



One Saturday, it poured rain as the Nature Detectives hiked to the forest. Nick and Karen ran ahead.

“Hurry,” yelled Nick to the others. “It’s dry in the forest.”

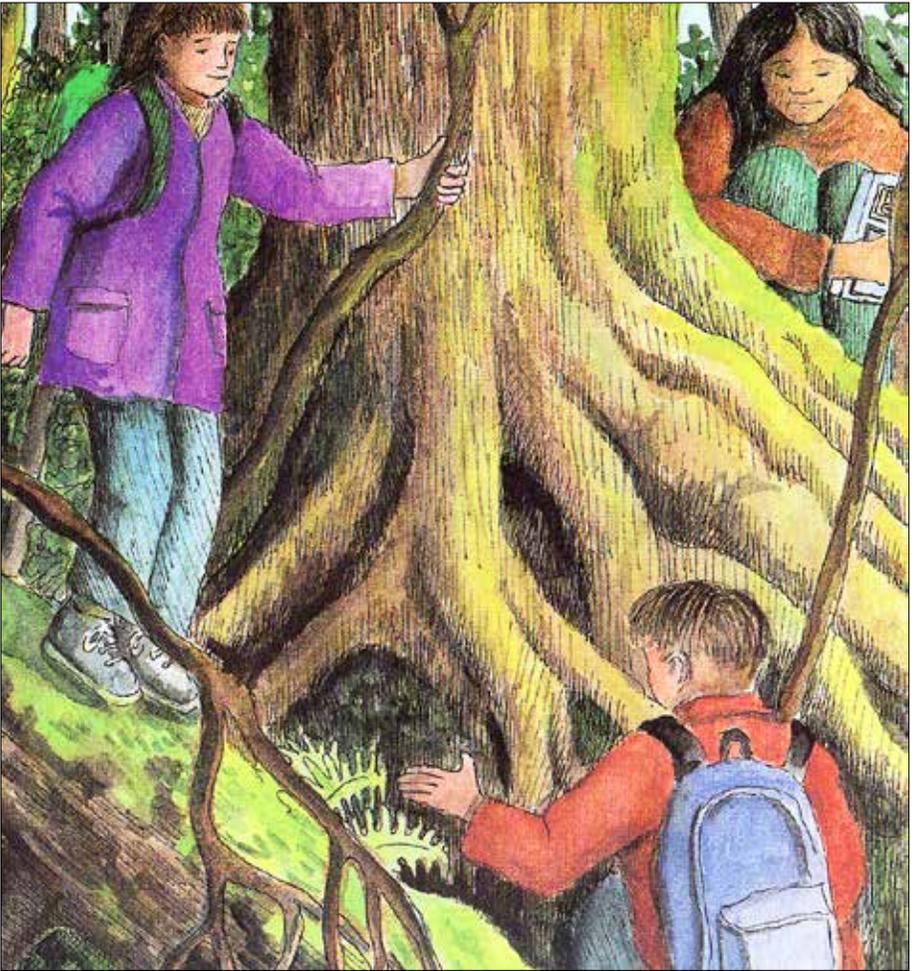
“It’s like having a roof,” said Karen, looking up. “The branches of these big trees overlap.”

“But rain still gets through,” said Jenny, as she and the rest of the club caught up. “Check around.”

The tallest trees were breaking the force of the rain, but raindrops were dripping from high branches to low ones. They were trickling down trunks. They were dropping from one plant to another. Gradually, the raindrops were reaching the **forest floor**. There, they seeped through fallen leaves and twigs into the soil.

"It's really damp here," said Andrew. He was wriggling his fingers in the ground by a huge tree.

"Good," said Jenny. "That will help the tree grow. The roots of trees and other plants take in water and **nutrients** from the ground. Their leaves—called needles on some trees—take in water, too. A tree needs about 1000 kilograms of water to grow 1 kilogram heavier."





“Rain helps seeds **sprout**, too,” said Andrew. “Look at this.”

He pointed to a tiny **seedling** in the damp ground he had been feeling. Gently, he brushed away the bits of dead leaves and dirt around it. Then he pulled a magnifying glass out of his pocket.

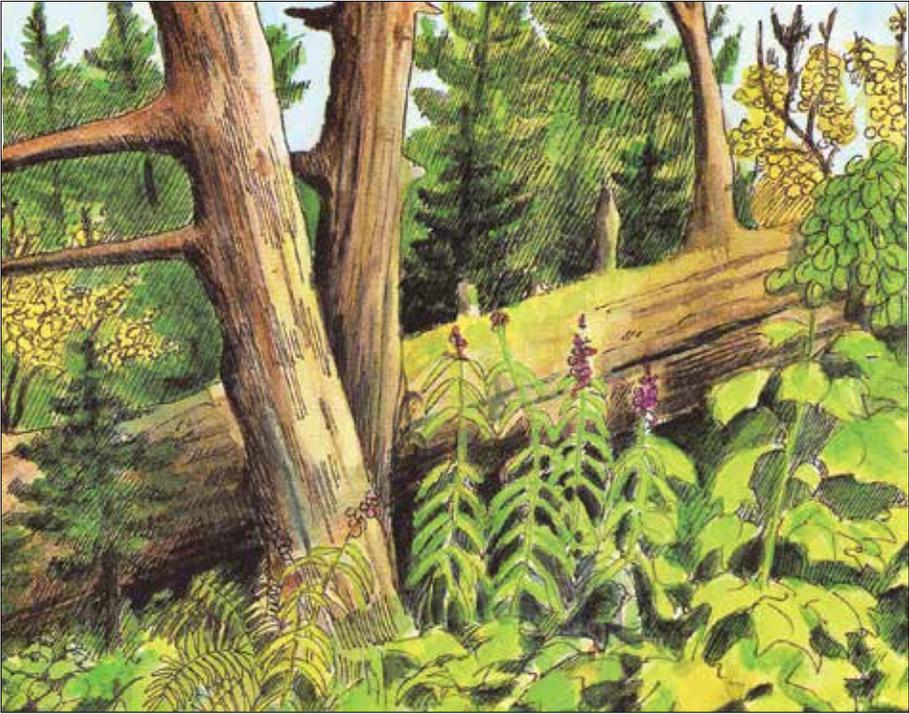
“You can see roots,” he said, looking through his glass. “There’s still a bit of the seed left, too.”



As the others checked the seedling, the rain stopped. Sunshine broke through the clouds, but it was still quite dark in the forest.

“That roof of tree branches blocks the sun just like it blocks the rain,” said Karen.

Branches of the tallest trees were getting a lot of light, but they were shading shorter trees. In turn, those trees were shading the bushes. Even less light was reaching smaller plants, such as **ferns** and **wildflowers**. Plants growing low on the ground were getting very little light.

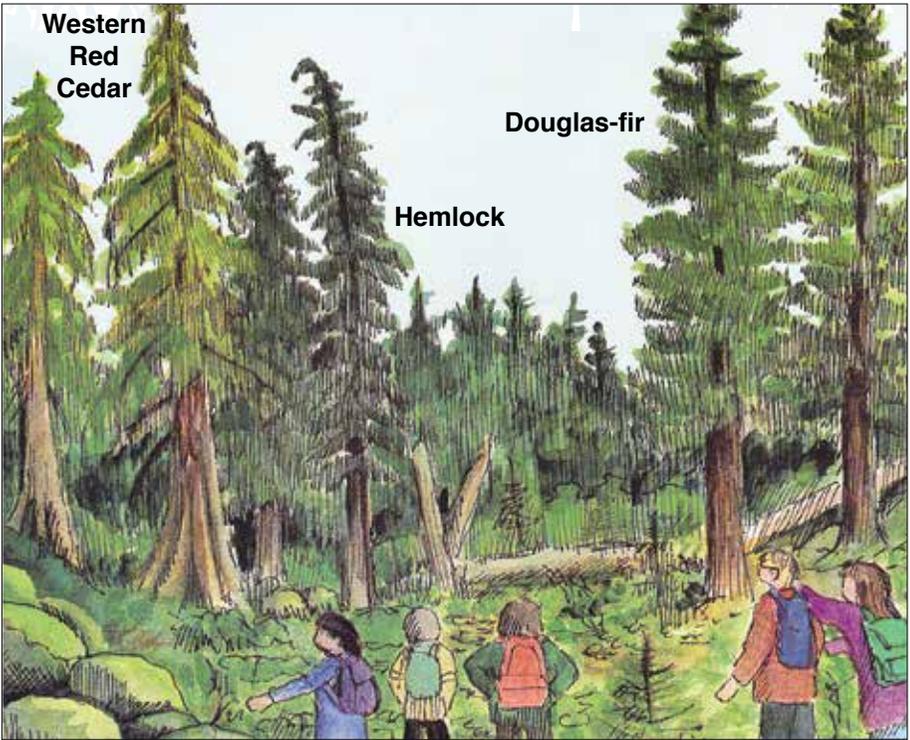


“There are reasons for every plant being where it is,” said Jenny. “Some plants need a lot of light; others grow fine in shade. When old trees fall down, they let more light in. Then different types of plants can grow on the forest floor.”

“My brother says plants eat light,” laughed Nick.

“That’s not such a joke,” said Jenny. “Plants don’t eat light, but they use it to make their own food—a kind of sugar. In sunlight, their leaves make sugar from water and air.”

“These big trees must make a lot of food,” said Nick. He was looking up at a **Douglas-fir** about 70 metres tall. It was as tall as a skyscraper.



“They sure do,” agreed Jenny. “Here on the coast, it rains a lot. The weather is cool, but not cold. That means trees like this Douglas-fir and those **hemlocks** and **western red cedars** can make food and grow all year. They get really big—especially the Douglas-firs. My book says they are the biggest trees in Canada,” she added, pointing to her *Forest Field Guide*.

“My grandpa told me about a giant Douglas-fir on Vancouver Island,” said Andrew. “It was over 1000 years old. When grandpa was little, it fell down. It shook the ground so hard people thought it was an earthquake.”



## PLANTS PAST

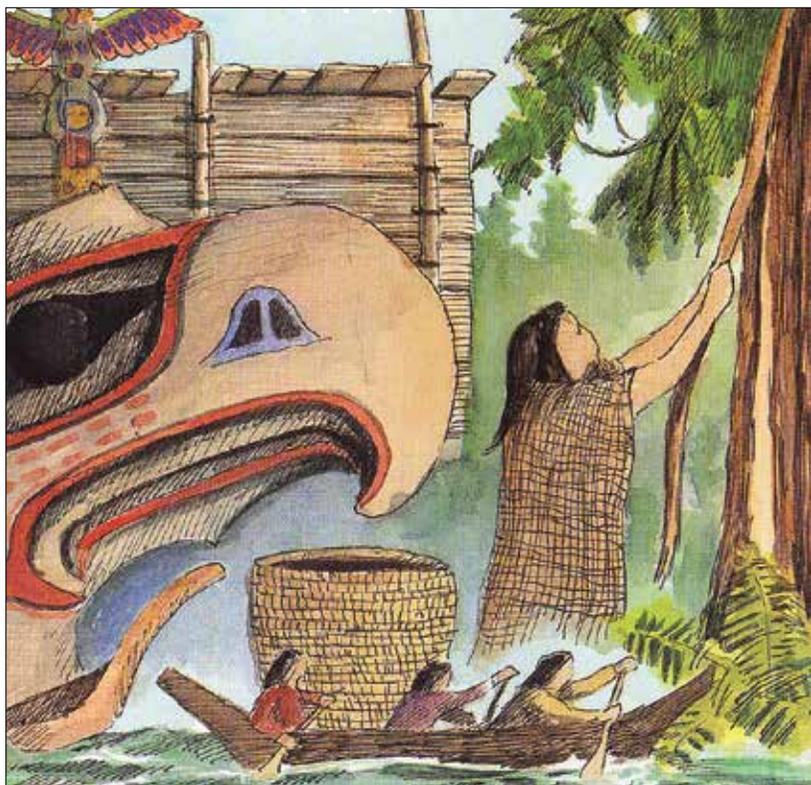


Ancient **pine** forests once covered much of the Pacific Northwest. Plant **fossils** helped scientists make that discovery. These fossils are the remains of ancient plants or the shapes of plants inside rock.

Thousands of years ago, the weather was warm and dry on the coast. Ancient pine forests **thrived**. As the weather became cool and wet, other kinds of forests—including Douglas-fir forests and cedar and hemlock forests—took over. Modern pine forests grow in drier parts of the region today.



## THE B.C. TREE



In 1988, British Columbians chose the western red cedar to be their provincial tree. It is a beautiful, sweet-smelling tree. It provides homes for many forest animals. It produces strong, light wood that does not rot easily.

First Nations people call the western red cedar the “tree of life.” They use its **bark** to make clothes and baskets. They carved its wood to make **lodges, totem poles** and long **canoes**.

## Nature Notes

### **WHAT I DISCOVERED**

1. *There are big trees, such as Douglas-firs, in the forest.*
2. *There are also smaller plants, such as wildflowers and ferns.*
3. *Many kinds of plants—even trees—grow from tiny seeds.*
4. *Many plants use light to make food from water and air.*
5. *Some plants need much more light and water than others.*
6. *Light, water and soil are non-living parts of the forest.*

### **THINGS TO CHECK LATER**

1. *How tall do hemlocks and western red cedars grow?*
2. *How long do they live?*

