Be a Nature Explorer!

From the bestselling author of *The Hidden Life of Trees*

PETER WOHLLEBEN

Translated by **Jane Billinghurst**

Illustrated by **Belle Wuthrich**

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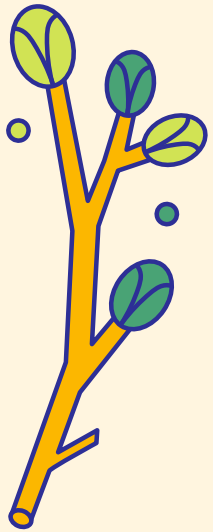

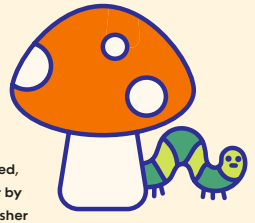

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While this book may mention specific plants, insects, and so forth, the author and publisher recommend that readers not touch or consume anything unless they are certain it is safe to do so. Kids, always check with an adult before touching or consuming anything you are unfamiliar with. Parents and guardians, please consult with and follow your local park and outdoor regulations, warnings, and restrictions.

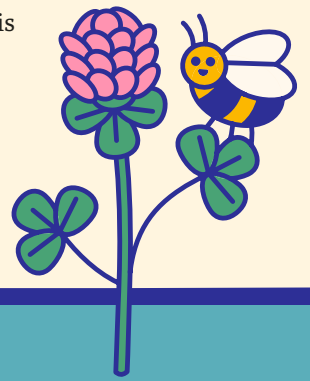
I'm So Happy You're Here!

When I was young, I loved to be out in nature and I enjoyed many adventures. For more than thirty years now, I've lived in an old forester's lodge in the Eifel mountains in the far west of Germany. I've seen wonderful animals here and discovered many amazing things about the natural world. Would you, too, like to go out and explore? You can absolutely do that because now you have this guide!

Lots of the animals and plants described in this book might also live near you, and most of the experiments will work all over the world. Your adventures will be even more exciting if you discover plants or animals that I'm not aware of because they don't exist in Germany. Some may look like the ones that live near me, but they've adapted to live near your home. Record these animals and plants in your very own nature notebook. Then you will have two books—the one I wrote and the one filled with your own discoveries.

To get started, all you have to do is step outside and set out on your first adventure. Have fun!

-Peter



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Listening to Tree Talk

Trees talk to one another.
And you can smell their conversations!

When a bark beetle lands on a tree to bore into its bark, the tree can feel it. The tree tries to get rid of the beetle by pushing a drop of sticky resin out of the hole the beetle is making. The beetle gets trapped and can't get any farther inside the tree.

Because trees react so slowly, they can defend themselves better if they have time to prepare themselves for the beetles' attack. For example, trees can prepare themselves when they are warned by other trees. Trees alert other trees to danger using scent. Every fragrance means something different. Trees share a language based on scent! You can smell it too, especially on hot summer days. If you sniff the air under conifers, you smell a sweet, spicy aroma—the alarm calls of trees.

Trees' needles spread the scent. Pick a few needles and rub them between your fingers. Notice how the smell becomes stronger? Pick needles only from trees that are not poisonous, such as spruce, pine, fir, or Douglas fir.

The most poisonous conifers in the forest are yew trees. Their dark green needles, bark, and the bright red packaging around their seeds are all dangerous.

In spring, you can even use needles from spruce or Douglas fir trees to make a smoothie. Fill a blender with fruit, some greens like spinach or lettuce, a few fresh needles, and a bit of water. Blend well. And there you have it—your tree smoothie!

activity 4

Using a Forest Telephone

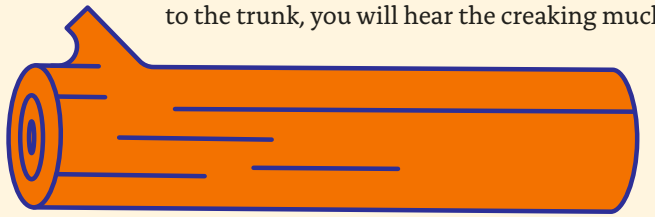
Woodpeckers use a kind of tree telephone.

Woodpeckers nest in cavities in tree trunks. Because wood transmits sound well, birds can hear when an animal climbs their tree. Then they look out to see who's coming.

You can discover for yourself what an approaching predator sounds like to the woodpeckers. First find a friend to help. Then look for a long trunk lying by the side of the trail. One of you holds an ear close to the thinner end of the trunk, while the other scratches or taps quietly with a little rock on the wider end. Without the trunk between you, the listener would not hear anything. But thanks to the tree telephone, the listener can tell whether the other person is scratching or tapping.

Windy weather is another good time to hear how well sound travels through a tree trunk. Find a tree that creaks a little when its top sways in the wind. If you hold your ear to the trunk, you will hear the creaking much more clearly.

If the wind builds to a storm, you should stay home because sometimes branches break off in stormy weather.



activity 5

Sampling Algae

You find a green, gray, or orange coating on the exterior walls of many houses. This is often caused by tiny plants called algae—and you can collect these plants.

Algae love moist air and avoid direct sun. That's why you seldom find them on the south side of houses. They grow best on shaded walls that get wet when it rains.

Have you found some? Now all you need is plastic wrap and your notebook. Take a strip of plastic wrap and press it over the algae. When you pull the plastic wrap off, algae will be stuck to the side that was against the wall. Now tape the plastic wrap onto a page in your notebook where you are collecting your discoveries. Underneath, write when and where you found the algae. Can you find algae in a variety of colors?

When it rains, lots of water runs down the trunks of deciduous trees with smooth bark. Algae really enjoy these conditions. You'll sometimes find reddish algae growing there in addition to the usual layer of green.

activity 14

Peeking Underwater

You don't need goggles or a diver's mask to see into a stream or under the smooth surface of a lake.

All you need is a glass bowl, a plastic container, or a large glass. They all work almost as well.

Immerse the container in the water as far as you can without water spilling over the edge. It's best to hold on to the container with both hands.

To make sure you don't tip too far forward and end up in the water, have someone hold on to you from behind. This works especially well if you have a belt or a sturdy waistband. The second person can hold on and gently pull back.

Now look through the bottom and sides of your container. What can you see?

It's important that your container is completely transparent and the bottom is flat without any patterns or writing on it.

activity 15

Making Chewing Gum

When spruce trees are injured, a sticky liquid flows out of the wound. The tree uses this like glue to quickly close the wound. Over time, the liquid dries out.

You can make chewing gum from dried-out spruce resin. In the forest, look for resin on the bark of large spruce trees. A good drop of resin is transparent and quite large (almost 0.5 inches; about 1 centimeter across). When you touch it, it should feel hard.

Pick this hardened drop of resin off the bark and put it in your mouth. At first, do nothing. After a couple of minutes, test it carefully with your teeth to see if it's slowly getting soft enough to chew. But don't start chewing too soon! If you do, the drop will shatter into tiny, bitter pieces.

As you test and chew, spit often. You're allowed to do that in the forest! The resin will gradually lose its bitter taste. If all goes well, after about ten minutes you'll have a pinkish chewing gum. When you don't want to chew it anymore, don't swallow it. Just spit it out!

Only use resin from spruce trees and don't look for resin in parks. Parks often grow species that are not local to your area, and their resin might be poisonous.