A Youth's Guide to the Acadian Forest

Growing the Roots of Knowledge

Forward

Like many of us who live within the Maritime provinces, I have a strong connection to the forest. Some of my earliest (and fondest) memories are of walking through the Bonshaw Trail behind our house, playing in treehouses and snow forts, and camping. I imagine it is not a coincidence that these memories all have a running woodland theme. This connection I have to the Acadian Forest has led me to develop a very real passion for how we see, treat, and utilize this amazing and beautiful component of the earth.

Although there is very little of the ancient, old-growth forest I read about in books or see in pictures of 'days gone by', I am happy to have the opportunity to make a difference in my own community, the communities in which I work, Prince Edward Island and beyond. We are all capable of making a change, by planting a tiny seedling, volunteering with a local environmental organization, or protecting a section of private woodland/forest stand. Thank you for taking the time to read this guide, and I hope it inspires you to see your local forest in a new light.

Kelley

About the author

Kelley Arnold graduated from Holland College in 2000 with a diploma in Environmental Technology, then went on to earn a Bachelor of Science degree in Environmental Studies from Saint Mary's University in 2007. She has both worked and volunteered for a number of watershed and environmental organizations, including the Hillsborough Area Watershed Co-op and the South Shore Watershed Association. Since 2009, Kelley has been employed by the Stratford Area Watershed Group and contracted with the Town of Stratford.

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Set off your senses

Imagine yourself walking out your door, down your walkway and across your street. Keeping going, and eventually you make your way to your backyard, a wooded park, or a forest. Close your eyes for a moment and listen. What do you hear? Take a deep breath; what do you smell? Perhaps you hear birds, mammals, and wind blowing through the trees. You might even catch a whiff of trees, leaves, moss and all of the other smells connected with a forest. I don't know about you, but I feel pretty relaxed and happy right now!

Now open your eyes and take in the beautiful sight of the trees, shrubs and flowers that you were listening to and smelling. Amazing sight, isn't it? If you're really lucky, you are gazing with wonder at the Acadian Forest….

My Friend, the Forest

Forests are amazing places, full of wonder and imagination! They are a complex and constantly changing environment, made up of many different living things working together to create a healthy place to live and play. Some of the organisms and components of a forest are:

- Wildlife (mammals, birds, amphibians, reptiles, fish and insects)
- Trees, shrubs, ferns, and wildflowers
- Mosses and lichens
- Fungi and microscopic organisms
- Water, nutrients, rocks, sunlight and air

TREE-via

A third of the earth's surface is covered by forest!

There are many types of forests around the world, from rainforests to boreal forests, but most of them have some things in common. One of the main similarities is the layers of a forest:

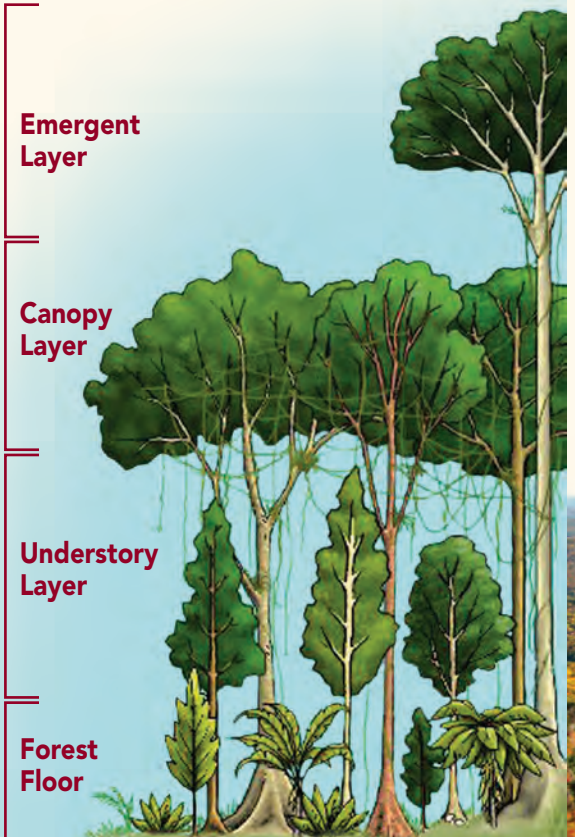
Emergent Layer — the tallest trees in a forest are the emergents. They tower over the other trees and get a lot of sunlight. Bats, butterflies and eagles are a few animals you might see here.

Canopy Layer — this layer forms a roof over the lower layers, and is usually a maze of leaves and branches. Many birds live at this level.

Understory Layer — There is much less sun-shine here; the plants are smaller, but grow larger leaves to get as much light as they can. These trees provide shelter for many species, such as birds, insects, and squirrels.

Shrub Layer and Forest Floor — it can be very dark here, but there are many species of wild-flowers, ferns and saplings. This is where the floor-dwelling mammals browse and hunt!

Forests provide benefits to all animals, including humans. Through photosynthesis, plants give us the oxygen we need to breathe, but they also absorb pollution and help clean the air. We need to protect our forests; help keep your forests in your area!



Introducing the Acadian Forest

There are many different forests in North America, with a wide variety of species of trees, shrubs, ferns, and wildflowers. If you visit a forest in Newfoundland, it will be different from a forest in Michigan, Alberta, Texas, or the Northwest Territories.

What forest do we belong to?

We belong to the Acadian Forest, a region that includes all of the Canadian Maritime provinces, areas of southern Quebec, as well as some of the northern New England states.

What makes the Acadian Forest special?

The Acadian Forest is a beautiful and diverse mix of hardwood and softwood trees, which create a wonderful place for many species of birds, mammals, amphibians, insects, and fish. It's also known as the "Lungs of the Maritimes", as every day the Acadian Forest helps filter the carbon dioxide and pollution in our air and give us back the fresh, clean oxygen we all need to breathe.

What does the Acadian Forest look like?

The Acadian Forest is home to 32 native tree species, ranging from baby seedlings to mature trees that are hundreds of years old. Each tree, of each age, plays a role in keeping our forest healthy. Healthy forests have a mix of young and old trees, as well as dead and dying trees which are very important for wildlife and for putting nutrients back into the system.

How old is the Acadian Forest?

Our forest began to grow over 10,000 years ago when the glaciers began to melt; these glaciers used to cover Canada and some of the United States. Once the ice was gone, species began to move north and grow. The Acadian Forest has the ability to become a very old forest, with many species living hundreds of years if left to grow without interference from humans or disease.

Did You Know?

The Acadian Forest has one of the most diverse communities of migratory songbirds in North America!

Types of Trees

Trees come in all shapes and sizes! There is a mind-boggling number of tree species on our planet; it is thought there are over 23,000 kinds! In Canada alone, there are about 180 species in almost 400 million hectares of land. These trees make forests, which are home to an estimated 140,000 species of animals, plants and microorganisms. Hard to imagine, isn't it? There are two main types of trees: Coniferous (softwood) and Deciduous (hardwood)... let's take a look at each.

Coniferous

Coniferous *(kon-if-ur-us)* trees tend to grow up instead of out, and very often have a typical triangle shape when looking at it from a distance. This makes the tree strong, and keeps the branches from breaking un-der the weight of snow or ice.

What is an Evergreen?

Most coniferous trees are evergreens, but there are some deciduous trees that keep their leaves year round.

Instead of broad leaves, a conifer has narrow hard leaves called needles, which are usually long, pointed and sharp. The needles or scales will often stay on the tree for several years, and then slowly fall off.

A conifer tree get its name from the cones that carry its seeds. When a cone opens up, the seeds fall out and are spread by animals or wind. There are some species that don't release their seeds unless there is a fire that destroys the parent tree!

In this booklet, we will be looking at the following coniferous trees:

- White Pine
- Red Pine
- White, Red and Black Spruces
- Eastern White Cedar
- Eastern Hemlock
- Eastern Larch
- Balsam Fir

Overall, coniferous trees grow more quickly than deciduous trees, and because it is able to stop water loss due to its small needles, it is able to grow in cold climates and poor soils. Talk about a hardy group of trees!

Deciduous

Hard Softwoods, Soft Hardwoods...huh?

To make things more confusing, there are some softwood trees that have super hard wood!

Deciduous *(de-cid-u-us)* trees spread out as they get older, and have a much more rounded shape than the coniferous trees. They have much broader, flatter and larger leaves, which catch the sun but can't survive without warmth and water. These trees are usually slower growing, but their wood is harder and lasts longer than that of coniferous. This is why deciduous trees are often called hardwoods.

When the summer ends and winter approaches, the leaves of the deciduous trees die because there is not enough sun and warmth for them to survive. This is when we see the leaves turn amazing shades of red, yellow, orange, gold and brown before they fall to the ground. The trees stop growing in winter, but when the temperature rises in the spring, the tree buds sprout and the leaves begin to grow.

The seeds of most deciduous trees are protected by a shell or fruit; they are spread by animals or wind.

This guide will take a sneak peek at these trees:

- Red Oak
- Sugar, Red, Striped and Mountain Maples
- White and Yellow Birches
- American Elm
- American Beech
- Trembling and Large-Toothed Aspens
- Black and White Ashes
- Butternut, Ironwood and Basswood

The Story of the Eastern White Pine

White Pine *(Pinus strobus)* can grow to be one of the largest trees in the Acadian Forest. In fact, some have grown as tall as 30 metres (98ft); that's just about as tall as a 3-story building! They often have a funny, flat-topped look because the tops of the older trees break off. This can make a white pine easy to see from far away. If left to grow, this pine can happily live up to 500 years old!

The Eastern White Pine is part of the coniferous tree family, with long soft needles in bundles of 5. These needles make the tree special, as it is the only pine in the Acadian forest with this many needles in a bunch!

TREE-via

During the times of sailing ships, white pines were used for masts because they grow so straight and tall!

Supportive Squirrels

The easiest way to collect white pine seeds is to collect the cones after the squirrels cut them from the tree. Thanks for making it easier for us!

Wild about the White Pine

Eagles love to nest at the top of these beautiful trees, and white pines are great homes for cavity-nesting birds like the black-capped chickadee and red-breasted nuthatch. Robins, blue jays and many other birds build nests in these trees, and the seeds are eaten by crossbills, juncos, squirrels, chipmunks, rabbits and mice. Talk about a popular tree!

The Story of the Red Pine

The Red Pine *(Pinus resinosa)* is a beautiful, tall straight tree, quickly becoming more rare in the Acadian Forest. With its orange-red flaky bark, it's no wonder its called the Red Pine! This tree can reach a height of 35metres (115ft), and sometimes live as long as 500 years.

This tree is different from the white pine, because its brittle needles are in bunches of 2. These snap easily when you bend them in half, very different from the non-native Austrian pine (which bend in half). Even though they are brittle, the red pine needles are thicker and stiffer than white pine. This species hates the shade, but will grow in windy sunny sites.

Gone with the Wind...

The light seeds of a red pine can be moved easily by the wind. They usually stay pretty close to home, but can travel as far away as 275metres (900ft)!

TREE-via

Red Pines are 'self-pruning', which means the tree gets rid of its own dead or dying branches. This makes it an easy tree to take care of!

Growing You OWN Roots of Knowledge Activity: Seed Hunt

There are so many ways in which seeds move in the Acadian Forest. The movement of seeds is super important for plant survival. Visit your backyard, local forest, nature trail, or wooded park and find as many different types of seeds as you can. Try and figure out what tree or plant they are from! Is there a way you can make them into art? Have fun!

The Story of the White Spruce

The White Spruce *(Picea glauca)* is one of the most common trees in the Acadian Forest, thanks to its ability to grow in many different conditions and climates. You will also see them in many homes in December, as they are a very popular choice for Christmas trees!

This coniferous tree can grow as huge as 40 metres (130ft), and live until the ripe old age of 350. This fast-growing species has medium bluish-green needles approximately 2cm (3/4in) with a whitish, powdery, waxy layer. They grow on all 4 sides, and are very stiff and sharp. The pollen cones are pale red, and the seed cones are a light brown or purplish colour with smooth edges; the cones hang from the upper branches.

Did You Know?
White spruce produce thousands of seeds, but only every 4 years!

TREE-via

The white spruce is a native to northern climates, and was one of the first trees to grow after the glaciers receded thousands of years ago!

The Spruce 'Super-Store'

White spruce forests provide shelter, cover and food for many, *many* wildlife species.

Moose, white-tailed deer and elk use these dense forested areas for protection from the heat and cold. A wide variety of birds snack on the seeds, such as chickadees, nuthatches, crossbills and pine siskins. Small mammals eat different parts of the tree, and prey species such as wolverine, lynx and wolves also use these forests for shelter and hunting.

The Story of the Black Spruce

The slow-growing Black Spruce *(Picea mariana)* is a transcontinental species, which means it's found from one side of Canada to the other. It's a smaller tree with a straight trunk and compact, drooping, branches with upturned tips. It can reach 15-30 metres in height (50-100ft), and live to be 280 years old. The tree often has a thick, dense clump of branches at the top because the red squirrels love to eat the tips. So if you're looking for a Christmas tree, this may not be first on your list!

The wetter the condition, the shorter the black spruce will grow; in fact, when grown in swamps, it is dwarfed to the size of a shrub. It can live on both lower and higher ground, but is common in wetter soils such as peat bogs and swamps.

TREE-via

Cones form at the top of the tree and can stay there for up to 30 years!

Take a Bite Out of Black Spruce

In winter, the snow-covered branches provide great protection from the cold ('thermal protection') for many animals in the forest. Red pine seeds are a main food for red squirrels, chickadees and nuthatches, and spruce grouse munch on the needles. Seedlings are eaten by hares and mice, and kinglets and warblers love to nest in the black spruce.

Black or White? What Spruce Am I Looking At?

It can be hard to tell the difference between spruces. One way to check is to look (closely!) at the branch under the needles. Is it reddish or covered in little red hairs? If the answer is yes, it's a black spruce; if it's pale yellow and bare, it's a white spruce.

Black spruce cones are egg-shaped; white cones are long and stretched out. Finally, look at the needles: black spruce needles are much smaller and stubbier than any other spruce! Black spruce needles are also very dull looking and smell a bit like mint when crushed between your fingers!

The Story of the Red Spruce

Once much more common, the Red Spruce *(Picea rubens)* has declined in numbers over the last 50 years, and is pretty rare in some parts of the Acadian Forest. These trees can live for up to 400 years, reaching a medium height of 25-30metres (80-100ft).

The needles are 4-sided (they grow from all sides of the twig) and are dark, shiny yellow-green. The needles are short, only about 1cm (0.40in) long, and curve inwards When crushed between your fingers, the red spruce needles might have a slightly orange smell! The twigs are reddish and hairy, and the new, bright growth comes out much later in the spring than the other spruces.

The bark of a mature tree is very thick and broken into reddish-brown odd shapes. Red spruce grow in mixed stands and can be seen in the understory of the forest.

Yummy Gum

Spruce gum was taken from this tree and used by chewing gum companies up until the early 1900's. Mmm, tastes like spruce!

TREE-via

Red Spruce is an excellent tonewood, which means it is a perfect tree to use for making musical instruments such as pianos, violins, and guitars!

Red Refreshments

Forests with red spruce tend to support a wide number of species. As with other spruces, this tree is great winter cover for deer and moose. Birds, porcupines, red squirrels and other animals eat different parts of the tree including the twigs and buds. In fact, some animals enjoy the taste of the red spruce so much that it could be one reason there are so few spruces... they eat all the seeds!

The Story of the Eastern White Cedar

This little tree doesn't often grow larger than about 12metres (40ft), making it one of the smallest trees in the Acadian Forest. Don't worry though, the mighty cedar *(Thuja occidentalis)* makes up for it's small size. The cedar can live to be about 400 years, but a 900 year old cedar was found in Quebec!

The cedar has fan-like branches and scaly leaves, making it look very different. It has reddish-brown bark that peels off in long strips. It loves to grow in wet areas such as swamps or damp spots on your lawn, but doesn't like to be in the shade. Make sure you plant it in a wet, sunny area!

How's it Growin'?

Cedar cones are a pale cinnamon brown, with woody scales that hide winged seeds, released a year after they 'ripen'.

TREE-via

The cedar is also called the "tree of life"; in the 16th century, Jacques Cartier discovered it could be used to treat scurvy!

Critter Comforts

A healthy cedar is a wonderful tree for humans and wildlife! The seeds are a favourite for many birds such as grosbeaks and pine siskins, but it is the amazing protection and cover for birds and small mammals that make cedars their Home. Take a look at a cedar tree next time you are near one; I bet you would have a hard time finding an animal in there because its hidden so well!

The Story of the Eastern Hemlock

The Eastern Hemlock *(Tsuga Canadensis)* is one of THE most amazing trees we have in the Acadian Forest, growing from Nova Scotia all way down to Alabama. It has the ability to live for a long time; some hemlock trees can live to be over 800 years old!

Hemlocks have small flat needles, similar to a balsam fir, but they are much smaller and droop at the end of the branches. Because of the sagging, these trees look very round when seen from far away. The needles are also a little bit softer than other coniferous trees.

The bark of a young hemlock is smooth and grey, becoming scaly with reddish-brown bark underneath. As the tree gets older, the bark turns a dark brown with flat-topped ridges and deep cracks.

If you are searching for a hemlock tree, look along a stream or river in areas with damper soil! They can survive in shaded areas, underneath the canopy of larger trees.

TREE-via

Hemlock was used for many different medicines. The bark alone was used for colds, fevers, diarrhea, coughs and scurvy!

Nests and Nibblers

Believe it or not, over 120 different species of wildlife use this tree for nesting and feeding! Some animals who enjoy the eastern hemlock are snowshoe hares, squirrels, porcupines, black bears and deer. It's not only birds who use these beautiful old trees for their homes, raccoons love to dig cavities for dens and nurseries. Large hives of honeybees can sometimes be seen hanging from the branches!

Sounds a Little Cone-y to Me

Since hemlocks are becoming more rare, it's very important to help bring them back to the Acadian Forest! By collecting seeds, you are helping to keep this amazing tree species in our forest. Cones can be collected in late September, placed in a paper bag, and kept in a warm place until the spring.

Don't forget to punch a few holes in the bag for air! When you're ready, plant the seeds about 2.5cm (1in) apart and about 6mm (0.20in) down. Ta-da!

Trees Have Friends Too!

The Eastern Hemlock is a social tree that enjoys being surrounded by friends such as the Yellow Birch, Red and Sugar Maple, White Pine and Red Spruce. If you decide to do a little planting, plant some of these species in the same area so the hemlock doesn't get lonely!

Growing You OWN Roots of Knowledge Activity: Animal Count

The Eastern Hemlock is one of the most important trees in the Acadian Forest for food and nesting. If you have a hemlock in your backyard, on your schoolground, or along your local nature trail, pick one as 'your' tree! Study it when you are walking by or eating your lunch and keep track of how many different species of animals are in, on or under the tree. You will be surprised at how many creatures love the hemlock!

JOKE'S ON YOU!

Why was the cat afraid of the tree?
Because of its BARK!

The Story of the Eastern Larch

The Eastern Larch *(Larix laricina)* is one of the most unique trees within the Acadian Forest. Why, you ask? Because it is the only conifer that sheds its needles each winter, and because the needles also turn a bright, warm yellow before they drop. Pretty amazing!

This tree likes to stick around boggy and wetter areas, and very rarely reaches over 20metres (65ft) tall; this is about 2 stories high. Larch trees are super resistant to rotting, which makes them great trees for railroad ties and telephone poles!

The bark of a larch/tamarack is thin, smooth and grey when young, and becomes thick, scaly, rough and reddish -brown when it ages.

TREE-via

Larch is also called Hackmatack, which literally means "wood used for snowshoes" in Algonquian!

Did You Know?

Larch needles are incredibly soft to the touch; very different than its Acadian forest brothers and sisters. Go run your hands along a branch!

Wildlife May... Not Be so Wild About the Larch

Although the Eastern Larch may not be as popular with local wildlife as other species, it is still a food and nesting source for some within the Acadian Forest. Its twigs and bark are browsed by snowshoe hares and porcupines, and seeds are stored and eaten by some species of squirrels and mice.

Nicknames Galore!

The larch is known across North America by many different names such as tamarack, hackmatack, black larch, red larch and American larch. Who would've thought one species would have so many nicknames?

Just One Big Happy Family

The eastern larch LOVES to be around other trees, and is definitely a social tree with a lot of friends! You will often see the larch with black and white spruce, white cedar and red maple. It is also good buddies with native shrubs like willow and cranberry!

Growing You OWN Roots of Knowledge Activity: EXplore the Colours in Nature

The eastern larch/tamarack is a beautiful tree in the fall, with an amazing bright yellow that catches your eye when you walk or drive by! Take some time to explore the wonderful range of colours in the 'great outdoors'! Try to find all of the colours in the rainbow. Once you have gathered all of your outdoor colours, put a strip of double-sided tape on a piece of card and stick them on from darkest to lightest, or in different shades of the same colour. Have fun and make art!

The Story of the Balsam Fir

Next to the spruces, the balsam fir *(Abies balsamea)* is the most common evergreen tree in the Acadian Forest. The fir can live to be 150, and grow up to 30 metres (100ft) tall. It has a dull green and grey bark dotted with raised resin blisters (careful, they are sticky!). Its needles are long, dark, shiny green on top with 2 white lines underneath.

This tree can grow in a many conditions and climates. It can be seen in mixed forests, or popping up alongside spruce in an old abandoned farm field. Its favourite location; however, is a place where it can sun itself with moist, rich soil.

TREE-via

With its steeple-shape and amazing scent of its needles, it is no wonder the balsam is the perfect choice for a Christmas tree!

Snacks and Sanctuary

The balsam fir is an important tree for wildlife in the Acadian Forest, with many relying on this tree for shelter, food and protection from predators. Deer use balsam for cover and shelter, and fir stands can even be used as deer hangouts during severe winters. Snowshoe hares, mice and voles love to seek shelter under this tree, and bears strip bark and lick the exposed surfaces between the bark and wood!

Buds, tips and needles are eaten by some birds (especially in winter) such as the spruced grouse and ruffed grouse.

I Can't Roll With It

If you aren't sure the tree is a balsam, take a needle and try to roll it between your fingers. Balsam needles are flat; they won't roll!

A Sticky Band-Aid

Balsam fir have a clear, oily resin (goo!) in raised areas along the smooth bark. This incredibly sticky liquid is used to help protect the tree when it's wounded, trap insects before they make their way inside the bark, and fight off any organisms or fungi that might try and invade the tree!

Did You Know?

"Canada Balsam" oil is used for countless purposes like coughs, colds, deodorant, disinfectant, and fighting fatigue. It is a great way to help seal'n heal cuts and scrapes, and has been sold in stores as chewing gum and throat lozenges!

Growing Your OWN Roots of Knowledge Activity: Through the Lens of a Camera

A camera in small hands (or big ones!) can bring people close to nature in wonderful and interesting ways! Once the ON button is pressed, kids feel the urge to observe nature and all of its details! Take photos of anything and EVERYTHING. Animals, insects, flowers, leaves, trees, water, sky ...the possibilities are endless. Take photos close up, far away, upside down or through a binocular lens. When it comes to photography, there are no rules!

Print off your photos and put them in an album, or frame them and place them around your house. Are you new at it? Don't worry; practice makes perfect! Grab your camera and get outside!

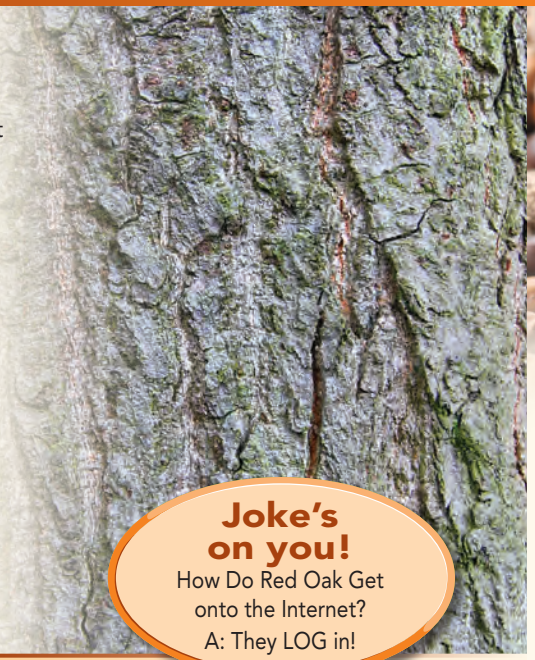
The Story of the Red Oak

Red Oaks *(Quercus rubra)* are amazing trees! In the right conditions they can grow fast, both in sun and part-shade. Keep in mind that when oaks are young they grow slowly, but if kept healthy and free of competition from other trees around it, can as tall as 30 metres (100ft) and live as long as 500 years!

Oaks are happy almost anywhere, as long as they are growing in well-drained soils. This means they don't like to have their 'feet' wet, so don't plant them in areas that puddles gather.

Red oak leaves are waxy and oblong, with 7-11 lobes and sinuses.

The leaves are the easiest way to spot a red oak, but its bark is smooth and dark grey that develops deep ridges as the tree gets older.



Joke's on you!
How Do Red Oak Get onto the Internet?
A: They LOG in!

TREE-via

There are over 600 types of oak trees across Earth. And I bet YOU thought you had a large family!

The Red Oak Restaurant

The red oak is not only loved by humans, but by animals too! Acorns are at the top of the list for many smaller species such as blue jays, ruffed grouse, squirrels, snowshoe hares, and raccoons. If you live outside of Prince Edward Island, you may see black bear and deer nibbling on buds, twigs and acorns.

The Miracle of Survival

Red oaks produce seeds called acorns, which can be 2-3cm (1in) long, and fairly round with a scaly cap on the top. They are too heavy to move by the wind, so they are moved by animals such as blue jays and squirrels. Just another reason to love the animals in your backyard!

A Rare Treat in Some Areas

Even though it may not be common anymore on PEI, the red oak is Prince Edward Island's official tree. They are special trees that are now being planted by many groups across North America. Next time you see a red oak, give it a BIG hug!

Growing You OWN Roots of Knowledge Activity: Collect and Prepare Acorns for Planting

Find an oak tree and gather some acorns (usually around September-October). Soak the acorns in water for about 24 hours and keep the ones that sink to the bottom. Air dry them, place in a plastic bag in with a slightly damp paper towel (squeeze out the extra water) and put in the fridge for up to 4 months...be sure to let your parents know they are in there!

In the spring, take out the acorns and plant about 2.5cm (1in) deep in a container with potting mix OR soil and compost. Put the container in a nice sunny area, away from wind (maybe a nice spot on your patio!). Be sure to plant them in your yard before winter and protect it from little critters...but you might want to get help from your parents or guardians for that!

The Story of the Sugar Maple

Although sometimes confused with other maples, the Sugar Maple *(Acer saccharum)* is a stunning tree within the Acadian Forest, and one that deserves a big round of applause! These maple trees can reach up to 25metres (80ft)) and can be over 1metre (3ft) in diameter. They grow straight and tall within the forest, but can be shorter with more branches when grown out in the open. The sugar maple enjoys a long life , sometimes living for 300- 400 years.

The leaves have five sharply-pointed lobes, with rounded notches in between; it is the rounded inner notches that make the sugar maple different from the red maple. The fall colours are spectacular, ranging from yellow to orange to reddish. Amazing!

The bark is smooth and grey when it is young, but becomes darker and splits into ridges that curl out when it ages.

Joke's On You!
What Did you Little Tree Say to the Big Tree?
LEAF me alone!

TREE-via

It takes about 40 litres of maple sap just to make 1 litre of syrup!

Famished Fauna

The seeds, buds, twigs and leaves of sugar maple are eaten by deer, moose and snowshoe hares; this is seen more often in the winter. Different species of squirrels can also be seen nibbling on the bark and stems.

If I Had Wings I Would Fly

Every 2-5 years, the sugar maple produces yellow-green flowers in the spring in huge numbers. When this happens, the tree has almost a 'glow' from far away! The winged seeds (samaras) develop from the flower, and are released in the autumn in enormous numbers!

Did You Know?
Maple syrup was first recorded way back in 1540 by Native Americans who used the sugar maple's sap. That's some OLD syrup!

Growing Your OWN Roots of Knowledge Activity: Visit a Maple Syrup Farm

Mmmm, few things trigger the memory of a Sunday morning breakfast like the smell of maple syrup. You know what it looks like in the bottle or on your pancakes; why not see how it all begins? Visit a local maple syrup farm and learn the process, from tapping the trees to boiling the sap down to syrup. It's a fun-filled day for the whole family! Not sure where to go? Google "maple syrup tour", or ask your friends and family.

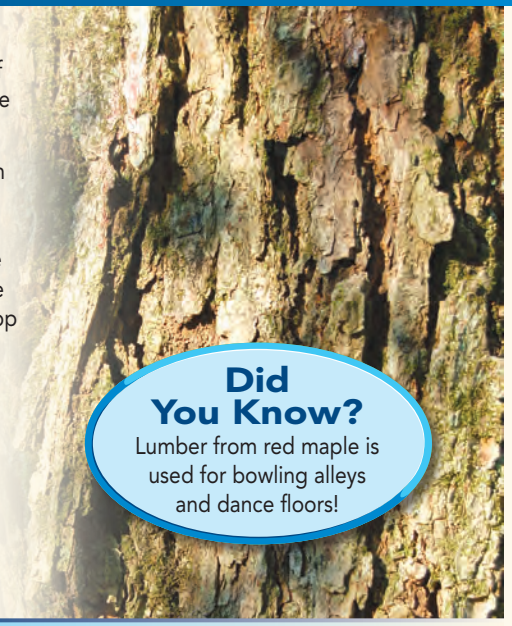
The Story of the Red Maple

Most Canadians would know what a maple leaf looks like; all you have to do is look up a flagpole and see one proudly displayed on our flag.

The red maple *(acer rubrum)* is a beautiful tree in the Acadian Forest. With its bright red leaves in fall to its ruby red flowers in springtime, it's the only species with its signature colour on the tree throughout all 4 seasons! Red maple leaves have 3 lobes with small jagged teeth, dull green on top and pale green or whitish on the bottom.

This tree can grow up to 25 metres (80ft) tall; that's half the size of an Olympic-sized swimming pool! When talking tree-years, it only lives 80-100 years.

The bark of this maple is smooth and light grey when it is young, but eventually turns greyish-brown and scaly.



Did You Know?
Lumber from red maple is used for bowling alleys and dance floors!

TREE-via

The maple leaf didn't become Canada's national tree emblem until 1996!

'Deer" Red Maple

There are a lot of animals who enjoy nibbling on the Red Maple, including the white-tailed deer, moose, elk and snowshoe hare. In fact, this tree is very important for the deer in many parts of the Acadian Forest in fall and winter.

The red maple is browsed by birds such as the woodpecker and sparrow, but is a shelter or a nesting tree for bluebirds, snakes, peepers and skunks!

I'm Gonna Spread my Wings and Fly!

Red maple fruits are called samaras, which have a seed sealed up inside on one end, and dry wings at the other. These are often called whirly-birds, because the wing makes them spin when they fall from the tree!

Here I 'Grow' Again...

The Red Maple is a generalist tree, meaning it will grow in many different places. It will actually change how it grows depending on where it's planted. That must be why it's one of the most common trees in the Acadian Forest!

Growing Your OWN Roots of Knowledge Activity: Wax Leaves

Collecting leaves is a simple and interesting way to look at many leaves in the Acadian Forest. We have so many shapes, colours and sizes; why not make them into a collage or leaf garland for your home or classroom?

Choose beautiful leaves that haven't begun to dry up or curl, and put them between two sheets of waxed paper. Cover your ironing board with a rag so you don't get wax on the board, and place your wax sandwich in between two rags on the board. Under the supervision of an adult, heat the iron to high (with no steam!) and iron your sandwich carefully for about 4-5 seconds. Cut around the waxed leaf and decorate with them to create a forest piece of artwork!

The Story of the Striped Maple

One of the Acadian Forest's 4 native maples, the Striped Maple *(Acer pensylvanicum)* is an under-story tree, rarely growing tall enough to reach the forest canopy. This shrubby species only reaches 4-10metres (10-30ft) high.

A striped maple can be easily spotted by the light vertical stripes on its greenish bark. However, its large 3-pointed "goosefoot" leaves, which can be up to 30cm (11in) wide, are also a giveaway. Beautiful clusters of bright yellow, bell-shaped, drooping flowers bloom in May-June, with a winged samara that ripens and spreads in autumn.

The striped maple prefers cool, moist forests, often seen on hilly slopes and in the shade.

TREE-via

The stripes on the young bark allow the striped maple to photosynthesize better in the shade, even before its leaves come out in spring!

Munchin' on Moose Maple

The striped maple is also called moose maple, as moose are very fond of eating the twigs in winter! Deer, rabbits and porcupines also prefer to browse from this tree. When other species are not as plentiful, beavers and caribou have also been known to take a few nibbles.

Even though it may not be eaten by many types of animals, it is a great tree for protecting wildlife during nesting, feeding and perching.

The Story of the Mountain Maple

The mountain maple *(Acer spicatum)* is considered both a large shrub and a small tree, due to its small size and place in the understory of the forest. It's found on moist, rocky sites, higher up on hills and cliffs.

It's a small bushy tree, hardly reaching above 6 metres (20ft), with thin red-brown bark and reddish twigs. The 3 -lobed leaves can grow as large as 10cm (4in), and are arranged opposite each other on the twig; they are dark green above and covered in white fuzz under- neath.

Amazing, small colourful flowers bloom in May-June along an erect stalk throughout the tree branches. The winged samaras are a brilliant red and mature late in the summer.

TREE-via

This is one hairy tree! The twigs and buds are all covered with very short grey hairs!

A Mountain Maple by Any Other Name... is Still a Mountain Maple!

The mountain maple is also known as the low maple, moose maple ,water maple and moosewood! Do you think it answers to all when you call them?

Meals Fit for a Moose

Like the striped maple, the mountain maple is favoured by moose within the Acadian Forest. The bark is also eaten by deer and beavers. The ruffed grouse will eat the buds that form in the spring of the year.

The Story of the White Birch

The White Birch *(Betula papyrifera)* is very common within the Acadian Forest, making it an easy-to-spot tree, perfect for kids who are just starting to learn about tree species.

It can be hard to recognize a white birch when it's young, because all birches start out with reddish-brown shiny bark. However, when it gets a little older, the bark becomes a brilliant white and peels off in large strips. You may also notice small black marks or scars on the bark.

A white birch can live to be 150 years, reaches up to 20 metres (65ft), and likes to grow on dry areas out in the open.

TREE-via

The white birch is also called the paper birch, and in the past had MANY uses such as canoes, baskets, spears arrows, snowshoes and firewood!

A Popular Place to Prowl and Perch

The white birch is a popular hangout for animals! It's a favourite feeding tree for sapsuckers, hummingbirds, siskins, grouse and chickadees, but moose, deer, hares and even beavers enjoy the taste of this common tree. It's a great place to peck out nesting holes (cavities) by woodpeckers, nuthatches and tree swallows. Talk about a busy tree!

Tree Armour

The bark of a tree is often called its armour, meaning it's there to help protect the tree. Although it's ok to grab some birch bark if it's just about to fall off the tree, pulling at the bark can leave it open and vulnerable to weather, disease and insects. Feel the hanging bark to see if it's dry; if so, then it's ok to take it off.

When in doubt, leave it where it is!

What is a Catkin?

A catkin is a long, slim flower with no petals that grows on certain species. You can see them hanging off birch trees in May-June, and can grow as long as 10cm (about the size of a small package of Kleenex!)!

Did you know?

The White Birch is a great tree to have around if you are camping out in the woods! The sap from this tree can be drunk right from the tree, and its papery bark can help start campfires!

Growing Your OWN Roots of Knowledge Activity: Make a White Birch Picture Frame

If you live near white birch, you will see pieces on the ground where the bark has fallen off the tree. Grab a few pieces and let them dry for a few days before you start. Ask if you can use an old simple picture frame that might be laying around the house. Get glue and some scissors. Cut up some pieces of the white birch and glue them flat along the front of the frame, being careful not to cover up too much of where the picture will be. Put a lovely photo in and enjoy nature all year long!

The Story of the Yellow Birch

The Yellow Birch *(Betula alleghaniensis)* can be one of the tallest hardwood trees in the Acadian Forest, with a height up to 25 metres (80ft)! This tree is easy to spot by its golden-yellow bark, which tends to shred off rather than peel in large strips.

The lifespan of a yellow birch is about 150 years, and can easily live in the shade; this is why you will often see large old birches along streams, and in older sections of forest.

The yellow birch leaves are about 10cm (4in) long, oval, and have very fine teeth along the edge. They are a dark green on the top, with a pale green underneath.

Birch seed is grouped in strobiles (cones), which break apart easily to release the seeds in- side.

Joke's On You!

What did the birch wear to the pool party?
Swimming Trunks!

TREE-via

Although not as sweet as maple, the Yellow Birch can also be tapped to make syrup!

Take a Bite out of Birch

Because birches can produce a huge number of seeds in a year, birch seed is a super important food source for many winter birds like the American goldfinch, northern junco, chickadees, blue jays and sparrows. Not only are the seeds eaten, but twigs, leaves, and bark are nibbled on by moose, white-tailed deer, snowshoe hares, insects, and squirrels. In fact, you might even see squirrels sipping on the yellow birch sap!

Minty Fresh

The yellow birch is one of the freshest smelling trees in the Acadian Forest! When you scrape off the outer bark on a yellow birch twig, it smells like wintergreen! How many other trees do you know smell like toothpaste?

Sneaky (Sticky) Hunter

There are wonderful animal hunters on our planet, including the Yellow-Bellied Sapsucker! This smarty-pants woodpecker will drill a hole in the birch to let the sap run. The sap will then attract ants and other insects, which will all be licked up by the bird using its special tongue. AMAZING!

Growing Your OWN Roots of Knowledge Activity: ADOPT-A-TREE

Do your parents ever measure your height? Do you like having something to take care of? ADOPT-A-TREE in your backyard or in your schoolground! Learn all about a tree and watch it grow!

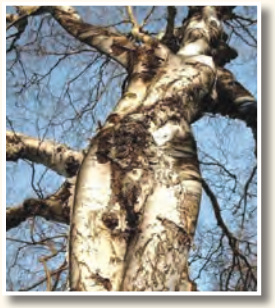
Look in the back of this guide for ADOPT-A-TREE activities!

The Story of the Grey Birch

The Grey Birch *(Betula populifolia)* is one of the Acadian Forest's native birches, but it's the kid brother or sister of the others because this tree is so much smaller. It grows only to about 6-11metres tall (20-35ft), and doesn't live as long as its siblings, living only 20-50 years.

Although it has white bark like a white birch, it hardly ever peels, and has very visible black marks under each branch. It's small leaves look almost like a triangle, with a very long tapered tip. They are usually about 5-7cm (2-3in) long.

The grey birch does not like to be in the shade, and can be found on dry sunny sites such as old fields or burned areas.



TREE-via

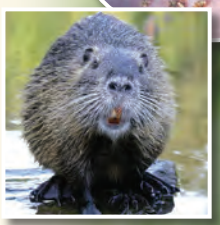
In nature, the grey birch is usually found with white birch. Talk about best buddies!

Common, But Still Special!

Grey birch is still fairly common hardwood, and don't often need much help with conservation. Don't forget about them though; they are still great for planting!

Grey Birch Grub

Although not as many critters like to munch on the grey birch, there are some that still find it a tasty source of food! Beavers and porcupines chew on the bark and wood, and sapsuckers feed on the sap. Chickadees and siskins enjoy the seeds, and the catkins are eaten by the ruffed grouse. Don't forget that twigs can also be a toothy treat for hares, moose and white-tailed deer!



The Story of the American Elm

This majestic vase-shaped tree *(Ulmus Americana)* is one of the Acadian Forest's most stately trees. The elm has the ability to grow up to 20metres (65ft) and to live for about 90 years.

The American elm has a simple leaf, with teeth along the edge and a texture like sandpaper. It is capable of self-pollination, with small purple-brown flowers that are carried by the wind. Its fruit looks similar to a pumpkin seed, flat and broad with a circle wing surrounding the seed.

Elms love to grow in moist, rich soil where the water table is near the surface; that way it can drink tonnes of water up through its roots. Add the sun and it's a perfect location for an American elm.

TREE-via

Once common throughout the region, the introduction of Dutch Elm Disease in the 1930's decreased the number to a point where it is very rare to see a mature elm.

Elm Eatery

Deer and rabbits will eat the leaves and twigs, the seeds are consumed by some small birds, and the flowers and fruit can be nibbled by mice, bobwhites, and squirrels.

Interestingly, this tree is a larval host and source of nectar for several butterfly species such as the Question Mark, Eastern Comma and the Painted Lady!

The Story of the American Beech

The American Beech *(Fagus grandifolia)*, is a special tree, because it's the only species of its genus in North America! This slow-growing tree can live up to 400 years, and reach a height of 30 metres (100ft).

The beech favours shade more than most Acadian Forest trees, and does not like growing in areas of pollution, salt or hard soil. Its easy to spot a beech tree by its large leaves (up to 15cm or 5in) that are elliptical in shape, and very course with saw-toothed edges. The leaves are a dull green on top and light green underneath, which turn yellow-brown in the fall.

Beech bark is also special, as it's the only bark that stays very smooth and pale gray, even when it's hundreds of years old!

Did You Know?

Beechnut chewing gum, a company that sells candy, has nothing to do with the beech tree!

TREE-via

The smooth bark of the American Beech is a tempting place to carve names or initials. It's not a great idea, though, as the marks will make the tree less beautiful and can be an easy place for harmful insects and fungi to enter!

A Picnic at the Beech

The American Beech is loved by so many animals, there is no way we could list them all in this guide. From moth caterpillars to leafhoppers, it is a popular tree for insects and beetles (some good, some bad). Beech nuts are a food staple for many birds and mammals; some of these birds include the ruffed grouse, wild turkey and wood duck. Mammals that love the taste of beech nuts are squirrels, mice, and wild pigs.

The leaves and twigs are sometimes eaten by white-tailed deer, but it's not their favourite.

This Tree is Nuts!

The beech tree produces flowers that eventually become nuts with very prickly husks. These husks start out green, but turn brown as the nuts ripen. Each husk contains 2 nuts, each in the shape of a triangle! Keep an eye out for them on the ground during the fall and collect them to eat later.

Dry them in a warm, dry place for a couple of months, crack them open and enjoy the nutty taste!

Trees Get Sick Too... Beech Canker and Beech Bark Disease

It's always sad to see a sick tree, and the beech tree species is one of the sickest in the forest. Over the past 200 years, the Beech Bark disease has been killing and deforming beech trees throughout the Acadian Forest.

What causes it? The disease occurs when the beech scale insect attacks the bark and wounds it, causing a canker to develop (the bumps and holes on a beech tree). The trees do not grow well, are much weaker, and produce a lower amount of food for wildlife.

Growing Your OWN Roots of Knowledge Activity... Participate in Local Tree Planting

Whether you participate alone or as a family, class, school, group, you CAN make a difference!

Contact your local watershed group or environmental organization to see if you can attend a tree planting event in your community. If not, then contact these groups to see if they can provide you with some trees to plant in your own backyard! Better yet, organize a tree planting event. The possibilities are endless.

"Rebuilding a Forest One Tree at a Time"

The Story of the Trembling Aspen

The Trembling Aspen *(Populus tremuloides)* is the most widespread tree in North America. Known by many names (such as the quaking aspen), it grows in many conditions, and is very quick to sprout up where there is bare soil or disturbed sites. It needs a lot of sun to survive though, so be sure to plant it in a sunny area.

The aspen is a short-lived tree, and doesn't often grow taller than 15metres (50ft). It is known for its beautiful smooth white bark, marked with black scars. Its glossy green leaves are small and somewhat heart-shaped, with a very fine saw-toothed edge. The leaves are small, averaging around 5cm (2in).

Aspen trees reproduce and spread very quickly, growing new root systems underground that sprout new trees close by. This can form aspen forest stands, with some of the roots dating back thousands of years!

TREE-via

The trembling aspen gets its name from the noise the leaves make at even the smallest breeze. This is due to its flattened petioles (the part of the plant that attaches the leaf to the stem)!

This is One Fluffy Tree

Aspen catkins are tiny, green flower clusters that look like long, soft, fuzzy caterpillars. Sometimes when you're walking in a forest you will see white fluffy pieces on the ground; it's the catkins after they have been moved by the wind!

Tremblin' Take-Out

The Trembling Aspen is a great habitat for wildlife who need young forests, including hare, black bear, deer, elk and several smaller birds. The ruffed grouse uses all sizes of aspen trees for nesting, breeding and winter food. Little creatures such as caterpillars, moths and butterflies nibble on the leaves.

The Story of the Large-Toothed Aspen

The Large-Toothed Aspen *(Populus grandidentata)* is very similar to the trembling aspen, but there are some basic differences that separate the 2 species. The most obvious difference is the bark; the large-toothed aspen has a thin, grayish-green bark that is smooth on younger trees, and becomes a dark green or brown as it gets older. The bark also is ridged with diamond-shaped raised pores and splits.

The leaves are bigger than the trembling aspen, reaching as large as 10cm (4in). They have rounded, coarsely-toothed edges with white fuzzy hairs underneath. This medium-sized tree can grow up to 20metres (65ft), but only lives about 60 years.

Like its aspen relatives, the large-toothed tree spreads by sending up root suckers, which spread underground and form clones close by.

Did You Know?

Because this tree is one of the first to grow in a bare area (pioneer species), the big-toothed aspen produces a huge number of seeds. In fact, 1.5 million seeds can be dispersed from a single tree!

TREE-via

The large-toothed aspen is used for many different items, including log homes. Chopsticks, pallets, hockey sticks and ladders are also made from aspen!

Large-Toothed Lunch

Aspen forests is a good habitat for ruffed grouse, whose most important food sources are the leaves and flower buds. The root suckers are delicious snacks for the moose and white-tailed deer, and the bark, branches and leaves are preferred by beaver.

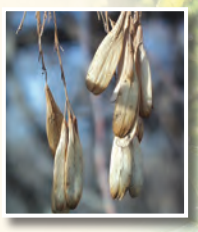
The Story of the Black Ash

The Black Ash *(Fraxinus nigra)* is a slender tree that can reach 20 metres (65ft) . The ashes are very different than the other trees in the Acadian Forest, because they have oval-shaped compound leaves (7-11 leaves on each stem), tapered to a fine point at the tip. Each leaf is attached directly to the stem, and has little clusters of rusty hairs where the leaf meets the stem. The leaves turn yellow in the fall, different from other ash trees in its family.

The bark of a black ash is gray, thick and corky, eventually becoming scaly and full of grooves when it ages; this tree can live up to 300 years! You can find them thriving around streams and at the bottom of slopes, but hates the shade and should be planted in a sunny location!

Tree-via

The tree is called basket ash, because the wood layers can be peeled off in long strips. The wood is then used to weave baskets by some First Nations peoples.



Don't Throw Away the Key!

The black ash has bunches of winged seeds, called keys, because of the way they hang down from the twigs! The seeds are so small and flat, they are barely thicker than the wings!

Seeds, Seeds and More Seeds

The popular part of the black ash is the seed, eaten by many birds such as the wood duck, quail, bobwhite, purple finch and grosbeaks. Mammals like the beaver, porcupine and mice will also sneak in and grab some seeds! White-tailed deer and moose will bite off the twigs and leaves.

The Story of the White Ash

The White Ash *(Fraxinus Americana)* is the tallest of the ashes, growing as high as 25metres (80ft). A fairly common tree within the Acadian Forest, it prefers sunny spots, but will tolerate part-shade. Unlike the black ash, this tree does not like to grow in wet soil!

The white ash have 5-9 (usually 7) leaflets on each compound leaf, each attached to the stalk with a small stem. This is different than the black ash, whose leaves are attached directly to the stalk. Confused yet?

The bark on a white ash tree is dark gray, with deep, narrow grooves and diamond-shaped ridges. Sometimes it's easier to tell a white from black in the fall, as the autumn leaves of a white ash are a reddish or purple colour.

Tree-via

The white ash was used for medicine and healing by Native Americans. For example, the juice from the leaves was used on mosquito bites to help swelling and itching!

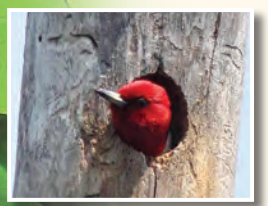
Sporting Sensation

The wood from white ash is used to make tennis rackets, baseball bats and hockey sticks!

Woodpecker Paradise

The white ash is a perfect home for woodpeckers and other birds who nest in tree cavities. Red-bellied, red-headed, and pileated woodpeckers are the main species who live in these trees, but wood ducks, owls and nuthatches also use the ash for their homes.

The samaras (seeds) are browsed by squirrels and mice, and the bark and twigs are eaten by deer, beaver and rabbits.



The Story of the Butternut

There is some talk about whether the Butternut tree *(Juglans cinerea)* is a member of the Acadian Forest, but since it grows within the forest range, it is now part of the family! The butternut is a medium-sized tree, reaching between 20-40metres (65-130ft). It is a short-lived tree though, rarely living longer than 75 years.

Because butternut does not like a lot of shade, it will not be seen underneath other trees in a forest. It will grow in scattered groups along fences or in open fields. If in light shade, it will become a handsome tree with a large open crown.

This leaves of the butternut are compound and large (40-75cm or 15-30in), with 11-17 leaflets on each stem. The leaflets are directly attached to the stem, are hairy both above and underneath, and have very fine, sharp teeth.

My Family is Nuts!
The butternut is actually part of the walnut family!

The Butternut Canker

Butternut trees of all ages are being killed by the canker disease, a fungus that creates cankers under the bark and 'strangles' the tree by stopping the flow of much-needed water and nutrients. Look for dark, sunken cankers (looks like soot), and dying or leafless branches! If you see this, contact your local natural resources department!

TREE-via

The butternut tree is not as common as it used to be; in fact, it is now on the endangered species list. If you are able to plant butternut in your area, it will help this wonderful tree in our forest!

Hairy Fruit. YUM.

These lemon-shaped fruits have a sticky, hairy yellow-green husk, which do not break open when they mature, but rely on decay or animals to crack the shell and release the seed!

Take a Bite Outta the Butternut

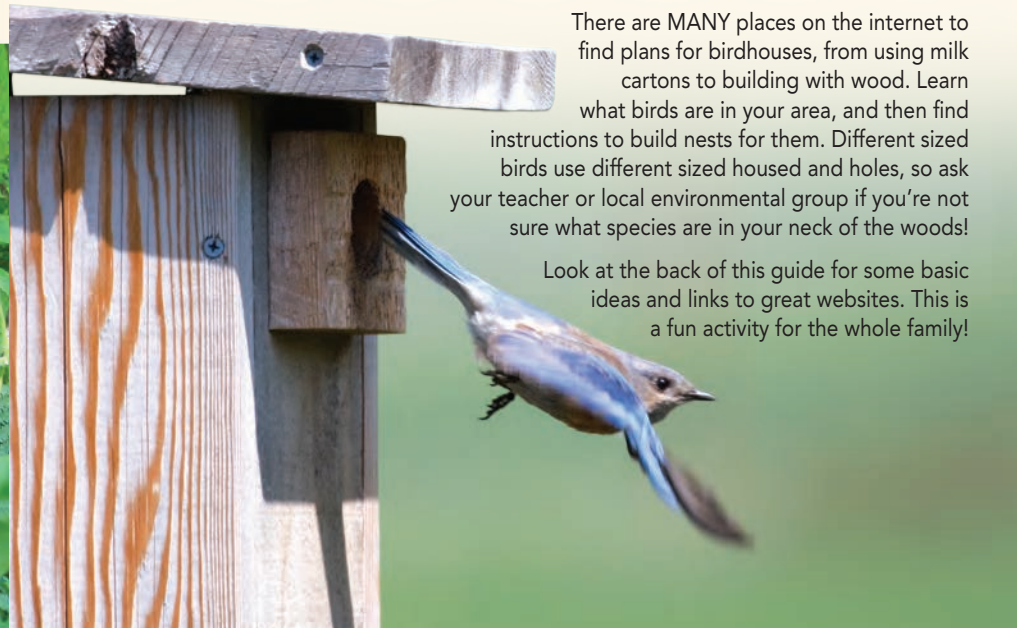
The nuts are eaten by blue jays, red squirrels and chipmunks, but other smaller birds and mammals will snap up the butternuts on the ground that have split naturally or been eaten by larger species! Humans also collect the nuts for baking and making candies, as the nuts have an oily texture and lovely flavour.

Growing Your OWN Roots of Knowledge Activity: Bring the Birds to Your Backyard!

What if you didn't have a roof over your head when you sleep, eat and relax? Many species of birds need a place to build nests, feed their young and hide from predators. Help them out by building birdhouses for your backyard or school!

There are MANY places on the internet to find plans for birdhouses, from using milk cartons to building with wood. Learn what birds are in your area, and then find instructions to build nests for them. Different sized birds use different sized housed and holes, so ask your teacher or local environmental group if you're not sure what species are in your neck of the woods!

Look at the back of this guide for some basic ideas and links to great websites. This is a fun activity for the whole family!



The Story of the Ironwood

The Ironwood *(Ostrya virginiana)* is one of the most rare trees in the Acadian Forest region, often found only in scattered patches. Also known as the American Hophornbeam, it's a fairly small and short-lived tree, reaching about 12metres (40ft) tall and 150 years old.

The bark of a hophornbeam is brown to gray-brown, with small shaggy plates that flake off as the tree matures. Its leaves are simple, alternating, and oval-shaped with sharp teeth that get larger towards the tip.

This is an understory tree (underneath the taller trees), and loves to grow in rich, moist soil in part-shade of other trees.

Hoppity Hop

The fruit of an ironwood is a small, smooth nutlet, 5-8mm long, and surrounded by a small, flat inflated sac. The fruit and its cover look a lot like hops, which are flowers grown on a hop plant and used in the making of beer!

TREE-via

This tree is called the ironwood because its wood is the hardest, densest, and heaviest of all Acadian Forest species!

Hophornbeam Home-Cooking

The nutlets and buds of an ironwood are eaten by birds such as pheasants, grouse, purple finches, wild turkey and rose-beaked grosbeak. Mammals enjoy the taste of this tree , especially red and grey squirrels, deer and cottontail rabbits.

The Story of the Basswood

Although quite rare on Prince Edward Island, the Basswood *(Tilia Americana)* is a tree seen throughout the rest of the Acadian Forest region. Also known as the linden, this medium - sized tree can live for up to 100 years and reach a height of 20 metres (65ft). Don't underestimate this tree though; it grows fast, and sprouts easily from the base of tree trunks.

The leaves of a basswood are large (15cm or 6in), heart shaped with toothed edges, and have short stubby points. They can be unevenly shaped, with each side looking just a little different! Young leaves also have star-shaped hairs on the upper surface.

The bark is light gray-brown with shallow, vertical grooves that get deeper as the tree matures.

Basswood can grow in many conditions; it can grow in full sun, but also in the dense shade of a forest. Remember: it does love nice, moist, rich soils!

TREE-via

Bees love basswood because it is a late bloomer, flowering in midsummer instead of spring. In fact, honey made from these flowers is a prized and wonderful treat!

Did You Know?

The Native Americans used the inner bark of basswood for thread and rope; they even stitched wounds with basswood thread!

The Spruce 'Super-Store'

Basswood (linden) is a favourite of white-tailed deer! The wood, which easily decays and creates cavities, is a great nesting tree for wood ducks, pileated woodpeckers and other small mammals.

Bees love the nectar hidden within the flowers, and the clusters of hard little nutlets are eaten by squirrels, chipmunks, mice and voles.

HEY! What does this word mean?

Sometimes we might put a word in here that you don't understand. That's ok, we have it covered! Here are a few words that might need some explanation:

Catkin - A catkin is a drooping cluster of flowers without petals. They are often found on trees which are pollinated by the wind

Conifer/Coniferous - A conifer is any plant that carries cones, and those cones carry their seeds. Most conifers keep their leaves year-round (evergreens), with thin leaves called needles

Deciduous - These trees lose most or all of their leaves for part of the year; in colder areas, this happens during the autumn

Dispersal - Movement of seeds away from the parent tree

Diversity - Variety of species

Genus - A class of trees that share similar characteristics

Hardwood - A hardwood is a tree that produces seeds with a covering, such as a fruit (apple) or a hard shell (acorn)

Hybridize - More than one plant species have mixed to form plants with characteristics of the 'parent' plants

Lobes - Lobes are the round point on a leaf or petal, opposite of a sinus

Photosynthesis - Process where green plants use energy from the sun to turn water, carbon dioxide and minerals into oxygen and food

Resin - The clear, oily, sticky liquid that forms a protective coating around a wound or opening in a plant

Samara - A samara is a winged nut containing one seed which spreads by the wind

Self-Pollination - Plants that self-pollinate do not need the help of other plants. These plants are fertile on their own

Sinus - The space between two lobes on a leaf

Softwood - Softwoods let their seeds fall to the ground, and are often released into the wind when they are mature

Stand - A forest stand is an area that contains mostly trees of the same species or have a common set of characteristics

Adopt-A-Tree Activities

Whether you adopt-a-tree with your family, friends, class or just on your own, there are many ways to take care of your tree and watch it grow! Grab a journaland keep notes and drawings, so you can look back later and see the changes over the months and years!

Here are some activities you can do:

1. Make a sketch of your tree. Make sure to note what season you are drawing it in!
2. Find out what kind of tree it is. Does it have fruits, nuts or seeds to help identify it? Sketch what you find. Use this field guide or other references to look up its name.
3. Where is your tree? Draw a map to show its location.
4. Draw a picture of your tree from various perspectives: from a distance, from a high place, or from lying underneath looking up.
5. How healthy is your tree? Is it alive? How can you tell? Are people/animals hurting it? Helping it?
6. Write 10 words to describe your tree, and then use these words in a paragraph or poem about the tree.
7. Draw a picture of a leaf or needle from your tree. How does it smell? How does it feel? How does the bark smell? How does it feel?
8. Are there animals on or near the tree? Don't forget to look for spiders, insects and other small animals! Use binoculars or magnifiers for a closer look.
9. Are there any signs that animals have used your tree? Look for holes, nests, trails or other animal marks.
10. Each time you visit your tree, describe any changes you notice since your last visit.
11. Take photographs of your tree when you visit Look at several different photos at once. In what way has your tree changed over time? How has it stayed the same?
12. Keep a journal of seasonal changes in your tree. When do the leaves start to fall? When do you buds form on branches? When do the seedpods or fruit ripen?

Making a Birdhouse is Fun!

Making birdhouses can be as easy or as difficult to build as you want, but how do you know which is the best one for your backyard?

Some of the factors that will affect what bird uses your birdbox include:

Hole size

Depth of hole/box

Dimensions (the shape of the box)

Materials used

Location

Different species of birds look for different styles of birdhouses; even a small change in the design will change the species that will use it. Find out what birds are in your backyard and which ones will nest in birdboxes before you start cutting or hammering!

Some of the more common birds that will nest in a birdhouse are *chickadees, wrens, blue-birds, swallows, flickers and woodpeckers.* However, there are birds that like nesting shelves, which are more open.

A Click in the Right Direction

Here are a few websites that will help you pick a birdhouse to fit your backyard critters!

www.allaboutbirds.org/page.aspx?pid=1139
allcrafts.net/woodworking/birdhouses.htm
www.50birds.com/birdhouses/birdhouse-plans-2.htm

Build a One-Board Birdhouse

This is a simple birdhouse, which can be built using only 1 piece of pine. Check what birds are in your backyard; however, before you and your family build it!

Materials Needed:

One 5ft, 1x6inch #2 pine board

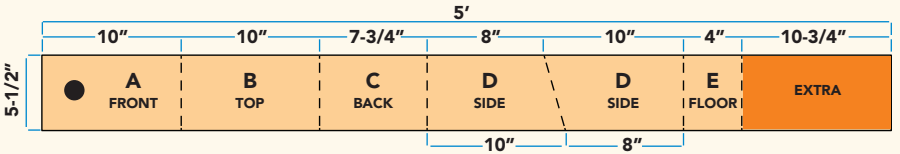
1 5/8 galvanized deck screws

2inch galvanized finishing nails

Power drill

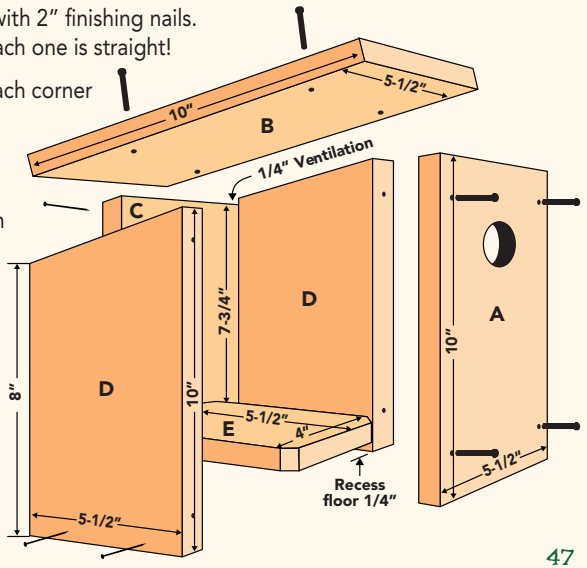
Appropriate-sized spade bit

Hand saw



Steps:

1. Using the full board, cut out the pieces as shown above.
2. Attach the front to the sides with 1-5/8" deck screws. Predrill the holes in the front piece to prevent the wood from splitting. After nesting season when it's time to clean out the bird-house, remove these screws for easy access.
3. Attach back to the sides with 2" finishing nails. Predrill holes, making sure each one is straight!
4. Cut about 1/2" inch off each corner of the floor for drainage.
5. Recess the floor 1/4" up from the bottom, then attach it with 2" nails from sides and back. Do not nail the floor from the front or you won't be able to open it for cleaning!
6. Attach the roof to the sides with 1-5/8" deck screws. That's it!



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