman who started this newspaper, Mary Baker Eddy, wrote, "It re-

**'Love your friend
enough to say 'no,'
and don't be afraid
of the consequences.**

quires the spirit of our blessed Master to tell a man his faults, and so risk human displeasure for the sake of doing right and benefiting our race" ("Science and Health with Key

to the Scriptures," pg. 571).

Every time we do what is right, we help not only ourselves but others, too. Just as every act of kindness encourages others to be kind, every act of honesty gives others the courage to be honest.

*O keep my soul,
and deliver me;
let me not be ashamed;
for I put my trust in thee.
Let integrity and uprightness
preserve me; for I wait on thee.*

Psalms 25:20, 21

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