

But Why: A Podcast for Curious Kids

Why are pandas black and white?

November 17, 2023

Jane 0:08

Hey friends, it's Jane. Last year I visited the giant pandas at the Smithsonian National Zoo in Washington DC. Pandas only exist in the wild in China, and the pandas at the DC zoo were on loan from the Chinese government. Just recently, China decided that it was time for the pandas to return home. So the three pandas I met were loaded up into special carriers and returned safely to Chengdu, China. With these pandas in the news so much we thought you might be hearing about them, and we wanted you to be able to listen back to our panda episode to learn more about them. Enjoy!

Jane 1:03

This is But Why: a Podcast for Curious Kids from Vermont Public Radio. I'm Jane Lindholm. In this show, we answer questions from you, kids listening around the world. And it's our job to find answers for you. Usually, we're doing that work from our home base here in Vermont. But sometimes we get to go report from other places and we take your questions with us. For this episode, we got to go on a field trip to learn a little bit more about an animal that sounds like this. That was a newborn. Do you know what it is? Let's hear what this animal sounds like when it's a kid.

Jane 1:46

These animals can bleat honk and chirp, roar and squeal. Got any guesses? We'll give you two more examples. Here's an adult female and an adult male.

Jane 2:04

Want to know the answer? Those are the sounds made by pandas. The giant panda is a bear that lives in the wild in China. Unfortunately, we did not get to go to China to report this episode. But we did get to go to one of the few places in the United States where you can meet one of these bears. The National Zoo in Washington DC. National Zoo has been taking care of pandas for 50 years now. And what you just heard is from their panda exhibit, where you can read all about the bears and their behavior and play their various calls. But you don't just get to read about pandas. You get to see them. There are three pandas living at the zoo right now. An adult male named Tian Tian, and

adult female named Mei Xiang. And their youngest cub named Xiao Qi Ji. Xiao Qi Ji will turn two this summer, and the parents are both in their 20s that would make them very, very old pandas if they were living in the wild. Animals living in zoos have lots of good food and no predators. They also have plenty of people like animal doctors called veterinarians to make sure they stay healthy, so they can live a little longer. Today, we're going to go behind the scenes at the zoo to see the bears and learn more about how the zoo keepers take care of them. And I know you're wondering, so I'm just gonna say it right here at the start. No, I did not get to touch the pandas. Pandas are big bears with big teeth and claws. And even though they eat plants, not meat, they're wild animals. So none of the panda handlers are ever in the enclosure with loose pandas. And I wasn't either. I got to the zoo really early on a rainy morning before visitors are allowed in. That's when the staff is busy getting animals, their breakfasts and setting up their outdoor spaces. I started off in a locked area that regular zoo visitors don't get to see. It was kind of in between the outdoor play area and the indoor play area for the pandas.

Mariel 4:05

Hi, hey, Jane.

Jane 4:06

Nice to meet you. And I was joined by a zookeeper.

Mariel 4:10

My name is Mariel Lally, and I am a giant panda keeper at Smithsonian's National Zoo and Conservation Biology Institute.

Jane 4:17

I'm gonna let you get to work but before you do that sounds like a job that every kid wants. Is it as good as everybody thinks it is?

Mariel 4:24

Being a giant panda keeper is a really fun job. And it's extremely fun and rewarding. We get to work with these awesome species, but at the same time, it's a very dirty job because most of my day actually revolves around panda poop.

Jane 4:39

Okay, maybe it's not always as fun to be a zookeeper as I imagined. Mariel didn't make me pick up any panda poop. But she did let me follow her around as she did some other chores.

Mariel 4:51

We are behind the scenes of our enclosures, one and two, and our yards one and two. So this is a space that is only used by keepers, and it is where we are able to shift the bears around and get to them a little bit more closely. And in this space is where we do a lot of our training with the pandas, if we're not doing any medical procedures, and it's also a space that we are able to navigate their enclosures in a very safe manner. So we're gonna start going through a bunch of different gates. And we're gonna make our way over to the bamboo shed so that we can get them some bamboo for breakfast. So just watch this stuff coming through here. So Mei Xiang is telling us good morning.

Jane 5:36

Is she using sign language?

Mariel 5:38

So she has this little behavior that she usually does when she's anticipating us to start feeding her, which is just what she was doing there. So she is looking out at us like, hey, keepers, I know breakfast is coming, and I'm very ready for it.

Jane 5:52

Now she was kind of putting her hand up like hey, no, come over here.

Mariel 5:56

Yes!

Jane 5:56

Mei Xiang and her cub were in their indoor enclosure, where they spent the night and they were definitely ready for breakfast. So we hustled over to the bamboo shed, which is in a little building in the outside enclosure. It's called a shed, but it's actually pretty high tech. It's climate controlled, so the bamboo doesn't get too hot, or too cold. And there's even a sprinkler system that sprays water over the plants to keep them from drying out. Kind of like the mist you might sometimes see getting spritzed over lettuce at the grocery store.

Mariel 6:27

We get bamboo deliveries about twice a week. Right now the pandas are eating well over 100 pounds of bamboo every single day. So we go through a lot of bamboo, and their favorite species is actually yellow groove bamboo. But we feed out a variety of different species depending on the time of year.

Jane 6:47

The zoo grows most of its own bamboo, but it also cuts some from other people's yards, with their permission, of course. Mariel helped some of the other zoo workers get long stalks of bamboo off a truck and into the bamboo shed. Each stalk of bamboo was taller than I am and had lots of light green leaves branching off. So you're weighing this?

Mariel 7:09

So I'm weighing the bamboo. So we weigh out all of the giant pandas bamboo, and then we are able to track their consumption. So we, after we weigh out the bamboo, we'll feed it to the pandas and then when it is time to give the pandas fresh bamboo, we look at the bamboo and see how much of the leaves did they eat? And how much of the comb did they eat?

Jane 7:30

Pandas eat different parts of the bamboo throughout the year, depending on where the most nutrition is in the plant.

Mariel 7:36

So right now I have about five kilograms of bamboo. So we're gonna go ahead and we're gonna put this into one of the panda yards, and then I'll come back and get about another five kilograms of bamboo.

Jane 7:47

She dragged the big bushel of bamboo over to where the pandas like to hang out outside.

Mariel 7:52

So the pandas pretty funny and they tend to like to eat with a backrest. So we tend to put their bamboo next to something that they could lean against whether it is the back of the enclosure, so they're leaning against the stone wall, or I'm going to put these next couple of pieces over by a tree so that they can eat with their back up by the trees.

Jane 8:10

Well, Mariel was working on feeding the pandas, I asked her a few of your panda questions.

Isla 8:15

My name is Isla. I'm three years old, I live in San Francisco and my question is why do animals live in the zoo?

Jane 8:24

Why do animals have to be in zoos? Why are they in zoos?

Mariel 8:27

So that's a really great question. zoos have really changed over time. So today's modern zoos, we are all about saving species, and also having ambassador animals that people are able to see that gets them more involved in conservation. So giant pandas are a perfect conservation story, because they were once an endangered species. But thanks to zoos and the collaboration with China, we have been able to take giant pandas in the wild from endangered to just vulnerable. So it's a really big success story. So all of the animals in the zoos are part of a bigger picture of conservation, whether they're participating in a breeding program, or they're just here so that people come and see them and get excited about ways that they can help conserve their wild habitat and all of their wild counterparts.

Jane 9:19

And you say that's a change. That's a change from what the mission of zoos were 50 years ago, maybe?

Mariel 9:25

So even 50 years ago, we did have conservation programs in zoos. But when you're thinking back to the original zoos many, many years ago where it just looked like animals on display for human enjoyment. It is not like that at all anymore. So yes, they are here for our enjoyment and to get us excited. And there's nothing better than seeing a child's eyes light up when they see a giant panda for the first time. But it all is just part of that bigger conservation picture.

Jane 9:52

And in fact, I said 50 years but yes, of course. This is the 50th anniversary of the panda project, right? So this has been going on here at the zoo for 50 years.

Mariel 10:00

So yes, this year is our 50 year anniversary of when Ling Ling and Hsing Hsing came over from China. And it is a really big deal that we just hit our 50 year mark here at National Zoo. We have accomplished so much with our Chinese colleagues. And it has just been really rewarding to see how far the panda program has gone here at National Zoo.

Jane 10:20

The panda program is pretty interesting. Only three zoos in the United States have pandas. And there are pandas in about 25 other countries as well. All of these pandas originally came from China, which is the only place in the world pandas live in the wild. As Mariel said pandas used to be considered endangered. That means they were at risk of going extinct, being totally gone. Pandas are still rare, but now their official status is a little better than endangered. When a panda cub like Xiao Qi Ji is born at a U.S. zoo. It lives with its mom for a few years. And then it actually goes back to China. So pandas are kind of on loan, I guess you could say, from China.

Coco 11:02

My name is Coco for North Carolina. And my question is do panda bears hibernate?

Mariel 11:08

Pandas do not hibernate, where they come from in the wild, they have no reason to hibernate. So they also do not hibernate here at the zoo. But what's really interesting about pandas is actually they spend the majority of their day either eating or sleeping. And multiple times throughout the day, they go into an extremely deep sleep and they go into an extremely, extremely deep sleep, but they do not hibernate. But one funny thing that us panda keepers know is that you never wake up a sleeping panda. A good rule of thumb is never wake a sleeping bear, but especially a panda. So when they go into that very deep sleep, if you do as much as just whisper their name and wake them up, they are going to be very grumpy. So when a panda is sleeping, we just let them sleep. So I'm gonna get just a little bit more bamboo.

Jane 11:57

Once the pandas food is out, they get enrichment items. That's just another way of saying toys and snacks.

Mariel 12:04

In addition to bamboo, the pandas at the zoo also receive leaf eater biscuits, which have tons of different nutrients in them. And they are these little itty bitty biscuits that we're able to put into toys, or feeders as we call them, which is the type of enrichment that keeps the pandas active. So the pandas are actually being fed here at the zoo, the same thing they would eat in the wild, which is bamboo. So they have the opportunity to eat in a very natural way. But it's also really good to use enrichment with them because it keeps their mind stimulated, their bodies stimulated. And it also is really enjoyable for the visitors to see the pandas interacting with different items.

Jane 12:40

And if you want to picture it, it's kind of like if you have a dog or a cat, and you might have one of those balls that you put food into, and then they have to sort of roll it around to get the food out. It's kind of like that, but much bigger.

Mariel 12:52

Exactly, it is just like the same thing that you would give to your dog or cat but on a much bigger scale for a bear. And there are certain enrichment items that were able to give to Mei Xiang because she is very precise in the way that she works with her enrichment that we can't also give to Tian Tian because Tian Tian would prefer to just bang things around until food falls out of it. But Mei Xiang is able to figure out almost any type of enrichment item. She is very articulate in the way that she does things. So it's a lot of fun, especially with her making her enrichment and seeing the way that she interacts with it.

Jane 13:28

Then one of the pandas started making noise from inside the indoor enclosure. So I asked Mariel what it was trying to say.

Mariel 13:35

So that was actually our cub. And he was probably communicating that he is also ready for breakfast. So one thing we have noticed with him is that he has picked up on being very vocal, and he lets us know if we're running a minute late. So a lot of times we'll hear that and he's like, I know you're on the other side of the door and I'm ready to eat so you guys better hurry up.

Jane 14:01

Coming up, Xiao Qi Ji finally gets his breakfast, and we answer more of your questions.

Jane 14:08

This is But Why: a Podcast for Curious Kids. I'm Jane Lindholm and today we're learning about pandas at the Smithsonian National Zoo in Washington DC. For 50 years the zoo has worked with colleagues in China to learn more about pandas and to help save them in the wild. We're talking to zookeeper, Mariel Lally as she goes about her morning chores, getting the panda play areas ready for the pandas to come outside in the morning and getting their breakfast ready. After the pandas got weighed by another zookeeper they were led out of their indoor enclosures and they raced outside to go explore the yard. The cub Xiao Qi Ji trundled down to where some bamboo had been leaned up against a tree and he began to munch away. His mother Mei Xiang, wandered over to where we were standing behind a closed gate. She found one of those big toys that Mariel had filled with biscuits and she lay down and started to shake the treats out.

Mariel 15:02

So she is using her toy to get her biscuits out. And this is the very special Mei Xiang way. So this is something that Tian Tian has never done. None of our other clubs have done this either. But Xiao Qi Ji has somehow figured out exactly how to do this.

Mariel 15:24

He is communicating to me that he is ready for something, whether that is some training, or just a little bit of play, or the leftovers of his breakfast, so just to ensure that he's going to get his portion of food and that Mei Xiang is going to receive a portion of food, I'm going to close this door temporarily. Ji! Hey, buddy.

Jane 15:46

Mariel closed a door. So the cub and his mother were separated from one another. And then Mariel started working with the bears in what she called a training session. Mariel would make a hand signal and say a word like, stand up, or mouth. And when the bear stood up or opened its mouth, it would get a treat. And why do you do a training session is this, this isn't like a circus where they need to perform?

Mariel 16:09

So training is actually extremely important for zoo animals, especially ones that were not able to share the same space as so right now. I'm asking Mei Xiang to put her paws up for me, which gives me a really good look, good girl, at her paw pads, and also her claws. So say she cut her foot on something when I asked her to put her paws up for me like that, I can see if she has any injuries or anything of that manner. Another thing that we work on with them, open, good, is asking them to open their mouth so that we can get a good look at their teeth. And just like us, we do have a dentist that will come in and do dental work on the animals here at the zoo. So we want to make sure that we get a really good look at their teeth every single day. But training is really just something that helps us get a good view of the animals for medical purposes, as well as training them things like their names. So all of the pandas know their names. And when we call their names, they know that they should come to us because usually it means there's a tasty treat on the other end of that. But Mei Xiang here is actually trained for a number of different things. So she was trained to do what we call maintenance behaviors, which are things like stand up, good. Move her paws around, lay down, open her mouth to show me her teeth. But she's also trained for a lot of stuff that makes her medical care a lot easier. So she will lay down in our training cage and receive ultrasound gel right on

her belly so that the vets are able to get a good ultrasound of her to check and see if she's pregnant. And then our pandas are also trained for things like blood draws. So I don't know about you, but I do not like having my blood drawn. But the pandas don't mind having their blood drawn at all. And we actually have a little specialized port that they'll reach their hand out and hold on to a bar and they'll receive honey water which is one of their favorite treats. And hi, Qi Ji, and the vets are able to draw their blood in a completely stress-free manner. And then Mei Xiang has also been trained for things like radiographs, so which are X rays, and things like cardiac ultrasound, so we can also get a good ultrasound of her heart, and Tian Tians heart, especially as they age. So training is extremely important at the zoo they don't do any backflips or jump through hoops of fire, because they are not circus animals, but they do a lot of different behaviors that help in their care and make both their life and our life as their keepers much easier.

Jane 18:54

With training over Mariel had time to answer a few more questions.

Anna 18:57

My name is Anna. I'm six. I live in Shelburne, Vermont. And my question is why pandas black and white?

Mariel 19:06

Pandas being black and white is a really good question. And it's something that is still up for a little bit of debate. So we don't have the 100% concrete answer on that. But the reason that we lean to them most likely being black and white is actually for camouflage. So where the pandas live in the wild, it tends to be snowy a lot of the year so that white fur camouflage has them in the snow and then those black legs, arms bands on their backs are actually really good camouflage in the shadows of the bamboo. So although pandas are large bears, the cubs do have predators in the wild that they have to hide from such as snow leopards or Asiatic black bear so that camouflage can help aid them when Mom is out foraging and making sure that they are nice and safe.

Chaya 19:56

My name is Chaya and I am nine years old, and I live in Jerusalem, in Israel. And my question is why do pandas only can take care of one baby and not have two like most of the animals?

Mariel 20:18

So it really depends on the panda. So some pandas have had triplets. Some pandas have had twins and some pandas have had single cubs. So it really just depends on the individual and the year. So sometimes, it is a little bit difficult for a mother panda to raise two cubs, especially if you have one cub that may be a little weak and sick, then a lot of times mom is going to take the larger, healthier cub and raise that one. But a great thing, especially with pandas that are in captivity and in the breeding centers in China, is that you're able to assist rear those cubs, so you're able to help her by taking a baby and feeding it some formula or actually what has been successful in China too, has actually had surrogate panda moms. So if a female is not able to take care of both cubs, the other cubs can go over to a surrogate mom for a little while. But here at the zoo Mei Xiang has only been able to figure out how to take care of one cub at a time.

Jane 21:25

Is there a tendency toward one cub or two cubs or probably not three as often.

Mariel 21:31

So triplets is definitely something that's a little bit more rare. But generally we do see one or two cubs, it just kind of depends on the year and the way the cards kind of fall.

Zinnia 21:41

Hi, my name is Zinnia. I'm four years old. I live in Bismarck, North Dakota. And my question is, how can we save the pandas?

Mariel 21:52

You can really help save the pandas by educating people on giant pandas. But then something that you can actually do at home that not only helps save pandas, but saves all of the animals around you is by volunteering to help clean up streams or sides of roads, waterways, things that you do here at home, picking up litter, recycling, all of that has an impact on the entire world. So even though it may feel like just picking up litter in your neighborhood, is just going to impact you and the birds and the frogs and the chipmunks that live in your neighborhood, when we do things like that it impacts animals all over the world. They make eating sounds so delicious. I'm gonna actually let them get back together. Just watch her feet in case she reaches out.

Jane 22:45

It was time for me to leave. I actually had to catch a plane back to Vermont. So I was rushing to the airport even though I really wanted to stay at the zoo. But before I left I wanted to know how Mariel got such a cool job.

Mariel 22:58

I grew up in the D.C. area coming here to see Mei Xiang and Tian Tian as a small child. And then one day got to work with them. I always wanted to be a zookeeper, but I never thought in a million years that I would be working with giant pandas. But when that opportunity came up, there was no turning it down. And it was something that I was just a temporary keeper at the time, I did not think I would land a permanent position. But I did and it is been one of the best decisions I have ever made. It's extremely rewarding working with the pandas. Obviously, there aren't many pandas in the United States. So there's not a lot of people that can say, oh, you know, I, I held a panda cub or I did an ultrasound on a giant panda. So it's definitely something that is very rewarding. And I never ever thought I would be doing this.

Jane 23:49

Did you have to go to a special school to be trained to do this?

Mariel 23:51

I just had to make sure that I had some sort of biology degree in college. But the biggest thing with becoming a zookeeper is gaining experience. So that's through volunteering and internships. I was an intern at a couple of zoos and a volunteer at a couple of zoos for about two years before I actually got my first keeper job. And that was with the pandas. And they've never been able to get rid of me since. But it's definitely a very specialized and competitive field. Whether you want to work with giant pandas or just any animal in the zoo, lots and lots and lots of volunteering and interning, the more experience you have the better.

Jane 24:33

If you're interested in working with zoo animals, like Mariel said, studying biology is important. But it's also important to learn more about animal care. That's something you can work on now by taking care of your own pets, or maybe asking a friend or a neighbor to teach you how to take care of their pets. You could also look at

opportunities to get involved in a zoo or aquarium or farm or maybe a humane society near you. That's it for this episode. Thanks to the Smithsonian National Zoo, Mariel Lally and Annalisa Meyer. We have links to more information about the panda program in our show notes. Now if you have a question about anything, have an adult help you record it and then send it to us. You can email the file to questions@butwhykids.org?

Remember, we can't answer all the questions we get, but we do listen to them all, and we really love hearing from you and learning what you're curious about. It helps us figure out what programs to do next. But Why is produced by Melody Bodette, and me, Jane Lindholm at Vermont Public Radio. Our theme music is by Luke Reynolds and we're distributed by PRX. We'll be back in two weeks with an all new episode. Until then, stay curious.