Name: _____

Why do reindeer have antlers?

Look, a reindeer! Why do reindeer have antlers?



Why?

1. **Antlers are bone.**
   Antlers are made of bone, like the bones inside you. But they grow on the outside of the head!
2. **New antlers every year.**
   Every spring, new antlers start to grow, covered in soft, fuzzy skin called velvet. A goat keeps its horns for its whole life. But a reindeer drops its antlers, and grows new ones every year!
3. **Moms keep theirs all winter.**
   In winter, food is hidden under the snow. Reindeer dig holes with their hooves to reach it. A mom with antlers can keep the best spot to eat.

Color Nora too!



Try it! Spot the mom

You need: a grown-up and pictures of reindeer

1. With a grown-up, look at pictures of reindeer in winter.
2. Who has antlers?
3. Who might be a mom?

What happened? If you see a reindeer with antlers in the middle of winter, it might be a mom!

Video + more questions:
whywhywhykids.com/reindeer

scan with a grown-up

Why is it cold in winter and dark so early?

Brrr! Why is winter so cold, and dark so early?



Why?

1. **The Earth leans.**
   The Earth does not stand straight up. It leans a little to one side, like a tipped spinning top. For part of the year, our half leans toward the Sun. That's summer. For the other part, our half leans away. That's winter!
2. **Low, slanted sunshine.**
   In winter, sunshine comes in low and slanted, like a tipped flashlight. The same sunshine spreads over more ground, so each spot gets less warmth.
3. **Short days.**
   The Sun comes up late and goes down early. So it gets dark before dinner, and there are fewer hours of sunshine to warm things up.

Color Sunny too!



Try it! The flashlight test

You need: a grown-up, a flashlight and paper

1. Shine a flashlight on paper, straight down.
2. Now tip it.
3. Which spot is brighter?

What happened? Straight down, you get a small, bright spot. Tipped, the same light spreads out into a big, dim spot.

Video + more questions:
whywhywhykids.com/winter

scan with a grown-up

How do penguins stay warm?

Look, penguins on the ice! How do they stay warm?



Why?

1. **A warm coat of feathers.**
   The feathers are packed tight. They hold a layer of air next to the skin, like a cozy blanket.
2. **A thick layer of fat.**
   Under the feathers, there is a thick layer of fat. It keeps the warmth inside the body, like a puffy jacket.
3. **Taking turns in the middle.**
   Lots of penguins squeeze together in a big huddle. The whole huddle shuffles, a few tiny steps at a time, like a slow wave. Bit by bit, every penguin gets a turn in the warm middle!

Color Puff too!



Try it! Make a family huddle

You need: your family and a blanket

1. Snuggle up close with your family under a blanket.
2. Do you feel warmer together?

What happened? In a huddle, every penguin is a warm wall for its neighbors.

Video + more questions:
whywhywhykids.com/penguin

scan with a grown-up

Why do dogs lick you?

Slurp! That tickles! Why do dogs lick you?



Why?

1. **A lick is a dog word.**
   Dogs can't talk with words. So they talk with their bodies. And a lick is one of their words!
2. **It starts with puppies.**
   Wild puppies wait for their mom to come home from hunting. Then they lick her mouth, as if to say, I'm hungry, please share! Many dog experts think dog kisses grew out of that puppy lick.
3. **A lick can mean lots of things.**
   A lick can mean hello, you're home! A lick can mean you're my family. It can make a dog feel calm and safe.

Try it! Read the whole dog

You need: a grown-up and a friendly dog

1. Next time a dog licks you, look at the rest of its body.
2. Is the body wiggly? Is the tail waggy?
3. Then wash your hands with soap and water.

What happened? A wiggly body and a waggy tail? That's a happy hello!

Video + more questions:
whywhywhykids.com/doglick

scan with a grown-up

Why do cats meow?

Meow! Meow! Why do cats meow?



Why?

1. **Kittens mew to call their mom.**
   Mew, mew! That means, I'm cold! I'm hungry! Come here, Mom! And their mom comes back. So mewing works!
2. **Grown-up cats talk with bodies and smells.**
   When kittens grow up, they mostly stop meowing at other cats. A tail held straight up means, hi, I'm friendly!
3. **Meows are for people.**
   People don't talk with tails and smells. We listen with our ears! Scientists think that's why cats keep meowing to us, like kittens meowing to their mom.

Try it! Guess the meow

You need: a cat you know

1. Next time a cat meows at you, look at where it is.
2. By the food bowl? By the door?
3. Then guess what it's saying!

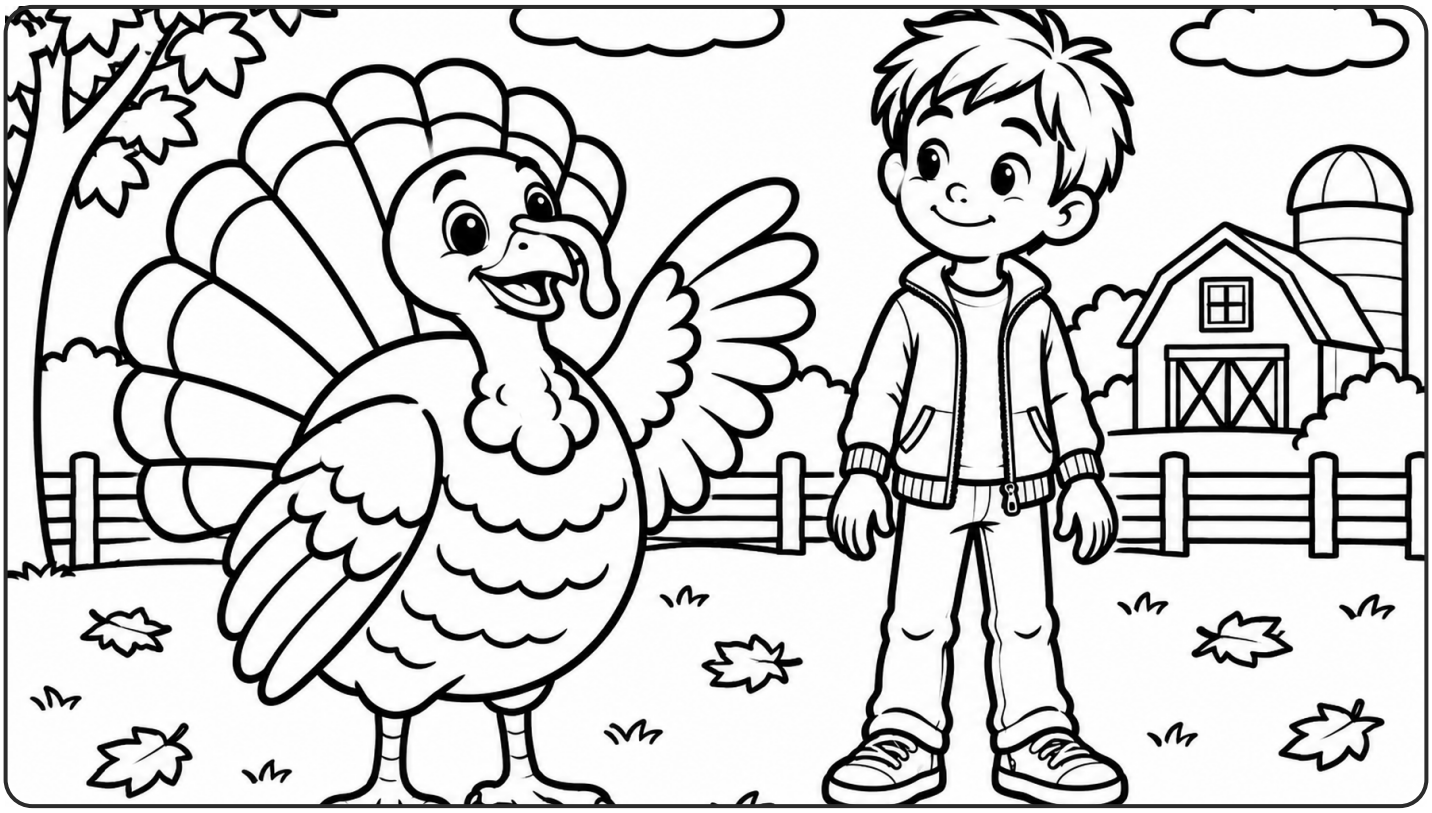
What happened? Each cat learns which meows work on its people.

Video + more questions:
whywhywhykids.com/meow

scan with a grown-up

Why do turkeys' heads change color?

Whoa, look! His head is blue! Why do turkeys' heads change color?



Why?

1. **A turkey's head is bare skin.**
   There are no feathers on it. The bumpy skin under the chin is the wattle. And the floppy thing over the beak is the snood.
2. **Tiny threads and tiny blood vessels.**
   Under the skin are lots of tiny threads, lined up side by side. When the blood vessels in between swell up, they push the threads farther apart. When they shrink, the threads move closer together.
3. **It's not paint. It's light!**
   That changes how light bounces off the skin. So you see a different color - red, or white, or blue!

Try it! Look at a turkey's head

You need: a turkey on a farm or at the zoo

1. Next time you see a turkey, look at its head.
2. What color is it today?

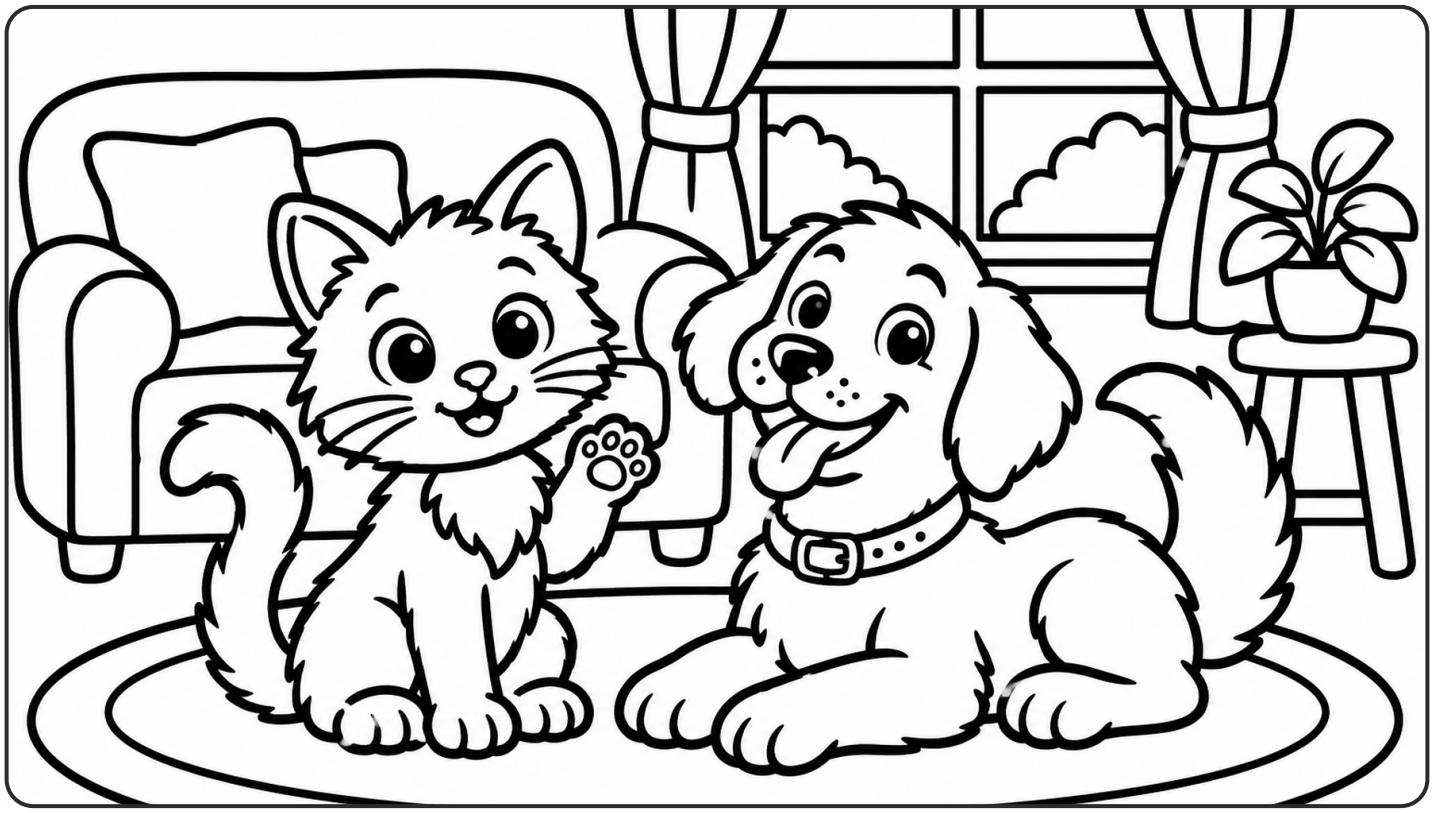
What happened? A turkey's head can turn red, then white, then blue!

Video + more questions:
whywhywhykids.com/turkeyhead

scan with a grown-up

Why do cats and dogs fight?

Woof! Hiss! Why do cats and dogs fight?



Why?

1. **Tails talk.**
   Cats and dogs don't talk with words. They talk with their bodies, with their tails, their ears, and how they hold their heads.
2. **A wag means different things.**
   When a dog is happy, it wags its tail. But when a cat swishes its tail hard, from side to side, it often means, I'm grumpy! So a happy dog wags at a cat, and the cat thinks, uh oh, that dog is mad!
3. **Chasing is fun for the dog, not the cat.**
   Lots of dogs love to chase things that move. So when a scared cat runs away, the dog may chase it, just for fun. But the cat isn't having fun at all!

Try it! Watch the tail

You need: a grown-up and a friendly cat or dog

1. Next time you see a dog or a cat, look at its tail.
2. Is it wagging, or swishing?
3. Always ask a grown-up before you pet an animal.

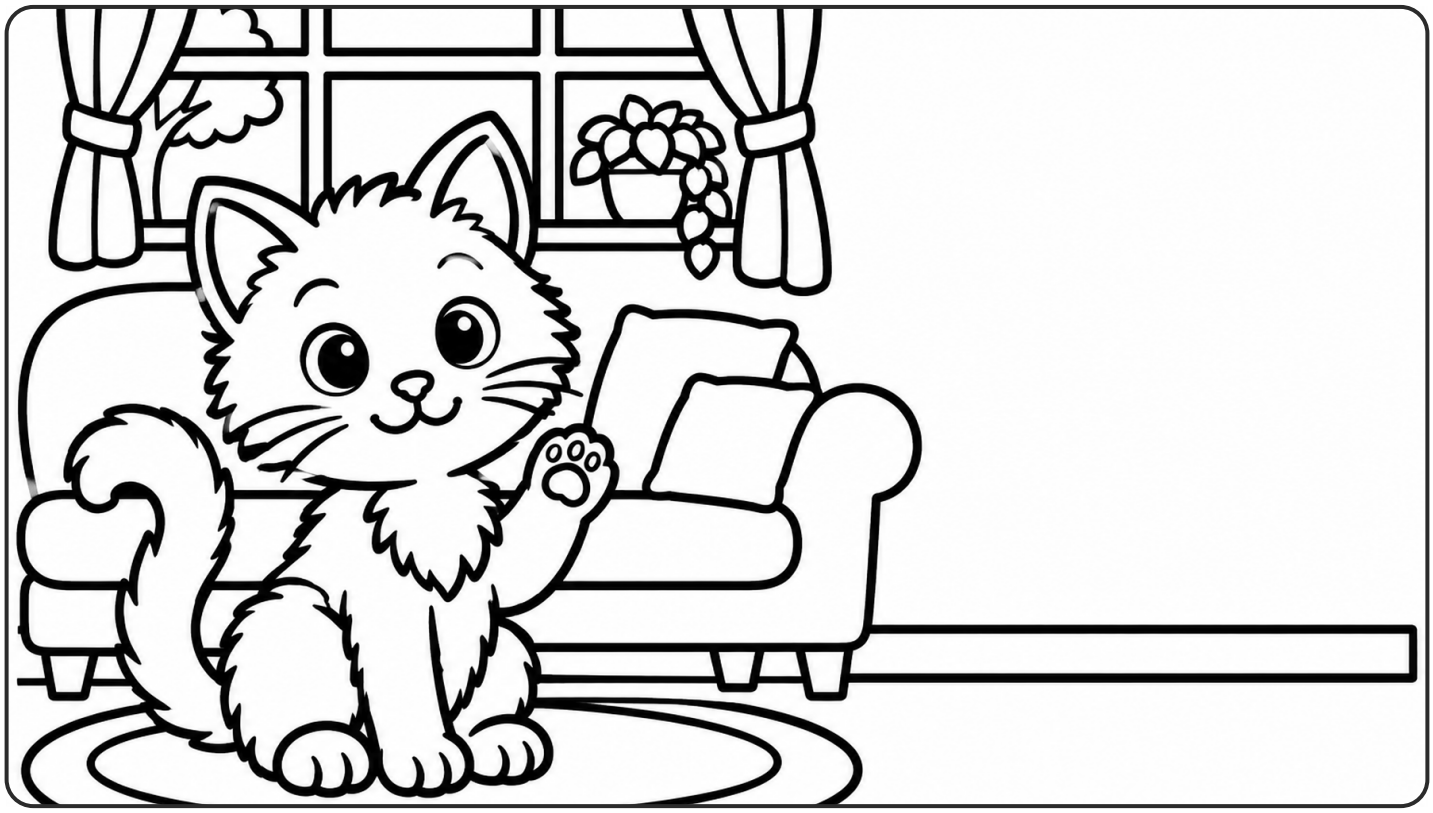
What happened? Tails talk!

Video + more questions:
whywhywhykids.com/catdog

scan with a grown-up

Why do cats purr?

Prrr, prrr! Why do cats purr?



Why?

1. **A purr is a rumbly buzz.**
   A purr is a soft, rumbly sound. And you can feel it, too! A purring cat buzzes, like a tiny motor.
2. **It comes from the throat.**
   The purr comes from the voice box. Tiny muscles there squeeze and let go, very fast. About twenty-five times every second! Cats purr when they breathe in, and when they breathe out.
3. **Not only happy purrs.**
   Grown-up cats purr when they feel cozy and happy. But cats also purr when they're hurt, or sick, or scared. Even at the vet!

Try it! Read the purr

You need: a grown-up and a friendly cat

1. When a cat purrs, look at it.
2. Sleepy, soft eyes? It's happy!
3. Hiding, or hurt? Tell a grown-up.

What happened? Purrs say lots of things!

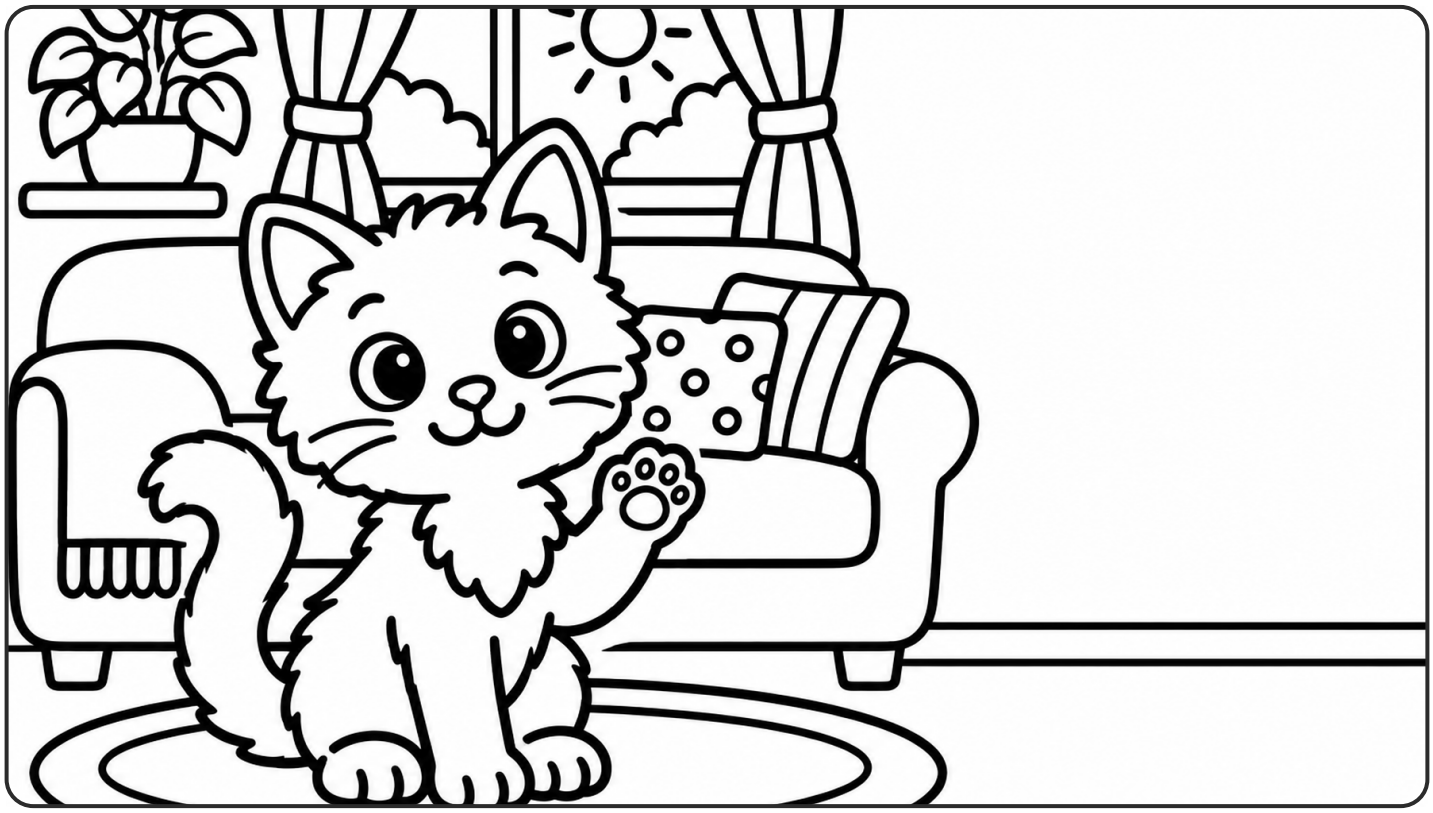
Video + more questions:
whywhywhykids.com/purr

scan with a grown-up

Name: _____

Why do cats knead?

Push, push, push! Why do cats knead?



Why?

1. **Making biscuits.**
   Kneading is when a cat pushes its front paws down, one and then the other. Left, right, left, right! It looks like pressing soft dough. That's why people call it making biscuits!
2. **It starts with kittens.**
   Tiny kittens knead their mom's tummy while they drink milk. Push, push! It helps the milk come out.
3. **It means cozy.**
   Grown-up cats keep kneading when they feel calm, cozy and safe. Often with a happy purr!

Try it! Be a cozy spot

You need: a grown-up, a friendly cat and a soft blanket

1. If a cat kneads on you, stay calm and gentle.
2. Put a soft blanket on your lap for the claws.

What happened? It can mean, I feel cozy with you!

Video + more questions:
whywhywhykids.com/knead

scan with a grown-up

How do polar bears stay warm?

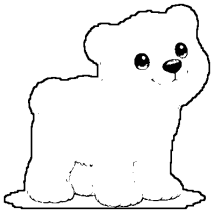
Whoa, Mom! A polar bear in icy water! How do polar bears stay warm?



Why?

1. **A blanket of fat.**
   Under the skin, a polar bear has a thick layer of fat. It's about as thick as your hand is wide! The fat is like a warm blanket inside the body.
2. **Two layers of fur.**
   Short, thick fur close to the skin, and long hairs on the outside. Together, they hold in the warmth, like a puffy winter coat.
3. **Black skin soaks up sunshine.**
   Under the fur, the skin is black, even the nose! Black soaks up the warm sunshine, like a dark t-shirt on a sunny day.

Color Snowy too!



Try it! Dark shirt, white shirt

You need: a dark shirt, a white shirt and a sunny day

1. On a sunny day, touch a dark shirt and a white shirt in the sun.
2. Which one feels warmer?

What happened? Black soaks up the warm sunshine.

Video + more questions:
whywhywhykids.com/polarbear

scan with a grown-up

How do animals survive in winter?

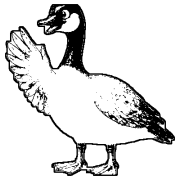
Brrr! Look, Dad, everything is snowy! How do animals survive in winter?



Why?

1. **Trick one, go away!**
   Lots of birds, like Honk's goose family, fly south in the fall, to warmer places with more food.
2. **Trick two, sleep through it!**
   Bears eat and eat all fall and get nice and fat. Then they curl up in a cozy den for a long winter rest. A resting bear's heart beats very, very slowly. It doesn't eat for months. It lives on the fat it stored!
3. **Trick three, stay and get ready!**
   Many animals grow a longer winter coat. The snowshoe hare's fur even turns white, so it can hide in the snow. Squirrels hide thousands of nuts in the fall, and dig them up months later.

Color Honk too!



Try it! Track hunt

You need: a grown-up, warm clothes and a cold day

1. On a cold day, look for animal tracks in the snow or mud.
2. Which animals stayed for the winter?

What happened? Go, sleep, or stay!

Video + more questions:
whywhywhykids.com/wintersurvive

scan with a grown-up

Why do cats like boxes?

Plop! Midnight jumped in the box again! Why do cats like boxes?



Why?

1. A safe hideout
A box is my safe hideout. There are walls all around me, so nobody can sneak up on me. I can still peek out and watch everything.

2. A place to hide
When a cat feels scared or upset, it likes to hide. A hiding spot helps it feel safe and calm down.

3. Snug and cozy
Cats like it warmer than people do, and a small box helps hold in their body heat.

Try it! Try a box

You need: an empty box and a cat

1. Put an empty box on the floor near a cat.
2. Watch.
3. How long until the cat climbs in?

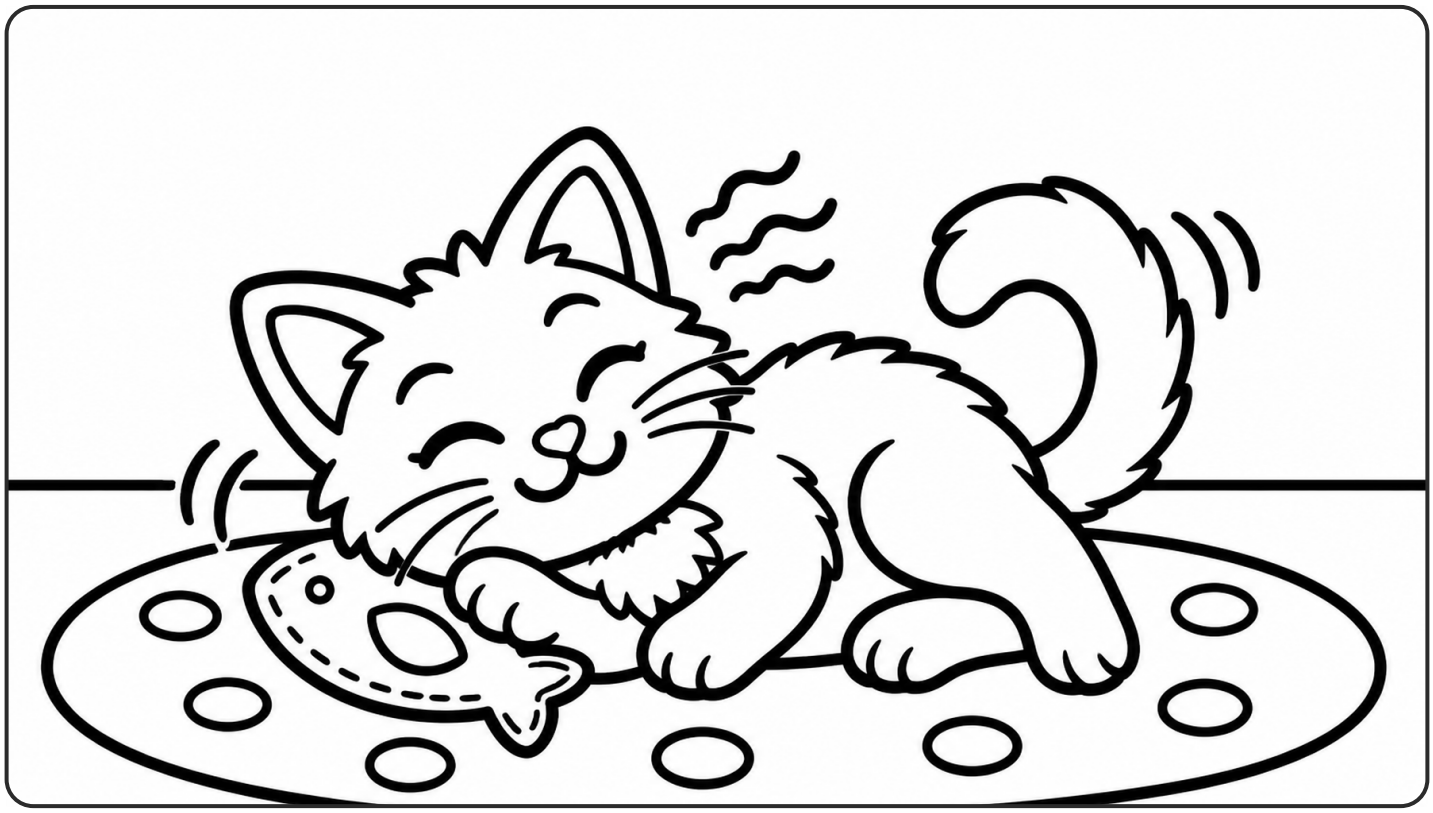
What happened? A box is a safe hideout.

Video + more questions:
whywhywhykids.com/catbox

scan with a grown-up

Why do cats like catnip?

Look! Midnight is rolling all over the floor! Why do cats like catnip?



Why?

1. **A special smell**
   Catnip is a plant in the mint family. Its leaves have a special smell inside.
2. **A message to the brain**
   When a cat sniffs the leaves, the smell goes into its nose, and the nose sends a message to the brain.
3. **Rolling and rubbing**
   Then the cat rubs its cheeks, rolls over, and acts silly. Some cats purr, and some leap about!

Try it! Try a catnip toy

You need: a grown-up, a cat and a catnip toy

1. If you know a cat, ask a grown-up to give it a catnip toy.
2. Does it roll, or walk away?

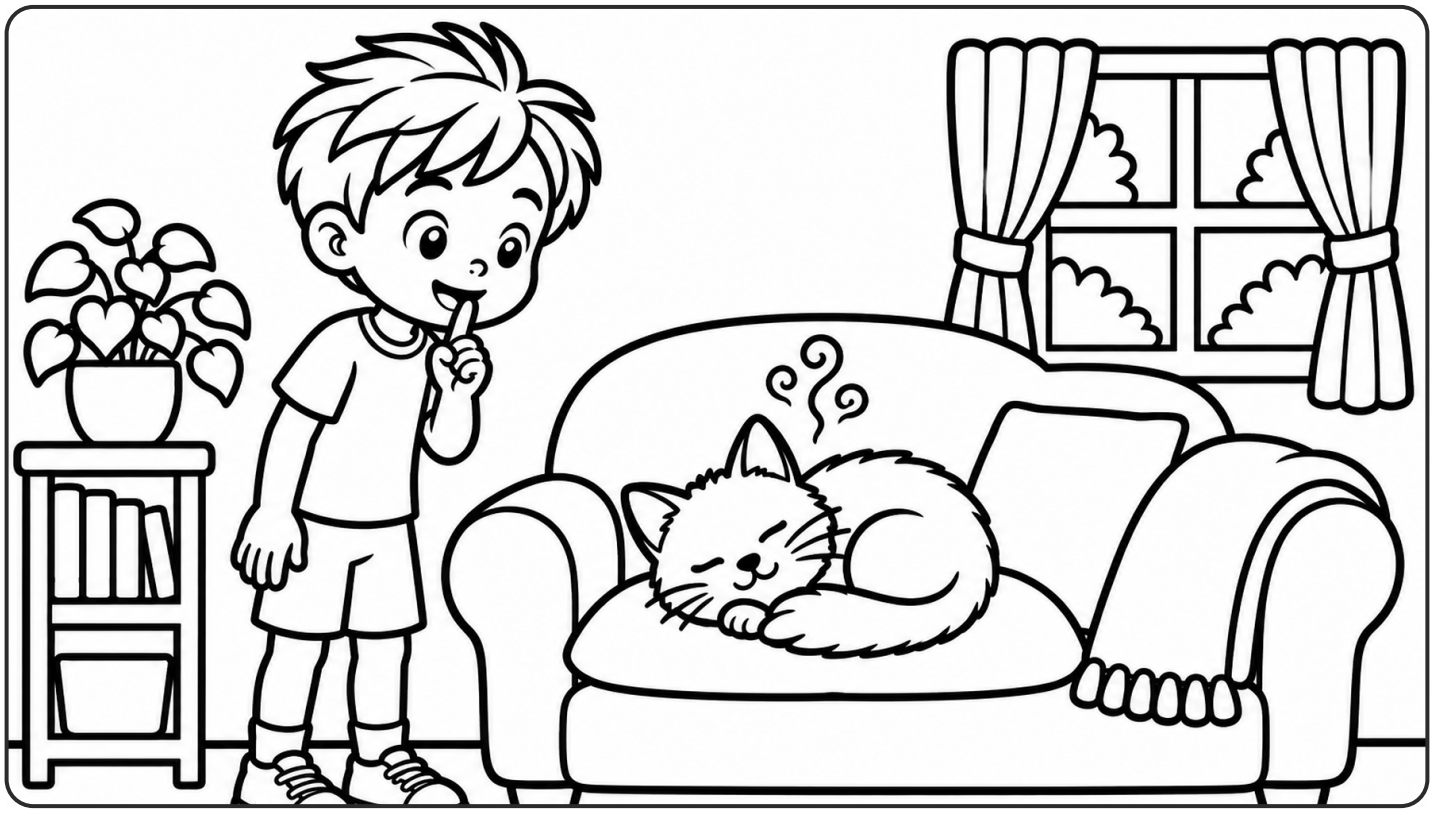
What happened? But not every cat feels it. Lots of cats just sniff, and walk away.

Video + more questions:
whywhywhykids.com/catnip

scan with a grown-up

Why do cats sleep so much?

Shh! Midnight is napping again! Why do cats sleep so much?



Why?

1. **Saving energy**
   Running and pouncing use up lots of energy. So cats rest a lot, to save energy for the next pounce.
2. **Light naps**
   Most cat naps are light naps, about fifteen minutes to half an hour. The eyes are closed, but the ears still listen!
3. **Deep sleep**
   Sometimes a cat sleeps very deeply, just for a few minutes. Its paws may twitch. Maybe it's dreaming!

Try it! Watch quietly

You need: a sleeping cat

1. Watch a sleeping cat very quietly, and let it rest.
2. Do its ears move when there's a sound?

What happened? The eyes are closed, but the ears still listen!

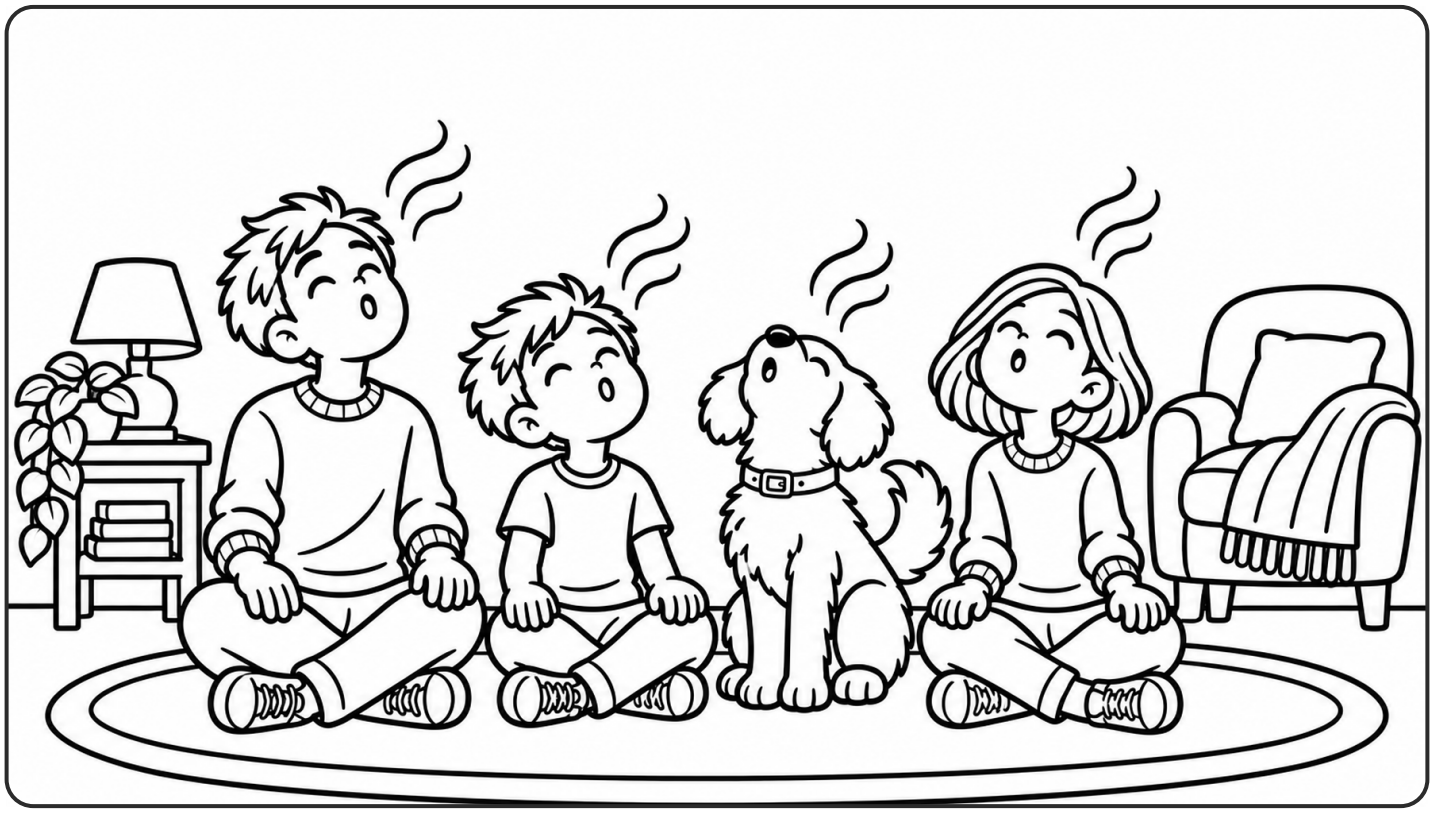
Video + more questions:
whywhywhykids.com/catnap

scan with a grown-up

Name: _____

Why do dogs howl?

Ow-ooo! Listen to that! Why do dogs howl?



Why?

1. A faraway call
When a wolf is far from its family, it howls, as if to say, "Where are you? I'm here!"

2. Long and low
A howl is long and low. It can travel a long way, through the forest and across wide, open land.

3. Dogs howl too
Dogs came from wolves. Lots of dogs still howl, just like their wolf family!

Try it! Howl together

You need: your family

1. Howl together with your family, like a wolf pack.
2. Long and low: ow-ooo!

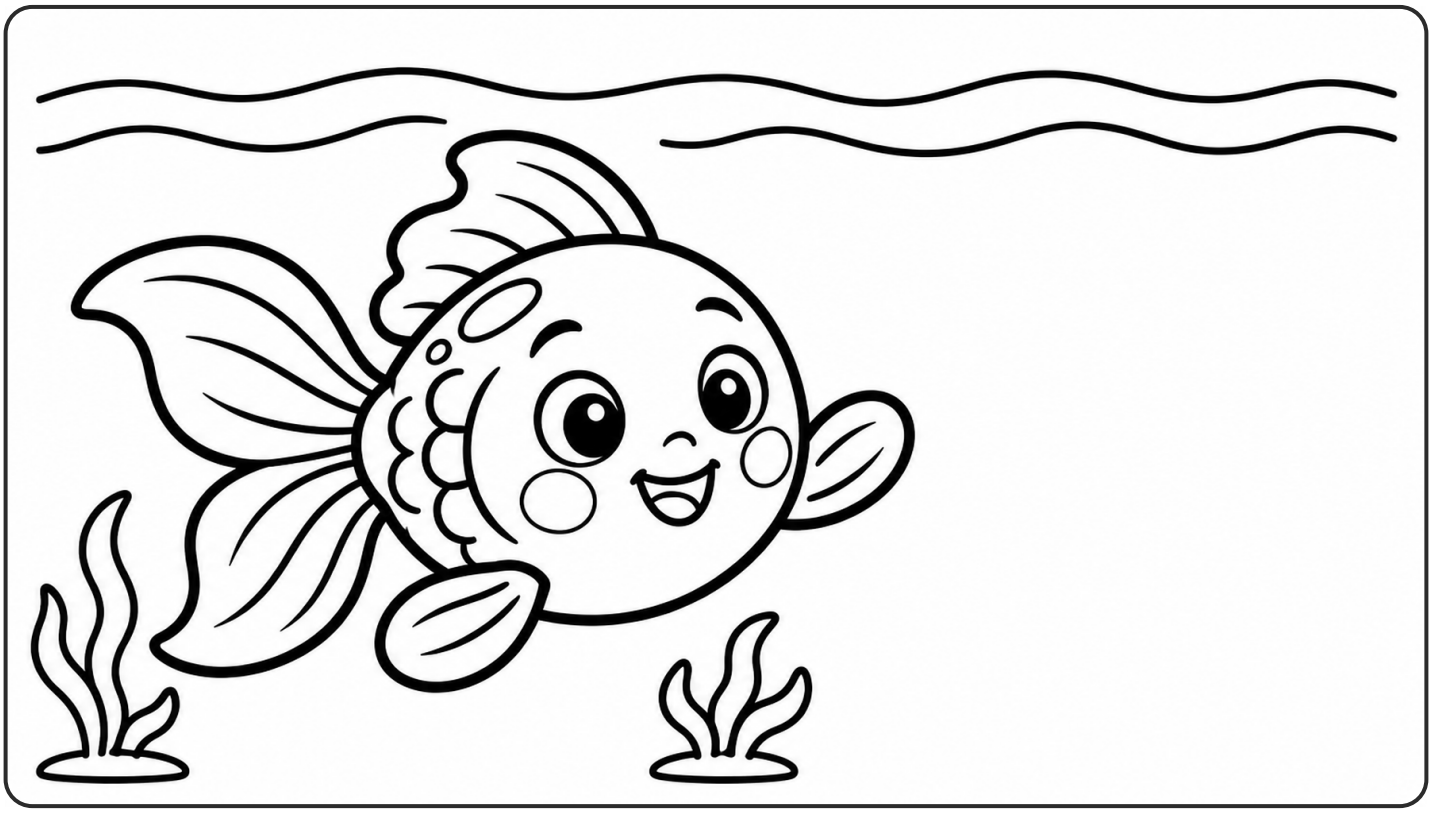
What happened? A howl is long and low.

Video + more questions:
whywhywhykids.com/howl

scan with a grown-up

How do fish breathe underwater?

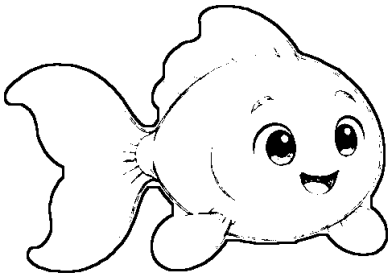
Blub, blub! Look at that fish! How do fish breathe underwater?



Why?

1. **Oxygen in water**
   Water has oxygen too, hiding inside it, much too small to see.
2. **Through the gills**
   A fish takes water through its mouth and pushes it out through its gills, just behind its head.
3. **Into the blood**
   As water flows over the gills, oxygen slips out of the water and into the blood, which carries it around the fish's body.

Color Finny too!



Try it! Watch a fish

You need: a fish in a tank

1. Watch a fish in a tank.
2. See its mouth open and close, and the covers over its gills move?

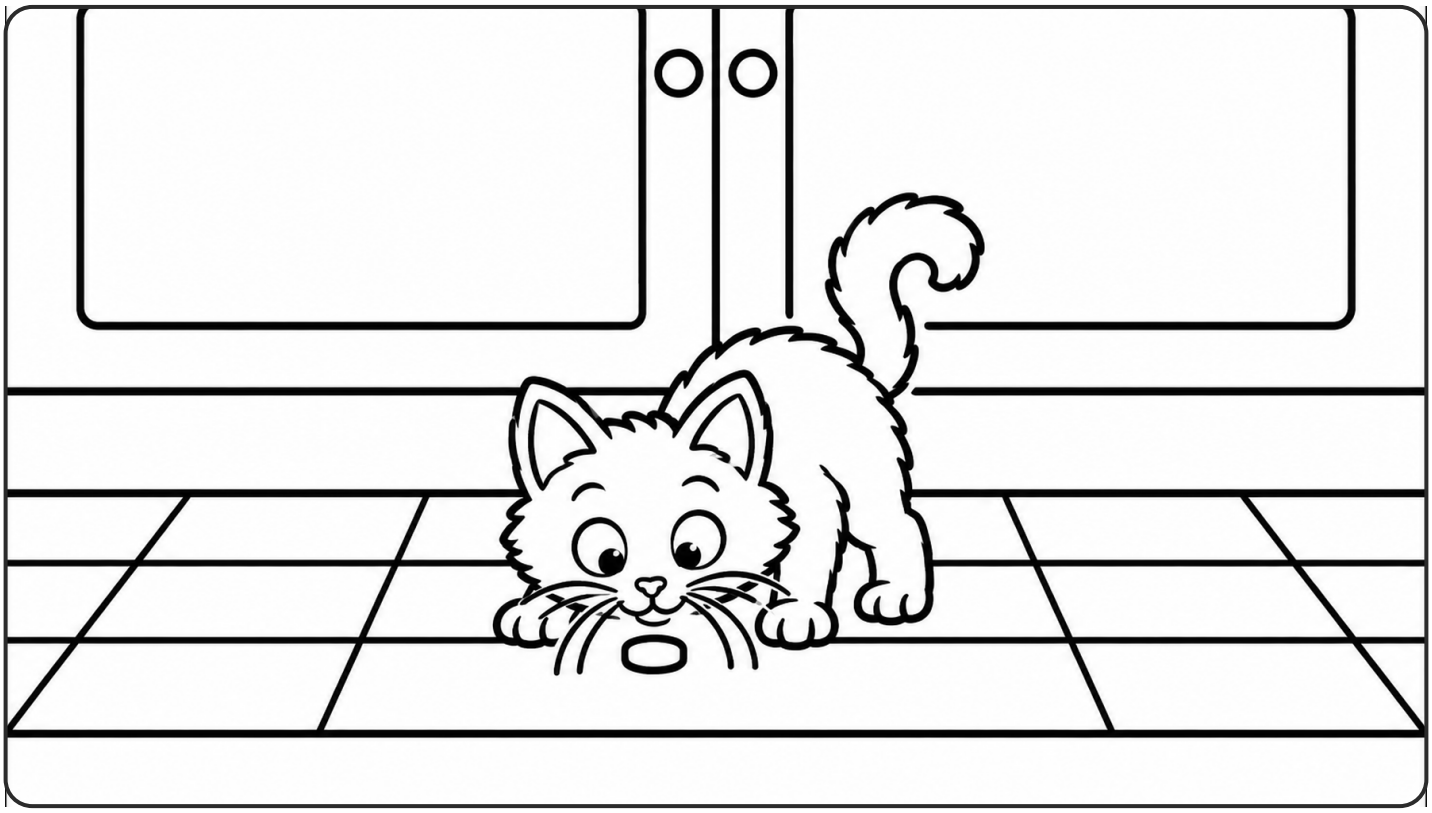
What happened? That's the fish breathing!

Video + more questions:
whywhywhykids.com/fishbreathe

scan with a grown-up

Why do cats and dogs have whiskers?

Look at Midnight's long whiskers! Why do cats and dogs have whiskers?



Why?

1. **Special hairs**
   Whiskers are not like other hairs. They are thicker and stiffer, and their roots go about three times deeper.
2. **Lots of nerves**
   Around each whisker root are lots of nerves. When a whisker moves, the nerves tell the brain: something is here!
3. **Feeling the air**
   When something moves close by, it makes the air move, too. The whiskers feel those tiny air moves. That helps in the dark.

Try it! Find the whiskers

You need: a cat or a dog

1. Look closely at a cat or a dog, without touching.
2. Can you find the whiskers above its eyes?

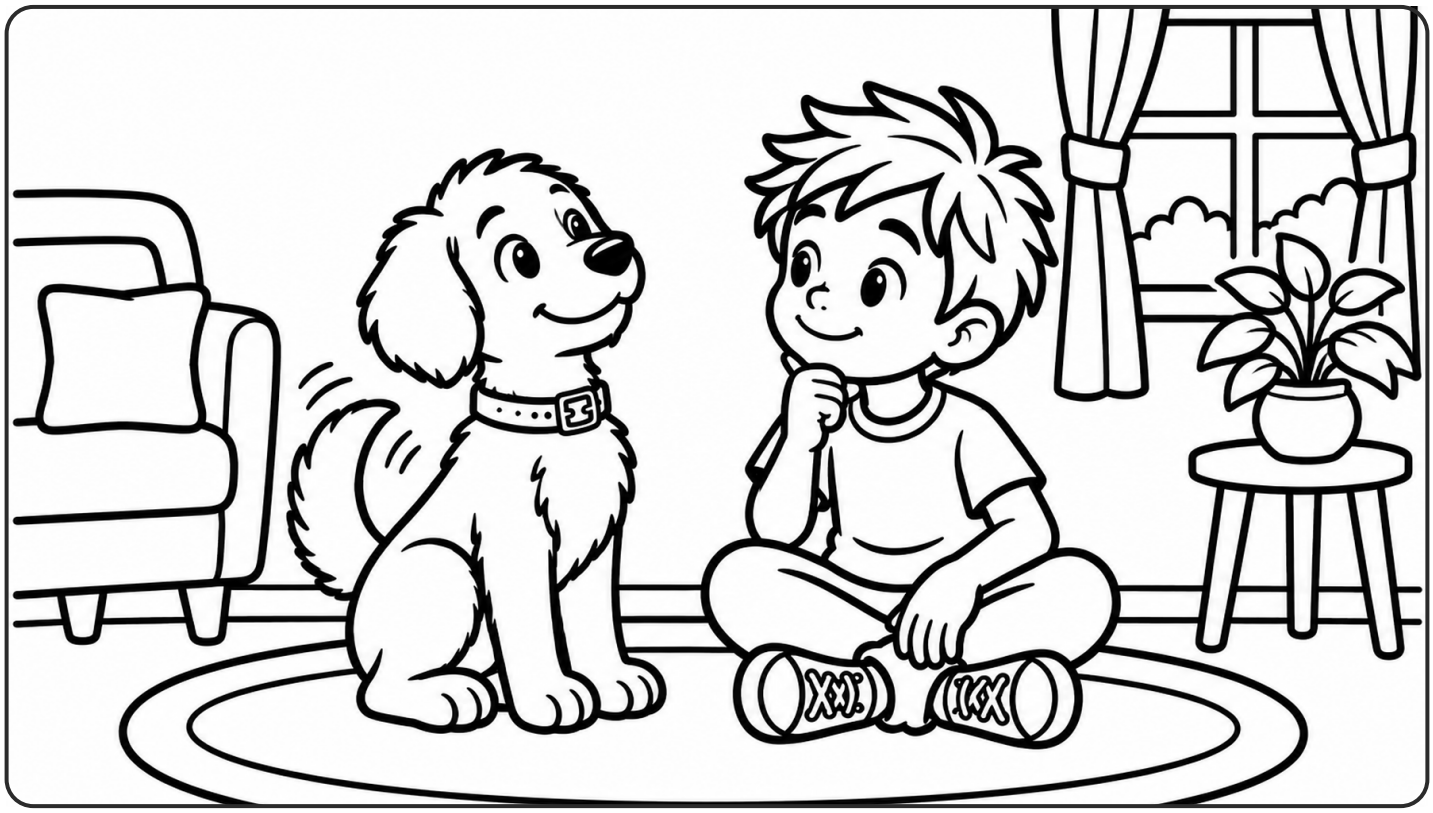
What happened? Never cut a cat's or a dog's whiskers.
They need them to feel the world around them.

Video + more questions:
whywhywhykids.com/whiskers

scan with a grown-up

Why does my dog follow me everywhere?

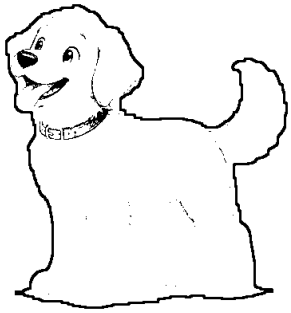
Why does my dog follow me everywhere?



Why?

1. **A very old friendship**
   Dogs and people have been companions for more than fifteen thousand years.
2. **Good things happen near you**
   Vets say that if a dog gets pats or treats when you're around, it follows you more.
3. **A big heart**
   A vet says a puppy can get so close to its person, it looks to them like it would to a mother.

Color Sunny too!



Try it! Say hello

You need: a dog that follows you

1. Next time your dog follows you, say hello.
2. Give it a gentle pat!

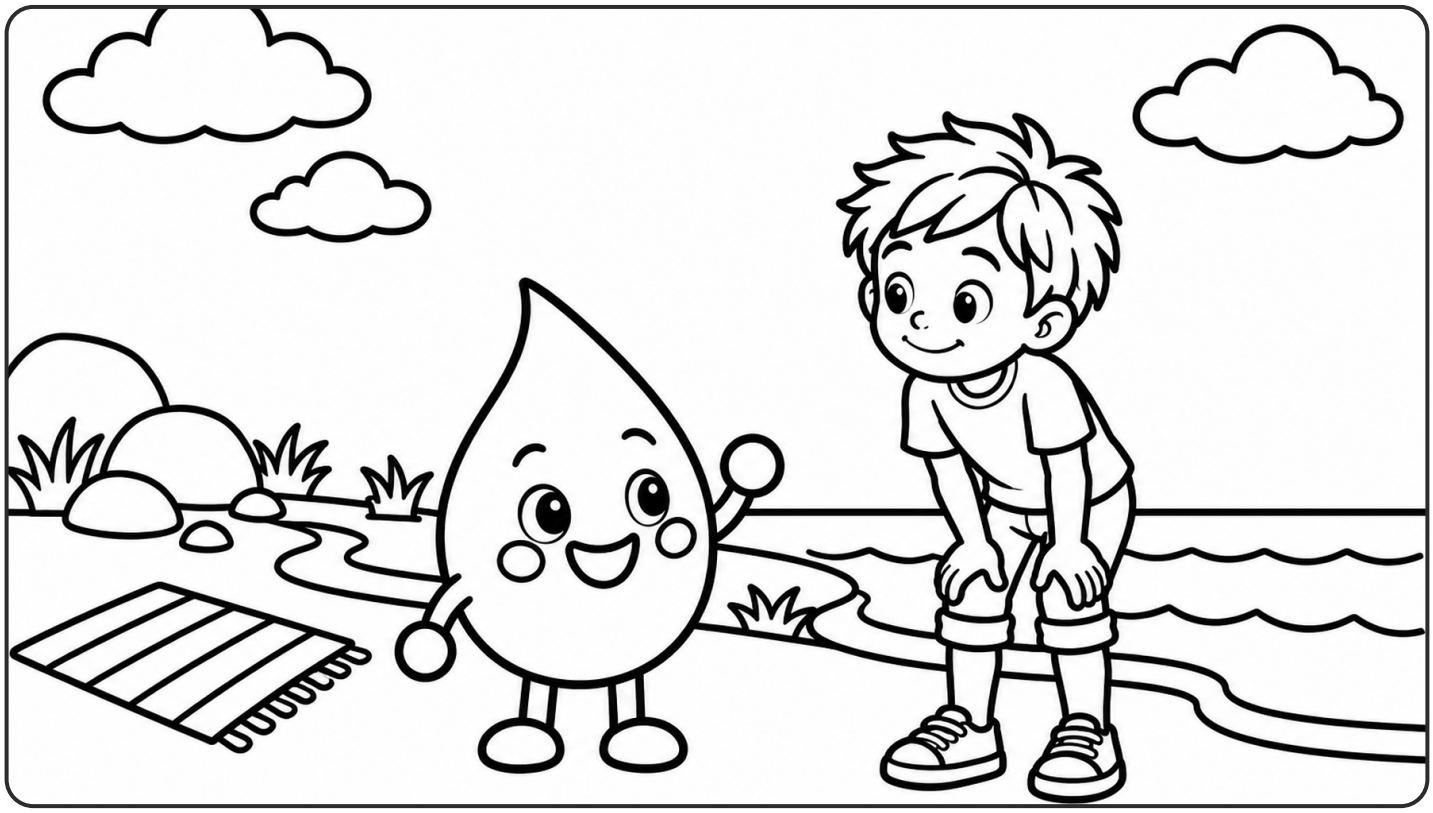
What happened? Pats and good things make a dog want to stay near you.

Video + more questions:
whywhywhykids.com/dogfollow

scan with a grown-up

Why is the ocean salty?

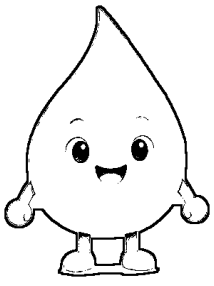
Where does all the ocean's salt come from?



Why?

1. **Rain on the rocks**
   Rain falling on rocks slowly wears them down, and washes out tiny bits of salt and minerals.
2. **The rivers**
   Streams and rivers carry those tiny bits down the hills, and they flow all the way into the ocean.
3. **The sun**
   The sun warms the ocean, and water rises into the air as vapor. But the salt can't float away. It's left behind in the sea!

Color Droppy too!



Try it! Salty water in the sun

You need: a saucer, salty water, a sunny spot, a grown-up

1. With a grown-up, leave a saucer of salty water in the sun.
2. When the water dries up, look at what is left behind.

What happened? The salt is left behind when the water goes up into the air!

Video + more questions:
whywhywhykids.com/ocean

scan with a grown-up