

Polar Bear Mom and Cubs

National Geographic, 2 min 44 sec.

For the first time in five months, this mother polar bear sticks her nose into the open air here in the Svalbard Islands of Norway. She's sniffing the air because, if you've been living in the dark for five months, your eyes would take time to adjust to the light.

She's also checking for predators because now she's got not one, but two cubs to protect. Hello world! Notice how closely mom looks after her babies. Talk about vigilant. Over half the cubs born here die in the first year, often killed by adult male polar bears.



Now the cubs are growing fat on mom's milk, but mom herself hasn't eaten in 5 months and is getting thinner by the day. Is it time to go on the hunt? Well, maybe one last nap in the lair.

Ten days after they first poke their noses into the frigid air, mom leads the way. They'll never return to that den. They've got lots of important stuff to learn in

the world! Like, for example, what we like to call lair crashing. Lair crashing is where mom teaches the kids how to jump up and down on the ice so they can break through to eat the seal cubs below. But isn't this just like kids, they forget the lesson and start horsing around with a reindeer leg. In fact, pretty soon they've got a reindeer carcass. They haven't yet learned not to play with their food.

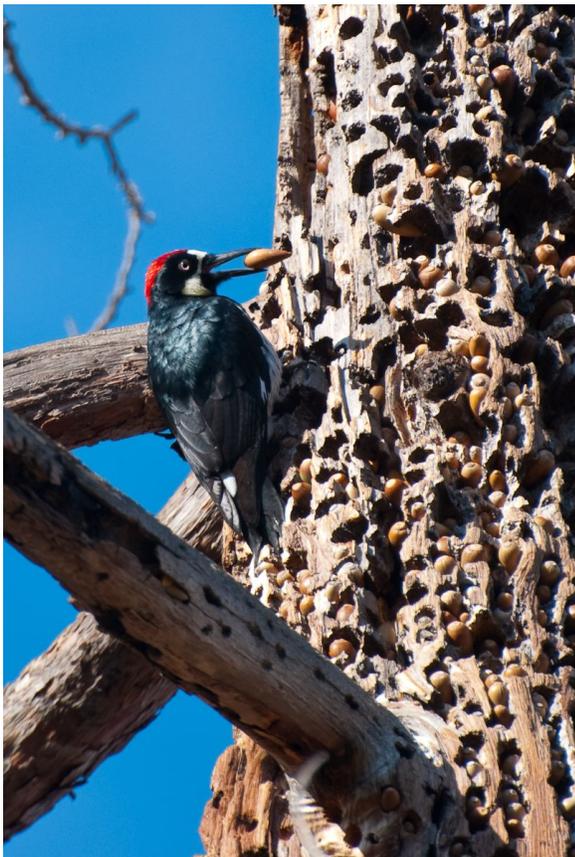
Stop at 2:02

~~We could pretend we're showing you this stuff to educate you on how polar bear moms suddenly initiate their young into the right-center nation through tom foolery. OK that's part of it, but mostly we're showing it to you because it's so gosh darn cute. But all good fun must eventually come to an end. Mom rolls in the snow, which is how polar bears dry off. Of course, getting the cubs to stop cavorting, well, good luck on that.~~

Woodpeckers vs. the World

National Geographic, 2 min 58 Sec.

You probably recognize the sound of woodpeckers busy at work. But have you ever wondered why they're pecking away and why they do it so endlessly? Well, at least in the case of acorn woodpeckers in Carmel Valley California, they're creating storage units; thousands and thousands and thousands of storage units. You see, these acorn woodpeckers are engaging in a behavior called hoarding. They're collecting far more food than they need for the winter by pecking holes in dead trees and stuffing them with their favorite food - fat-filled acorns.



This oak tree has been transformed into a storage site or granary tree for one extended family of acorn woodpeckers. This particular granary tree has been pecked with over 10,000 holes! Can you imagine how much work it takes to create all of these holes? Then imagine how much work it takes to fill them. A woodpecker might gather over a hundred acorns a day. And can only gather 1 acorn in each trip. A woodpecker can fly over 12 miles in one day gathering acorns. Then the acorn has to be pounded snugly into the hole. If the fit isn't just right, [the acorn falls.]

Falling acorns aren't the only problem these woodpeckers face. They have to be wary of birds of prey, who pick off one in every five of the birds out here. Less deadly, and more annoying are the animals that raid their hard-won food supply. Ground squirrels love to let woodpeckers do all the work of gathering acorns just so they can sneak in and steal them. Naturally, the woodpeckers don't think

too kindly of this. When they find out, look out! When their food supply is threatened like this, you might say the woodpeckers go, well, nuts!

One last threat, large portions of the acorn supply can rot. So even though hoarding can have negative connotations to humans, overstocking is necessary so the woodpeckers don't have to migrate to different food supplies. And all the acorns that get dropped in the hoarding process help regenerate all these oak trees, keeping the acorn woodpecker's

circle of life intact.

Three-toed sloth: the slowest mammal on earth
Nature 1 min 55 sec

This is a 3 toed sloth, a female, and she's ravenously hungry. It's the leaves she's after. However, in order to protect themselves, rainforest leaves are often tough, rubbery, and full of toxins. They're indigestible and lacking in energy, but that hasn't stopped the sloth. With large multi-chambered stomachs containing a unique mix of bacteria, they're able to deal with the tough leaves, but it's not a quick process.

Sloths have the slowest digestion of any mammal. It can take them two weeks to process a single meal. And it's a hopelessly inefficient process. Sloths had two options, either they had to eat more, or do less. Sloths evolved to do less. Their entire lifestyle is all about expending as little energy as possible.



The City of Bees - 1 min 33 sec

Look at this special bee.

She is bigger than the other bees.

Yes, that's because she's the queen bee.

She is the most important bee in the whole family. All the others are important, too, but the queen lays all the eggs that turn into new bees. See how she walks up to a cell and pokes her head in? She's checking to see if it's clean. It is so she inserts her abdomen and lays her egg at the bottom of the cell.



The queen bee lays eggs all the time. And since she has to lay so many eggs, she's got to have someone to look after her. That's why she has a whole court of bees around her. They wash and groom her and feed her so she can concentrate on laying eggs for her city.

Every time I get a new queen, I give her a marker on the back with a number and a color. Red for one year, white for another year, then yellow, blue, and green. This way you know how old she is. If you have a friendly bee, every bee in that city will be friendly.

Is that Skunk?

Nature PBS 3:55

This new mom has six helpless kits. The babies are born with black and white markings on their naked skin that are soon covered with fur of the same pattern. At the age of 4 weeks, they open their eyes for the first time. In another three weeks or so, around the time of weaning, mom will lead them on their first trip out of the den. This mother seldom leaves her kits alone. That's because if a male enters the den, even the dad, he's likely to kill her babies.

Jerry Dragoo's pregnant female has given birth, and she and her kits are doing well. But not all baby skunks are so lucky. Another litter lost their mother at a very young age. Dragoo picked them up from New Mexico Game and Fish. For these 6-week old orphans, he's acting *en loco parentis*, but many would call him just plain *loco*.

"When we got them they were hungry. They were being fed cat food, but cats require a lot more protein in their diet than skunks do. A lot of people, for some reason, seem to think skunks and cats are closely related, but really, they're not. So we switched them over to the puppy formula real quick."

The babies are born ready to spray.

"They don't have quite as much oil so it's more of a poof rather than a liquid. You'll get the same odor, but it just doesn't last with these guys."

The kits won't start eating solid food for another couple of weeks.



"You see, the female's got a lot of white on her tail and then these 2 males, they've got a little white tip on their end. And this guy, I call him Blackie because he didn't have a white tip."

With thirty to eighty skunk guests a year, Dragoo finds it challenging to get on a first-name basis with all of them.

"We just run out of names. You just can't call them all

Flower, or Stinky or Pepe."

Dragoo will release these four orphans as soon as they can fend for themselves.

How Beavers Build Dams - PBS 2:32

Beavers are vegetarians. They gnaw through bark to eat the sugary layer underneath. They've been gnawing through forests for 20 million years.



Felling trees with your teeth takes great strength, skill, and patience. One technique is to slice halfway through and let the wind do the rest.

Beaver's incisors are strengthened with iron which makes them orange. They grow continuously and even self-sharpen.

The pond makes it easier to move around the heavy logs they need to build their dams. Out of the water, it's a struggle. Stones help weigh down the base. The whole family works together, carefully interlocking the timber. They dredge mud from the pond bottom to seal the dam. Each pond traps several inches of sediment every year so there's plenty of it. The young act as apprentice builders, learning the tricks of the trade. The final results are impressive.



In the Rocky Mountains, beaver dams slowly filter billions of tons of water. The ponds build up soil and nutrients and help prevent floods and droughts.

The Silence of Bees

Nature PBS 2:41

A healthy hive of honey bees functions like a perfect and fluid organism. At the center of all activity is the queen, an egg laying machine, the queen is actually a slave to her duties, laying up to 2500 eggs a day, as many as two million in her lifetime.



The worker bees are all female and make up the bulk of the colony. In a typical hive of 30,000 bees, only about 100 are males, called drones. With oversized eyes and bulky bodies, drones are not equipped to gather pollen or nectar and must rely on the workers to feed them.

The invaluable work bees do takes its toll. In the summer, workers only live around thirty days, literally worked to death. But the hive is constantly replenished with new generations of bees ready to go to work from the moment they hatch.

When a bee is three weeks old, she becomes a forager and will spend the rest of her short life collecting nectar and pollen. She'll fly up to three miles away and amazingly always return to the same hive. When she discovers an abundant pollen source, she'll recruit other foragers through a most unusual form of communication, a dance.

"She informs the other bees that food is available in such-and-such direction from the hive and is at such-and-such a distance away from the hive. And those pieces of information, distance and direction are encoded symbolically in movements and sounds that she produces."

Turn right at 100 feet. Take a left at 50 feet. The waggle dance is the only known symbolic language that exists outside the realm of humans and lower primates.

"There's really nothing that compares to the dance language of the honey bee. It stands as one of the seven wonders of the animal behavior world."

What is a tornado? SciShow kids 3:46

The weather is a funny thing. One day it can be sunny and warm; a perfect day for sunglasses and flip flops but the next day it can be cold and rainy. Most of the time, the weather doesn't give us anything that we can't handle with maybe some sunscreen, or an umbrella, or a snow shovel. But some times and in some places, there can be extreme weather like big thunderstorms, or hurricanes or snowstorms. And one of the most powerful kinds of extreme weather out there is a type of a storm that scientists pay close attention to, tornadoes.

A tornado is a fast-spinning column of air that stretches all the way from a thunderstorm cloud in the sky down to the Earth's surface. Because tornadoes turn and twist as they move, they're sometimes called twisters. They form inside really big thunderstorms when cold dry air moving in one direction bumps into warm wet air coming from a different direction. Because the cold air is heavier, it slides down under the warm air, and pushes it up really fast. All this fast-moving air rushing up and down can create a sort of spinning thunder storm and it can eventually keep going to form a tornado.



And when a tornado forms, it can be one of the most powerful forces in nature. Tornado winds are the strongest in the world, even stronger than hurricanes. In some twisters, we know that the wind can blow into almost 500 kilometers an hour, strong enough to lift heavy things like cars and trucks into the air. And they're loud, too! People who have seen them or even been in them say they sound like giant roaring trains, but they don't move as fast as a speeding train. Usually tornados travel across the land at about 50 km per hour, slower than most cars go.

Now, weather can be really unpredictable, which means you can't just predict or know what's going to happen before it happens. And that's especially true for tornadoes. These storms can speed up, slow down, change direction or even stand still. They can last anywhere from a few seconds to as long as an hour. While tornadoes can happen all over the world, they're most common in the United States. About two-thirds of the tornadoes in the world happen right down the middle of the country, from the Dakotas right down to Texas, especially in the late spring and early summer.

Because tornadoes are so powerful, and so unpredictable, meteorologists spend a lot of time studying them. They want to understand more about exactly how and when tornados form and hopefully predict when they'll show up. There are even people called storm chasers who follow big storms around the middle of the US hoping to spot one as it turns into a tornado so we can get a better picture of what really happens when a twister forms. Scientists still don't know for sure when a tornado is going to happen, but they have gotten better at knowing which thunderstorms might be strong enough to create one. If they spot a bad-looking storm early enough, then they can give people who live nearby a warning that a twister might be coming. That's one of the most important jobs that a meteorologist has; helping people get ready for extreme weather.

So the more they learn about tornadoes, the better we can prepare for them. And the more they can help us understand how our weather works, even when it's not so extreme.

Nutters - the monkey production line - Clever Monkeys BBC 4 min 05 sec

A bearded capuchin monkey starts the processing of palm nuts by tapping them to see if they're ripe. There are only 20-30 monkeys in the group with fewer social pressures, they are thinkers and doers, not chatterers. The ripest palm nuts are stripped of their outer case ready to be dropped onto the ground to dry out, which will take about three days. Each stage seems very well coordinated; a routine in a monkey culture, choreographed to perfection. Tapping again tells the monkeys which ones are ready.

The next stage may take place at the other end of the valley; the nut-cracking site. The hammers are of the hardest stone brought up from the river beds by the monkeys. They're heavy; some as heavy as the monkey itself. Palm nuts are extremely hard and difficult to crack open. It only works if you get it exactly right. Somehow, these clever monkeys get amazingly good at it.



Collecting a ripe nut has taken days of harvesting, testing, ripening, transportation, collecting tools and choosing sites, not forgetting years of learning in the nut-cracking school.

The year-two class is still wrestling with the basics. The sounds echo through the forest. Jaguars know it's monkeys that work. The capuchins always select their sites carefully, preferably below the edge of the escarpment. But it's more than just an escape route. We are increasingly realizing we are not the only intelligent life on the planet.

Magic of the Snowy Owl - Owl of the Arctic

PBS 1:04

In the dim glow of the arctic dawn, the true majesty of the snowy owl can be seen in its frozen white kingdom. There is little relief from the constant wind. For adult snowys the lengthening daylight means the chance to breed is drawing closer. It may not look like it, but the start of the short arctic summer is racing towards them.

