



Transcript for *Redwoods* by Jason Chin (Square Fish, an Imprint of Macmillan)

Introduction (approximately 0:00 – 3:24)

Hi everyone! It's Colleen from the KU Natural History Museum, and I'm so excited for today's Story Book Science. I do want to wait so that we can give some more people an opportunity to join us. So while we wait, let's go ahead and talk about redwoods, the topic of the book we'll be reading!

Now redwoods are a type of tree. They're a group of trees. And today we're going to be talking about one redwood in particular: the coast redwood, also known as *Sequoia sempervirens*. Now I do have a photo of a redwood, a coast redwood, on the wall. But just in case you can't see, here is that same photo. And you can see just how large a coast redwood is! It grows very tall, and we're going to talk about just how tall it grows.

Now coast redwoods are appropriately named because they are found on the coast! They are found on one specific coast, and in a very small area. And I have a map to show you just where they grow. Now here's a map, and if you look, you can see this green part of the map. And that green part of the map represents the range of the coast redwood. So they grow along the northern coast of California, and then, just a tiny, tiny bit grow in the very southern coast of Oregon. But you mostly find these trees growing along the coast of Northern California.

Now it looks like we've had some more folks join us. So let's go ahead and get started!

So, first and foremost, we have to go over our guidelines for Story Book Science. We are not in the museum, but we are going to go ahead and practice our museum guidelines. So that means that you will use kind and considerate words, if you're writing a comment or asking a question. If you respond to a question or a comment, you need to make sure that you use those kind and considerate words.

Now for today's Story Book Science, we'll be talking about redwoods while we read the book *Redwoods* by Jason Chin. This book is published by Square Fish, which is an imprint of Macmillan. And we're also going to be reading it with permission from Square Fish. So thank you to them for the permission to read this book! I really like this book because it's amazing to talk about redwoods and how tall they are and the amazing things you can find in a coast redwood forest. And it's also fun to imagine exploring a forest, just like the young boy we'll read about today.

Now I do want to let you know if you want to ask a question or write a comment, please feel free to do so. But just know that I may not be able to get to it immediately. I'll answer at the end and only if time remains. I also want to let you know that if you need a partial transcript of this reading, that will be made available later today on the museum's website, and there is a link to where you can find it in the video description.

So let's go ahead and get started!

Redwoods.

Reading from *Redwoods* (approximately 3:25 – 13:25)

Redwoods includes copyrighted materials, and we do not have permission to include the written text of the book in this transcript.

Conclusion (approximately 13:26 – 24:12)

This is the final picture of the book. We have another kid who is walking through the forest about to explore the redwoods!

What a cool book! Now I think it's so impressive how tall these trees can grow.

The biggest coast redwood is 379.1 feet! And another redwood is 370 feet! That is really hard for me to imagine. Try to think how big and how tall something is that's 370 feet. I want you to think about a tree that is that tall. Is it hard to imagine? Because I think it's a little hard to imagine. So I have a technique we can use to better understand just how giant a coast redwood tree is. So we're going to make a scale drawing.

Now a scale drawing is a way to represent the actual size of something but in a way that we can better visualize it. So you can either shrink something, or you can make it really big. And since a coast redwood is already very tall, let's shrink it!

Now we're going to be drawing a scale drawing of a coast redwood right here, on this side of the page. And for our scale drawing, for every one inch we draw that represents 37 feet of a coast redwood. So let's draw an inch! Alright. So here's a one inch of a coast redwoods scale drawing. That's 37 feet. We still have quite a bit of ways to go, don't we? Yes. So let's draw another inch!

Alright. That's two inches, where each inch represents 37 feet. So we have doubled our scale drawing from what it was at first. So this represents 74 feet. We still have quite a bit of ways to go, don't we? Yes. So let's add a couple more inches.

I'm going to draw those, and it will take just a moment.

But what you will see is that here is a line, it is 10 inches long, and it represents a 370-foot tall coast redwood because each inch represents 37 feet, and 10 inches represents 370 feet total. Now that's a good scale drawing, but let's do some other scale drawings to better understand just how tall this coast redwood is.

So the next scale drawing I want to do is of a tree you would find where I live in Kansas. This is a cottonwood. And cottonwoods, they're pretty tall. And when I stand next to them, I feel pretty short. And I wanted to compare a cottonwood to a coast redwood, since we know coast redwoods are the biggest, tallest trees in the world.

So coast redwoods can grow between 70 and 100 feet, or I'm sorry, the cottonwoods can grow between 70 and 100 feet! So let's draw a 70-foot scale drawing of a cottonwood. We know if we draw one inch, that represents 37 feet. So let's draw one inch on our scale drawing. So we need to add a little more height to our scale drawing. Now if we add another inch for two inches, that's going to be double 37 feet. That's 74 feet! That's a little too big for our cottonwood. So what we want to do is we want to draw a little less than two inches for our scale drawing of a cottonwood. So I'm going to draw a line that's not quite two inches, that's just below, to represent 70 feet. If you look at this line, you can see just how smaller the cottonwood is to the coast redwood because that line is not as large as the line for our coast redwood drawing.

Now the last scale drawing I want to do is a scale drawing of a six-foot tall person because it's always good to think about how huge these trees are compared to us. Now this is where we're going to draw our six-foot person scale drawing. And we know one inch equals 37 feet. That, that's way too tall for our six-foot tall person. Thirty-seven feet is much greater than six feet! So we need to draw less than an inch. Now if we half that inch, we are also halving what the inch represents. So one-half of an inch represents half of 37, or 18.5 feet. That's still too tall for our six-foot tall person! So we have to make an even smaller drawing. So we're going to divide this one inch by six. So we're going to draw one-sixth of an inch, and that represents one-sixth of 37 feet, which is roughly six feet. So let's draw that on our scale drawing. Alright.

Now let's look at our scale drawings together. Here is the coast redwood. Here is our 70-foot tall cottonwood. And this is our six-foot tall person. You may not be able to see it, but there is that scale drawing of a six-foot tall person. And they're very small compared to the 70-foot tall cottonwood, but look how small they are compared to the coast redwood. That's how massive these trees are!

Now we could go on and on and talk about all of the ways that the height of a coast redwood are impressive. But in the book we learned that coast redwoods not only have this amazing height, but there's all of these different things you can find in a coast redwood forest. Now some of the animals that we talked about in the coast redwood forest were the marbled murrelet that nests high up in the branches of coast redwoods. We even talked about banana slugs. These yellow slugs that move on a muscular foot, leaving a trail of slime behind them! You can find those in coast redwood forests. But yesterday I asked you to think about what other animals could live there, specifically animals that have many legs and could be classified as an arthropod, or an invertebrate, so an animal without a backbone, that has different body segments.

Now we talked about one of them in the book. We talked about centipedes. And this is a museum specimen example. Now when you look at this specimen, you'll see a lot of legs! But a centipede makes you think 100 legs, right? Well centipedes don't have 100 legs. What centipedes have our one pair of legs per body segment. So each body segment, and you might be able to see how each kind of section of that arthropod, there's one pair of legs for the section.

Now the other many-legged arthropod we want to talk about are millipedes. Now millipedes, they also have many legs, but instead of having one pair per body segment, they have two pairs per body segment! And unlike the centipede, they look a little more cylindrical. So they look more like tubes. It's a little hard to see the many legs on the centipede, or I'm sorry the millipede, but you might be able to see with these museum specimens.

Now in a coast redwood, there's one millipede in particular that I wanted to share with you. And it is called the yellow-spotted millipede, appropriately named because it has yellow spots on it! Do you see the yellow spots of this millipede? You can see them all along the sides of the body. Now this yellow-spotted millipede, appropriately named because of its yellow spots, it also has an interesting distinction about it. So these yellow spots, they're not just cool to look at! But they also serve as a warning to predators, or potential predators of the millipede, that the millipede is adapted to survive its environment. Particularly, it's adapted to protect itself against predators. These yellow spots are an indication that this millipede can release a toxin or something that would really harm a predator that's trying to eat it. Now if you've ever been to the redwoods, or if you go and you see one of these yellow-spotted millipedes, you might notice an almond scent. So it smells a little bit like almonds. If you smell that, that is a good indication that the millipede has released its toxin. Its toxin smells like almonds! So I just wanted to share this unique species of the coast redwoods.

Now I had such a great time talking about redwoods and all of the amazing aspects of a coast redwood forest, not just its height, but all the things you can see in the forest! But it is the end of Story Book Science. I do want to let you know I will be reading another book next week. And we're going to talk about trees, but we're not talking about trees in Northern California. We're talking about trees in Kenya! We'll read the book *Planting the Trees of Kenya: The Story of Wangari Maathai*, and this book is written by Claire A. Nivola, and it's also illustrated by her! So we'll get to learn together about the story of Wangari Maathai next week. So I hope you join me for Story Book Science here on Facebook Live at 10am. I'll see you then! Bye!