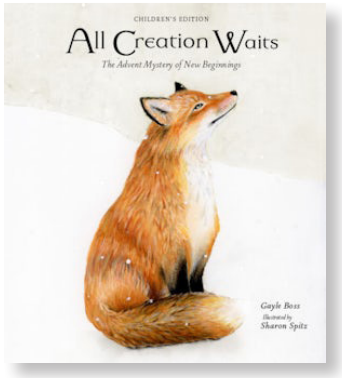
All Creation Waits -Children's Edition



Explorers' Guide

To help us join the animals in their season of waiting, *All Creation Waits, Children's Edition* is best read like an Advent calendar: one "door" (page spread) each day of December leading to Christmas. Which will not be easy! The "More Animal Wonderment" pages (58-64) at the back of the book will help. There you'll find extra insights into each animal's amazing nature and some prompts for sensing how that creature speaks to us.

In addition to the "More Animal Wonderment" pages at the back of the book, here are even more wonderments for each creature's Advent day. If you'd like to connect with author Gayle Boss, visit https://gayleboss.com

"In Late Fall ..." (pp.6-7):

All the animals that you'll meet throughout the book make their first appearance here—except two. And a third is here but hidden inside their home. You won't know which two are missing and which one is hidden until you've finished the book!

- Which of these creatures in the picture have you met before?
- Which of these creatures can you see now, where you live?
- The words on page 6 say, "Animals know what to do when the season of dark and cold spreads over the earth." Do you behave differently in the cold, dark wintertime than in the warm, bright summertime?

Advent 1: Painted Turtle

In warmer seasons Painted Turtles like to hang out together. You might see 5 or 10 or more lined up (or on top of each other) on logs in a pond! They're "basking"—absorbing warmth from the sun into their bodies. Absorbing heat from the outside is the only way they can warm the inside of their bodies.

- Sit in the sun (outside or through a window) and feel how slowly or quickly your body warms.

It's not the cells inside its body that decide whether a Painted Turtle will be a male or female. It's the temperature of the nest where it hatches from an egg. Adult females prefer to dig nests in sandy soil without too many rocks. In cooler nests the eggs hatch into male turtles; in warmer nests, the eggs hatch into female turtles.

- What might make a nest warmer or cooler?

In this picture book, Painted Turtle is buried in the mud for her winter rest, so her colors aren't visible.

- Look for a picture on the web to see why she is called a "painted" turtle. You can see some good photos on this site: https://www.inaturalist.org/taxa/39771-Chrysemys-picta/browse_photos.
  What colors do you see?

Most of the turtles that people buy as pets are Painted Turtles. It's important never to release a pet turtle into a wild pond.

- Why do you think this is?

Advent 2: Muskrat

Painted Turtle is here in Muskrat's pond too.

- Can you find her?
- Do you think Muskrat knows she's there?

Muskrat's thick winter coat helps him stay warm by trapping air bubbles. The trapped bubbles stop the cold from getting through to his skin. His coat also holds his body's warmth in. It works for him something like the insulation in a house. The trapped air bubbles also help him float.

- Imagine tiny balloons hidden under Muskrat's fur, holding him up!

Muskrat has the ability to keep his feet and tail—which are scaly, not fur covered—cooler in winter than the rest of his body.

- How do you think this helps the main, fur-covered part of his body stay warm? (Hint: If you go outside in cold weather wearing warm clothes but with bare hands, what happens to your hands? What happens to the warmth of the rest of your body?)

Muskrats are active at all times of the day but most active from late afternoon until the sun is setting.

- When are you most active?

Muskrats get their name from a thick, milky fluid called "musk" that they make in glands at the base of their tails. Both males and females leave some of this musk, which has a very strong smell, on the trails to and from their homes to tell other Muskrats and intruders, "This is where I live." The name is a combination of what people thought this animal looked like (a rat) and smelled like (musk).

Advent 3: Black Bear

In the picture, Black Bear is curled in her den in the woods.

- Who is awake while Black Bear sleeps?

Though they're called "black," there are many color differences among Black Bears. Some are cinnamon colored or blue-gray or blue-black or even white! They are still Black Bears.

- If it's not color, what body features do you think might make a Black Bear a Black Bear? To help you, find a picture of Grizzly Bear and Polar Bear and compare their bodies to Black Bear's body. What differences do you see?

Though she might look big and clumsy, Black Bear is an excellent tree climber. In summer, she sometimes even sleeps in trees!

- What do you think would happen if you tried to sleep in a tree without a hammock or tree house?

Black Bear is also an excellent swimmer. She can swim 1.5 miles. That's the length of 50 Olympic-size swimming pools!

- Can you swim the length of one swimming pool? Imagine swimming the length of 50 big swimming pools!

Though there are scary stories about Black Bears, they are not aggressive toward people or other bears. Truly wild bears want to avoid people.

- What do you think has happened if Black Bear shows anger toward a person or another bear?
- Why is it important not to feed any kind of wild bear?

Advent 4: Chickadee

Throughout the winter Chickadee eats thousands of hidden seeds. But his food changes with the season. In summer he eats caterpillars and insects, foods he can't get in winter.

- What foods do you eat in summer that you don't eat in winter?

Among birds, Chickadee is especially friendly and curious. If you're very still and patient, you might be able to coax him to take a sunflower seed from your hand, especially in fall and winter.

Chickadee can make the temperature inside his body much cooler on cold winter nights. This helps him save the "fuel" stored in his tissues that would burn up faster if his body was trying to stay as warm as it is during the day. He needs every bit of fuel he's stored up to get through winter.

Chickadee communicates information in his call. If you hear several *dee-dees* at the end of his call that means he is alerting other birds to a nearby danger.

- Besides the words we choose, how do human voices change when we're communicating danger?

Unlike many other birds, Chickadee is able to dig soft, dead wood out of a tree to form a nesting hole.

- When a Chickadee pair is finished raising their chicks, they leave a nice nesting hole for birds that aren't able to dig. They're good neighbors! With your abilities, what are you able to do for others?

Advent 5: Whitetail Deer

Only male Whitetail Deer have antlers, which are made of bone and the same material your fingernails are made of: keratin. In midwinter, the males' antlers fall off; a new set begins to grow in the spring. The size of a deer's antlers depends on how old he is, how much healthy food he can find, and whether his father and grandfathers had large antlers.

- How is this like growth in human beings?
- If possible, walk through the woods and look for antlers on the ground.

Whitetail Deer are great jumpers. They can jump a fence that is 8 feet tall (the height of ceilings in many houses) and the length of a school bus. When escaping from danger, they can run 30 miles per hour. That's faster than a car driving through a neighborhood.

A Whitetail Deer mother hides her newborn baby, called a "fawn," in tall grass when she goes out to find food. The fawn lies down and stretches his head and neck flat on the ground. In this position he is well hidden from any creature that might harm him. His spotted coat, which looks like the pattern of sunshine coming through trees onto the forest floor, also hides him. After 3 or 4 weeks, the mother does take the fawn with her.

- Why do you think the mother would hide her newborn fawn rather than take him with her when she goes away to feed?

Advent 6: Honey Bee

If you see a Honey Bee on a flower, it's a female. Females are called "workers," and the oldest worker bees (3 weeks old and older) are the ones that collect flower nectar to make the hive's honey.

- Can you think of reasons why only the older workers—called "foragers"—get the job of collecting nectar?

Working together, the foragers have to fly about 55,000 miles (like going around the whole Earth twice) and visit 2 million flowers to make 1 pound of honey for the hive.

- Measure ⅛th teaspoon of honey. One worker bee will make a little less than that much honey in her whole life!

Male Honey Bees are called "drones." They help the workers keep the hive at just the right temperature to hatch new Honey Bees from eggs. The males' main job is to father new Honey Bees with the queen.

Males don't have stingers. If you've ever been stung by a Honey Bee, it was not a male.

A healthy colony of Honey Bees might have 50,000 bees. Of those 50,000 Honey Bees in a hive, there is 1 queen, about 300 drones (males), and all the rest—49,700—are workers (females)!

- If a town has 1,000 people, that means only 6 would be men or boys. Imagine what that might look like in schools and workplaces.
- With the help of a caregiver and based on the example above, figure out how many men or boys there would be in your town.

Advent 7: Chipmunk

Chipmunk's front feet are half the size of a paperclip. But they're strong! With them, he digs tunnels that are as long as a 2-story house is tall.

- Imagine digging— with your hands—a tunnel in the ground wide enough for your body and as long as a 2-story house.

Along this tunnel is Chipmunk's home, called a "burrow." Chipmunk is an excellent housekeeper. He keeps his burrow clean, with a separate room for peeing and pooping, like your bathroom. He also has a separate sleeping room, like your bedroom.

In his burrow and along his tunnel, Chipmunk has also built pantries where he stores his seeds and nuts. By late fall he's collected enough seeds and nuts to fill 8 one-gallon milk jugs.

- Fill just 1 milk jug with sunflower seeds or peanuts or something else about that size. Imagine 8 jugs full of seeds to see how much this little rodent stores away for winter.

Chipmunks are sometimes called "pygmy squirrels." But while squirrels spend much of their time in trees, Chipmunk spends almost all of his time on or under the ground. And unlike squirrels, Chipmunk has stripes on his back. In fact, he has stripes because he spends so much time on the ground.

- How do you think Chipmunk's stripes help him in his life on the ground?

Advent 8: Cottontail

Cottontail prefers to make her home in a place that has open grassy areas surrounded by dense bushes and small trees.

- After reading her story, why do you think this is the best home for Cottontail?

Like Chipmunk, Cottontail has very strong front feet. Unlike Chipmunk, Cottontail does not dig herself a burrow. Even in winter she rests above ground. She scrapes a shallow, cuplike shape, called a "form," usually under bushes or a brush pile, and rests there.

- Why do you think Cottontail doesn't go underground to escape from predators like Owl or Coyote?

Cottontail can see in a complete circle around her. She can even see behind her head! Except, she has one blind spot, which is right in front of her nose.

- Ask someone to stand in front of your nose, where you, unlike Cottontail, can see. Then have the person move slowly around you until they are behind you. How far to the side can you see the person before they disappear?

Cottontail rarely comes out of her form on windy days. In the wind she can't tell exactly where a sound is coming from, and hearing a sound that signals danger, then running, is the main way she stays safe.

- When is it better for you to stay inside your home?
- Is hearing a sound (a car or train, for example) the main way you stay safe? Or do you depend more on seeing, smelling, or touching?

Advent 9: Common Loon

Many people say they get shivers when they hear the calls of Common Loon. There is the tremolo or "laughing" call, the yodel call, the howl, and the hoot. All have different purposes.

- You can hear the calls and a good explanation of when each call is given on this YouTube channel: https://www.youtube.com/watch?v=SXh8fr35woo
- Which calls give you the shivers?

Common Loon is graceful in the water but clumsy on land. He has to slide on his belly and push himself forward with his legs. Try it! This is because his legs are at the back of his body—perfect for powerful diving and underwater swimming, but poor for walking.

Common Loon chicks leave the nest when they're a day old and stay with their parents on the water, sometimes riding on a parent's back. This keeps the chicks warm and safe from creatures that might try to eat them.

- Tell about a time you needed to "ride" on an adult for a time. Why did you need a ride?

When Common Loons move from their summer homes to their winter homes, young loons born over the summer don't fly with their parents. Young ones go together, without adults, to a place they've never been before. Scientists aren't sure how the young birds know the way to their winter homes. But they do!

- Imagine going with other kids your age to a place you have never been before. What would you do to find the way?

Advent 10: Wood Frog

Wood Frog is a smallish frog.

- Put two quarters in your palm. That's how long Wood Frog is.

Because of his ability to freeze in winter, he is the only frog that can live north of the Arctic Circle.

- Look on a map to see just how far away the Arctic Circle is from where you live.

Wood Frog is the first species of frog to begin singing in spring. To some people, these frogs sound like a lot of tiny ducks quacking. Other people describe the sound as chuckling laughter.

- Listen to Wood Frog's call in this National Park Service recording: https://www.nps.gov/media/video/view.htm%3Fid%3D37263086-1DD8-B71B-0B6B2346E1022B27
- What do the calls sound like to you?

Wood Frogs hatch from eggs laid in ponds in spring. A newly hatched Wood Frog looks nothing like a frog! In this baby stage of his life, he's called a "tadpole," and he looks more like a tiny fish.

- You can see Wood Frogs lay eggs, hatch into tadpoles, and change into frogs in this YouTube video: https://www.youtube.com/watch?v=l-31GQj-JAk
- How have you changed since you were born? What do you look forward to being when you become an adult?

Among all the kinds of frogs, Wood Frog seems to be best at recognizing his family members. When many young Wood Frogs (in tadpole form) are in the same pond, they look for their brothers and sisters and cluster together. Maybe you do this in a crowd, too.

Advent 11: Raccoon

Raccoon may be Earth's easiest-to-please eater. She eats nearly anything!

- Are you a Raccoon-like eater?
- Why do you think this has helped Raccoon thrive in many kinds of places?

Raccoon likes to put her food under water before eating it. It's not because she's washing it; rather, it's because her paws are more sensitive under water, and she can better feel whether the food has anything in it that might harm her.

- Feel a firm piece of food, maybe a carrot or an apple, in the air and in water. Does it feel different under water?

Raccoon is a smart creature! She uses the clever "fingers" of her front paws to figure out how to open locks and latches to get to food. Once she has solved a lock, she can remember how to open it for 3 years or more!

You can best recognize Raccoon by her bandit's mask. It has a purpose. Many scientists think the black fur around her eyes cuts down glare so that she can see better at night, when she's out searching for food. Sometimes athletes and sports players put black grease under their eyes to cut down on glare, too. Maybe humans learned this from Raccoon!

Raccoon is also easily recognized by the 5 to 7 black rings or bands around her tail.

- As you think about where she lives, what purpose do you suppose Raccoon's tail rings might have for keeping her safe and well?

Advent 12: Little Brown Bat

Little Brown Bats spend the winter together in caves where the temperature is always between 42 and 45 degrees Fahrenheit—about as cold as the inside of a refrigerator.

- Put your head and shoulders inside a refrigerator for 1 or 2 minutes. Imagine living inside a room that cold for 5 months!

Little Brown Bats' bodies go almost as cold as the cave air around them. They warm themselves enough to stay alive by pressing close together and sharing body heat.

- Huddle close to another person or a pet and feel their warmth coming into your body. Imagine a thousand people huddled close together for warmth. That's what a winter bat cave—called a "hibernaculum"—is like.

Every 3 weeks or so, the bats wake and fly about the cave, peeing and pooping. This cleans their bodies of waste that could harm them if it stayed inside them.

In warm seasons, Little Brown Bats find insects to eat by echolocation. A bat blasts out a call and listens for the echo when that call bounces off an insect. The echo tells the bat how far away the insect is.

- Close your eyes tightly and have someone lead you into a room. Call out your name. Can you hear your voice echo off the wall? From the echo, try to guess how many steps it is to the wall. Were you right?
- Imagine being able to hear your voice bounce off something as small as a mosquito!

Advent 13: Opossum

Opossum has a hard time staying warm in cold weather. In hot weather, Opossum spreads his spit all over his body to cool down.

- Next time you get hot, try licking your arm to see if your spit cools it.

A newborn Opossum is the size of another animal in this book: Honey Bee. Immediately after birth the baby Opossum climbs into a pouch on his mother's belly and stays inside the pouch for about 2 months. Then he comes out of the pouch and climbs onto his mother. She will carry him and his brothers and sisters—as many as 12!—on her back for about another 2 months until they are ready to live on their own.

- Animals that carry their newborns in pouches are called "marsupials." What other marsupials have you seen in pictures or in person?

Opossum has 50 teeth—more than any other mammal that lives on land—and they're razor sharp.

- How many teeth do you have? Are they as sharp as a cat's or a dog's teeth? Opossum's teeth are sharper than a cat's or dog's.

If a poisonous snake bites him, Opossum is not harmed. A protein in his blood blocks the snake's venom. Scientists are trying to copy this protein to make medicine that humans could take if we're bitten by a venomous snake. With the medicine, our bodies, like Opossum's, would not be harmed by the snake's poison.

Advent 14: Wild Turkey

If you see Wild Turkeys in the sun, notice the beautiful coppery-green shininess, called "iridescence," their feathers have. A Wild Turkey has 5,000 to 6,000 feathers!

How can you tell a male Wild Turkey from a female? Besides being bigger and brighter, a male has a red flap of skin called a "wattle" from his beak down his throat, fleshy bumps called "caruncles" on the back of his head and neck, a flap of skin called a "snood" growing from his forehead over his beak, and a "beard," a tuft of coarse, hair-like strands hanging from his breast. The longer the beard, the older the turkey.

- See some beautiful pictures of Wild Turkeys on this website from the U.S. Fish & Wildlife Service: https://www.fws.gov/story/wild-facts-about-wild-turkeys

Also, male Wild Turkeys' poop is shaped differently from females' poop! Males have j-shaped droppings while females' droppings are clumpy coils, a bit like a snail's shell. The larger the poop, the older the turkey.

- Draw these shapes to see the difference.

Scientists have identified 15 different calls or vocalizations that Wild Turkeys make. One of their quieter calls is named a "purr" because it sounds a bit like a cat purring. Just like cats, turkeys—farmed turkeys, too—make this sound when they're feeling content. The loudest call is a "gobble," which the male makes to attract females. A male's gobble can be heard a mile away!

- Listen to some of Wild Turkey's calls here: https://www.dnr.sc.gov/wildlife/turkey/sound/turkeysound_index.html

Advent 15: Common Garter Snake

Common Garter Snakes are not dangerous to humans. You can pick up Common Garter Snake to look more closely at his beautiful scales and yellow stripes, but he might give off a smelly fluid to tell you he wants to be put down—gently!

Common Garter Snake has nostrils for breathing, but for smelling he uses his red forked tongue. He flicks his tongue out of his mouth to smell creatures he wants to eat and creatures he wants to avoid.

- Try holding your nose and sticking your tongue out in a room where food is cooking or a scented candle is burning. Are you able pick up any odors with your tongue?

He also uses his tongue to smell female Common Garters who have traveled ahead of him to reach their winter den. Females lead the way and give off scent to help direct the males.

- Tell about a time you followed a smell—good or bad—to find something.

Common Garter Snakes are one of the few snakes that birth their babies alive. Most other snakes are born from eggs laid in nests. Like all snakes, a Common Garter Snake baby is on his own to find food and shelter from the minute he's born—and he can!

- Look at a human baby and imagine him finding his own food or her finding her own shelter. Snakes are amazing!

Advent 16: Woodchuck

Woodchuck—also called Groundhog—is an elaborate home builder. His maze-like underground burrow sometimes stretches 80 feet. That's as long as an 8-story building is tall. Woodchuck might build 3 or 4 burrows on his territory, repairing and remodeling them often. A peaceful animal, he allows other creatures, like Skunk, to share his big homes.

- Think of people you know who share their homes with others who are not their family members.

Woodchuck spends most of his time underground. Sometimes he will tunnel under a garden and pull vegetables that grow underground, like carrots and potatoes, straight into his burrow through his ceiling. Imagine a gardener finding her carrots have disappeared down holes into Woodchuck's burrow!

Some people call Woodchuck "Whistlepig." He gives a shrill, whistle-like warning call to alert his neighbors to low-flying hawks and other dangers.

- You can listen to a Woodchuck's whistle alarm call here: https://www.chesapeakebay.net/discover/field-guide/entry/woodchuck. (Scroll down to the heading "Voice.")

In the U.S. and Canada, February 2 is called "Groundhog Day." According to legend, Woodchuck, or Groundhog, wakes up and comes out of his burrow on that day. If the sun is shining and he sees his shadow, we can expect 6 more weeks of winter weather. If it's a cloudy day and he doesn't see his shadow, spring weather will soon begin. This legend began because early February is the time when male Woodchucks briefly leave their own burrows and visit their female neighbors. Then they go back to sleep again.

Advent 17: Striped Skunk

Striped Skunk doesn't sleep as deeply as Woodchuck. She's awake for a short time most days. Because she's awake more often than Woodchuck, she needs more energy to stay warm than the fat on her own body can provide. So she curls up with other Skunks, all of them sharing the body heat of the others. It's like a group sleepover in a small tent in winter.

Skunks are gentle creatures and get along easily. If Skunk has sprayed your dog—or you!—it's because she was frightened, not because she meant to harm you.

- Next time you see Skunk, remember how cooperative and gentle she is. And back away slowly so you don't frighten her into spraying.

Skunk doesn't want to spray. She never sprays other Skunks, even if she's unhappy with them. She sprays only to defend herself and then only when her warnings— stamping her feet, arching her back, raising her tail—haven't made the threatening creature go away. That's because once she has used up her spray, it takes 10 days for her to make a new supply. During those 10 days, she can't protect herself.

Have you ever smelled Skunk in February? Though the calendar and usually the weather forecast say it's still winter, Skunk knows spring is coming. On mild February nights the males leave their dens and go out looking for females. This means they are more likely to meet dogs or foxes or other dangers—and spray!

Advent 18: Porcupine

Porcupine's coat is amazing! It's made of special hairs, which cause snow and rain to slide off his body, and quills—30,000 quills! The quills help keep him warm, but they also protect him.

- Look at a kitchen match. Porcupine's quills are about as thick and usually as long as the match. Unlike the match, each quill has a spear-shaped tip, and on each tip are 700-800 barbs visible only under a microscope. You can see a quill with its sharp tip and barbs under a microscope at this website: https://www.science.org/content/article/porcupine-quills-reveal-their-prickly-secrets
- Feel your fingernails. Porcupine's quills are made of the same material, called "keratin," but with more layers of keratin than fingernails—and with barbed points!

Porcupine doesn't like to fight, but if another animal tries to attack him, he will defend himself. He doesn't throw his quills at the attacker, as people have sometimes thought. Instead, if the attacker doesn't leave after his warnings, Porcupine will back into the attacker or swing his tail, and his quills will stick in the attacking animal's skin. The barbs then pull the quills deeper into the attacker's body.

- Imagine needles going deeper into your skin every time you move. Very painful! Porcupine can grow another quill for each one that gets stuck in an attacker.

Though Porcupine's quills also help hold him steady in the treetops, sometimes he falls. And then his quills stab him! But his quills are coated with a kind of medicine that protects Porcupine from infection. If an attacking animal gets stabbed with the quills though, the coating doesn't protect the attacker from infection!

Advent 19: Common Eastern Firefly

Some birds and frogs like to eat Common Eastern Firefly. Wouldn't her flashing light on summer nights tell those predators exactly where she is? It does, and it warns them. The yellow-green flash is Firefly's way of saying, "Stay away, or you'll be sorry!" Birds and frogs recognize her light and know that if they eat her, a chemical in her body will poison them.

- Other than words, what signals do humans use to say, "Stay away!"?

Common Eastern Fireflies also use their flashing lights to talk to each other. If you see a light in the air, flying, it's a male firefly. If you see the light on the ground, it's a female. Males are using their flying flashing lights to say, "Where are you?" With their grounded lights, the females are saying, "Here I am."

- Other than words, what signals do humans use to say, "Here I am!"?

There are 2,400 species of fireflies in the world, and several of them have a yellow-green light. Common Eastern Fireflies recognize each other by the amount of time between their flashes—their flash-rhythm. Only Common Eastern Fireflies have this rhythm.

- Clap a rhythm and imagine each clap as a burst of yellow-green light. This is your Common Eastern Firefly flash-rhythm. Clap a different rhythm. This is your rhythm for another firefly species. Clap several different rhythms. Each one would be the flash-rhythm for a different kind of firefly.

Advent 20: Meadow Vole

Like Little Brown Bat and Striped Skunk, Meadow Vole is a huddler. But unlike them, she doesn't enter a deep sleep, living off her body fat. In fact, she purposely gets thinner to prepare for winter. At first, that doesn't seem to make sense.

- Read her story and tell why getting thinner instead of fatter works for Meadow Vole. Each creature meets the cold and dark in its own way!

In winter, Meadow Voles live in communities with long, maze-like tunnels just above or just under the ground. If you crouch in a field, you might see ridges along the ground. These are the roofs of their tunnels. The Voles set aside separate rooms in these tunnels as community toileting areas to keep the rest of the tunnel system clean. It's something like a one-story dormitory with a community bathroom.

In summer, Meadow Voles want to be alone, especially the females as they birth and protect their many pups. Mothers can be very fierce in warning other Voles not to come near them or their babies. If a newborn pup gets separated from his mother or siblings, he gives several calls too high-pitched for human ears to hear. When she

hears those calls, the mother knows the pup is getting cold, meaning he's outside the nest, and she'll go looking for him.

- If you get separated from your caregiver, what do you do so your caregiver can find you?

Advent 21: Eastern Fox Squirrel

Eastern Fox Squirrel is like a magician. He makes other squirrels think he's put a nut in one hole when it's actually in another.

- With another person watching, see if you can fool that person into thinking you've put a coin in one place when you've actually put it in another.

Fox Squirrel buries so many seeds and nuts in the fall that he usually doesn't eat them all. Or he'll forget where he hid some of them! Underground, these seeds and nuts sprout into new trees. His system of storing food is called "scatter hoarding."

- When you see Fox Squirrel, thank him for being a helpful tree planter.

Fox Squirrel's bushy tail has a purpose—or rather, several purposes. For example, he flicks his tail to express frustration or warning.

- What other ways he might be using his thick, bushy tail. (Hint: Think about how he's outside in all kinds of weather and how he moves through the trees.)

Fox Squirrel's four front teeth, like Porcupine's, keep growing all through his life. Porcupine has to gnaw on bark and Fox Squirrel on nuts to keep their teeth from getting too long for their mouths. Also, both animals can turn their ankles to put their feet behind them, instead of in front of them so they can go down trees headfirst.

- Watch a squirrel come down a tree headfirst and notice the position of his feet. How far around can you turn your feet?

Advent 22: Red Fox

Red Fox is friendly, curious, and playful among other foxes and animals. In fact, foxes have been known to play with balls and will sometimes take them from golf courses and yards! Usually they are very cautious around humans, but foxes will sometimes come out to listen when people play music.

- Though they are not aggressive around humans, many people fear Red Foxes. Why do you think that is?
- It is important not to feed Red Fox or to leave small pets alone if you know she is nearby. Foxes are created to be hunters, and they see every small animal as food. This is how they survive.

Red Fox can see tiny movements from a long distance, even at night. But it's her hearing that's truly amazing. She can hear a mouse scurrying under the snow a football field away. Plus, she can sense magnetic forces within the Earth that tell her the exact inch of underground where the mouse sits.

- Put your ear to the ground. Can you hear anything underground?

The rusty red color that names her "Red Fox" is her most common color, but it's not the only one. Besides rusty red, Red Fox can also be silver, black, or a cross between red and silver.

- Here's how to identify Red Fox from other kinds of foxes, like Gray Fox: No matter what color Red

Fox is, she will always have a white-tipped tail.

Advent 23: Northern Cardinal

On very cold days Northern Cardinal might look chunkier than he did the day before. That's because he's puffing out his feathers to create air pockets next to his skin. These air pockets help insulate him from the cold—sort of like a puffy jacket.

What cheer! What cheer! What cheer! Northern Cardinal sings in spring. In most bird species, only the males sing. But both female and male Cardinals sing. They even sing phrases back and forth to each other, each repeating what the other has sung, then sometimes changing it up a bit.

- Sing the lines of a song back and forth with a friend or caregiver, each of you changing the melody a little each time. It's fun! Maybe Cardinals are having fun with their singing too.

While courting and raising chicks, the male Northern Cardinal feeds the female seeds, beak-to-beak. It can look like they're kissing. It's called "mate-feeding," and some people believe this is a way Cardinals bond with each other. It's certainly a way the male helps the female get enough food for the hard work of nest building, laying eggs, and raising chicks.

Have you seen Northern Cardinal attacking a window, car mirror, or shiny bumper? Both males and females do this, most often in spring and early summer when they are defending their territory against intruders. They see their reflection and think it's another Cardinal trying to take over their home area!

Advent 24: Lake Trout

When it's time for her to lay her eggs, Lake Trout returns to the rock pile where she hatched from an egg, even if she's hundreds of miles away. Because she hatched there, she knows that that rock pile can protect her eggs.

- Are you near or far away from the place where you were born?

Lake Trout lays her eggs where the rocks are about the size of a small soup bowl or a large doorknob. Rocks this size, piled about as tall as a human, have gaps between them just right for sheltering Lake Trout eggs.

- What things about your home keep you sheltered and safe?

Before Lake Trout arrives to lay her eggs, male Lake Trout come and clean the rocks. They fan the rocks with their fins and tails and scrape them with their bodies to clear away algae, silt, and debris. This opens up more gaps between the rocks for eggs to rest in securely.

- What do humans do to get their homes ready for someone—a child or another family member or a guest—to join them?

Scientists report that Lake Trout is perhaps the most adaptable fish on Earth when it comes to food. If there aren't enough small fish, she'll eat insects. If there aren't enough insects, she'll become a vegetarian, eating plant material.

- How does being a flexible eater help Lake Trout survive?
- Which other animals that you've met in this book are flexible eaters?

Advent 25: Jesus, the Christ

We don't usually think of humans as animals, but we are. Humans belong to the group of animals called "mammals." Besides having a backbone, all mammals feed their babies with milk the mother makes in mammary glands in her breasts. Our word "mamma" comes from the word "mammary." Also, mammal babies are born alive, not from eggs, and mammals have fur or hair (except most whales, which only have fur before they're born, inside their mothers).

- What other mammals have you met in this book?

You're a mammal. Jesus was a mammal. Most of the animals that surrounded Jesus when he was born were probably mammals. (There also may have been birds, like chickens and doves.) As mammals, they were members of his family. If God created all animals, including humans, all animals are part of our family.

- Are there animals that you see as family?
- Maybe the animals that surrounded Jesus at his birth saw him as another animal, as one of them, even as family. What do you think of this idea?
- Would you be afraid to sleep in a barn, with animals? If you would be afraid, what would make you less afraid?

The reading for this day says that when the sheep-men saw the child Jesus, they saw what all creation was waiting for: "a human at home with all creatures as kin."

- What does this mean to you?

Here are some "wondering" prompts that can be used for the book as whole:

The book shows how 24 animals adapt to the season of dark and cold. You might like to learn about how one or more of them adapts to the season of light and warmth.

- For example, what does Painted Turtle do in the spring, after she digs out of the mud at the bottom of the pond?
- Can you tell a story or write a poem or sing a song about an animal's warm-season life?

There are many wild ones where you live that are not in this book—owls, for example, or earthworms, moles, spiders, bobcats, crows.

- Choose one or two and observe them, if possible.
- Learn how that creature meets the darker, colder season.
- Try writing your own poem or story about that animal's winter life. Use lots of action words, like "swing, float, hop, burrow, rest, dream."

If you could become one of the creatures in the book for a winter day, which one would you choose? Tell why.

Each of the animals in the book moves its body in a particular way as it adapts to the dark and cold. Imagine yourself as each animal, moving your body as it would. For example:

- Huddle your body (alone or with another) like Muskrat in his little hut. If you're huddling with another, feel their body warmth. Then, with the energy of that warmth, show how you would "dive sleek and quick."

- Dash a zig-zag path like Cottontail, pack down your path for quick escape, then settle down quiet and still, nibbling, but always ready … to leap!

Many holy people throughout history have talked with animals and honored them by listening to the animals for what they might be saying to us.

- St. Francis of Assisi is the most famous among these holy people. He spoke to the animals as family members, calling them Brother Wolf and Sister Mouse. Many Celtic Christians, like St. Kevin and St. Brigid, loved animals as well. You can learn some of their stories at: https://catholic-animals.com/saints-who-loved-animals and also at: https://slmedia.org/blog/saints-and-their-furry-and-feathered-friends
- Try sitting quietly with an animal, observing and listening with full attention and respect. The animal could be as small as a pet goldfish or as large as a wild moose. What do you see and hear?

Humans often think of some of the animals in *All Creation Waits* as pests—Chipmunk, for example, and Cottontail, Raccoon, and Skunk—because they sometimes eat our gardens, dig up our lawns, burrow under our houses, or turn over our trash cans. It's tempting to want to kill these animals when they upset things we've made and need.

- Investigate ways people have learned to live peacefully with "pest" animals. For example, many gardeners plant marigolds among their other garden plants because Cottontails don't like the smell or taste of marigolds.
- Can you imagine other ways to live peacefully with animals?

The dark is not an end. It's a door. It's the way a new beginning comes. These words appear in the bottom right-hand corner of every animal's story.

- What new beginning is each animal being prepared for during the dark, cold season?
- Can you notice how humans are being prepared for a new beginning during the dark, cold season?

All online resources are only suggestions from the author. All sites were active, age-appropriate links when the text was written in the summer of 2023. Citing these links does not serve as an endorsement from the author, illustrator, or publisher for any of the organizations.