



In this episode, we travel high into the rainforests of Central and South America to meet one of the most powerful birds on Earth: the harpy eagle! These enormous eagles have giant feet and talons, incredible eyesight and hearing, and broad wings that help them maneuver between the trees of the rainforest canopy.

Through Tupi's story, we meet a young harpy eagle who has everything he needs to leave the nest. Except the courage to try it. With a little patience, some encouragement, and the help of one very small marmoset, Tupi discovers that being brave doesn't always mean you stop feeling scared. Sometimes, it means trying something scary anyway.

In this week's episode extension, we'll take a closer look at those harpy eagle nests. Younger explorers can investigate nests in their own neighborhood and discover the different materials birds use to build them, while older kids can put their engineering skills to work designing, building, and testing a nest strong enough for a growing harpy eagle.

AFTER YOU LISTEN, TALK ABOUT IT:

- Tupi felt scared to leave the nest, even though he knew he could fly. What helps you feel brave when you're trying something new?
- Tupi discovered that being brave didn't make his scared feeling disappear. What's something that used to feel scary or hard, but feels easier now?



WHAT TO READ NEXT

Ages 3-5

What's Inside a Bird's Nest? by Rachel Ignotofsky

This delightful book is all about birds: how they move, their eggs, how they communicate, and how they build nests.

Ask:

- What different types of nests do you notice?
- What materials did the birds use to build their nests?
- How does each nest work for the bird that lives there? What about the place where it lives?
- If you were building a nest for a harpy eagle, what would you use?

Ages 6+

Up in the Canopy by James Aldred

Explore the rainforest layer by layer in this beautifully illustrated non-fiction book. (Including a giant kapok tree!)

Ask:

- Where does the harpy eagle fit into the rainforest? Look closely... it's there!
- What other animals share that part of the forest?
- Think back to the episode: What did you learn about a harpy eagle's body that helps it live and hunt among all those trees?
- What did you learn about where harpy eagles build their nests? Why do you think that location works for them?



NATURE'S ENGINEERS

Harpy eagles are some of the biggest and most powerful eagles in the Americas. But for these activities, we're going to look at something else impressive: their nests!

Harpy eagles build enormous nests high above the forest floor, usually in the branches of some of the tallest trees in the rainforest. Their nests are made from large sticks and branches and can stretch more than a meter across. But here's where it gets really interesting. Harpy eagles also bring fresh green twigs and leafy branches to their nests, even after their chicks hatch!

Why? Scientists aren't completely sure. But they think those fresh green branches may help keep the nest cleaner and help protect young eaglets from insects and parasites. They may even help keep the nest cool.

A harpy eagle nest isn't just big. It's carefully built for raising a young eagle high in the rainforest canopy. So, what does it take to build a nest that's strong, sturdy, and ready for an eaglet? Let's find out!



NEST DETECTIVES (ALL AGES)



Bird nests come in all shapes and sizes. Some are big and messy. Others are tiny and carefully woven. Some sit high in trees, while others can be found much closer to the ground. In this activity, you'll use your scientific powers of observation to notice nests.

First, take a close look at the nest photos we've collected below.



- What materials did the birds use?
- What shapes do you see?
- Where did the birds choose to build their nests?
- How do you think the nests stay together?
- What is the same about the nests? What is different?
- What do you think it would be like to live in each nest?



Now, head outside for a Nest Detective Walk!

Take a walk with your family to search for nests in your town. (This might be in a neighborhood, a city block, a park, or along a trail.) Look up into trees. Peek carefully at bushes. Check ledges and other places where a bird might build a home. How many nests can you spot?

Remember: A nest is a wild animal's home. Look with your eyes, but don't touch or disturb any nests you find, especially if you see eggs or baby birds inside.

When you get home, draw one of the nests you discovered. If you didn't find one, invent a nest of your own! What type of nest would you build to live in YOUR part of the world? What would you build it from? Where would you put it?



ENGINEER A NEST BASKET (AGES 5+)

Harpy eagles build their enormous nests by carefully arranging sticks and branches. Now it's your turn to see what you can build with sticks by constructing a stick basket that you can "nest" things inside.

You will need:

- Sticks
- Twine or yarn
- Scissors



1

Collect your sticks.

Head outside and collect sticks in different lengths. Try to find two sticks of each size.

2

Sort them.

Lay your sticks on the ground and arrange the pairs from longest to shortest. Look at that! You're already using one of an engineer's most important skills: planning before you build.

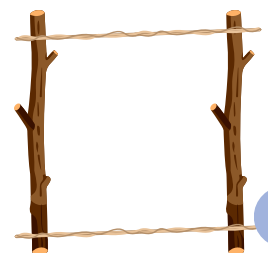
3

Make your frame.

Take your two longest sticks and lay them next to each other. Ask a grown-up to help you tie the ends together with string or twine. You should have two parallel sticks with string connecting them at both, creating a frame with two parallel stick sides and two parallel string sides.



2

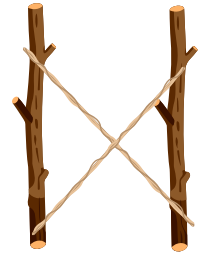


3

4

Make an X.

Hold one stick in each hand and lift your frame. Now flip one stick over. Your two strings should cross in the middle to make an X.



4

5

Start building!

Take your next pair of sticks and slide them between the strings, across the first two sticks. Then add the next pair going the other direction. Keep alternating: across, up and down, across, up and down, working from your longer sticks toward your shortest ones.

Watch what happens as you build. Your flat sticks should begin to form a basket-shaped nest!



5

6

Make it a harpy eagle nest.

What else would your eaglet need? Try adding leaves or other soft materials you find outside. You could even make a pretend egg or eaglet to tuck inside.

Grown Up Tip: There are a lot of videos of this method of basket making online. [This one makes the steps really pop.](#)

- Why do you think using shorter and shorter sticks changes the shape of your nest?
- What helped “fill in the gaps”?



BECOME A NEST ENGINEER (AGES 6+)

A harpy eagle nest has a big job to do. It needs to be strong enough to support a growing eaglet, sturdy enough to stay together high in a rainforest tree, and big enough for one of the world’s largest eagles.

Now it’s your turn to become a nest engineer! Your challenge is to build the strongest nest you can using materials you find outside or around your home.

You’ll build and then test how strong your nest is. If it’s not as strong as you hoped, you can try again. That’s what an engineer does! They plan, they build, they test, and they adjust.

1

Before you build, make a plan. Think about:

- What shape will make your nest strong?
- Which materials will you use?
- How will you connect the materials so they stay together?
- How will you keep your “eaglet” from falling out?

2

Construct your nest. This is where the fun begins! Now it’s time to gather up materials to build a nest. Birds are opportunistic and use materials in their environment. What can you find?

Look for sticks, leaves, string, or even hair. Experiment with mud. Try dry grasses.

3

Now, test your work.

Start with something light inside your nest, like a plastic egg or small toy. Then slowly add weight: pebbles, coins, LEGO bricks, or other small objects. How much weight can your nest hold?

Remember: engineers rarely get everything right on the first try! Look closely at what happened. Where did your nest bend, break, or come apart?

Take notes below and then change your design and test it again.

Can you make your next nest even stronger?

The Nest



Draw Your Nest

What happened?

What should you try next?

The Nest



Draw Your Nest

What happened?

What should you try next?

YOUR WILD AND KIND MISSION

Did you know? Harpy eagles need big, healthy forests. They build their enormous nests high in some of the tallest trees in tropical rainforests, and they need large areas of forest to find food and raise their young.

But in some places, those forests are disappearing. When forests are cleared, harpy eagles can lose the trees they depend on for nesting and hunting.

You may live far away from a harpy eagle, but some of the choices your family makes can help protect forests around the world.

Your mission: Shop for the shade!

Some foods can be grown underneath a canopy of trees instead of on land where most of the trees have been cleared. That's called shade-grown. Next time you're at the grocery store, become a forest-friendly label detective! With your grown-up, look for a product that was grown in a way that helps protect trees and wildlife.

Grown-Up Tip: If you drink coffee, look for the Smithsonian Bird Friendly® certification, which identifies coffee grown under a healthy canopy of trees.

TALK ABOUT IT: Why might growing food underneath trees be better than clearing the trees away?

