

Introduction

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Hello and welcome to the Kentucky 4-H Virtual Experience. My name is Joey Barnard and I am the 4-H Extension Specialist for Camping a part of the University of Kentucky's College of Agriculture, Food, and Environment. Today, we'll be visiting North Central 4-H Camp where Andy, an Environmental Educator, will be sharing with us some information about the trees in that local area. We hope you enjoy.

0:35

Hi! Welcome back to another episode of Exploring the Outdoors. Today we're going to be talking all about trees. In particular, how to identify them, and how humans use them, both now and in the past. Before we get into actually identifying trees, though, there is some terminology I want to go over with you, because it can get a little bit complicated. And rather than just explaining it to you, I want to be able to show it to you on some actual leaves. So let's go ahead and get started.

1:01

Leaf Characteristics

So what we have here are two different kinds of simple leaves. That means the entire body of the leaf, the green part right here, is all going to be located in one spot. We have a sugar maple leaf, and we have an American elm. And the first thing I want to talk about is what we call the margins. So, the margin is just the more scientific term for the body. The elm has what we call an entire margin, which means that it has a full shape, there's not really any holes or divets in it, as opposed to the maple. The maple has what we call lobes. Lobes are these protruding portions right here that pop out. Then, you have what's called the sinus. The sinus are those deep, empty spaces from where the lobes just out. So when I say a tree has lobes, I'm talking about this. And then I'll talk about how deep that sinus is, or how shallow the sinuses are.

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The next thing I want to point out are these little lines that comes through the leaves. These are what we call the veins. They're very important for a plant because they basically work the same way our veins do, but instead of transferring blood around the plant, they transfer things like water, nutrients, and sugar. So we have to make sure they are intact and that they are working. The maple has what we call a palmate venation, which means that all the veins come out from one central point. It's kind of like the palm of your hand, if you can imagine. The central vein would go right here, and then the other, extra veins would come out kind of like your fingers. That's why it's called palmate. Palmate venation.

2:29

The American elm has what we call parallel venation. So, it has one major vein that goes right down the middle, and then has all these little veins that come off of it, that are more or less parallel. I chose the American elm in particular because its veins are very parallel. Sometimes they bend a little bit and so they don't look quite as parallel, but generally this is the idea that we're looking at.

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Lastly, I want to point out the edges of the leaves. The maple has what we call smooth margins, which means that there's not any really sharp jagged edges on it, these guys that are pointed right here would be additional minor lobes as opposed to these major lobes right there.

However, the elm is what we call serrated. You'll noticed that it has all these very jagged edges. We call it serrated, and the easiest way to think about that would be to also be considering a serrated knife. So, so they those jagged edges that go all the way up to the top. Sometimes they're a little larger, sometimes they're very fine and small, but the point is that it's not smooth.

So now that you know this information, we're going to go out into the woods and we're going to see the different variation in the leaves that we can find around camp.

3:38

Tree 1

Alright, so the first tree we're going to talk about is the sugar maple. Now, we already saw what a sugar maple leaf looks like. What I want to do instead is talk about the way that humans use it, and the number one way that we use sugar maple trees is to make maple syrup. And the way they do that is they take this small thing called a tap, and they'll put it into the side of tree, and they'll drain out a huge chunk of the sap, which they then boil down to make the syrup that we're familiar with. Now, it's used for more than just sap. It's a hardwood, so what we're going to end up doing is also using it to make furniture, we can use it for flooring and houses. Sometimes, it's just used for general timber, just because it's a very sturdy plant.

It also makes these things that we call samaras, that's the fruit of the plant, or the thing that carries the seeds around to get from one place to another. And, you may know samaras by a different name. A lot of times we call them helicopters. We throw them up in the air and they spin around just like this and they float around. That's the seed of the maple plant.

4:34

Tree 2

Alright, next we're going to talk about the white oak. And before we talk the leaves, I want to share a little bit information about the bark. So, the bark on the white oak is really easy to identify because it's very nice and tight on the bottom here, but as you go up the top of the tree, it begins to loosen up a lot, and it looks almost like it's about to fall off. Very similar to the bark of the shagbark hickory, which we're going to see in a little bit.

Alright, now you've probably seen an oak leaf before. It has that parallel venation that we talked about earlier, so that one mid-vein right down the middle and then the little veins that come off on the sides. You're also going to notice that it is a lobed leaf, so it has those protrusions that stick out, and those deep sinus points that we mentioned before as well. It also has a smooth margin, so it is not serrated.

What's most important to talk about with the white oak, though, is how it differs from its cousins, the red oak. Notice how the white oak leaf is very curved on the ends. A red oak leaf is pointed, and that's a very easy way for you to tell the difference there.

So, as far as human uses go, we use white oaks for a lot of different things. It's what we refer to as a hardwood, which means the woods is really dense and it's hard to chop through. Now, we use it most frequently for timber, so we will use it to build floors, we might use it to build furniture, things along those lines. But another really important wildlife use for it is for the fruit that it produces, which is acorns. They are a very valuable food resource for the animals inside of the forest, especially things like squirrels.

6:05

Tree 3

The next tree we're going to talk about is the Osage orange tree, which is the tree that is right behind me. The easiest way to identify the Osage orange isn't by the leaves. The leaves are actually pretty bland, they're just a plain, single-margined, entire leaf. They have a little bit of a tip, they have smooth edges. It's hard to tell them from any other plant. However, if you look at the wood of the tree, especially right underneath the bark, it tends to have an orange color to it, and that's really going to set it off right away.

You'll also notice that it's a very gnarled tree--it's low and wide. The most interesting thing about the Osage orange is that it's actually not even native to Kentucky. It's what we call a naturalized species, which means that it was brought here from the outside, and then it assimilated into our environment so that it's not harmful to the other plants around us.

A lot of people don't really know how it got here. A lot of speculation goes around the idea that it was traded among different Native American communities. The wood is really hard and very flexible, so it was very good for making things like bows, for bows and arrows and things along those lines.

There are also lots of uses for the fruit of the tree, something that we call a hedge apple. You've probably seen a hedge apple before: it's green, a little bigger than a softball, and it's very wrinkly. A lot of people called them monkey brains. And a lot of people will also use them to help repel spiders and other insects from their house. They'll simply chop them in half and they'll put them in their crawl spaces, or in the garages. However, science has shown that they actually don't do much for repelling spiders so I wouldn't recommend doing it, they do smell a little bit weird.

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Tree 4

This tree is what we call a shagbark hickory, and the easiest way to identify this guy is by his bark. His name actually says a lot about the tree to begin with. You'll notice that the bark on this tree is very, very loose. It's falling off and it has a kind of a shaggy look to it. That, along with the numerous amount of hickory nuts that will be made by this tree make it an excellent habitat tree. Animals and insects like to hide underneath the bark, and lots of animals will eat those nuts as they fall onto the ground, from squirrels to worms, even some birds and things along those lines.

Shagbark hickories are also important because this is the first tree we've seen today that has what's called a compound leaf. So most leaves will have one simple leaf margin on them, and that's it. That just what leaf is. Hickories, or compound leaves in general, have what we refer to as leaflets, a bunch of little pieces that look like individual leaves that come together to make one larger leaf. So what looks like

five, six, maybe even seven leaves on a shagbark hickory is actually just one leaf. And different trees that have compound leaves have different numbers of leaflets. A walnut tree can have upwards of thirty leaflets. A Kentucky coffee tree, our state heritage tree, can have up to a hundred different leaflets on it. So that makes it very unique.

You'll also notice that the hickory leaf has serrated edges. Remember, we said serrated is something that looks kind of like the edge of a serrated knife.

As far as human uses goes, hickories are used very similarly to maples and oaks. So, we'll see it being used a lot in furniture, and for flooring and houses. But it does have one additional use that is less common for those other hardwood species, and that is for smoking foods. If you've ever gone to the grocery store and you've seen something labelled 'hickory-smoked', maybe some bacon or some deli ham, things along those lines, that is when they've taken the wood from a hickory tree, burned it, and they've trapped that smoke in with those foods to give it a little bit of an extra flavor.

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Tree 5

The last two trees we're going to talk about today are going to be coniferous, softwood trees. What I mean by coniferous is a tree that is evergreen—which means it never drops its leaves—and it typically produces either cones or berries to protect its fruit.

When I say a softwood tree, what I mean is that the wood is very soft, typically because the trees grow very quickly. So they're lighter, they're easier to cut through, things like that.

The first one we're going to talk about is the Eastern redcedar, which is the tree that's right behind me. Eastern redcedars have what we refer to as scaled leaves, which means they have these very little, teeny-tiny leaves that overlap one another to give it kind of a scaled look, the way a lizard or a snake might. Another thing that makes the Eastern redcedar easy to identify is its bark. It tends to have stringy, kind of striped look, and it makes them kind of a red, or an orange color.

They also tend to be very aromatic, which means they have a particular smell. And this is important because that aromatic oil that's inside the bark is one of the major reasons that we use Eastern redcedars. We use them to build things such as trunks, or wardrobes that we'll put in closets, because that oil helps keep away moths, cockroaches, and other pests that might eat at the stuff that we would put inside those chests. We oftentimes also see Eastern redcedar used in panels for fences, because they help keep bugs out and so they will last a little bit longer.

10:56

Tree 6

The last tree we're going to talk about today is the white pine. And just like the Eastern redcedar, the white pine is a coniferous, softwood tree. And it's very easy to tell the white pine from other kinds of pines, just by looking at the number of needles that come in a bundle. In case you weren't aware, the needles are just the modified leaves of a pine tree. All pine trees have needles. And in particular, a white pine's needles come in bundles of five, as compared to something like a Virginia pine that would only have two needles in their bundles.

Pine trees also create a lot of what is called resin, and it's very similar to sap, except that it's much gooier and goopier and very, very sticky. If you've ever climbed a pine tree before, you probably know what I'm talking about. This actually serves as a way for the pine tree to protect itself. If insects burrow into the tree or their climbing along the sides, they can get stuck inside of the resin and then they are trapped there and they can't get out. In fact, if you look in historical timelines, fossilized resin comes up in the form of what we call amber. And oftentimes, inside those amber you can find ancient insects and small animals that have got stuck and died there. So that's a pretty cool, neat thing that we have that shows that pine trees, have been around for a very, very long time.

Pine wood is also utilized by humans, especially for lumber. It's our number one kind of lumber tree. Although, the kind of pine lumber that you're thinking of actually isn't typically made from white pine. White pine wood is very, very soft, so it isn't very good for structural supports. We might see it used in light furniture, we might see it used in wood trim on the sides of walls and things along those lines, but you're not going to see it for that structural wood that we would use to build houses and things along those lines.

It also is a kind of wood that is used pretty frequently for mulch, so if you find mulch at a house, there's a good chance that it's been made out of, if not pine, then at least some other kind of conifer.

12:50

Conclusion

That concludes today's episode of Exploring the Outdoors. Thank you so much for hanging out with us, and we'll see you all next time!