Kids in Parks

TRACK Trail Self-Guided Brochures List

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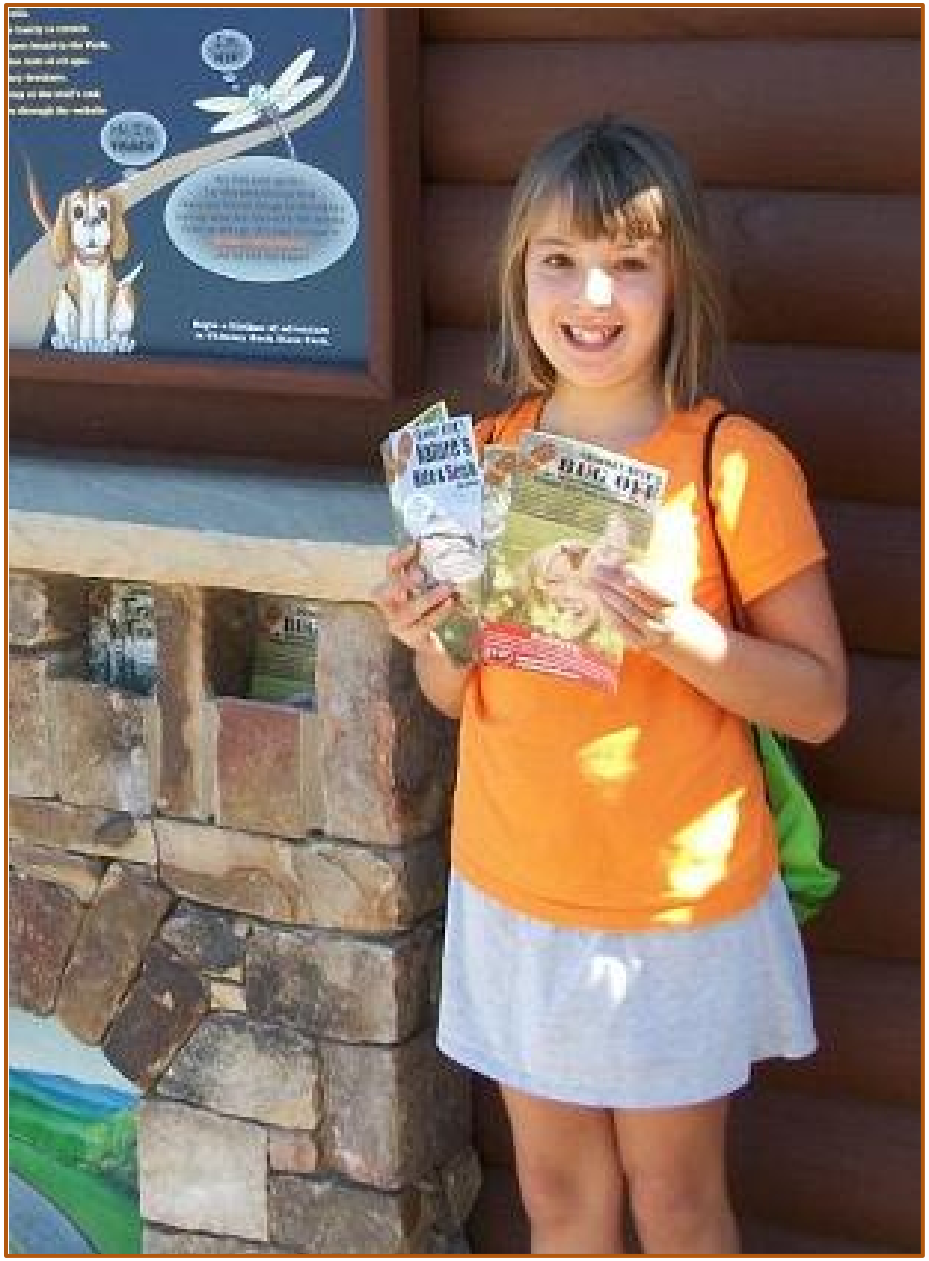


Introduction

Working together with partners throughout the community, the mission of Kids in Parks is to promote children's health and the health of our parks by increasing physical activity and engaging families in outdoor adventures that foster a meaningful connection to the natural and cultural world.

Partners in our TRACK Trails program receive a trailhead kiosk (with logo placard) and four self-guided nature adventure brochures, as well as integration into our website at kidsinparks.com.

Your logo(s) here

Our nature adventure brochures are 8.5x14" in a tri-fold format. The back middle panel (pictured above) is the same on each brochure, and directs kids to visit our website to register for prizes and find other TRACK Trails near them.

Generalizable Brochures

The following brochures are applicable to almost any trail and can be used year-round.

Four of the brochures – Nature's Hide n' Seek, The Need for Trees, Nature's Relationships and Animal Athletes – have multiple versions available so that you can choose the version that fits your trail best.

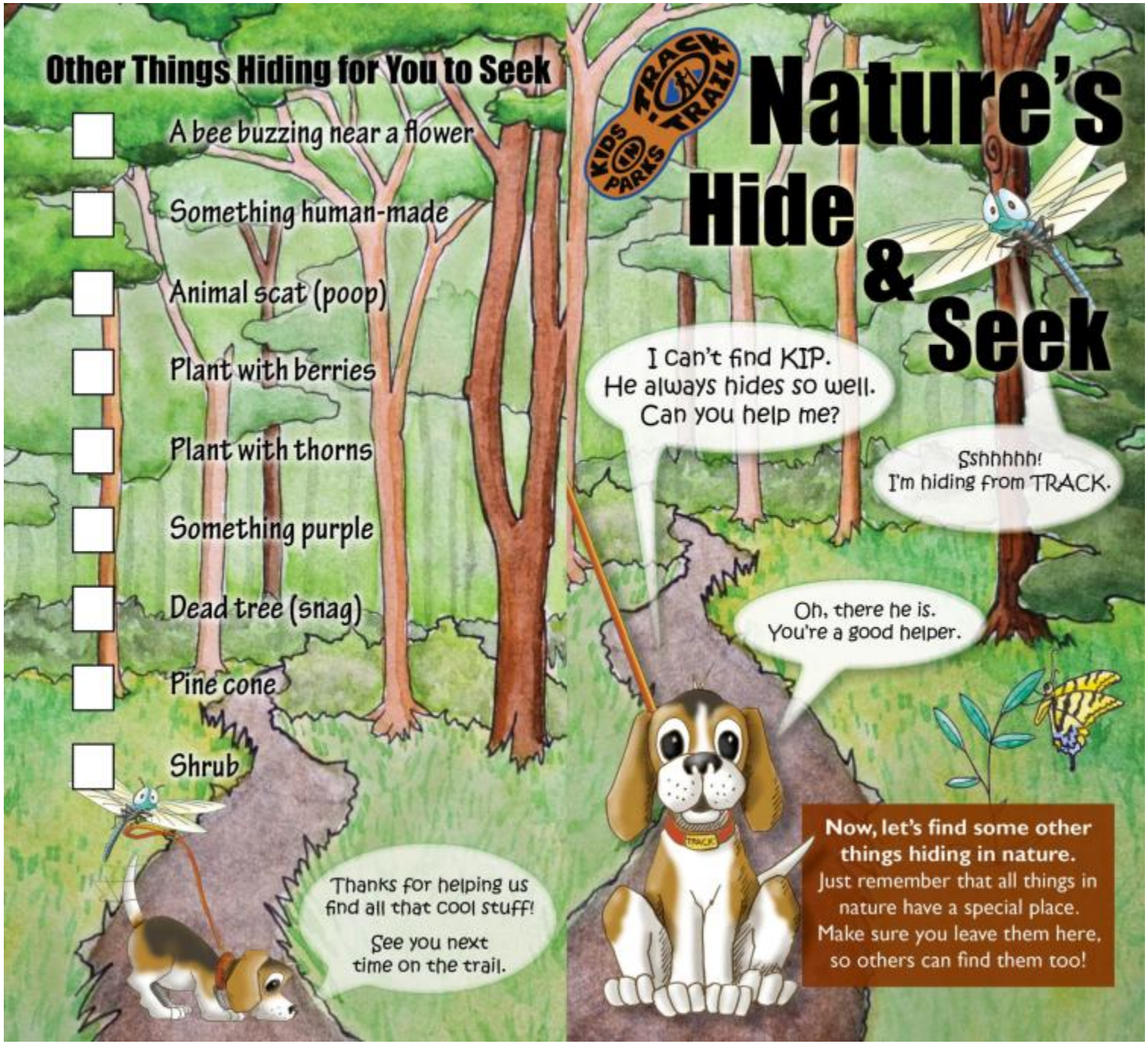
Nature's Hide n' Seek

Nature's Hide n' Seek is a standard brochure issued to every TRACK Trail, and is the most universal and frequently-used brochure.

The Nature's Hide & Seek brochure is designed so that kids of all ages can walk along the trail and discover common things that are often overlooked in nature. Some of them are hard to find, others are easy. This brochure is most appropriate for children 4 to 7 years of age.

There are 4 different versions to choose from.

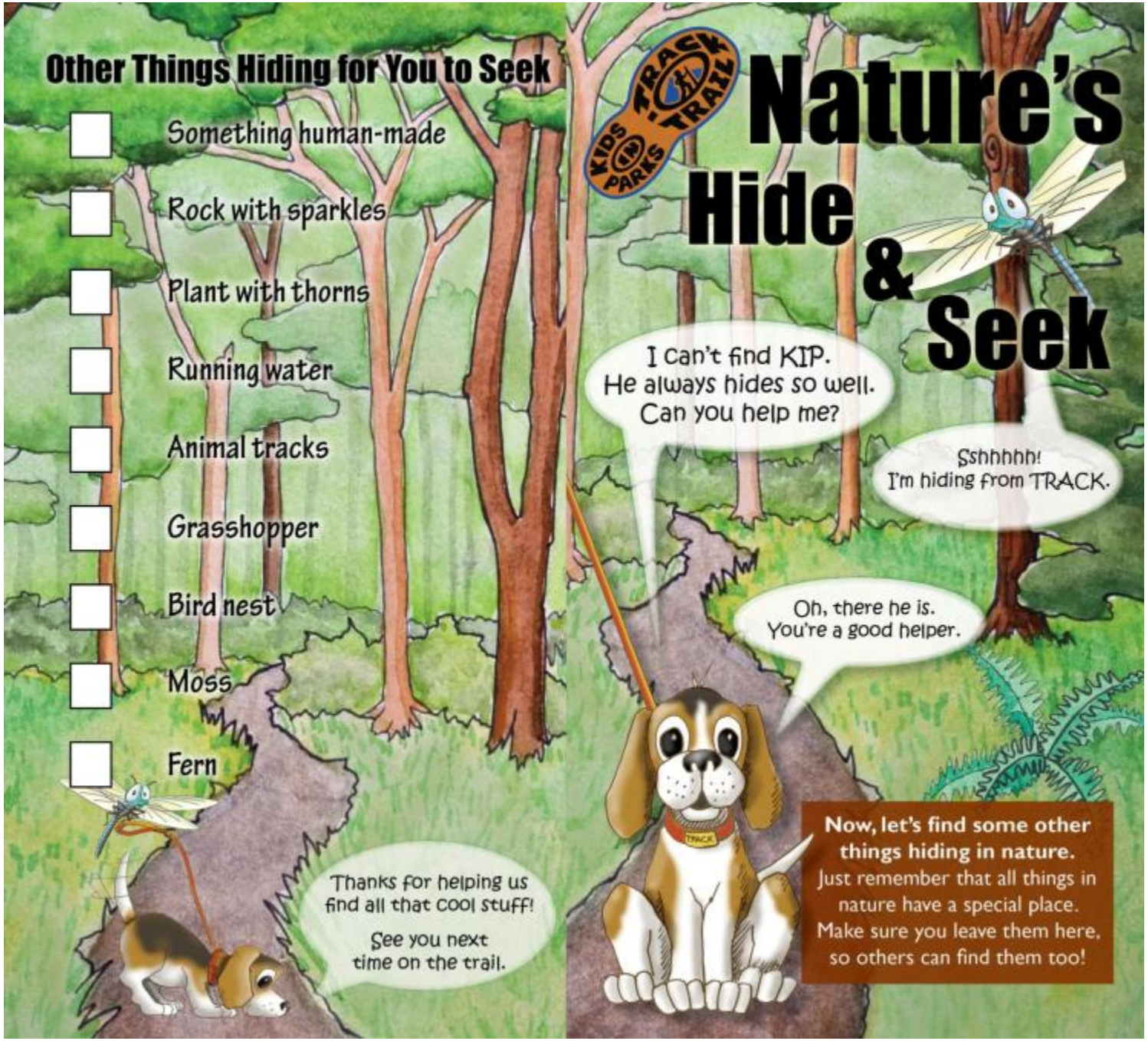
#1


Other Things Hiding for You to Seek
A bee buzzing near a flower
Something human-made
Animal scat (poop)
Plant with berries
Plant with thorns
Something purple
Dead tree (snag)
Pine cone
Shrub
Thanks for helping us find all that cool stuff!
See you next time on the trail.
TRACK TRAIL KIDS IN PARKS
Nature's Hide & Seek
I can't find KIP. He always hides so well. Can you help me?
Sshhhhh! I'm hiding from TRACK.
Oh, there he is. You're a good helper.
Now, let's find some other things hiding in nature. Just remember that all things in nature have a special place. Make sure you leave them here, so others can find them too!

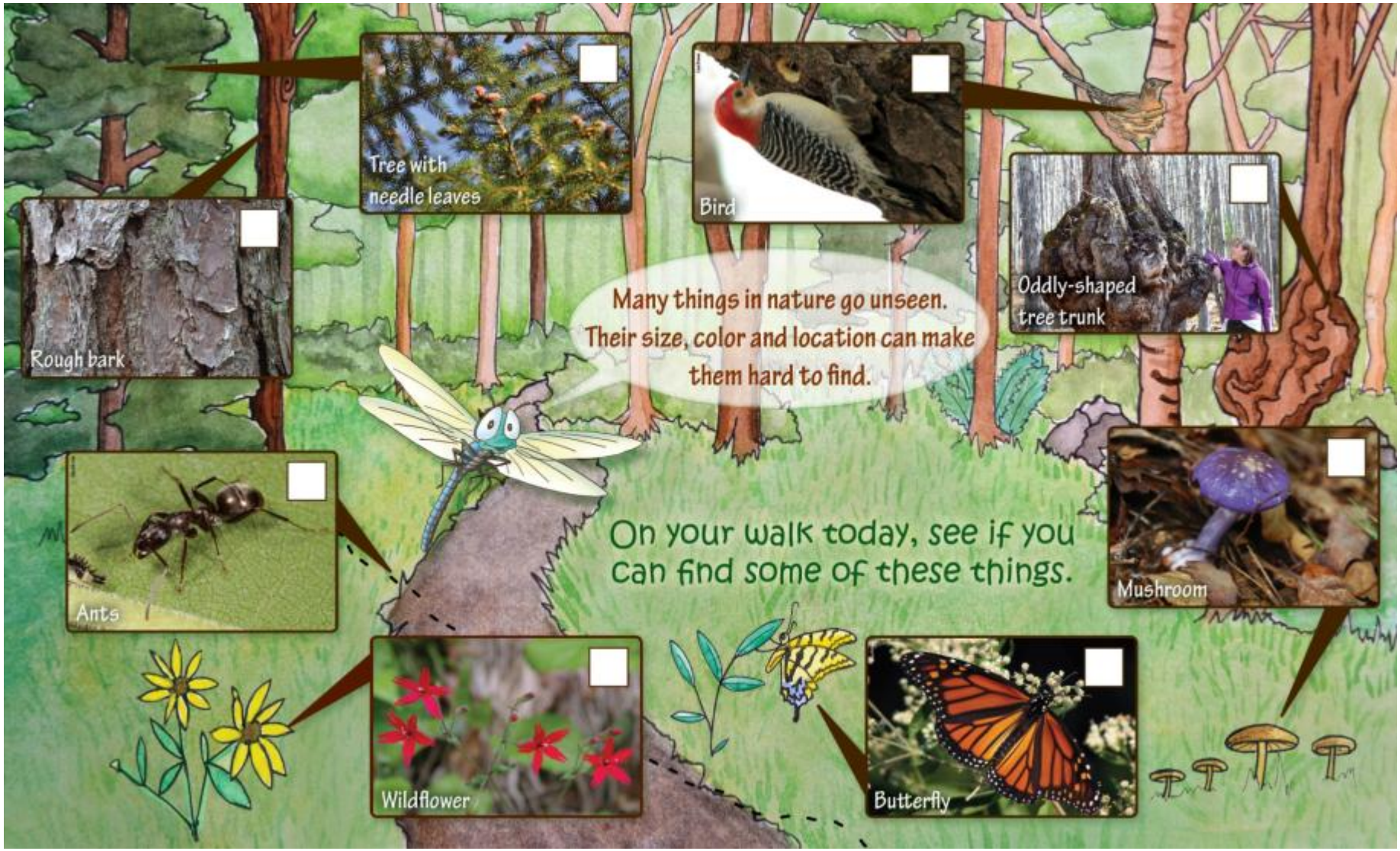
#1


Spider web
Tree with needle leaves
Bird
Many things in nature go unseen.
Their size, color and location can make them hard to find.
Poison ivy
Don't Touch!
On your walk today, see if you can find some of these things.
Lichen
Wildflower
Insect
Mushroom

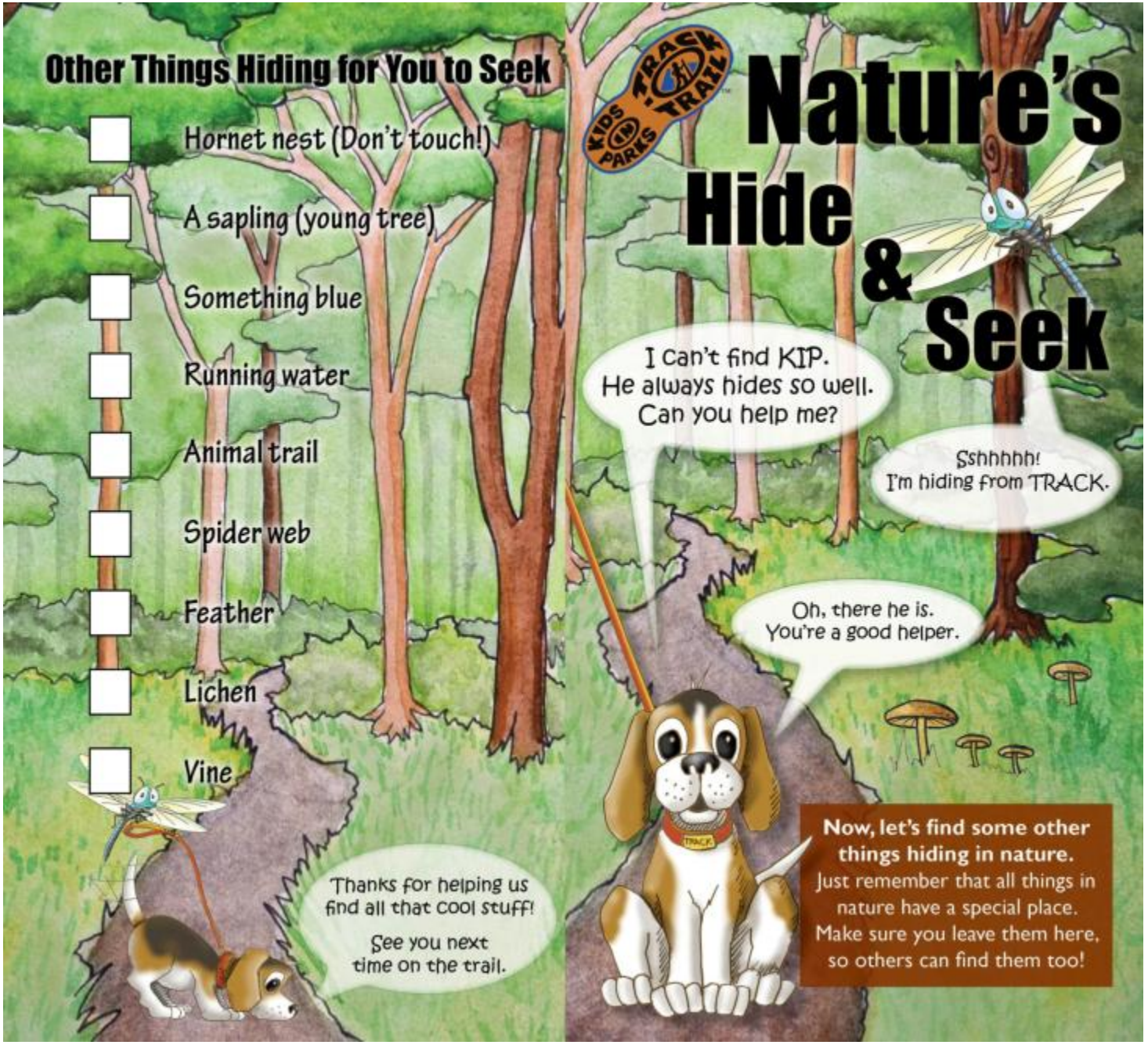
#2


Other Things Hiding for You to Seek
Something human-made
Rock with sparkles
Plant with thorns
Running water
Animal tracks
Grasshopper
Bird nest
Moss
Fern
Thanks for helping us find all that cool stuff!
See you next time on the trail.
TRACK TRAIL
KIDS IN PARKS
Nature's Hide & Seek
I can't find KIP. He always hides so well. Can you help me?
Sshhhhh! I'm hiding from TRACK.
Oh, there he is. You're a good helper.
Now, let's find some other things hiding in nature.
Just remember that all things in nature have a special place. Make sure you leave them here, so others can find them too!

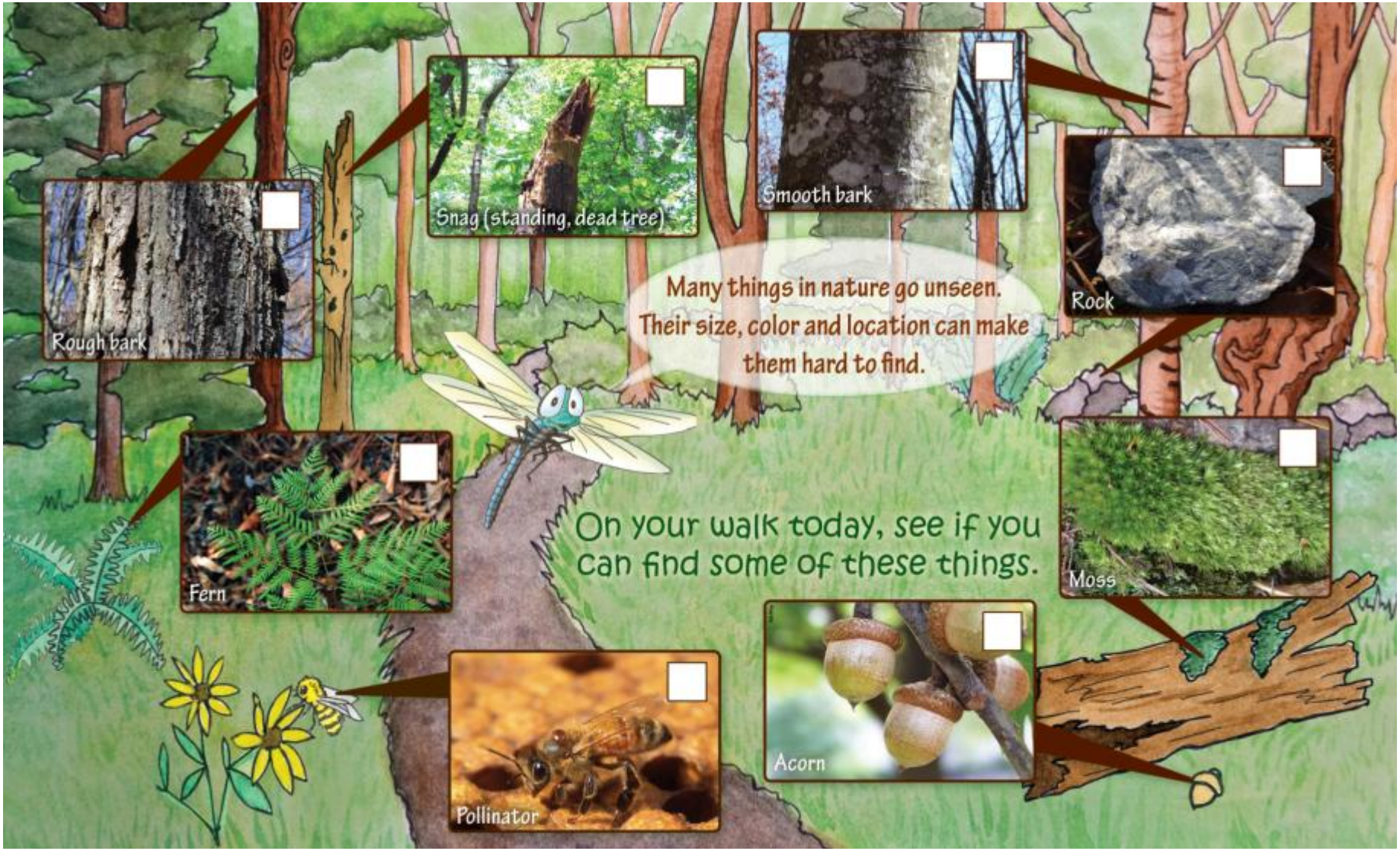
#2


Tree with needle leaves
Bird
Rough bark
Oddly-shaped tree trunk
Many things in nature go unseen.
Their size, color and location can make them hard to find.
Ants
On your walk today, see if you can find some of these things.
Mushroom
Wildflower
Butterfly

#3


Other Things Hiding for You to Seek
Hornet nest (Don't touch!)
A sapling (young tree)
Something blue
Running water
Animal trail
Spider web
Feather
Lichen
Vine
Thanks for helping us find all that cool stuff!
See you next time on the trail.
KIDS IN PARKS TRACK TRAIL
Nature's Hide & Seek
I can't find KIP. He always hides so well. Can you help me?
Sshhhhh! I'm hiding from TRACK.
Oh, there he is. You're a good helper.
Now, let's find some other things hiding in nature.
Just remember that all things in nature have a special place. Make sure you leave them here, so others can find them too!

#3


Snag (standing, dead tree)
Smooth bark
Rough bark
Rock
Many things in nature go unseen.
Their size, color and location can make
them hard to find.
Fern
On your walk today, see if you
can find some of these things.
Moss
Pollinator
Acorn

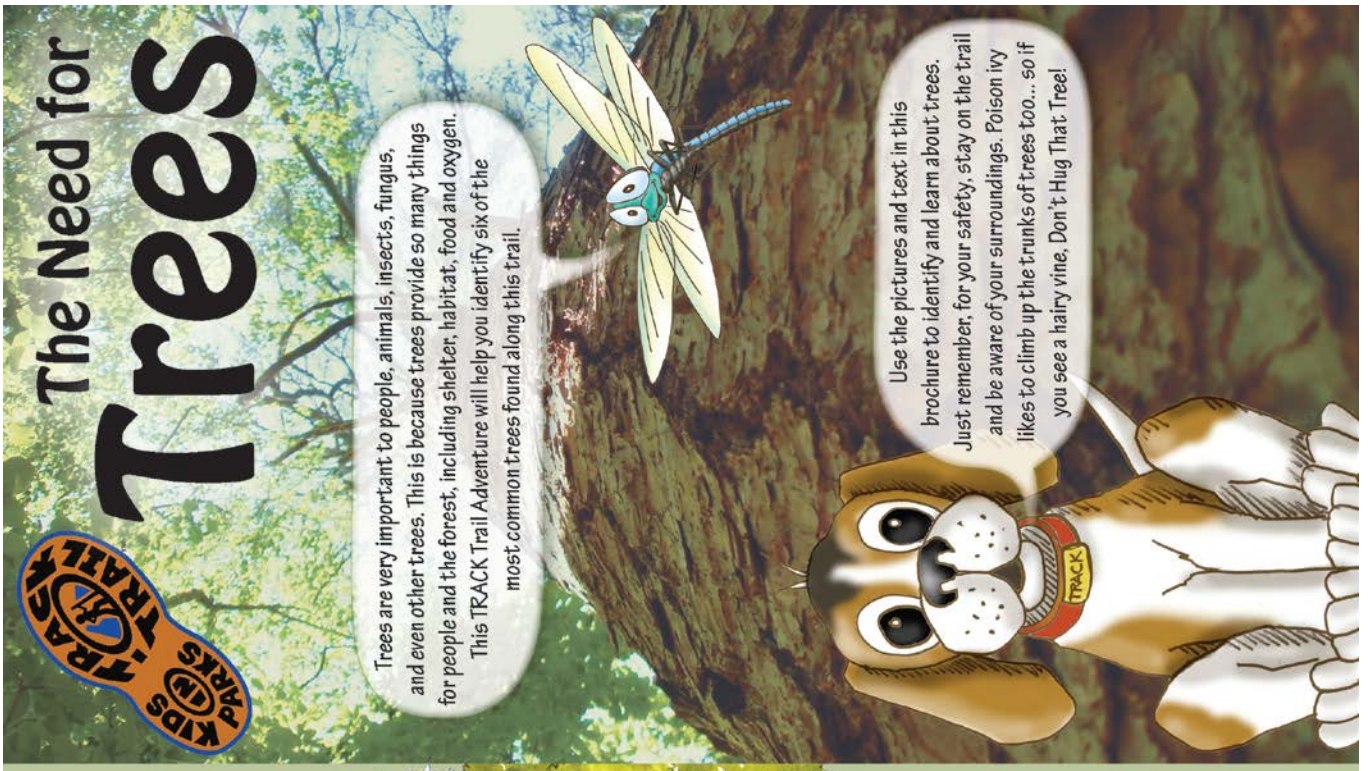
The Need for Trees

By following the picture and textual clues found in "The Need for Trees" brochure, kids will discover six of the more common trees found along the trail.

During their adventure, kids will learn about the need that people and other animals have for trees and about the roles trees play in the forest. This brochure is most appropriate for children ages 6-10.

There are six different tree groupings to choose from. The back panel features an illustration of the basic tree life cycle. This panel is the same on each brochure.

The Need for Trees



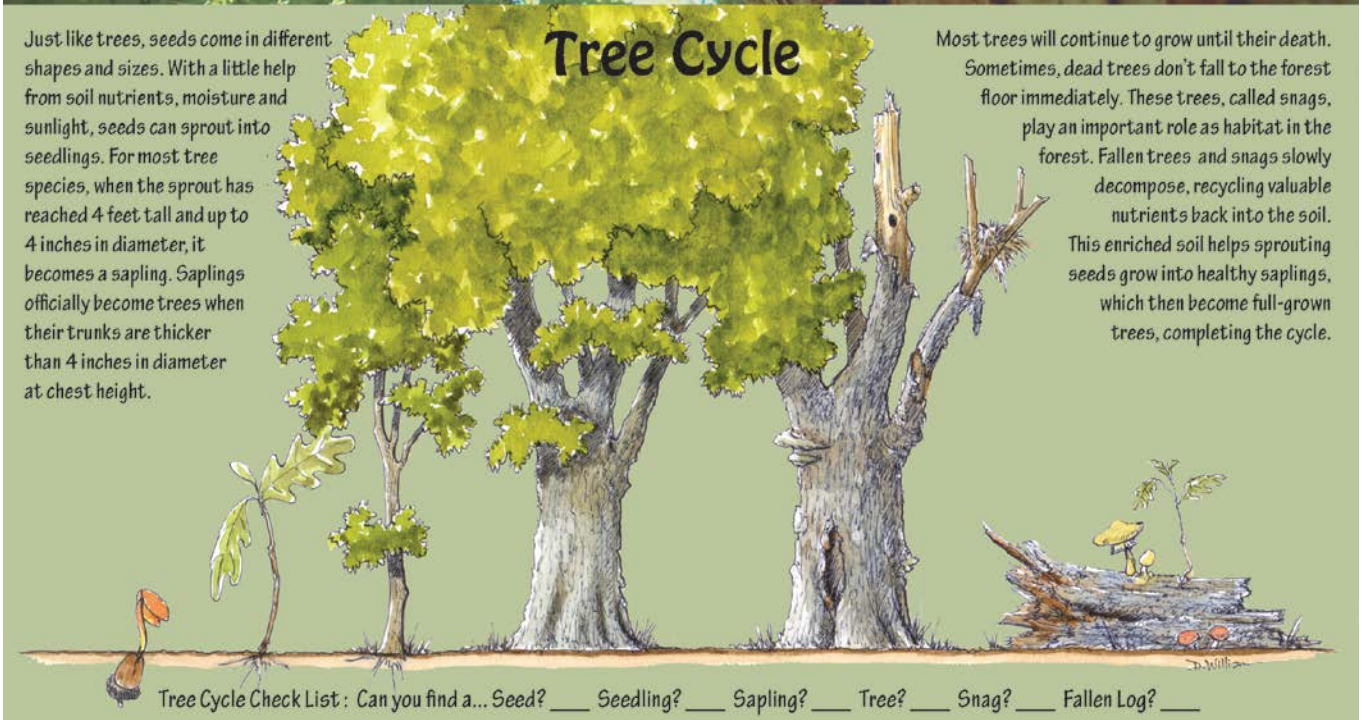
Trees are very important to people, animals, insects, fungus, and even other trees. This is because trees provide so many things for people and the forest, including shelter, habitat, food and oxygen. This TRACK Trail Adventure will help you identify six of the most common trees found along this trail.

Use the pictures and text in this brochure to identify and learn about trees. Just remember, for your safety, stay on the trail and be aware of your surroundings. Poison ivy likes to climb up the trunks of trees too... so if you see a hairy vine, Don't Hug That Tree!

Tree Cycle

Just like trees, seeds come in different shapes and sizes. With a little help from soil nutrients, moisture and sunlight, seeds can sprout into seedlings. For most tree species, when the sprout has reached 4 feet tall and up to 4 inches in diameter, it becomes a sapling. Saplings officially become trees when their trunks are thicker than 4 inches in diameter at chest height.

Most trees will continue to grow until their death. Sometimes, dead trees don't fall to the forest floor immediately. These trees, called snags, play an important role as habitat in the forest. Fallen trees and snags slowly decompose, recycling valuable nutrients back into the soil. This enriched soil helps sprouting seeds grow into healthy saplings, which then become full-grown trees, completing the cycle.



Tree Cycle Check List : Can you find a... Seed? ___ Seedling? ___ Sapling? ___ Tree? ___ Snag? ___ Fallen Log? ___

#1

☐ Chestnut Oak

Although its serrated leaves resemble those of an American chestnut, this tree is actually a species of oak. It is also referred to as rock oak because it likes to grow in rocky areas. The bark of a chestnut oak has vertical rectangular chunks. Good acorn crops are infrequent, but when available, the sweet nuts are eaten by deer, wild turkeys, squirrels and chipmunks.

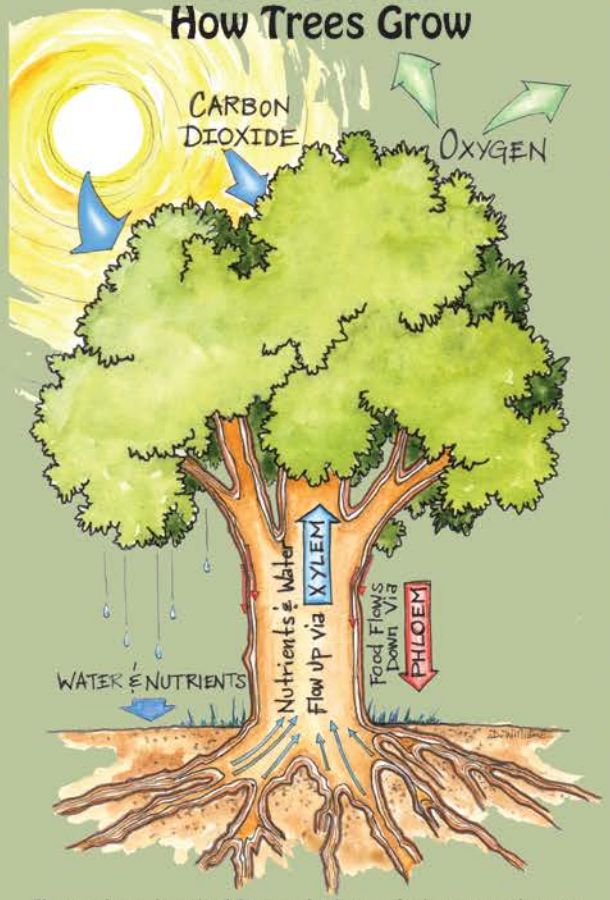
☐ American Beech

With its extremely smooth, light gray bark and leaves with serrated edges, the American beech is a very easy tree to identify. The fruits (beech nuts) are eaten by a large variety of birds and mammals, including ducks, blue jays, deer, black bears and foxes. Beech wood is used commercially for flooring, furniture, plywood, railroad ties, paper pulp and heating.

☐ Pitch Pine

With thick "puzzle piece" bark plates, twisted needle leaves in **fascicles** (bundles) of three and prickly cones the size and shape of a chicken egg, the pitch pine is easy to identify. It gets its name from the sticky sap (pitch) found in its wood. This resin helps the wood resist decay and is used to make turpentine and aromatic products like pine cleaner.

The Need to Know
How Trees Grow



Plants and trees have the ability to make their own food in a process known as photosynthesis. They do this by sucking water and nutrients from the soil up through their xylem and into their leaves. The water and nutrients are combined with carbon dioxide and sunlight to make a sugary food called glucose. This food is then distributed by way of its phloem to the rest of the tree, so it can grow.

Illustrations drawn by David Williams

☐ Pignut Hickory

Hickory trees have **compound leaves** (many leaflets on one stem). The pignut hickory gets its name because the halved nuts look like a pig's nose. Due to the high concentration of fats, these small nuts are an extremely important food source for wild animals such as squirrels, bears and wild turkey. Because of its relatively high heating value, hickory wood makes excellent fuel wood for stoves.

☐ American Holly

As you walk down the trail, look for the sharp, spiny, evergreen leaves of the American holly. It is also known as the Christmas holly because the red fruits appear in winter and are used for Christmas decorations. If eaten, their berries can make people very sick but are a valuable winter food source for deer and a variety of bird species.

☐ Sassafras

The sassafras is a small tree that can be easily identified by its three distinct leaf shapes (entire, mittened and three-lobed). Although the soft, brittle wood is of little value commercially, its resistance to rot makes it good for use as fence posts and outdoor furniture. In the past, people used the spicy-scented sap to flavor candy, tea and root beer. Their fruits are also a favorite food for many birds.

#2

White Oak

The leaves of the white oak have rounded lobes, and the bark has a peely appearance on older trees. The acorns are elongated with a shallow cup, and have a sweet taste, which makes them a preferred food of deer, bear, turkeys, squirrels and other wildlife. Because of the water-tight quality of the wood, white oak trees were valued in olden times for shipbuilding, and are still used today to make barrels.

Yellow Poplar

Growing straight and tall with a light gray bark and a large broad leaf that looks like the tip has been bitten off, the yellow poplar is easy to find. Due to its large size and straight growth, this tree provides a lot of useful lumber. Yellow poplar is also a very important tree for honey production. In spring, honeybees collect nectar from the poplar's abundant yellow and orange flowers.

Flowering Dogwood

The flowering dogwood is a small tree that is abundant throughout the Eastern United States. The bark of a dogwood has small cubic scales. The white "petals" of the dogwood flower are actually sepals (modified leaves), while the true flowers are the small yellow clusters in the middle. The buds look like green chocolate chips. Dogwood trees were historically used to create quinine - a fever reducer.

The Need to Know
How Trees Grow

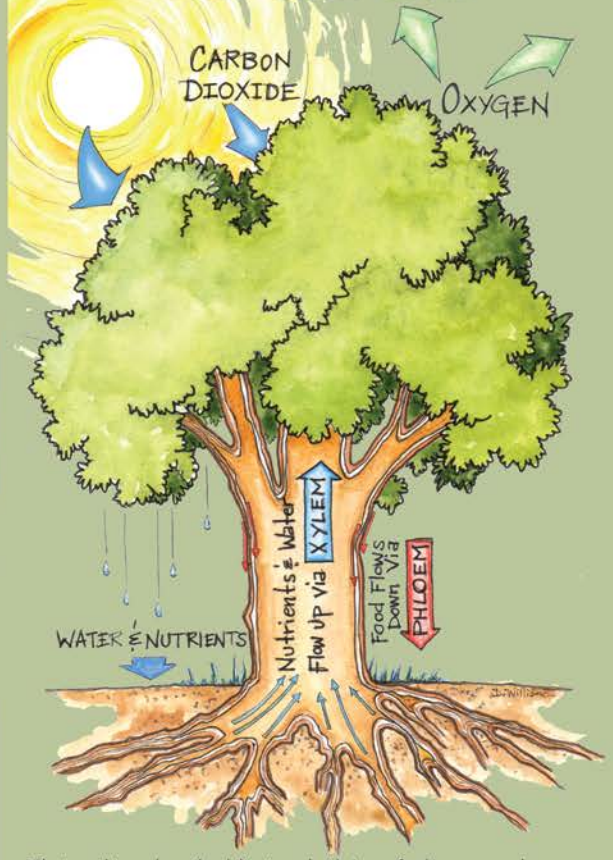


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Illustration drawn by David Williams

Shagbark Hickory

True to its name, the shagbark hickory has rough, shaggy bark that peels in long strips as the tree grows older. The leaves are compound (many leaflets on one stem), and the fruits (hickory nuts) are an important food source for squirrels, racoons, turkeys, and many other animals. Native Americans used the wood to make their bows and harvested the nuts for food, as people still do today.

Red Maple

Able to grow in almost any soil condition, the red maple is one of the most abundant and widespread trees in eastern North America. With red twigs, buds, flowers, and seeds, it's easy to see how the red maple got its name. Red maple wood is used to make parts of guitars, banjos, drums, and other musical instruments because of its flexibility, sturdiness, and beautiful coloration.

Eastern Hemlock

One of the most shade-tolerant of all trees, the eastern hemlock has short, rounded needles and cones about the size of a nickel. Over the past century, the eastern hemlock has been in decline due to invasion by the hemlock woolly adelgid, a tiny sap-sucking insect that was accidentally introduced from Asia. The woolly adelgid's egg sacks look like tiny tufts of wool on the tree's twigs.

#3

☐ White Oak

The leaves of the white oak have rounded lobes, and the bark has a scaly appearance on older trees. The acorns are elongated with a shallow cup, and have a sweet taste, which makes them a preferred food of deer, bear, turkeys, squirrels and other wildlife. Because of the water-tight quality of the wood, white oak trees were valued in olden times for shipbuilding, and white oak is still used today to make barrels.

☐ Yellow Poplar

Growing straight and tall with a light gray bark and a large broad leaf that looks like the tip has been bitten off, the yellow poplar is easy to find. Due to its large size and straight growth, this tree provides a lot of useful lumber. Yellow poplar is also a very important tree for honey production. In spring, honeybees collect nectar from the poplar's large and plentiful yellow-orange flowers.

☐ Flowering Dogwood

The flowering dogwood is a small tree that is abundant throughout the eastern United States. The bark of a dogwood has small cubic plates. The white "petals" of the dogwood flower are actually sepals (modified leaves), while the true flowers are the small yellow clusters in the middle. The buds look like gray-green chocolate chips. Dogwood trees were historically used to create quinine - a fever reducer.

The Need to Know
How Trees Grow

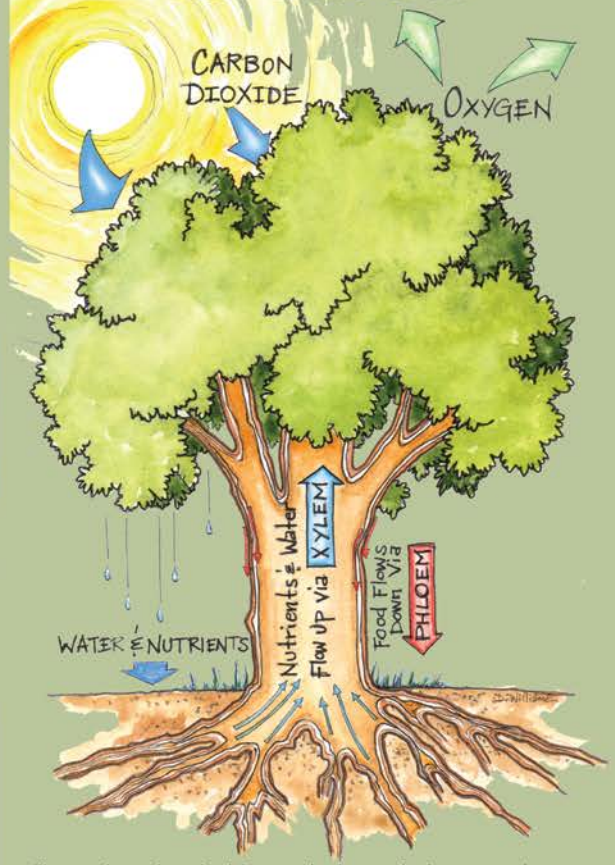

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Illustration drawn by David Williams

☐ Sourwood

Due to their deeply furrowed, chunky bark and curvy branch growth, sourwood trees are easy to find. In spring, their white flowers hang in clusters from the branch tips, and in fall the leaves turn crimson red. Because of its curvy growth, the wood from sourwood trees is of little value commercially, but the tree is prized as a valuable source of honey in the mountains.

☐ Red Maple

Able to grow in almost any soil condition, the red maple is one of the most abundant and widespread trees in eastern North America. With red twigs, buds, flowers and seeds, it's easy to see how the red maple got its name. Red maple wood is used to make parts of guitars, banjos, drums, and other musical instruments because of its flexibility, sturdiness, and beautiful coloration.

☐ White Pine

With their extremely straight trunks, needle leaves in **fascicles** (bundles) of five and long skinny cones, Eastern white pines are easy to identify. The white pine has long been used as a source of food and medicine. The needles are high in vitamin C and are used to make tisane, an herbal tea. Deer and rabbits eat white pine foliage and songbirds and mice graze on the seeds.

#4

☐ Black Cherry

The black cherry's leaves are dark green and shiny with a fine, saw-toothed edge. The smooth bark has horizontal lines called **lenticels**. The black cherry tree is very widespread due to the many birds and mammals that eat the tree's fruits and disperse the seeds. Settlers in the Southern Appalachians used the fruit to make jelly, and the bark of young cherry trees was used to make cough medicine.

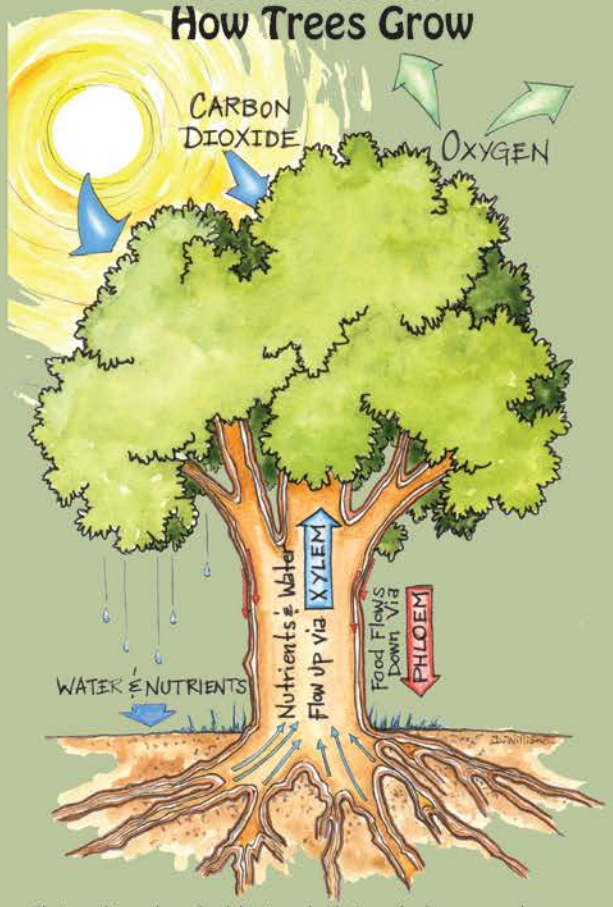
☐ Eastern Hemlock

One of the most shade-tolerant of all trees, the eastern hemlock has short, rounded needles and cones about the size of a nickel. Over the past century, the eastern hemlock has been in decline due to the hemlock woolly adelgid, a tiny sap-sucking insect that was accidentally introduced from Asia. The woolly adelgid makes egg sacks that look like tiny tufts of wool on the tree's twigs.

☐ White Pine

With their extremely straight trunks, needle leaves in **fascicles** (bundles) of five and long skinny cones, Eastern white pines are easy to identify. The white pine has long been used as a source of food and medicine. The needles are high in vitamin C and are used to make tisane, an herbal tea. Deer and rabbits eat the foliage and songbirds and mice graze on the seeds.

The Need to Know
How Trees Grow



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Illustrations drawn by David Williams

☐ Black Locust

Black locust has deeply furrowed bark with ridges that make a criss-cross pattern. The leaves are **compound** (many leaflets on one stem), and the twigs have paired thorns. Native Americans used the sturdy branches to make bows, and early farmers used the trunks for fence-posts. It was said that if you built your fence out of locust, it would stand for 100 years and then turn to stone.

☐ River Birch

River Birch got its name because it likes to grow near water. The gray-brown bark **exfoliates** (peels) in paper-like strips. The leaves are green on top and whitish on the bottom, with serrated edges. White-tailed deer eat the leaves and twigs, and birds and rodents eat the seeds. Birch sap can be boiled to make birch syrup, which is sweeter than maple syrup, but harder to produce in large quantities.

☐ Sycamore

The sycamore is a large, fast growing tree that is easily recognized by its mottled bark, which peels off in large irregular sheets to reveal shades of white, green, yellow, and brown underneath. The sycamore is also known as the buttonwood tree because of its round, pointed fruits (buttonballs). Native Americans used sycamore trees to make a variety of medicines.

#5

☐ Virginia Pine

Virginia pine has light red-brown bark that breaks into small gray plates on full-grown trees. The needles are short (1.5 to 3 inches long) and twisted, and grow in **fascicles** (bundles) of two. The cones are slightly smaller than a chicken's egg and have a long spine on the end of each scale. Virginia pine is a **pioneer species**, which means it grows well in fire-damaged areas and old fields.

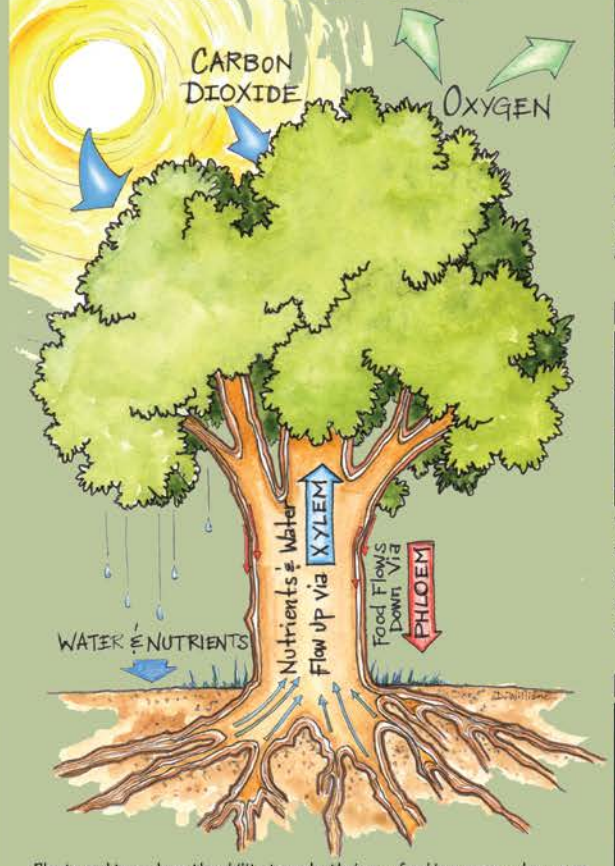
☐ Red Maple

Able to grow in almost any soil condition, the red maple is one of the most abundant and widespread trees in eastern North America. With red twigs, buds, flowers, and seeds, it's easy to see how the red maple got its name. Red maple wood is used to make parts of guitars, banjos, drums, and other musical instruments because of its flexibility, sturdiness, and beautiful coloration.

☐ Black Walnut

Black walnut trees grow best with lots of water and sunlight. They have dark brown or blackish bark and **compound leaves** (many leaflets on one stem). The fruits fall like green baseballs in October and are a favorite food of wild animals and humans alike, though removing the nut from the husk and shell is a rather messy and difficult process. Black walnut is also prized for its timber.

The Need to Know
How Trees Grow



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Illustrations drawn by David Williams

☐ Common Alder

Common alder, also known as black alder or European alder, likes to grow near water. The bark is dark brown with warty strips, and the shiny green leaves are rounded with a toothed edge. The flowers are **catkins** (long, skinny flower clusters) that resemble those of a birch tree. Buds and young leaves are sticky to the touch. Alder is the traditional wood used to make smoked fish and other smoked foods.

☐ Eastern Red Cedar

The Eastern Red Cedar is actually in the juniper family and is not closely related to other cedars. Its tough, stringy bark and waxy, scaly needles are designed for survival in very dry conditions. The berries of the red cedar are an important food source for many songbirds. The wood is prized by builders for its rich red color, sweet smell, and weather-resistant properties.

☐ Black Locust

Black locust has deeply furrowed bark with ridges that make a criss-cross pattern. The leaves are **compound** (many leaflets on one stem), and the twigs have paired thorns. Native Americans used the sturdy branches to make bows, and early farmers used the trunks for fence-posts. It was said that if you built your fence out of locust, it would stand for 100 years and then turn to stone.

#6

☐ Sugar Maple

Sugar maple trees have light brown to gray bark with long deep furrows on older trees. The leaves have pointed lobes and turn beautiful shades of red, orange, and yellow in fall. The fruits are **samaras** (have wings) and spin like helicopters in the wind. Sugar maple trees are the primary source of maple syrup. Sugar maple wood is used for basketball courts, baseball bats, bowling pins and musical instruments.

☐ Red Spruce

The red spruce is an evergreen that has scaly gray-brown bark with reddish grooves. The needles are short and curve inward toward the branch. The cones are small, about 1 to 1.5 inches long. Red Spruce wood is used to make the soundboard (top) for stringed instruments such as guitars and fiddles because it resonates sound better than most other woods. It is also an important wood for making paper pulp.

☐ Red Oak

The red oak tree has reddish brown bark with broad gray ridges which appear to have a shiny stripe down the center. The leaves are shiny green with pointed lobes, turning a rich red color in the fall. The acorns were boiled and eaten by Native Americans, and are an important food source for many birds and mammals. The red oak is one of the most important lumber trees in North America .

The Need to Know
How Trees Grow

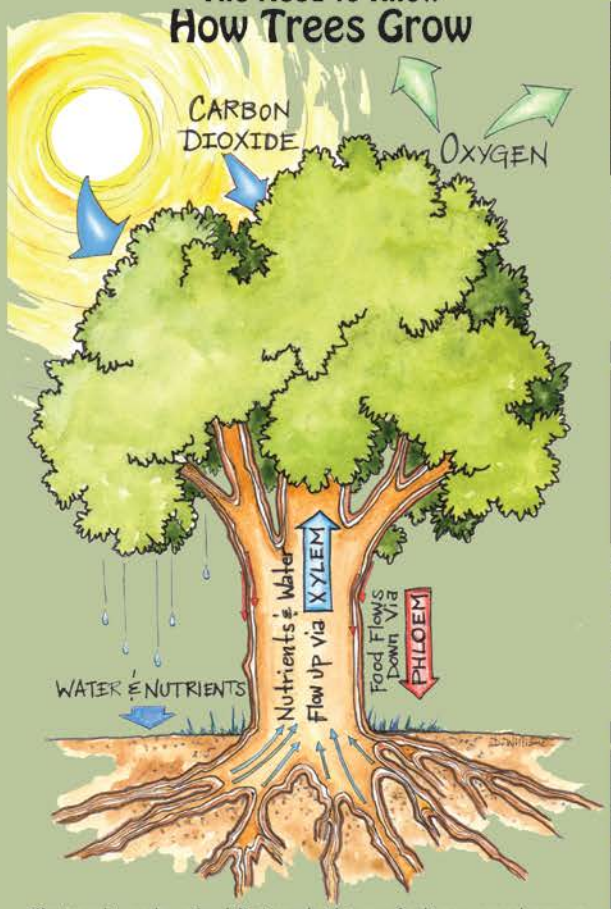

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Illustration drawn by David Williams

☐ Shagbark Hickory

True to its name, the shagbark hickory has rough, shaggy bark that peels in long strips as the tree grows older. The leaves are compound (many leaflets on one stem), and the fruits (hickory nuts) are an important food source for squirrels, racoons, turkeys, and many other animals. Native Americans used the wood to make their bows and harvested the nuts for food, as people still do today.

☐ Striped Maple

Striped maple is a small, shade-loving tree that has greenish-gray bark with distinct white stripes. It is also referred to as "goosefoot" because its leaf is shaped like a goose's foot. The bark and leaves are eaten by rabbits, porcupines, and deer. As with all maple trees, the seeds of striped maples are **samaras** (have wings) and spin like a helicopter in the wind.

☐ Yellow Birch

The yellow birch tree is also known as paper birch because its bark **exfoliates** (peels) in wide, paper-like strips. Yellow birch trees have multiple trunks with drooping branches and shiny green leaves that turn a beautiful yellow in the fall. Ice cream sticks, toothpicks and toys are often made using paper birch. Native Americans used the bark as an outer covering on canoes.

Nature's Relationships

In the Nature's Relationships brochure kids will discover how everything in nature is connected... even people.

The brochure tells a story about a few of the relationships that can be found along the trail and how different things in nature work together. This brochure is most appropriate for children 6-12 years old.

There are two different versions to choose from.

#1

Remember, Everything's Connected

In this brochure, only a few of the relationships found along the trail were discussed. Many more relationships are present. How many can you find? Here are some others you can search for:

I Lichen You!

Some fungi and algae "lichen" each other and help each other survive. In this relationship, the fungus protects the algae from adverse conditions and in exchange the algae provides the fungus with food. This is an example of mutual symbiosis (when two different organisms help each other survive).

Killing Trees Softly

Have you seen any tufts of "cotton" on the underside of a hemlock tree's leaves? These are the egg sacs of the hemlock wooly adelgid, a tiny insect parasite that was accidentally introduced to the Unites States from Asia in the 1920s. When the adelgid's eggs hatch, the larvae suck the **phloem** (food) out of the tree, killing it.

People and Nature

We also have a relationship with nature. When you go to the market to buy an apple, remember that the apple was once a flower pollinated by insects. Your home, constructed of wood, rock, or brick, came from items harvested from nature. Take the time to slow down and experience your natural world. And remember, everything in nature is connected... even us!

Nature's Relationships:

Everything's connected

"When we try to pick out anything by itself, we find it hitched to everything else in the Universe."
-John Muir

Although this brochure will not guide you to specific locations along the trail, it will tell you a story to help you discover some of the relationships found in nature. Use the pictures and text to locate as many of these relationships as you can. Keep your eyes open and have fun!

#1

Making Connections

Flowers and Pollinators

In spring, blackberry plants begin to flower. The flower's smell, size and colors attract a variety of pollinators such as bees, moths and butterflies. The pollinator's relationship with flowers can easily be seen as you walk along the trail.

Flowers become Fruit

Many flowers depend on pollinators to reproduce. Pollinated blackberry flowers develop into tasty fruits. If you look closely, you can see the tips of the **stigmas** (female parts of the flower) poking out of the blackberries.

Berry Berry Good - Fertilizer

Some plants depend on relationships with animals to disperse their seeds. Not only do animals such as birds, foxes, and black bears love the taste of blackberries, but their **scat** (poop) provides the seeds with a pocket of fertilizer in which to grow.

Open... Canopy

When dead limbs and trees fall to the forest floor, openings are created in the **canopy** (forest ceiling). This allows more sunlight to reach **understory** (lower level) plants such as blackberries.

Nature's Recyclers

Along this trail a variety of fungi can be found **decomposing** (breaking down) everything from scat to leaf litter to fallen trees. The forest depends on decomposers such as fungi to "clean up" waste materials and recycle valuable nutrients back into the soil.

Deadly Relationships

When bark beetles bore into a pine tree they bring the blue stain fungi with them. Later, as bark beetle larvae develop, they feed on the fungi. Together, they act as a parasite and attack the tree's circulation... killing it.

Dead Trees: Good?

Standing dead trees, called **snags**, can provide for more life than living trees. This is because many types of insects live inside dead trees, providing a valuable food source for animals such as woodpeckers and bears.

Tree Trials

Trees rely on decomposers to unlock the nutrients they need to be healthy. However, sometimes certain conditions cause trees to become weak. Unhealthy trees are vulnerable to attack from parasites and will eventually be decomposed.

#2

Remember, Everything's Connected

Only a few of the relationships found along the trail were discussed in this brochure. Since everything's connected, many more relationships are present. How many more can you find? Here are some others you can search for:

Dead Trees: Good?

Dead trees, called **snags**, can often provide for more life than living trees. This is because many types of insects live inside dead trees, providing a valuable food source for animals such as woodpeckers and bears. As dead trees decompose, they release nutrients back into the soil for use by future generations of plants and trees, thus completing the cycle.

Killing Trees Softly

Have you seen any tufts of "cotton" on the underside of a hemlock tree's leaves? These are the egg sacs of the hemlock wooly adelgid, a tiny insect parasite that was accidentally introduced to the Unites States from Asia in the 1920s. When the adelgid's eggs hatch, the larvae suck the **phloem** (food) out of the tree, killing it.

People and Nature

We also have a relationship with nature. When you go to the market to buy an apple, remember that the apple was once a flower pollinated by insects. Your home, constructed of wood, rock, or brick, came from items harvested from nature. Take the time to slow down and experience your natural world. And remember, everything in nature is connected... even us!

Nature's Relationships:

Everything's connected

"When we try to pick out anything by itself, we find it hitched to everything else in the universe."
-John Muir

Although this brochure will not guide you to specific locations along the trail, it will tell you a story to help you discover some of the relationships found in nature. Use the pictures and text to locate as many of these relationships as you can. Keep your eyes open and have fun!

#2

Guiding Pollinators

Many flowers depend on relationships with pollinators to reproduce. A flower's size, shape, color and smell attracts unique pollinators. Some flowers, such as the flowers of rhododendrons, have nectar guides that are visible to insects through ultraviolet light. These guides act as road signs, directing pollinators to the flower's sweet nectar.

Making Connections

We are an intricate part of nature's relationships. Our actions affect everything, from the bees that pollinate our flowers and food crops to the soil we walk on as we hike through the forest. During your hike today, take your time, stop to smell a flower and...

Open... Canopy!

During strong wind storms or cold winter ice storms treetops often crash down to the forest floor. The damaged trees and plants crushed by fallen limbs are affected negatively, but other plants are helped by the holes in the canopy. These holes allow more sunlight to reach understory plants such as wildflowers.

Caught in the Web of Life

On their daily journeys to find nectar and food, many flying insects get caught in the web of life - the spider's web that is. Different spiders build different types of webs - spiral orb webs, sheet webs, tangle webs, and funnel webs are a few examples.

Get Connected

A Healthy Home

Mountain forests are home to a variety of plants that require different amounts of nutrients, water and sunlight. Each plant finds its preferred home among the slopes, valleys, peaks and streamsides. Sometimes though, weather events can change the perfect forest home into a mess of stumps and logs.

I Lichen You!

A lichen is an organism formed by a relationship between algae and fungus. The fungus protects the algae from adverse conditions, and in exchange the algae provides the fungus with food. This is an example of mutual symbiosis (when two different organisms help each other survive).

Connecting Nature's Building Materials

Not only do many bird species eat spiders, some depend on spider webs to build their nests. Many species of hummingbird construct their nests by connecting spider webs and lichens. They use the sticky spider webs to weave materials together and to anchor their nests to the tree's branch. Spotting a hummingbird's nest in a tree is tricky since they're about the size of a golf ball.

Fungi Feed Forests

Fungi help break down and decompose everything in the forest, from dead trees and fallen logs to leaf litter. Fungi have large, underground networks of "roots" called mycelium that attach themselves to the roots of plants and trees. The plants provide water for the fungi, and the fungi help the plants gather nutrients. Fungi "fruits," or mushrooms, provide food for many insects and animals.

#3

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Dead Trees: Good?

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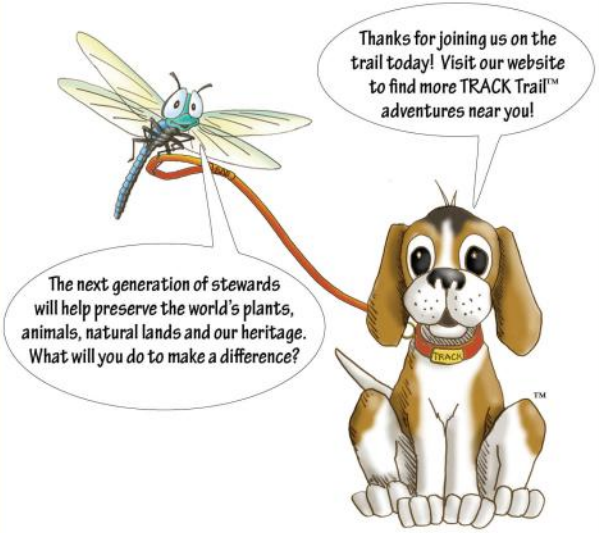
Flowers Become Fruit

Did you know every flower can become a fruit, and every fruit was once a flower? This is because when a flower is pollinated it transforms into a fruit, in order to produce more seeds. Can you find a plant with fruit on it? If you find a berry, DO NOT eat it. There are many poisonous berries that look a lot like the edible ones.

People and Nature

We also have a relationship with nature. When you go to the market to buy an apple, remember that the apple was once a flower pollinated by insects. Your home, constructed of wood, rock, or brick, came from items harvested from nature. Take the time to slow down and experience your natural world. And remember, everything in nature is connected... even us!

TRACK your hike at kidsinparks.com and get FREE prizes!



Kids in Parks...

Providing a network of fun-filled adventures that get kids and families active outdoors and connected to nature.

KIP

Kids in Parks Founding Partners

BLUE RIDGE PARKWAY FOUNDATION

BlueCross BlueShield of North Carolina Foundation

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#3

Get Connected

Guiding Pollinators

Many flowers depend on relationships with pollinators to reproduce. A flower's size, shape, color and smell attracts unique pollinators. Yellow flowers attract bees and wasps. Purple flowers tend to attract butterflies, flies and moths.

Making Connections

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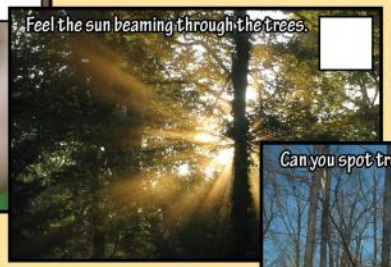

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A Healthy Home

Forests are home to a variety of plants that require different amounts of nutrients, water and sunlight. Each plant finds its preferred home among the slopes, flat areas and streamsides. Sometimes though, weather events can change the perfect forest home into a mess of stumps and logs.

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Birds of the Blue Ridge Mountains

The Birds of the Blue Ridge Mountains brochure shows kids how to identify birds along the trail.

The brochure contains illustrations of some of the more common woodland birds and information on how to identify them through various clues. This brochure is most appropriate for children ages 6 - 10.

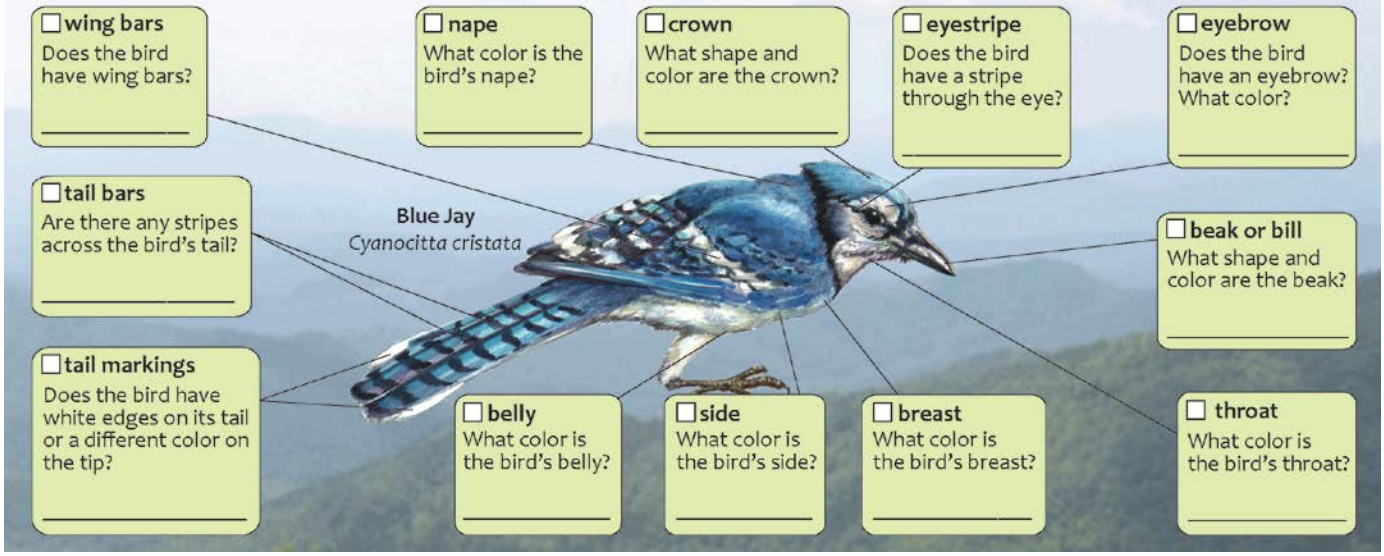
Birds of the Blue Ridge Mountains

Northern Flicker
Colaptes auratus

Depending on the season, over 200 species of birds can be found in the Blue Ridge Mountains. Use this brochure to discover how you can identify birds with clues such as location, behavior, size, shape and field marks.

Field Marks

In addition to size, shape, location and behavior, field marks can be used to help identify birds. If you can't identify a bird in the field, remembering what certain parts of the bird looked like can help you identify it when you get home. On your birding adventure, find a bird and try to answer as many of these field mark questions as you can:



Blue Jay
Cyanocitta cristata

☐ **wing bars**
Does the bird have wing bars?
_____

☐ **nape**
What color is the bird's nape?
_____

☐ **crown**
What shape and color are the crown?
_____

☐ **eyestripe**
Does the bird have a stripe through the eye?
_____

☐ **eyebrow**
Does the bird have an eyebrow? What color?
_____

☐ **tail bars**
Are there any stripes across the bird's tail?
_____

☐ **beak or bill**
What shape and color are the beak?
_____

☐ **tail markings**
Does the bird have white edges on its tail or a different color on the tip?
_____

☐ **belly**
What color is the bird's belly?
_____

☐ **side**
What color is the bird's side?
_____

☐ **breast**
What color is the bird's breast?
_____

☐ **throat**
What color is the bird's throat?
_____

What kind of bird is that...

When trying to identify a bird, the first things to look for are location and behavior. Is the bird up high making noise, or on the ground digging in leaves? Next, think about size and shape. Is it big like a crow or small like a sparrow? Does it have pointy wings or a long tail? Finally, you can use field marks to identify birds – flip to the back panel to discover how.

Circle the birds you find on your hike today!

in the trees?

Almost all the birds of the Blue Ridge Mountains use trees and shrubs in some way. Woodpeckers and chickadees make their nests in the cavities of trees and pick insects from the bark. Trees can provide fruits and seeds for birds such as cardinals and goldfinches to eat.

Look into the trees. How many different birds can you find? ____ ***What parts of the tree are the birds using?*** _____

Downy Woodpecker
Picoides pubescens
"Pik, pik, pik"

Carolina Chickadee
Poecile carolinensis
"chickadeedeedee"

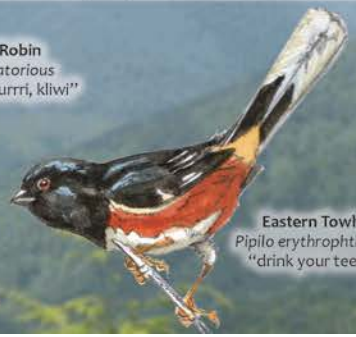
Northern Cardinal
Cardinalis cardinalis
whistles "woit woit chew chew chew."

American Goldfinch
Carduelis tristis
"per-chik-o-ry"
in flight

on the ground?

Birds that feed on the ground usually specialize in catching bugs or finding seeds. American Robins use their beaks to pull earthworms from the ground. Juncos and towhees scratch through leaves to uncover fallen seeds and berries. Mourning doves peck insects and seeds from gravelly areas. ***Check the ground near trail, stream and field edges. How many different birds can you find?*** ____ ***Can you tell what they are eating?*** _____

American Robin
Turdus migratorious
"plurri, kliwi, plurri, kliwi"



Eastern Towhee
Pipilo erythrophthalmus
"drink your teeeee"

Dark-eyed Junco
Junco Hyemalis
short, musical trill

Mourning Dove
Zenaida macroura
mournful "ooAAH
cooo coo coo"

in the air?

Birds that spend a lot of time in the air use their strong eyesight to find food. Hawks, crows and vultures can usually be found perched or circling up high as they search for their next meal. ***Scan the sky over fields and through openings in the trees. Are there any large birds flying overhead?*** _____ ***Are they flapping or gliding?*** _____

Turkey Vulture
Cathartes aura
warning "hsssss"

Red-tailed Hawk
Buteo jamaicensis
"chewwwv" raspy scream

American Crow
Corvus brachyrhynchos
"caww caww"

making noise?

Birds make all kinds of noises – some sing to attract a mate, while others will call attention to food, danger or territory. Carolina wrens are known for their loud, cheerful song and chattering sounds. Northern mockingbirds can imitate hundreds of different sounds and will sometimes sing at night! ***Close your eyes and listen for one minute. How many different birds can you hear around you?*** ____

Carolina Wren
Thryothorus ludovicianus
varied "pidaro pidaro pidaro"

Northern Mockingbird
Mimus polyglottos
varied phrases "krrDEE krrDEE krrDEE, jeurrdi jeurrdl"

illustrations by David Williams, Wingin' It Works

Finding Ferns

Our Finding Ferns brochure helps kids discover some of the common ferns along the trail.

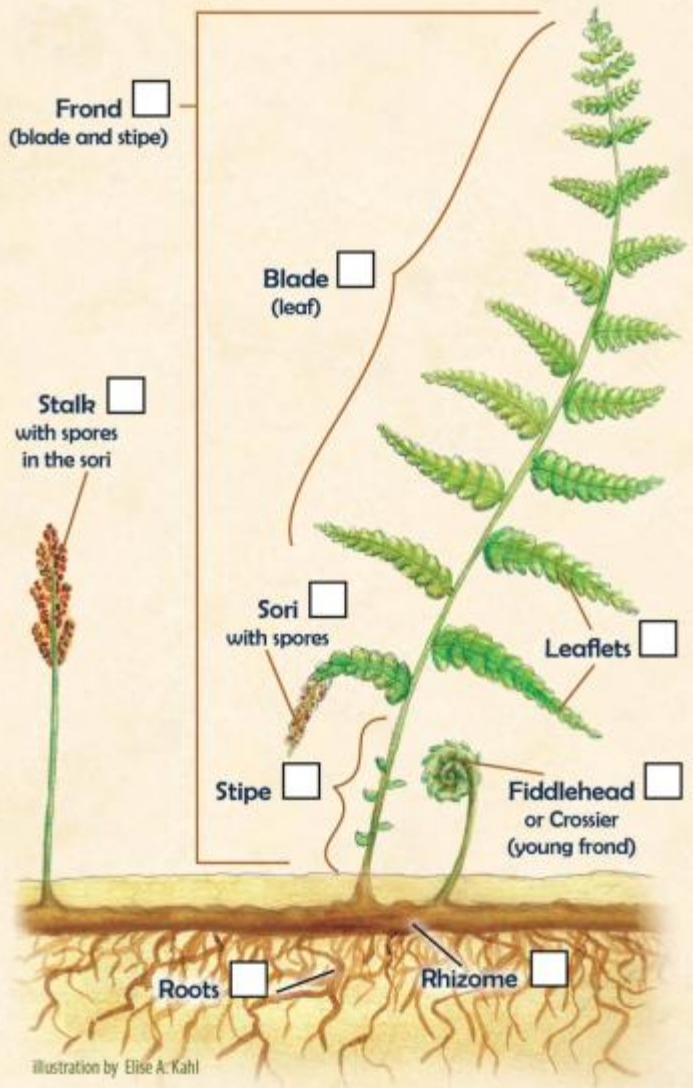
The brochure also shows the different forms ferns can take and what different parts of a fern are called.

This brochure is most appropriate for children ages 6 – 12.

Fern Parts

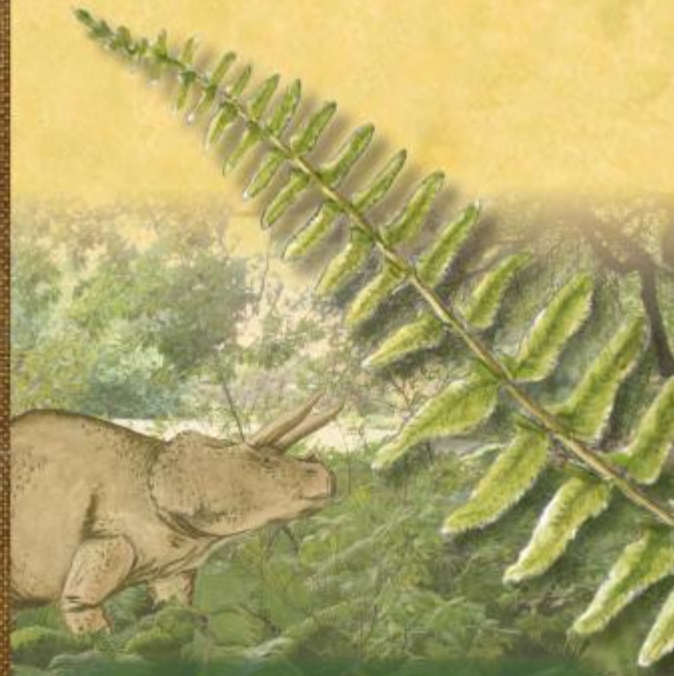
The image below shows all the major parts that might be found on a fern. Find a fern near the trail. How many different parts can you identify?

Note: not all ferns have all of these parts.



Finding Ferns

Have you ever walked on a path with ferns and wonder if there is a dinosaur nearby? Ferns are among the oldest types of plants on Earth and were one of the dominant plants when dinosaurs lived. Today, ferns grow all over the world in many shapes and sizes.



On your hike today, use this brochure to identify some of the various ferns that call the forest home. First, visit the fern parts section to learn more about how to identify a fern.

Fern Tracker

At first glance, many ferns look alike. But if you take a second look, these beautiful plants provide clues to help you identify them. Use the illustrations to the right to see how many you can find!

Fern Forms

The **blade**, or leaf, of a fern can be found in five major forms. Look at how the blade splits into leaflets. How many blade forms can you find?

Entire ☐

Pinnatifid ☐

Pinnate ☐

Bipinnate ☐

Tripinnate ☐

Spores Not Seeds

Most plants use seeds to reproduce, but ferns use single cells called **spores**. Depending on the fern species, spore-producing objects called **sori** are found on either fronds or stalks. Some spores that are released and find moist ground will germinate. Can you find sori on a fern?_____

Leaflet with sori

Christmas Fern ☐

(Polystichum acrostichoides)

Is the leaflet shaped like a stocking? Are there sori on the underside of some of the leaflets? Is the fern in a pinnate form?

Ht. 2-3' tall

Bracken Fern ☐

(Pteridium aquilinum)

Do the fronds feel leathery? Are there spores along the curled edges of some of the leaflets?

sori with spores

Ht. 6-18" tall

Cinnamon Fern ☐

(Osmunda cinnamomea)

Is there a cinnamon-colored stalk growing from the center of the plant? Are the leaflets divided into subleaflets?

subleaflets

stalk with sori

Ht. 1-3' tall

Northern Maidenhair ☐

(Adiantum pedatum)

Ht. 18-36" tall

Are the stems thin and black? Do the delicate fronds spread in a circular pattern? Are the leaflets round on the tips and square near the stem?

Illustrations by David Williams, WinginItWorks

Hikin' to find Lichen

This brochure-led adventure takes kids deep into the mysterious world of lichen.

Kids will discover the three different forms lichen can take, and some of the features that make the lichen lifestyle unique. Kids will also read the Lichen story about Alice Algae and Freddy Fungi to help them remember how lichens work.

This brochure is most appropriate for children ages 5 – 12.

Alice Algae & Freddy Fungi

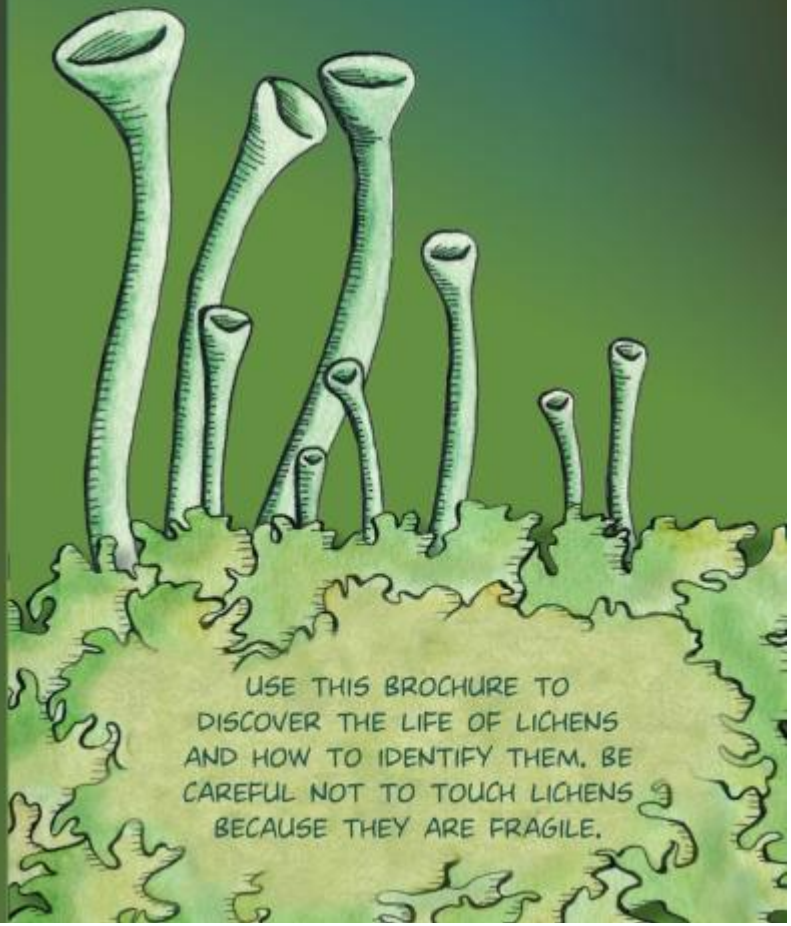
THE STORY OF HOW LICHEN CAME TO BE

TOGETHER, ALICE ALGAE AND FREDDY FUNGI FORM AN ORGANISM CALLED LICHEN. HERE IS THEIR STORY...

KIDS TRACK A TRAIL IN PARKS

Hikin' to Find Lichen

WHAT IS THAT? MOSS? UGLY WORMS... AN ALIEN SPACESHIP?!? IT'S LICHEN! Together, some fungus and algae create an organism called lichen. In a symbiotic relationship, the algae and fungus both help each other survive. The Southern Appalachian Mountains have a high diversity of lichens and scientists are always finding new species!



USE THIS BROCHURE TO DISCOVER THE LIFE OF LICHENS AND HOW TO IDENTIFY THEM. BE CAREFUL NOT TO TOUCH LICHENS BECAUSE THEY ARE FRAGILE.

Lichen, it's a Lifestyle

Although lichens are diverse, lichens can be found in three major forms. Check the box next to each lichen form you find on your hike.

Sensitive Species

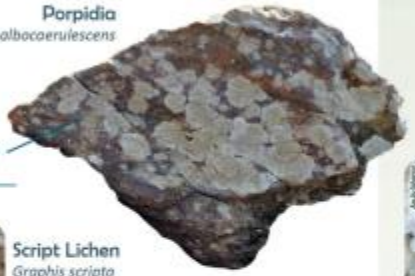
Lichens get their food from light, air and rain so they are easily damaged by pollutants in the air. Scientists study lichens to learn about air pollution. The healthier the air, the more species of lichen there will be. 1) On your hike, count how many different lichens you can find. 2) Based on your findings, would you consider the area to have good or bad air quality?

# of Lichens						
0	1-4	5-9	10-19	20-29	30-39	40+
Air Quality:						

Crustose ☐

Crustose lichens are thin like crust. The lichen's edges stay flat against the object it is growing on. Crustose lichens grow slowly and some are among the oldest living organisms on Earth!

Porpidia
Porpidia cf. albocaerulescens



Many lichens don't have a common name. What would you name this lichen?

_____

Script Lichen
Graphis scripta

Gold Dust Lichen
Chrysothrix xanthina

Foliose ☐

Foliose lichens look like dry, wavy **foliage** (leaves). The edges curl off the surface the lichen is growing on.

Punctelia
Punctelia rudecta

Powdered Ruffle Lichen
Parmotrema hypotropum

Look for little black 'hairs' called **cilia**!

Lungwort Lichen
Lobaria pulmonaria

Fruticose ☐

Fruticose lichens are the most three-dimensional lichens. Some look like mini fruit trees without leaves while others hang down from branches like hair.

Ramalina
Ramalina culbersoniorum

What would you name this lichen?

_____

Pixie Cup Lichen
Cladonia chlorophaea

Old Man's Beard
Usnea dasaea

Lichens come in many shapes, sizes and... colors!
What colors of lichens can you find?

_____

_____

Tiny Pioneers

Crustose lichens are nature's pioneers because they can grow in places that are too extreme for most other organisms. Severe heat, cold and drought are no match for lichens because lichens are able to go **dormant**, or "turn off," during harsh conditions. What kind of surfaces can you find lichens growing on that plants are not growing on?

_____

Leading the Way

Without lichens, plants may not grow in some places. Lichens are often the first to grow in a disturbed area. Over time, lichens are able to break down rock and produce thin layers of soil. More complex lichens, mosses and flowering plants are then able to take root. Find a community of lichens and describe the layers of lichens you see.

_____

_____

Lichens, The Next Frontier

Most questions about basic lichen biology remain unknown. The real mystery begins when lichens are studied under a microscope. Will you be the next scientist to make a lichen discovery?

Animal Tracks n' Traces

Every animal leaves "Tracks and Traces" of its presence when they pass through an area. From footprints, to scat (poop), to other traces like food scraps, animals leave clues of their presence everywhere.

The "Tracks and Traces" brochure was designed to help kids identify the various tracks and traces animals leave behind. This brochure is appropriate for ages 4 – 10.

Traces for You to Find


Bird Nest

A Bird's 'Crib'

Different bird species build unique nests. Some roost in the cavities of trees, some live in bushes and others build fancy nests. If you were a bird, where would you build your nest, in the hollow of a tree trunk like a woodpecker or in the canopy of a tall tree like the red-tailed hawk?

_____

Diggin' for Food

The large ovale holes in this tree were created by pileated woodpeckers in search of carpenter ants and bark beetles. Other types of woodpeckers make different sized and shaped holes. How many trees can you find with traces left on them by woodpeckers?_____


Woodpecker Holes


Eaten Nut

Yesterday's Lunch

Many animals leave traces of their food choices for us to find. Squirrels and chipmunks leave fragmented nuts and pine cones, while bears flatten thickets of berry bushes in search of the best berries. Can you find something an animal has eaten?

_____

Snake Proof

Finding a snake track is difficult, but occasionally we find other traces of their presence. Snakes shed their old skin as they grow larger. As a snake grows, it forms a new skin under the old one. When the new skin is ready, the snake slithers out of its old skin, leaving the shed behind.


Snake Shed

Tracks & Traces

Tracking things in nature is fun! Hey TRACK, what kind of footprint is that?

Well KIP, judging by the size and shape of these tracks, and the look of the scat, I think a coyote was here last night.

No animal can pass through an area without leaving traces. As you walk down the trail, use this brochure to discover the types of tracks and traces animals leave behind.

STOP

WARNING:
Raccoon scat may contain the eggs of raccoon roundworm, which can be fatal to humans. If you find scat, DO NOT handle it.

Raccoon ☐

Raccoon tracks have five toes on their front and rear paws and resemble miniature human-baby hand prints.

STOP

Because raccoons are **omnivores** (they eat both plants and animals), their scat can vary in size, shape and color. As a rule of thumb, if you can't identify the scat, treat it as raccoon scat and **DO NOT** disturb it.

Wild Turkey ☐

Can you count to three? Wild turkeys can. As male turkeys strut around, they often drag their wing tips on the ground leaving scrapes. Scrapes are also found where turkeys search for food.

Wild turkey scat is usually large and tabular with a slight curve on one end. Because their diets vary throughout the year depending on what foods are available, their scats vary in appearance and sometimes look like formless blobs.

Bobcat ☐

Cat tracks have four toes on both the front and rear feet. Because cats have **retractable claws** (claws that draw back in to their paws), claw marks are usually not present in bobcat tracks.

Containing the hair and bones from their prey, bobcat scat is segmented and round on the ends. Although bobcats have retractable claws which helps keep them sharp, they sometimes sharpen their claws by scratching the trunk of a tree.

White-Tailed Deer ☐

Deer tracks are usually the easiest to find because their hard hooves leave better impressions than the soft paws of other animals.

Found in clusters, a deer scat pellet has a dimple on one end and a point on the opposite end. A **deer bed** is a place where a deer likes to rest; look for an oval depression in the ground where leaves or grass are matted down.

Black Bear ☐

Bears tracks have large palm prints with five toes. Their tracks are sometimes capped with claw marks, and their hind-leg tracks leave heel impressions.

Like raccoons, bears are omnivores. Their scat varies in appearance depending on the time of year and what they have eaten - grasses in the spring, berries in the summer and insects from rotten logs in the fall.

Coyote ☐

Coyote tracks are approximately 2.5 inches long, capped with claw marks and are found in pairs. Their toes are closer together and not as wide as the toes of dog tracks.

Coyotes are **opportunistic eaters**, meaning they'll eat almost anything, so their scat can take many forms. In general coyote scat is long, with a rope-like twist and pointed ends.

Animal Athletes

The Animal Athletes adventure challenges kids to exercise with the animals.

This brochure gives kids eight different animal exercises they can do along the trail. From hummingbird hand-swings to lizard pushups, kids are sure to have fun getting in shape with the animals during their outdoor adventures.

This brochure is most appropriate for children ages 5 – 10. There are two different versions to choose from.

☐ Cottontail Dash

Watch for cottontail rabbits feeding in grassy areas. Rabbits are a favorite food of coyotes, foxes and hawks. When being chased, rabbits sprint in a fast zig-zag pattern until they find cover.

Sprint down the trail in a zig-zag until you find a large tree to hide behind.

☐ Squirrely Balancing

As you walk through the woods, look for gray squirrels playing in the trees. Squirrels have long tails to help them balance and maneuver quickly through the branches without falling.

Walk quickly in a straight line, placing one foot directly in front of the other for 20 steps.

Animal Athletes

Critter Cardio for Kids

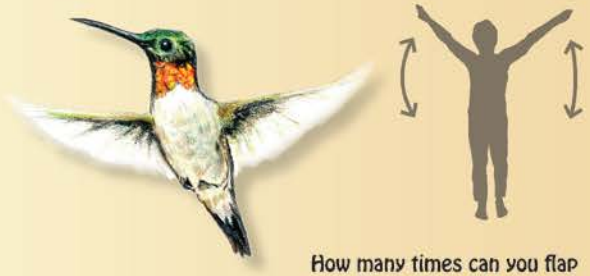
Wild animals are some of the world's greatest athletes, able to perform amazing physical feats. Are you ready to exercise with the animals of the forest? This brochure will show you how different animals move and guide you through eight animal exercises you can do as you hike the trail.

CAUTION: These exercises should only be performed with adult supervision.

#1

☐ Hummingbird Hand-swings

Look for ruby-throated hummingbirds feeding on flowers around woodland edges and fields. Hummingbirds flap their wings over 50 times per second! 50 wing-beats per second equals 1500 wing-beats in 30 seconds.



How many times can you flap your "wings" in 30 seconds?

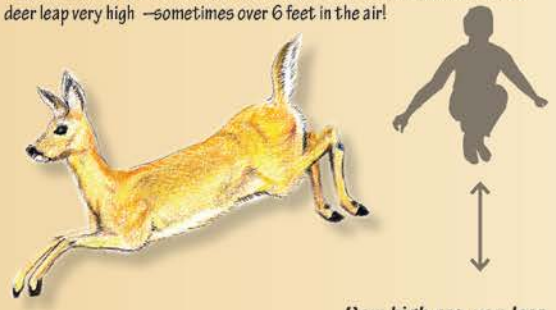
☐ Ant Strength Training

Ants are very strong insects, able to lift objects much heavier than their own bodies. Can you lift your own body weight? An easy way to find out is by doing push-ups.

Find a clear, safe spot on the trail and see how many push-ups you can do!

☐ White-tailed High Jump

Keep your eyes and ears open for white-tailed deer in the woods and meadows. In order to move quickly through the tall grasses and shrubs, white-tailed deer leap very high —sometimes over 6 feet in the air!



How high can you leap straight up in the air?

☐ Green Frog Hop

Listen for the "gunk!" sound of the green frog around ponds and streams. Green frogs make a tasty snack for predators such as snakes and herons. To escape quickly, frogs use their strong back legs to hop away.

Pretend you're being chased by a predator and hop like a frog down the trail.

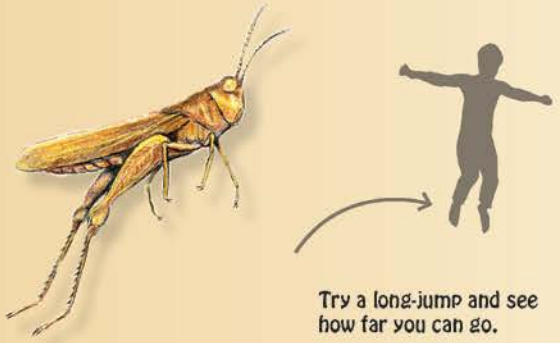
☐ Hawk Stance

To conserve heat and energy, birds of prey such as sharp-shinned hawks often perch on one leg. Locking tendons in their feet allow birds to balance on one leg for hours at a time.

Stand on the edge of the trail and see how long you can balance on one leg.

☐ Grasshopper Long Jump

You may glimpse grasshoppers in areas with short grass or gravel. Grasshoppers can jump 20 times the length of their own body. If you could do that, you would be able to jump almost 100 feet!

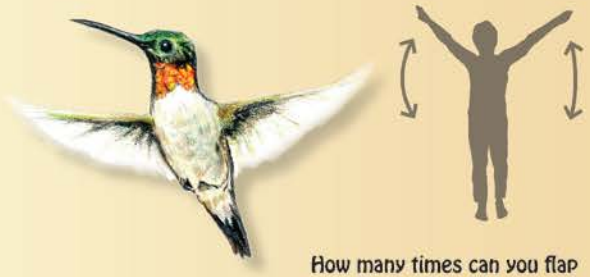


Try a long-jump and see how far you can go.

#2

☐ Hummingbird Hand-swings

Look for ruby-throated hummingbirds feeding on flowers around woodland edges and fields. Hummingbirds flap their wings over 50 times per second! 50 wing-beats per second equals 1500 wing-beats in 30 seconds.



How many times can you flap your "wings" in 30 seconds?

☐ Lizard Push-ups

Fence lizards like to hide in the trees and leaf litter of the woods, but if you're lucky you may spot one basking on a sunny log. Male fence lizards do "push-ups" to show-off their blue bellies and defend their territories.

Find a clear, safe spot on the trail and see how many push-ups you can do!

☐ White-tailed High Jump

Keep your eyes and ears open for white-tailed deer in the woods and meadows. In order to move quickly through the tall grasses and shrubs, white-tailed deer leap very high – sometimes over 6 feet in the air!

How high can you leap straight up in the air?

☐ Green Frog Hop

Listen for the "gunk!" sound of the green frog around ponds and streams. Green frogs make a tasty snack for predators such as snakes and herons. To escape quickly, frogs use their strong back legs to hop away.

Pretend you're being chased by a predator and hop like a frog down the trail.

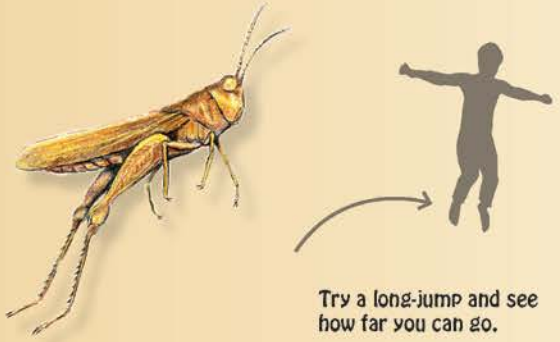
☐ Heron Stance

You can often see great blue herons standing by the water's edge with one leg drawn up to rest and conserve heat. The heron's long toes allow it to balance on one leg for hours at a time.

Stand by the edge of the trail and see how long you can balance on one leg.

☐ Grasshopper Long Jump

You may glimpse grasshoppers in areas with short grass or gravel. Grasshoppers can jump 20 times the length of their own body. If you could do that, you would be able to jump almost 100 feet!



Try a long-jump and see how far you can go.

Fun with Fungi

Our Fun with Fungi adventure introduces kids to the life of fungi and shows them how to identify some of the more common mushrooms in the woods.

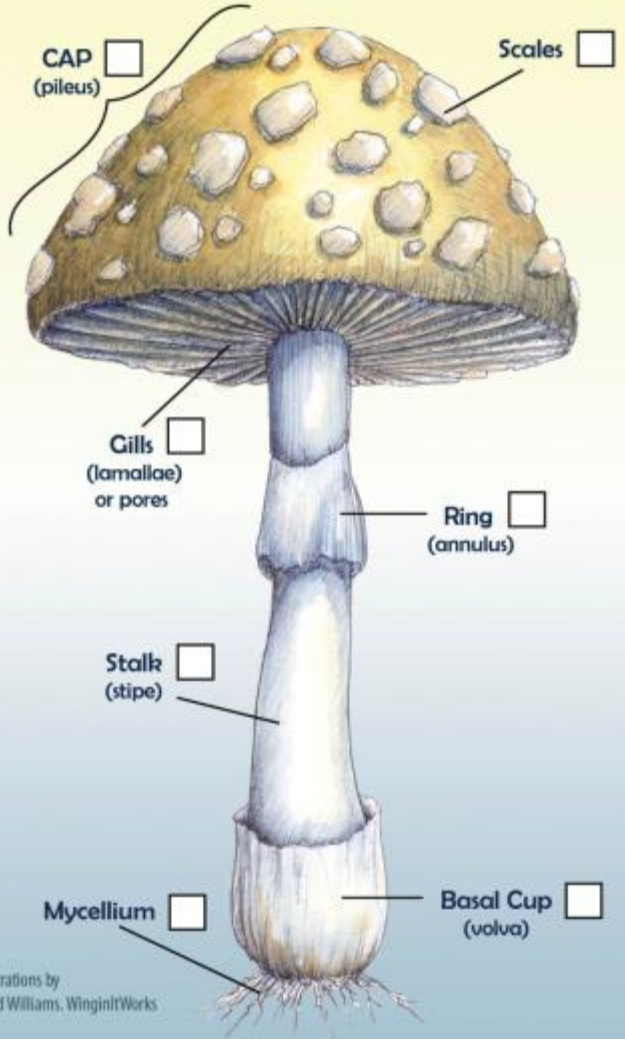
Kids will also learn what different mushroom parts are called and the important role fungi play in the forest.

This brochure is most appropriate for children ages 6 – 12.

Mushroom Parts

The image below represents a composite mushroom that shows all the major parts that might be found on a mushroom. Find a mushroom near the trail. How many different parts can you identify?

Note: not all mushrooms have all of these parts.

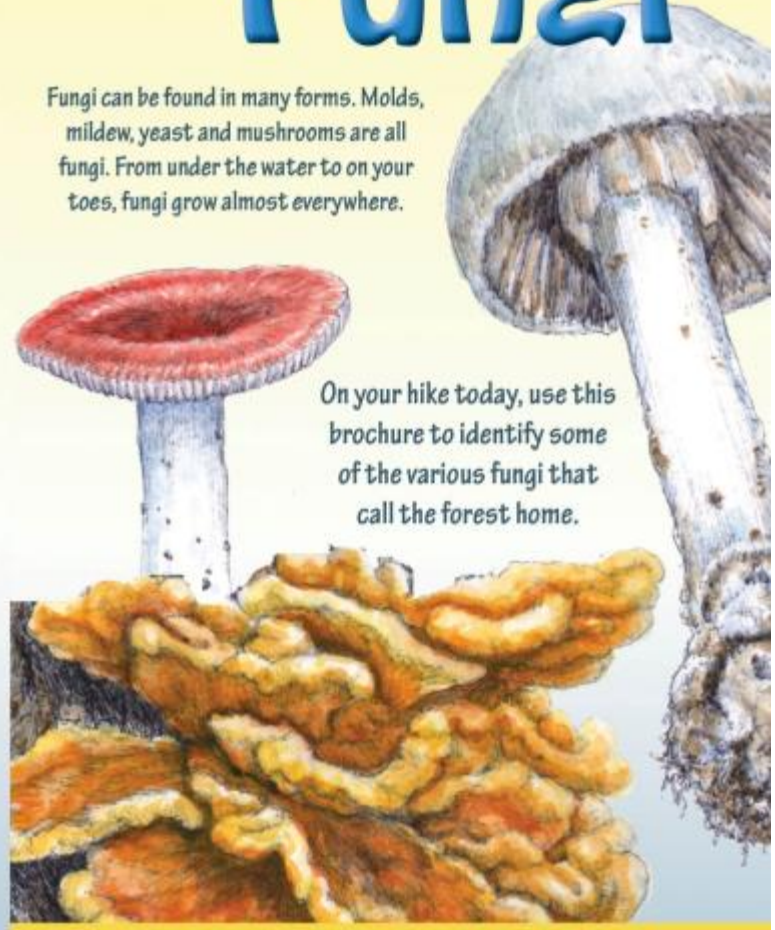


Illustrations by
David Williams, WinginItWorks

Fun with Fungi

Fungi can be found in many forms. Molds, mildew, yeast and mushrooms are all fungi. From under the water to on your toes, fungi grow almost everywhere.

On your hike today, use this brochure to identify some of the various fungi that call the forest home.



WARNING:

Many fungi contain toxins that can be harmful or fatal.
DO NOT HANDLE or EAT any mushrooms you find on the trail.

Mushrooms and Fungi

Check the box next to each type of fungus you find on your hike.

Fungus Fruit

When you find a mushroom in the woods, you are seeing only a small part of the fungus. The mushroom is the "fruit" of the fungus, where spores ("seeds") are produced. Different types of mushrooms have different ways of releasing their spores.

Giant Puffball
Calvatia gigantean

Puffballs ☐

Puffballs do not have a stalk or an open cap and spread their spores by puffing them out of a hole. Puffballs grow in a variety of sizes. Some look like eggs while others look like sport balls.

Chanterelles ☐

Chanterelles are shaped like a trumpet and can be found in many colors. The gills are found on the underside of the cap that continue down the stalk.

Golden Chanterelle
Cantharellus cibarius

You Are Where You Eat

Unlike plants, fungi do not make food from sunlight, but rather absorb nutrients from other living and dead organisms around them. Fungi are usually found growing in or on their food. Find a fungus near the trail.

Can you find its food source? _____

Boletes ☐

Boletes have a stalk and a round cap but unlike gilled mushrooms, the underside of the cap is spongy.

Old Man of the Woods
Strobilomyces floccopus

Gilled Mushrooms ☐

Gilled mushrooms are shaped like umbrellas; they have an open cap and a stalk. Gilled mushrooms have tiny ridges (gills) on the underside of the cap

Honey Fungus
Armillaria mellea

The Destroying Angel
Amanita bisporigera

Although this mushroom is beautiful, it is deadly. If eaten, this mushroom can kill an adult person.

spores

Shelf Fungi ☐

Often growing on tree trunks, shelf fungi look like, well, shelves. Many shelf fungi can be found throughout the year because they are woody. Look for tiny ridges on the underside of the shelf.

Turkey Tail
Trametes versicolor

Chicken of the Woods
Laetiporus sulphureus

Oh Mycelium

The mycelium, or "body" of the fungus, is usually hidden underground. The myceluim is made up of thread-like cells called hyphae which release enzymes and absorb nutrients. Turn over a decomposing stick.

Can you find the threads of a mycelium?___

Fungus Functions

Fungi play an important role as decomposers, helping to break down and recycle organic matter back into the soil. Without fungi, the forest floor would be littered with leaves, logs, and animal waste.

Can you find a log that is being decomposed by mushrooms? ___

Bug Out

The "Bug Out" brochure is an investigation into the creepy crawlies of the forest.

This adventure will help kids learn how to tell the difference between insects, spiders and other arthropods... as well as identify some of the more common bugs along the trail.

This brochure is appropriate for children ages 4 – 10

CAUTION: DANGEROUS

If you come across any of these critters, please DO NOT handle them. The forest is their home, and since these critters play important roles in the natural environment, please DO NOT kill them either.

Extremely Venomous

The female black widow and brown recluse spiders have extremely venomous bites that can cause serious injury to humans, and in some cases be fatal. Even though you're more likely to encounter these spiders in your house, they do live outside as well... preferring wood piles and fallen debris.

Female black widows can be easily identified by their jet-black color and red hourglass marking on the bottom of their abdomen.

The brown recluse (also known as the violin spider, brown fiddler and fiddleback spider) has a violin shaped marking on the top of its cephalothorax.

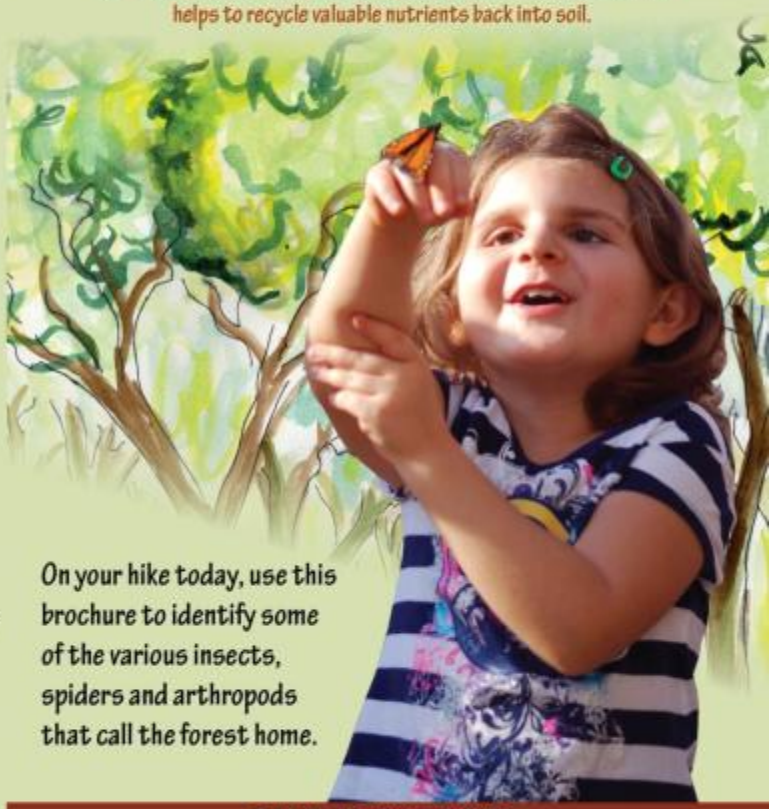
Potentially Dangerous

Wasps, bees and centipedes have a mildly poisonous sting or bite that can cause severe reactions in some people. Although it is rare, ticks may carry dangerous diseases.

Bug Out

An Adventure into the Creepy Crawlies of the Forest

Most people get "Bugged Out" in the presence of insects and spiders. However, bugs are one of the most beneficial creatures on Earth! Bugs help pollinate the world's crops. Bugs even decompose dead plant and animal material which helps to recycle valuable nutrients back into soil.



On your hike today, use this brochure to identify some of the various insects, spiders and arthropods that call the forest home.

WARNING:

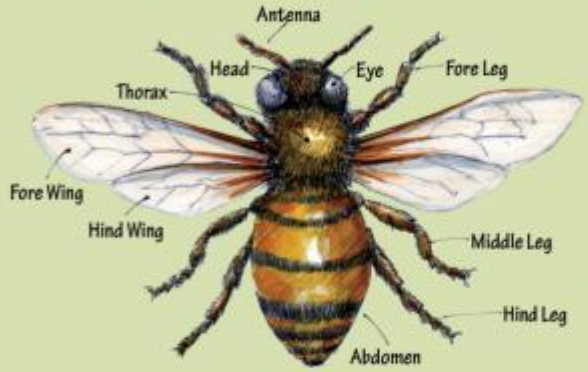
Some of our insect and spider friends have adaptations that help them survive that can be harmful to you. Be Aware! Please read the back panel for information regarding potentially dangerous spiders and insects before beginning your adventure.

Insects

Insects are an extremely diverse group of animals. More than half of all known organisms on Earth are insects. There are over 1 million different types of insects!

The drawing of the honeybee below is typical of most insects. All insects have:

- A hard, external skeleton called an exoskeleton
- A head with two antennae, compound eyes and mouth parts
- A thorax with six jointed legs and, if present, 2 or 4 wings
- An abdomen with respiratory, reproductive and digestive organs



On the drawing above, circle the three main body parts of an insect.

What is an Exoskeleton?

Unlike humans and other animals who have skeletons on the inside of our bodies, insects have their skeleton on the outside.

A hard exoskeleton protects an insect like a knight's armor.

How many different kinds of insects can you find today?

Other Arthropods

Arthropods are a group of creatures that make up about 80% of all living things on Earth. All arthropods have an exoskeleton, segmented body and jointed legs. Insects, spiders and crustaceans are all arthropods.

Look Similar, But Different

Although centipedes and millipedes look similar, they are not. Centipedes are venomous carnivores that eat insects and millipedes. Centipedes have two legs per body segment.

Millipedes are nonvenomous herbivores that like to eat decaying plant matter. Millipedes have four legs per body segment.

Spiders

Although insects and spiders look similar, they are actually different. Insects have a three-part body and six legs. Spiders have a two-part body and eight legs.

Body Parts

Spiders have a hard exoskeleton and a two-part body made up of the cephalothorax and abdomen. The head and thorax in insects are combined into the cephalothorax in spiders. It contains eight legs, pedipalps and has venom injecting fangs! A spider's abdomen has web-making spinnerets.

Hunting Strategies

Not all spiders live on or make spider webs. Some spiders actively hunt their prey by crawling through the leaf litter. Others patiently wait on vegetation. Where did you find the most spiders today?

Music From the Mountains

In our Music from the Mountains adventure, kids will discover how different trees found along the trail are used to make traditional Appalachian musical instruments.

Kids will be introduced to the different parts of stringed instruments and why certain types of wood were used to make those parts.

This brochure is most appropriate for ages 5 - 12

The Dulcimer,

A Blue Ridge Tradition

A dulcimer is a fretted stringed instrument with three or four strings that is played on your lap. There are many different shapes, styles and types of wood used to make a dulcimer.

Black Walnut ☐

Because of its strength, ease of working with, and its availability in the mountains, black walnut is a common choice.

*Black walnut trees have **compound leaves** (many leaflets on one stem). Each leaf has 12 to 15 **leaflets** (blades).*

The fruit is green and is about the size of a lemon in spring. In the fall, the fruit darkens to brown and falls from the tree. The hard nut shell is dark brown with a tasy nut inside.

Dulcimer

KIDS IN PARKS TRACK TRAIL

Music from the Mountains

Look, Wayne Henderson is shaping the side of a guitar! We visited Wayne in his workshop. He showed us which trees were used to make different parts of traditional musical instruments from the Blue Ridge Mountains.

Take this brochure on your walk today to find the trees used to make music from the mountains.

Songs from the Wood

Check the box next to each tree you find on your hike.

the Face (front)

The face of the instrument vibrates and transmits sound like a speaker. For the best sound, a soft wood needs to be used. In the Blue Ridge Mountains, red spruce is the best choice. If red spruce cannot be found, white pine can be used instead.

Red Spruce ☐

Red spruce is an evergreen that grows at higher elevations. Red spruce trees have short needles with sharp points that branch out from all sides of the twig. Look for round cones that are a little larger than an egg.

White Pine ☐

*White pine is an evergreen tree with long needles in **bundles** (fascicles) of five. The cones are long and thin. The tree trunk is straight.*

Mandolin

the Fingerboard

The fingerboard is a thin piece of hard wood that is glued to the front of the neck. Because the metal strings would dig into a softer wood over time, an extremely hardwood, like dogwood, needs to be used.

Dogwood ☐

*Dogwood bark looks like a worn checkerboard with crooked squares. In spring, dogwoods have yellow flowers with four white modified leaves, called **bracts**.*

the Neck

The strings on an instrument need to be strung very tightly. Because of this, a sturdy wood is used for the neck. Wild cherry has been used because of its strength and rich color.

Wild Cherry ☐

*A young cherry tree has smooth dark bark, with horizontal stripes called **lenticels**. A lot of trees have thick cracked bark when older.*

Mountain Banjo

the Sides and Back

When a string is plucked, sound waves travel down inside the instrument. For the best sound, a hard wood is needed to reflect the sound back out through the face of the instrument.

Sugar Maple ☐

Sugar maple has been the favorite hard wood for the back and sides of stringed instruments in the Blue Ridge Mountains for years.

*The sugar maple leaf looks like a hand with five fingers. They have winged seeds, called **sumaras,** that spin as they fall from the tree.*

Flower Power

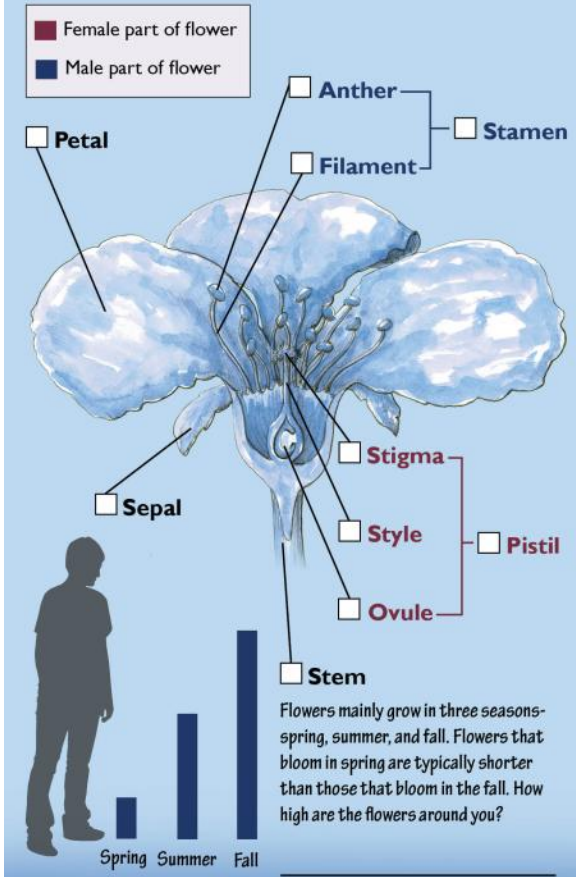
Our Flower Power adventure shows kids that flowers have the power to grow on a variety of plants, attract pollinators, and become fruit.

This brochure also provides a diagram that illustrates flower parts and their functions.

This brochure is appropriate for children ages 5 – 10

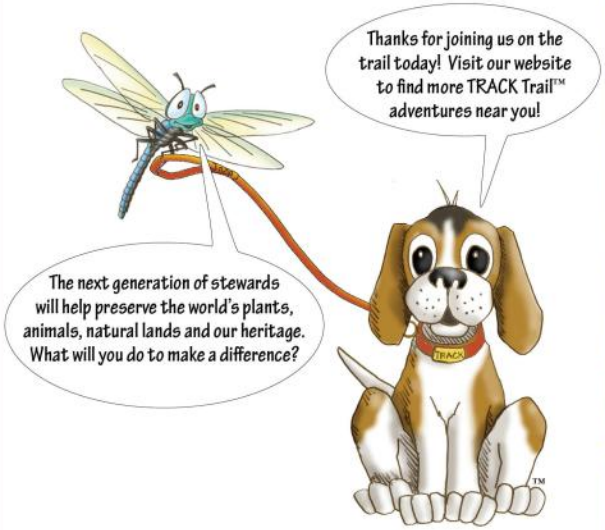
Parts of a Flower

Flowers come in many different shapes and sizes, but they all have the same basic parts. Look closely at a flower and see how many flower parts you can find.



Flowers mainly grow in three seasons- spring, summer, and fall. Flowers that bloom in spring are typically shorter than those that bloom in the fall. How high are the flowers around you?

TRACK your hike at kidsinparks.com and get FREE prizes!



Kids in Parks...

Providing a network of fun-filled adventures that get kids and families active outdoors and connected to nature.

KIP

Kids in Parks Founding Partners

BLUE RIDGE PARKWAY FOUNDATION

BlueCross BlueShield of North Carolina Foundation

Flower Power

Why do you like flowers? Is it the smell or the bright colors? Humans aren't the only ones who are attracted to flowers. Flowers are unique, fragrant and colorful to attract pollinators.

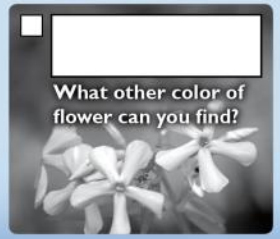
Use this brochure to explore the parts of a flower and discover what makes flowers unique.

Flower Finder

A flower's size, shape, color and smell attracts unique pollinators. Use the clues in this brochure to see how flowers are different from each other.

What Color?

Certain colors attract certain kinds of pollinators. How many colors of flowers can you find?



What Kind of Plant?

Flowers grow on woody (trees and shrubs) and herbacious (from the ground) plants. What kinds of plants can you find flowers growing on?

What Kind of Petals?

Petals are used to attract insects into the flower. One way to identify flowers is by looking at the petals.

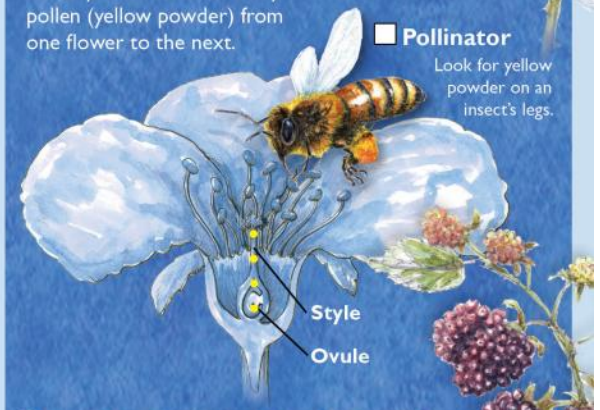
Draw the shape of a flower you find.

How Flowers Become Fruit

What do birds, bees, beetles, ants and butterflies all have in common?

They are all pollinators! Many flowers depend on relationships with pollinators to reproduce. Let's see how it works.

1. Pollinators fly from flower to flower to collect nectar (food). While doing that, a pollinator accidentally carries pollen (yellow powder) from one flower to the next.



2. If the pollen lands in the right spot on the flower, the pollen grains grow down through the style into the ovary where they fertilize the egg (ovule).

3. Once the egg is fertilized, it matures into a seed. The surrounding ovary matures into a fruit or vegetable!

More Specific Brochures

The following brochure adventures were developed by the Kids in Parks staff for specific trails or certain seasons.

If you have a brochure concept you would like developed for your site specifically, we are willing to work with you to develop your brochure concept.

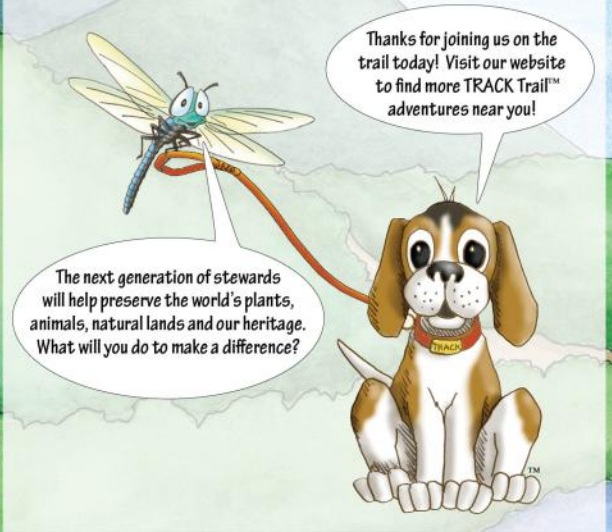
National Mall and Memorial Parks

Other Things Hiding for You to Seek

- **Memorial** – Constitution Gardens is a place of nature and beauty but it's also a place to remember our past and acknowledge what others have done to make this country what it is today.

- **NPS Arrowhead** – Did you know that you are in a national park?
- **Circle of Trees** – The original design for Constitution Gardens included big circles of trees for music, programs, and sports. How fast can you make it around the circle?
  *Hint: the circle is near the Vietnam Women's Memorial
- **Insect** – More than half of all known organisms on Earth are insects. Did you know that there are over one million different types of insects?
- **Stump** – Look around you. For every tree that falls down or has to be removed, a new one is planted somewhere in the park.

TRACK your hike at kidsinparks.com and get FREE prizes!



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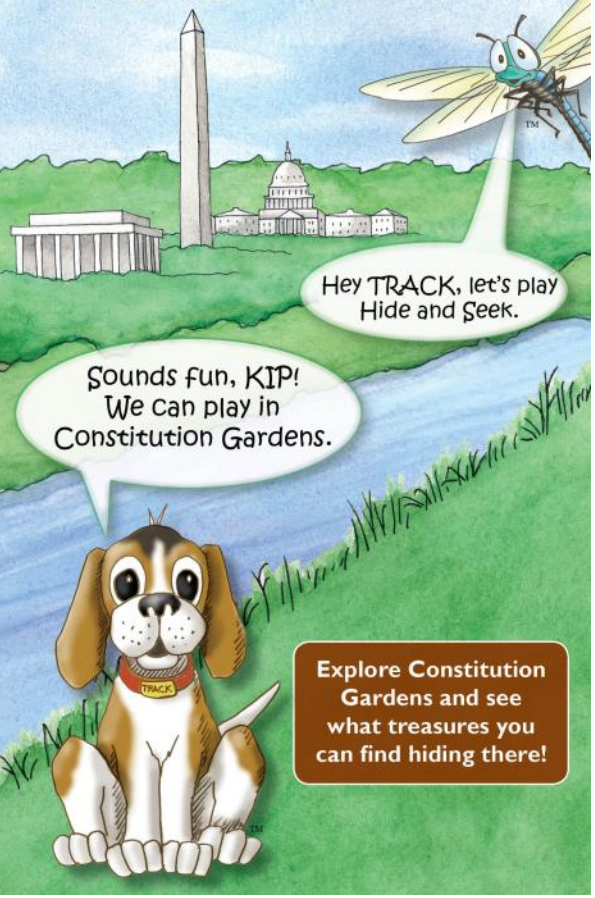
National Mall and Memorial Parks' Hide & Seek



Discover treasures in Constitution Gardens

History and nature can be found together here in Constitution Gardens. Follow along the trail and discover just a few of the stories this park has to tell.

Weeping Willow

Originally from China, weeping willow trees grow near water and can reach heights of 50 feet. The skinny leaves that hang down on branches look like tears falling, giving the tree its name. Stand by a weeping willow, close your eyes and listen to the tree. Describe what you hear.

_____

Mallard Duck

To attract a mate, the male mallard has a shiny green head and neck. The female is camouflaged to protect her nest from predators. She can raise up to a dozen chicks at one time! How many mallards do you see swimming in the pond?

_____

Vietnam Women's Memorial

To the north of the trail through the trees you can see a bronze statue of three nurses caring for a wounded soldier. This memorial honors the thousands of women who served their country during the Vietnam War. Eight yellowwood trees are planted around the memorial to recognize the eight women who died during the war. Can you count all eight trees?

American Yellowwood

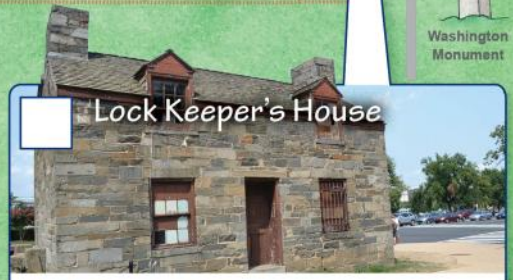
The American yellowwood is a small tree native to parts of Tennessee, Kentucky, and Arkansas. It has smooth, grey bark and **compound leaves** (many leaflets on one stem). In late spring, yellowwood trees bloom with fragrant white and pink flowers.

Memorial to the 56 Signers of the Declaration of Independence

In the summer of 1776, fifty-six people came together to unite our country and move towards a new beginning by signing the Declaration of Independence. Read part of the Declaration below and sign your "John Hancock".

"...We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness..."

_____
sign here



Lock Keeper's House

Boats used to travel up and down a canal that followed the same path as Constitution Avenue. The Lock Keeper's House operated similar to a modern day traffic light, controlling the movement of boats along the canal. What year does the plaque on the house say it was built?

_____

Designed and illustrated by Elise A. Kahl

Overmountain Victory Trail

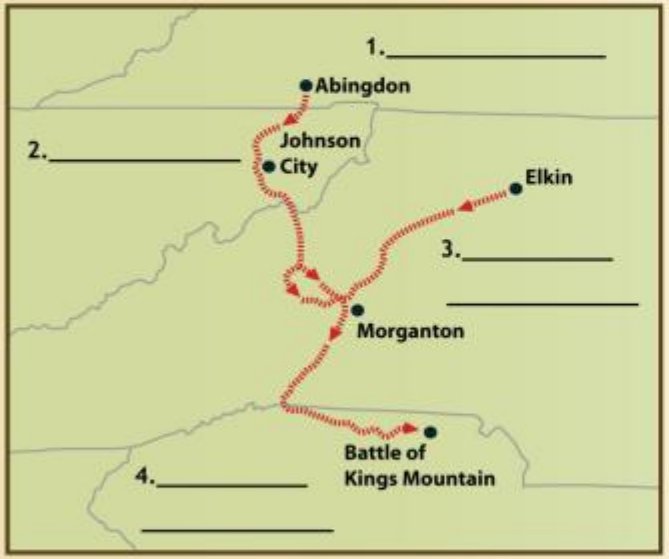
The Overmountain Victory Trail adventure introduces children to the Overmountain Victory Trail and describes how the Overmountain Men used their wilderness and hunting skills to defeat the British Loyalists at Kings Mountain.

This brochure can be used in any park that has a portion of the Overmountain Victory Trail running through it. It is most appropriate for ages 6 - 12

Our History, Our Trail

The path you are on is part of the Overmountain Victory National Historic Trail. It was created by the United States Congress in 1980 and is 330 miles long, honoring an important event during our War for Independence. The Trail is administered by the National Park Service, with many partners along the route.

Can you label the 4 states on the map that the Overmountain Victory Trail passes through? Where are you on the map?



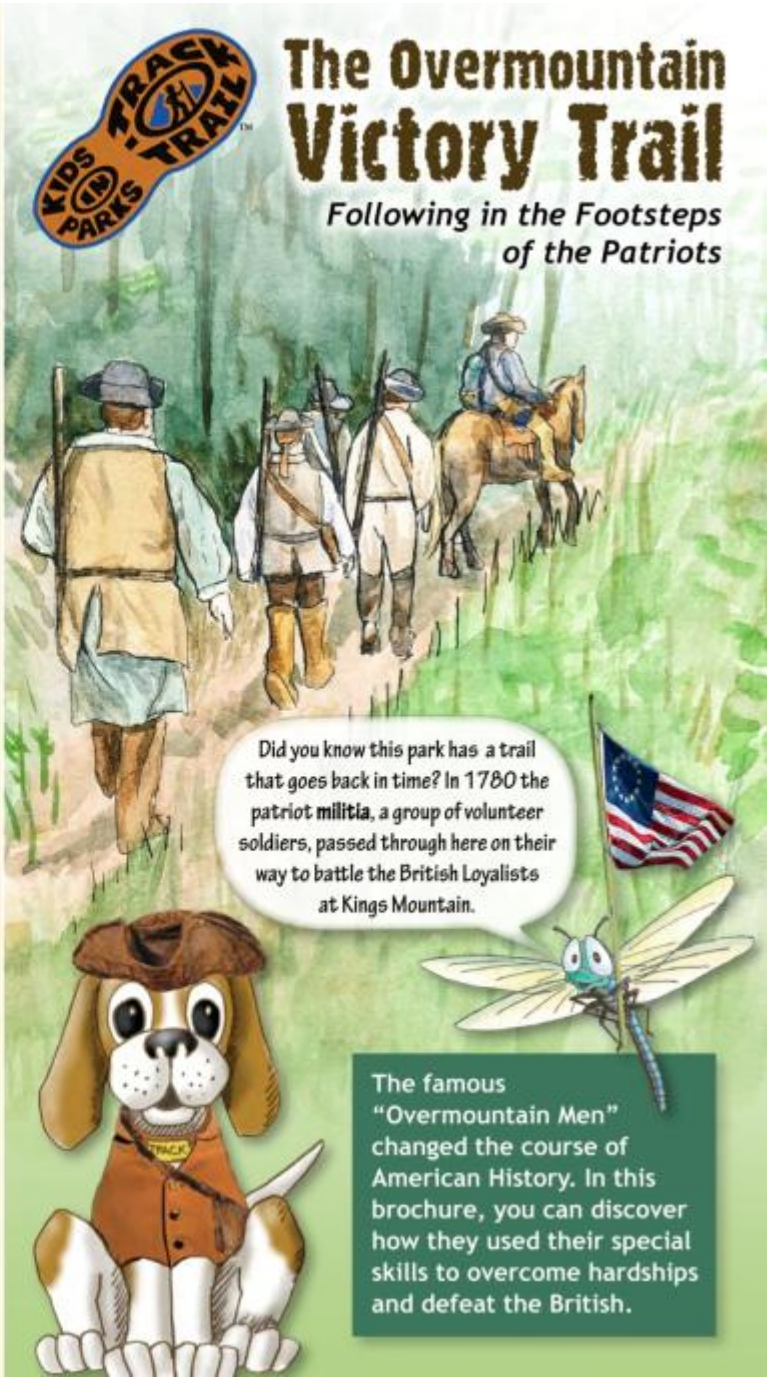
Have you been to any other National Trails or National Parks?

To find out more more about the Overmountain Victory Trail, other National Trails and your National Parks, visit:

www.nps.gov/ovvi
www.pnts.org
www.ovta.org

The Overmountain Victory Trail

Following in the Footsteps of the Patriots



Surviving Life in the Wilderness

The Overmountain Men's trek to and from Kings Mountain took weeks.
See if you can find some of the following items that they needed daily to survive the journey:

Battling with an 18th-century Weapon

In addition to battling the British Loyalists, the patriot militia had to "battle" with their guns to make them work properly. The long, heavy guns used during the American Revolution were called muzzle-loaders because the bullets were loaded through the "muzzle," or front of the gun. Soldiers on both sides could only fire about 3 rounds per minute. The Overmountain Men hid behind trees for safety while they reloaded their weapons.

Imagine if you had to follow these steps every time you were faced with an enemy:

1. Pour gunpowder in the pan and down the muzzle.

2. Load the wad and ball through the muzzle.

3. Push the ball down with the ramrod.

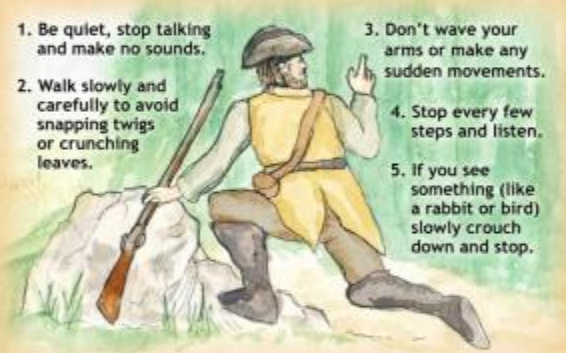
4. Pull the hammer to fully-cocked position.

5. Take aim and fire!

From Hunters to Soldiers

The Overmountain Men were made up of farmers and hunters, who did not march in rows and fight out in open fields like the British expected. Instead, they adopted Native American methods of hunting and fighting in the woods. One of these methods was being stealthy (quiet) so that the enemy didn't know you were there.

Try walking like an Overmountain Man:



Now, take turns having one person in your group close their eyes, and see if you can sneak up on each other without being heard.

If you follow these steps you'll be moving through the woods just like the patriot militia did when they were sneaking up on Patrick Ferguson and the British Loyalists at Kings Mountain. These techniques can also help you see more wildlife and hear more sounds while enjoying nature!

Johnson Farm Hide and Seek

The Johnson Farm Hide and Seek brochure was developed as to give kids and families a scavenger hunt adventure at a historic farm on the Parkway.

The brochure is designed so that kids of all ages can walk along the trail and discover “farm-type” things that are can be found at the Johnson Farm.

This brochure is most appropriate for children 4-7 years of age.

Other Things Hiding for You to Seek

- [ ] Metal wash basin
- [ ] Kids' bedroom
- [ ] Kerosene lamp
- [ ] Flower garden
- [ ] Firewood pile
- [ ] Wood stove
- [ ] Kid's game
- [ ] Corn crib
- [ ] Wagon

Johnson Farm Hide & Seek

The Johnson family lived on the farm from 1852 to 1941. Today, the NPS maintains the historic farm so visitors can discover what farm life used to be like in the 1930's.

Use this brochure to find hidden objects and places that were important to the Johnson's everyday lives.

On your visit today, see if you can find some of these things.

Make sure you leave the things you find, so others can find them too!

C&O Canal Scavenger Hunt

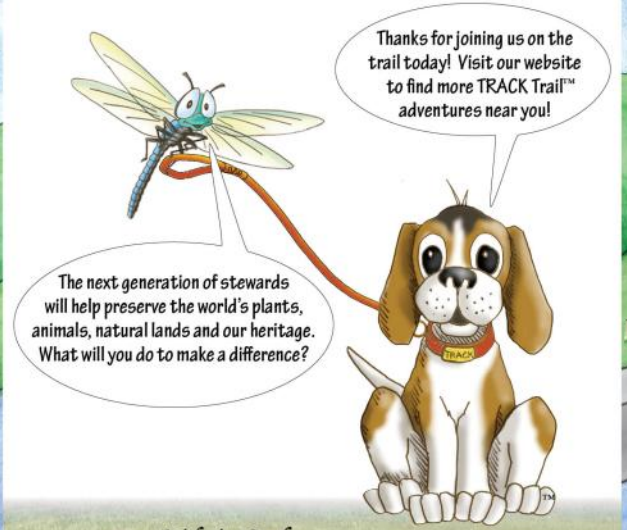
Other Things Hiding for You to Seek

- [ ] **Turtles** – Turtles enjoy sunning themselves on floating logs. How many can you see?
- [ ] **Water birds** – ducks, geese, herons and other water birds make the C&O Canal their home. Do you see a bird floating or flying around?

- [ ] **Fish** – Fish can occasionally be spotted near the shoreline of the canal or jumping in the water. Look closely and you may see some.
- [ ] **Well** – If you see a round brick structure on the side of the canal you have found the water well for the lockkeeper. How long do you think it would take to carry water from the well to the lockhouse?

- [ ] **Powerplant** – The big modern structure next to the canal is a coal-powered electric plant that was open between 1923 and 2012.
- [ ] **Launch boat dock** – If you are visiting in the summer months, you may be lucky enough to get a ride on a small canal launch boat. Ask a ranger if boat rides are available.

TRACK your hike at kidsinparks.com and get FREE prizes!



Kids in Parks...

Providing a network of fun-filled adventures that get kids and families active outdoors and connected to nature.

KIP

Kids in Parks Founding Partners

BLUE RIDGE PARKWAY FOUNDATION

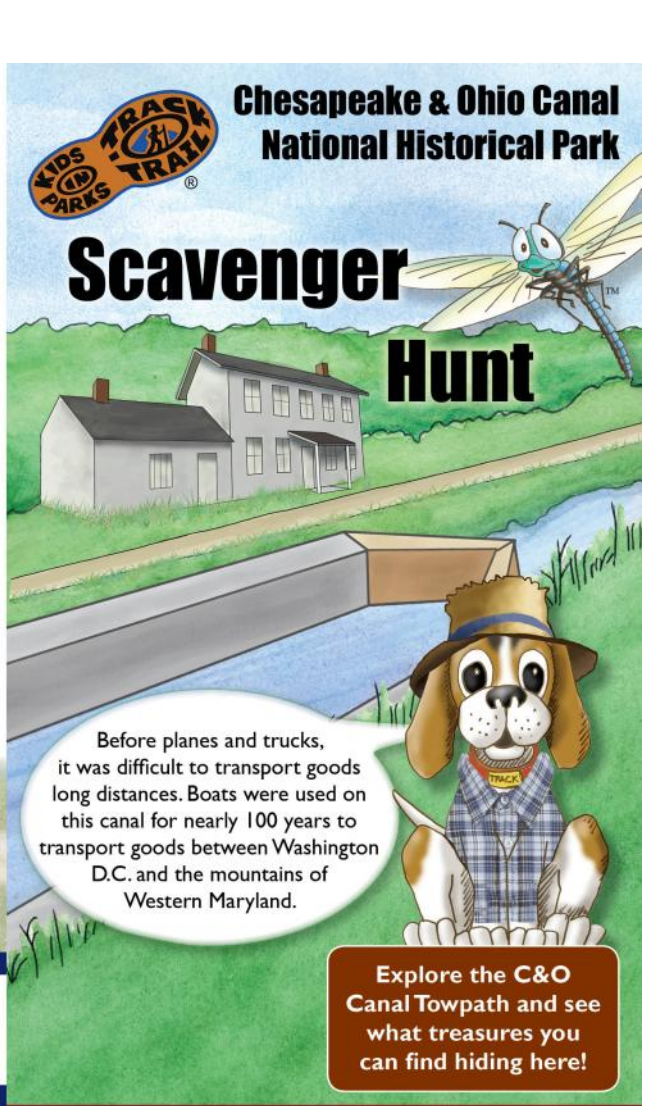
BlueCross BlueShield of North Carolina Foundation

This project was financed in part by the National Park Service's CONNECT TRAILS TO PARKS program, commemorating the 50th anniversary of the National Trails System in 2018.

KIDS in PARKS TRACK TRAIL®

Chesapeake & Ohio Canal National Historical Park

Scavenger Hunt



Lock 44 TRACK Trail

Discover treasures on the Lock 44 TRACK Trail

History and nature can be found together here in the C&O Canal National Historical Park. Follow along the trail and discover just a few of the stories this park has to tell.

Cushwa Warehouse

Before the canal was built, the Cushwa Warehouse sold flour and animal feed. After the canal opened in the 1830s, the warehouse sold coal, brick, flour, iron, cement and plaster. The coal sent from here to Hagerstown and further inland made Williamsport a booming community. Where were the goods loaded and unloaded from the canal boats?

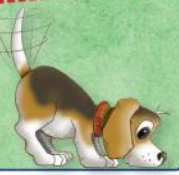
_____

Turning Basin

When the canal was open, Williamsport was a busy town with a lot of boat traffic. Since canal boats were around 90 feet long (that's three school buses parked bumper to bumper) it was important to have a place for the boats to turn around after loading or unloading.

Railroad Lift Bridge

This bridge was built in 1923 by the Western Maryland Railway so that coal could be transported to the power plant. The bridge operated like an elevator, lifting up the railroad tracks so canal boats could pass underneath.



Lock 44

There were 74 locks along the C&O Canal that lowered and raised boats 8 to 10 feet when the elevation along the canal changed. Look down the towpath at the hill. That elevation change would have been too steep for the boats without a lock. Look for the wooden gates that were opened and closed to operate the boat-locking system.

Lockhouse 44

Lockkeepers had to be available 24 hours a day to help maintain traffic flow on the canal. It was their job to safely move boats through the locks. The lockkeeper was given a salary, a rent-free house and an acre of land for livestock and a garden. Lockhouse 44 is one of only a couple dozen still standing along the C&O Canal. Which would you want to be - a lock keeper or a canal boat captain (canawler)? Why?

_____

Milepost 99

Mileposts like this one mark the canal at every mile along the canal. They helped canawlers calculate the distance covered during a given period of time. The C&O Canal is 184.5 miles long. How far are you from the beginning of the canal?

_____

How far are you from the end?

_____

C&O Canal

C&O Canal Towpath

Lock 44 TRACK Trail

N

Milepost 99

Living in Appalachia

The Living in Appalachia brochure was designed to help kids and families learn about life in the Appalachians then and now.

This brochure gives examples of what the requirements for life was like in the 1930's at Johnson Farm and what they are like today.

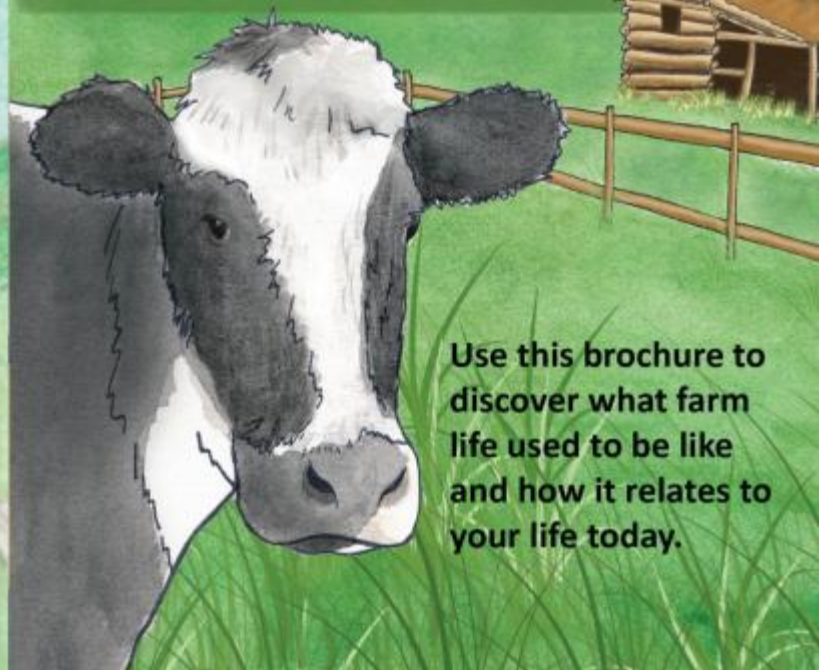
This brochure is most appropriate for children ages 6-12.

Match each key element of a 1930's farm with elements of modern life.

1930's Johnson Farm	Modern Life
☐ 	☐ 
☐ 	☐ 
☐ 	☐ 

Living in Appalachia
Lessons for Tomorrow

Life looked different in the 1930's than it does now, but people still had the same basic needs: food, water and shelter. Looking back to farm life in the 1930's holds valuable lessons for us today.



Use this brochure to discover what farm life used to be like and how it relates to your life today.

Wrinkle in Time

Directions
1. Match each element of a 1930's farm with those of a modern home.
2. Check each item or place you find on the farm and at your home.
3. Answer the questions to learn about life in the 1930's and today.

1930's Johnson Farm

The spring house kept foods cool in the summer and from freezing in the winter. The spring house's temperature is "set" by the ground temperature which is around 52° F year round. What foods might the Johnsons have stored there?

_____

The Johnsons grew or gathered most of their food here on the farm. Various vegetables were grown to eat fresh or stored for winter, and excess was often sold in the local market. Chickens provided eggs, milk cows gave fresh milk and butter, while hogs were killed for meat. What do you think the benefits are of growing your own food?

_____

With no electricity on the farm, the Johnsons used wood for cooking and heating. Wood stoves are safer and more efficient that open fires for cooking and heating. Firewood was gathered, cut and transported to the farm to use throughout the year. What time of year was the stove most important?_____

While mountain families typically walked almost everywhere they needed to go, horse drawn wagons allowed the Johnsons to move heavier items to and from town. What features can you find on the wagon that provided for a safe and comfortable ride?

_____

Modern Life

Today, food in our grocery stores travel on average 1,500 miles from where it was grown or raised to you. Find your favorite food item at home and read its label. Where is it from?_____
Are there ways you can eat food that is local?

_____

_____

Today there are many ways to travel— plane, train and bike to name a few. Many forms of transportation use a combustion engine while others use electricity and some boats even use wind to move. What is your favorite way to travel?

_____

The Johnsons got water for drinking, cooking, cleaning, cooling and livestock from a spring 50 yards from the house. What lake, river, reservoir, well or spring does your water come from?

_____

Modern heating and cooling systems are convenient and easy to control. How do you heat your home? Is it run by gas, electric, solar, from the ground or something else?

_____

Tree Tales

The Tree Tales brochure is a trail specific brochure designed to lead kids to specific trees found along the trail that have a story to tell. From bark beetles to wildfire to lightning strikes, the brochure helps kids and families learn the stories the forest has to tell.

This brochure is most appropriate for children ages 6-12.

More Tree Tales

Which Woodpecker?

Downy, hairy and red-bellied woodpeckers leave scattered holes in trees (a) as they dig for insects and create nesting cavities. Yellow-bellied sapsuckers make horizontal lines of shallow holes in the bark (b) to feed on the sap that flows out. Pileated woodpeckers tear away large chunks of bark to get the insects underneath and make distinctive oval-shaped holes for nesting (c).

Hemlock Woolly Adelgid

Have you seen any tiny tufts of "cotton" (a) on the needles of a hemlock tree? These are the egg sacs of the hemlock woolly adelgid (b), a tiny insect parasite that was accidentally brought to the Unites States from Asia in the 1920s. At Hungry Mother State Park, 650 hemlock trees, marked by silver tags (c), are being treated to protect them from the hemlock woolly adelgid. Rangers spray a chemical on the trunks of the trees every year or two, which absorbs into the trees and kills the hemlock woolly adelgids when they eat it.

What do you think happened to these trees?

(a) _____ (b) _____ (c) _____

_____ _____ _____

Hungry Mother State Park's

Tree Tales

Did you know that trees are great storytellers? If you look closely at the bark and the shape of a tree, you might find clues about its past and future. Use this brochure to investigate unusual trees that can be found along the Lake Loop Trail.

Note: *Nature is in a constant state of change, continuously building up and breaking down materials. Some features along the trail may not appear exactly as they are described in this brochure.*

What happened to that tree?

A tree's shape tells the story of its life. Bad weather, animals, fungi, other plants and humans can all leave their mark on a tree. As you walk the trail, look for these unique trees . . . each one has a story to tell.

Adventitious Roots

After crossing the small bridge beyond the parking lot, look to your left for a tree with roots that look like an octopus. Roots that sprout from unusual areas of a tree are called "adventitious roots". They are typically a result of flooding or erosion. Can you find any other signs of flooding nearby?

Trailhead

1

2

3

4

5

6

Burls and Galls

Proceed from the island back to the main trail. At the junction, look to the left for a tree with baseball-sized bumps on the trunk. These bumps are called "burls" or "galls". They can be caused by insects, fungus, or physical injuries to the bark. Have you seen any other trees with galls?

Signs of Beavers

When the trail forks, turn left, following signs for the ampitheater. After crossing the bridge onto the small island, look to your left for stumps with cone-shaped tops near the water. These trees have been chewed down by beavers. Can you see the beaver's teeth marks in the trunk?

Swell or not swell?

Just before the next trail junction, look to the right for trees that appear swollen at the base. This is called "butt swell" or the "buttress". It occurs naturally on most trees as a response to moist soil, but can also be a sign of disease. Which do you think is the case with this group of trees?

Initial Problems

As you descend the stone stairway, look to the left for a tree that people have carved initials into. Although it seems harmless, carving into a tree's bark can disrupt the flow of nutrients and water from the roots to the leaves, causing long-term damage and even death for some trees. Do you think that carving your initials into a tree trunk is a good idea?

Woodpecker Holes

Continuing down the trail, look to the left for a tree that has lost several large limbs near the top. The exposed wood was most likely invaded by insects, which then attracted woodpeckers to the tree. Do you know what kind of woodpecker made the large, oval-shaped holes?

Nature's Hide n Seek - Fall Edition

In this seasonal version of our Hide n' Seek adventure, kids will discover different leaf shapes and their respective fall colors. The brochure also gives the scientific explanation as to why the leaves change color in the fall, and why they change to the colors they do.

This brochure is appropriate for ages 3 – 12, and works best between September and November.

The Chemistry of Fall Colors

Chloro-Filled

Some plants, called evergreens, have special adaptations in their leaves that allow them to keep their chlorophyll and remain green all year. For example, pine trees have long, thin "needle" leaves that are filled with a resin that resists freezing and covered with a wax that helps prevent water loss. Since evergreens can protect their chlorophyll from winter conditions, they do not need to shed their needles every fall. How many different types of evergreens can you find?

Hidden Hues

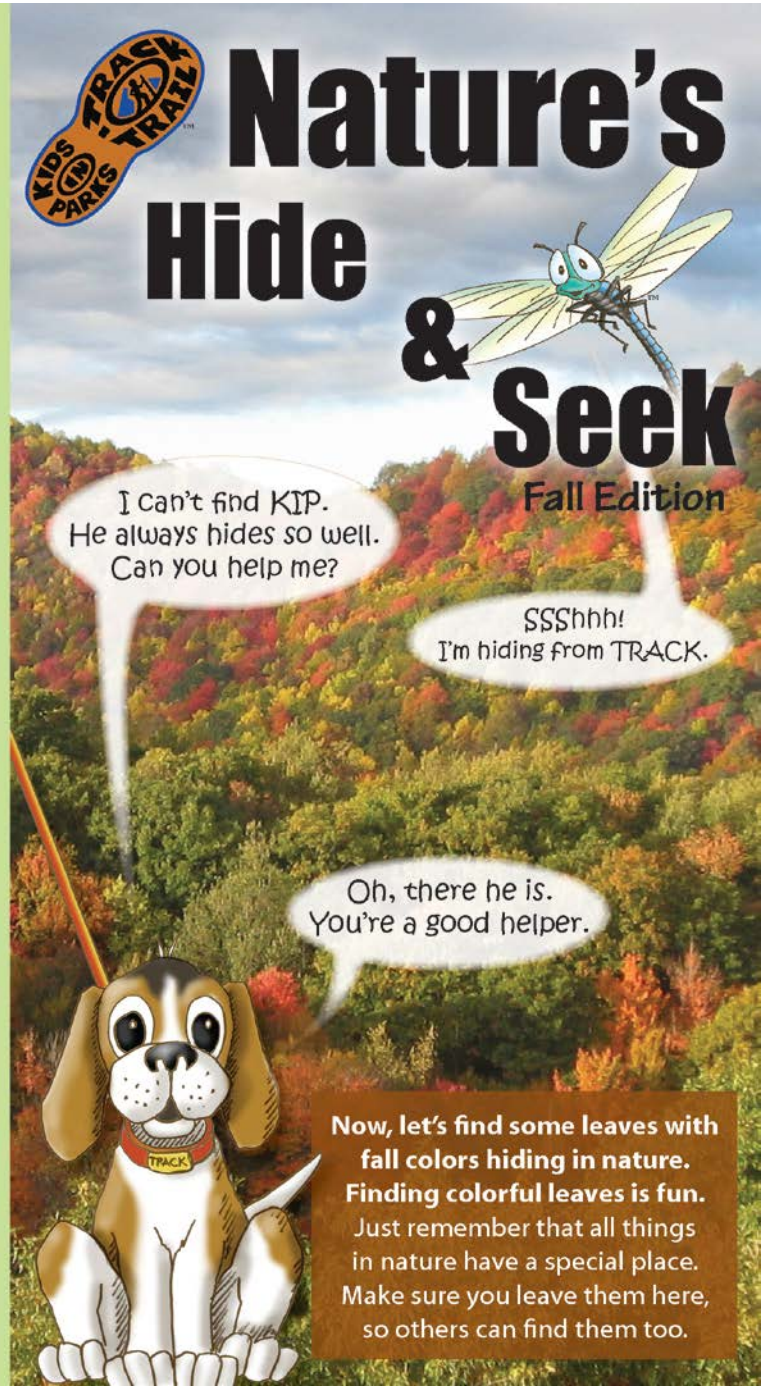
As chlorophyll disappears, the pigments responsible for making leaves turn yellow (xanthophyll) or orange (carotene) are revealed. Because these pigments were already in the leaf and were just masked by the darker green chlorophyll, the yellow and orange hues of fall remain fairly constant from year to year. See how many different-shaped yellow and orange leaves you can find during your hike today.

Sugary Saps React

When days shorten, a barrier (abscission layer) forms between the leaf stem and branch, trapping sugars in the leaf. These sugars react with bright sunlight producing a sappy-sugary substance called anthocyanin. Anthocyanins are responsible for the brilliant red colors we see every fall. The intensity of the fall's red colors varies dramatically depending on weather. The most vibrant autumn reds are produced when dry, sunny days are followed by cool, dry nights.

Nature's Hide & Seek

Fall Edition



Now, let's find some leaves with fall colors hiding in nature. Finding colorful leaves is fun. Just remember that all things in nature have a special place. Make sure you leave them here, so others can find them too.

Nature's Painted Landscape

Every fall, millions of people flock to the Blue Ridge Mountains to see the beautiful colors of fall's foliage: nature's painted landscape. During your hike today, see how many of these colorful leaves you can find.

☐ American Holly

☐ Tulip Poplar

☐ Sassafras

☐ Hickory

☐ Oaks

☐ Flowering Dogwood

☐ Maples

☐ American Beech

Developing Other Brochures

We are constantly developing new brochures to add to our collection of general brochures. Most of our brochures have been developed out of a site's needs for specific content (i.e. geology, aquatic invertebrates, etc…).

We would be more than happy to assist in the development of new brochures that would be applicable to various locations. Site specific brochure development is also available at an additional fee.

Please feel free to let us know if your site has specific brochure needs that our current list of brochures does not meet.

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