



# Junior Journal 64

TITLE	GUIDED READING LEVEL
What Is a Tree?	Gold 1
Tree Facts	Gold 1
Trees and Us	Purple 2
The Sticky, Sticky Pine	Purple 2

The *Junior Journal* is for students who are working at early level 2 in the New Zealand Curriculum and reading Ready to Read texts at Purple and Gold. The *Junior Journal* supports students to make the transition from reading individual Ready to Read texts to reading the level 2 *School Journal*.

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# Junior Journal

# 64

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# What Is a Tree?

by  
Sophie  
Fern

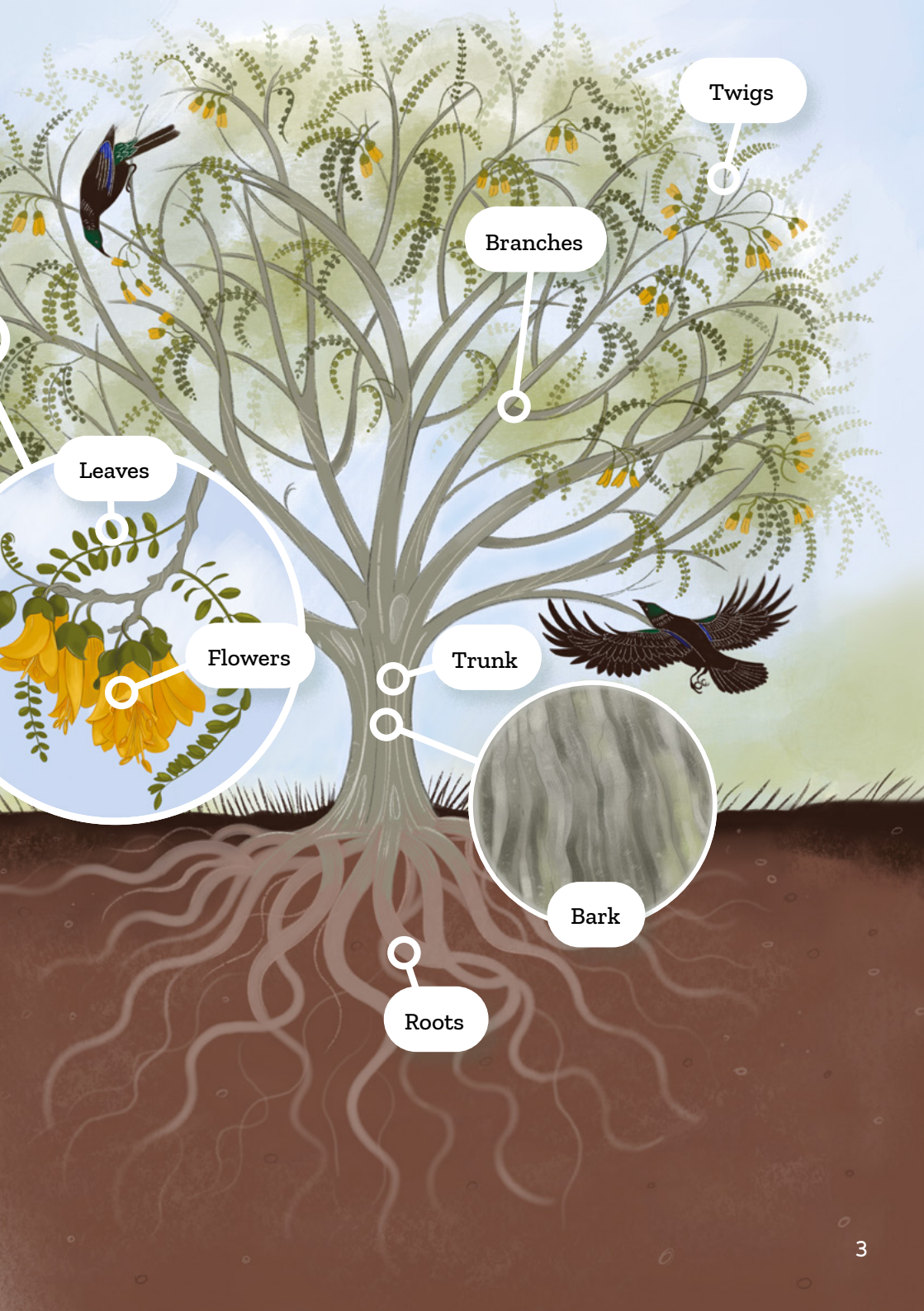
A tree is a type of plant. Grass is also a plant. So are vegetables. What makes a tree different from these other plants?

## The parts of a tree

A tree is a tall plant with a thick trunk covered in bark. The bark is like a skin that protects the trunk and stops it from drying out. Most trees have branches growing out from their trunks and twigs growing out from their branches. Leaves and flowers grow along the twigs.

Under the ground, trees have a network of roots. Sometimes these are as big as the part of the tree you can see above ground. The roots anchor the tree into the ground. They also take in water and **nutrients** that the tree needs to live.\*

\* **nutrients** – substances that are needed for healthy growth



Twigs

Branches


Leaves

Flowers

Trunk

Bark


Roots



## How long do trees live?

All trees are **perennial**, which means they live for more than two years – and some live much longer than this.\*

As a tree grows, its trunk gets thicker. It grows a ring of new wood each year. You can tell how old a tree is by counting the rings. (But you have to cut down the tree to do that!)



Tāne Mahuta is a kauri tree in Northland. It is over 50 metres tall, and its trunk is more than 13 metres around the outside. Tāne Mahuta is between 1,250 and 2,500 years old.

\* Some plants are **annuals** – they live for only one year or less, and some plants are **biennials** – they live for two years.

# Endemic, native, and introduced trees

Aotearoa New Zealand has many trees. Some of these trees are endemic – they were here before people arrived in the country and are not found anywhere else in the world.

## ENDEMIC



Rimu



Kawakawa

Some trees have always been here but can be found in other countries as well. These are called native trees.

## NATIVE



Mānuka



Whauwhaupaku / Five finger

Over time, people have brought new trees to Aotearoa. These trees are called introduced trees.

## INTRODUCED



Radiata pine



Silver birch

# Evergreen and deciduous trees




Some trees keep their leaves all year – they are evergreen. Other trees have leaves that change colour and fall off in autumn. These trees are called deciduous trees. Deciduous trees spend the winter without leaves and grow new ones in spring.

Most native and endemic trees in Aotearoa are evergreen, including kauri, pōhutukawa, and kōwhai. Only a few of our native trees lose their leaves in autumn. Many of our introduced trees, including fruit trees, are deciduous.








## Where trees live

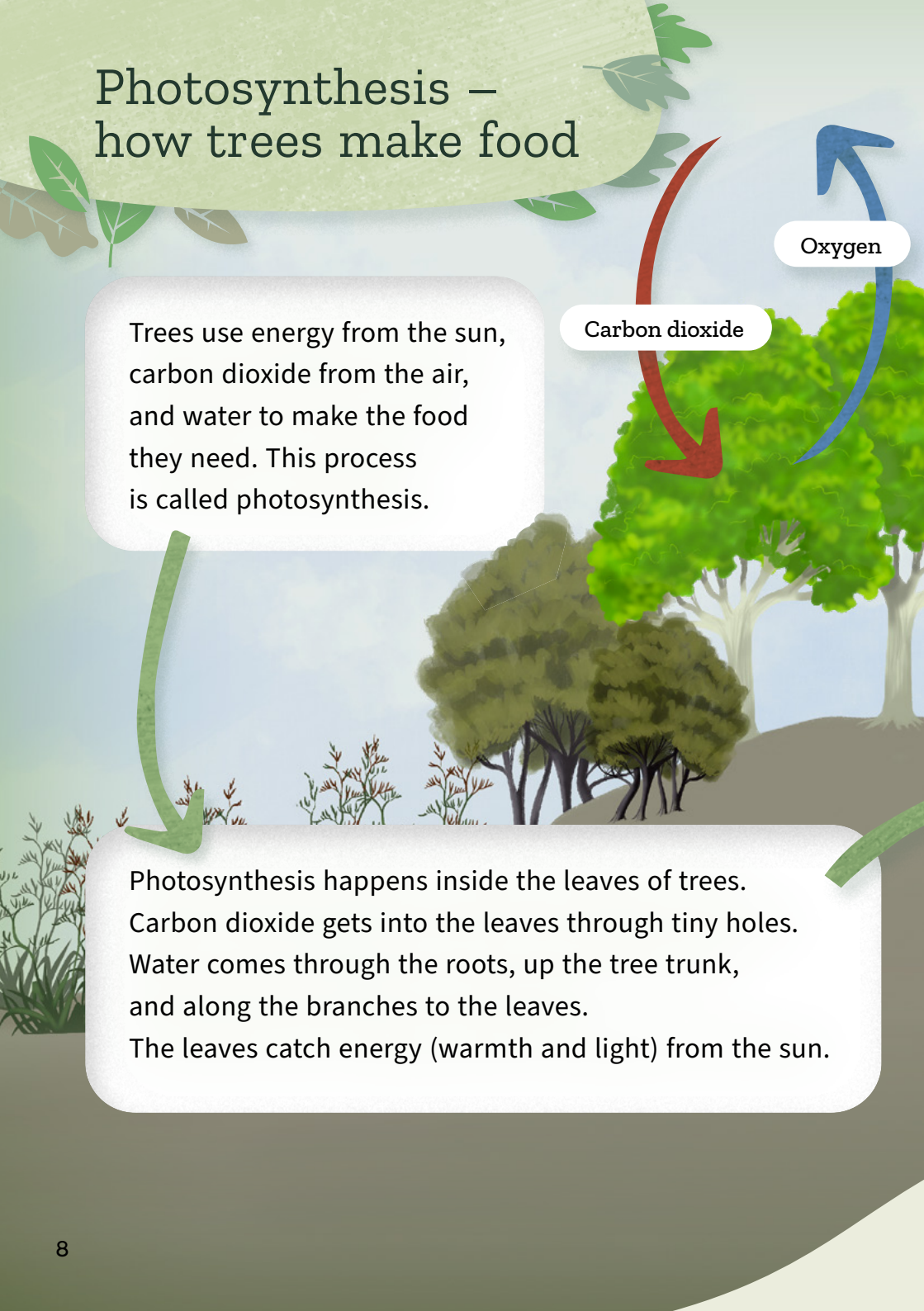
Pōhutukawa

Different trees grow best in different places. Kauri like very warm weather and can live in dry soils. This is why they grow best in the north of New Zealand. Pōhutukawa can grow in areas with very little soil or fresh water so are often found in rocky areas by the sea. Mānawa or mangrove trees are the only trees that can grow in sea water. Their roots filter out most of the salt in the sea water so it doesn't harm them.



Mānawa

# Photosynthesis – how trees make food

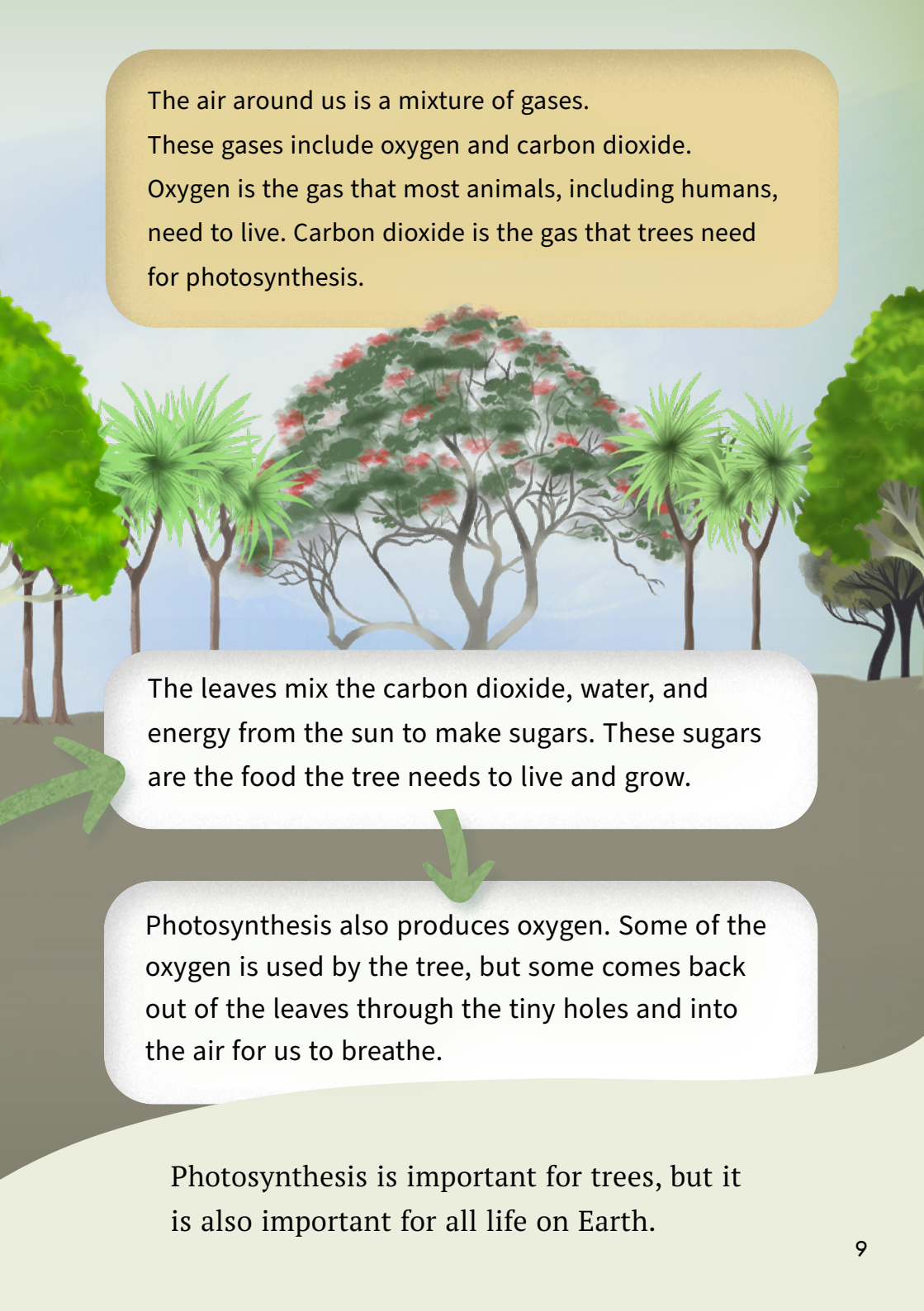


Trees use energy from the sun, carbon dioxide from the air, and water to make the food they need. This process is called photosynthesis.

Carbon dioxide

Oxygen


Photosynthesis happens inside the leaves of trees. Carbon dioxide gets into the leaves through tiny holes. Water comes through the roots, up the tree trunk, and along the branches to the leaves. The leaves catch energy (warmth and light) from the sun.




The air around us is a mixture of gases.

These gases include oxygen and carbon dioxide.

Oxygen is the gas that most animals, including humans, need to live. Carbon dioxide is the gas that trees need for photosynthesis.



The leaves mix the carbon dioxide, water, and energy from the sun to make sugars. These sugars are the food the tree needs to live and grow.



Photosynthesis also produces oxygen. Some of the oxygen is used by the tree, but some comes back out of the leaves through the tiny holes and into the air for us to breathe.

Photosynthesis is important for trees, but it is also important for all life on Earth.

# Tree Facts

by Sophie Fern



On the next few pages, you will find information about some endemic and native trees in Aotearoa New Zealand.



Do you know the names of these trees?  
The answers are on the inside back cover.





# Pōhutukawa

## Description

Endemic

Has a twisted, curvy trunk with wide-spreading branches

## Height

Up to 20 metres

## Leaves

Oval, about 8 cm by 3 cm, dark green and glossy with fine white hairs on the underside

## Flowers

Bushy, with lots of single strands (stamens), usually bright red

## Where found

In coastal areas throughout Aotearoa

## Interesting fact

The pōhutukawa is often called the New Zealand Christmas tree because it's usually covered in red flowers in December.



Stamens

# Kōwhai

## Description

Endemic

Has smooth grey bark and tangled branches

## Height

Up to 25 metres

## Leaves

Small leaflets, about 1–3 cm long, growing in pairs along the leaf stem

## Flowers

Bright yellow, hanging down in bunches

## Where found

Throughout Aotearoa, on the coast and in forests and bush

## Interesting facts

Tūī, kererū, and korimako (bellbirds) like to feed on the nectar in the flowers. The flowers can be used to make a yellow dye. Kōwhai is the Māori word for yellow.



# Tī kōuka or cabbage tree

## Description

Native

Has a long, straight trunk, with rough, thick bark, and long, pointed leaves at the top

## Height

Up to 20 metres

## Leaves

Long and narrow, up to 1 metre long

## Flowers

Tiny white, scented flowers in spring, followed by blue-white berries

## Where found

Common in most parts of the country, often in open areas and wetlands

## Interesting fact

Early Māori used tī kōuka leaves to make ropes, food baskets, clothing, and shoes.



# Mānuka or Kahikātoa

## Description

Native

Usually a small, prickly tree or shrub but can grow taller

## Height

Usually 2–5 metres

## Leaves

Small, 0.5–2 cm long, oval with sharp, pointed ends

## Flowers

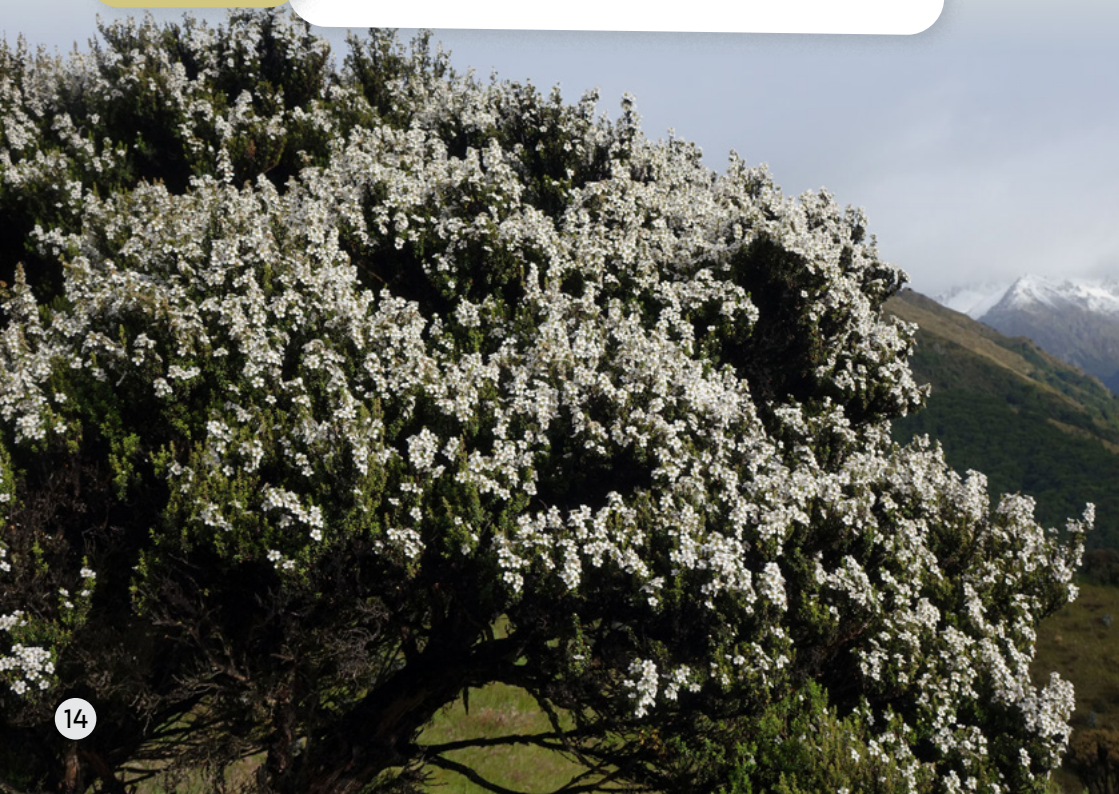
Small and white (or sometimes pink)

## Where found

Throughout Aotearoa in dry areas

## Interesting facts

Mānuka can be used for making medicine and to attract bees for making honey.







# Rangiora

## Description

Endemic

A small bushy tree or shrub

## Height

Up to 6 metres

## Leaves

Large, up to 25 cm long and 20 cm wide, with white fuzz on the underside

## Flowers

Bunches of tiny white or cream flowers in spring

## Where found

Throughout Aotearoa in scrub and lowland forest

## Interesting fact

Some early Pākehā settlers called rangiora “bushman’s toilet paper”, so you can imagine what they used the leaves for!





# The Sticky, Sticky Pine

**A traditional story from Japan,  
retold and illustrated by Jem Yoshioka**

Long, long ago in Japan, deep in the forest, there lived a woodcutter. He was kind to the trees and only collected branches that had been blown down in the wind. That way, he didn't hurt the trees. The kind woodcutter knew that trees were alive, so he looked after them.

This meant that the kind woodcutter was poor because he did not have much wood to sell. However, he was happy because he knew he was helping the forest. He knew that the forest was home to all the life around him, and he also knew that he depended on the forest to live.

One day, the kind woodcutter found a big, old pine tree deep in the forest with two of its branches broken off. Sticky, sticky sap was seeping from the places where the branches had been broken. The woodcutter knew that the sap was like the blood of the tree and that the tree was in pain.

The kind woodcutter tore off strips from his clothes to make bandages. He wrapped the broken branches with the bandages, making sure that they were tight. The sap stopped flowing, and he knew the tree would now be able to heal.



Just as he finished, a river of gold coins began flowing from the tree. The kind woodcutter was astonished. It was more money than he had ever seen in his life! He knew this was the tree's way of thanking him for his kindness. He thanked the tree for its generosity and began sweeping the coins into his basket.



The woodcutter knew he would never have to worry about money again. Not only would he live the rest of his life in comfort, but he could also help all the people who lived around him. He would never go hungry or let others go hungry ever again.



The woodcutter started walking home with his basket full of coins. On the way, he met another woodcutter. This woodcutter was greedy and didn't care about the life of the trees. In his basket, there were two branches. The kind woodcutter could see that they were freshly broken from a tree.

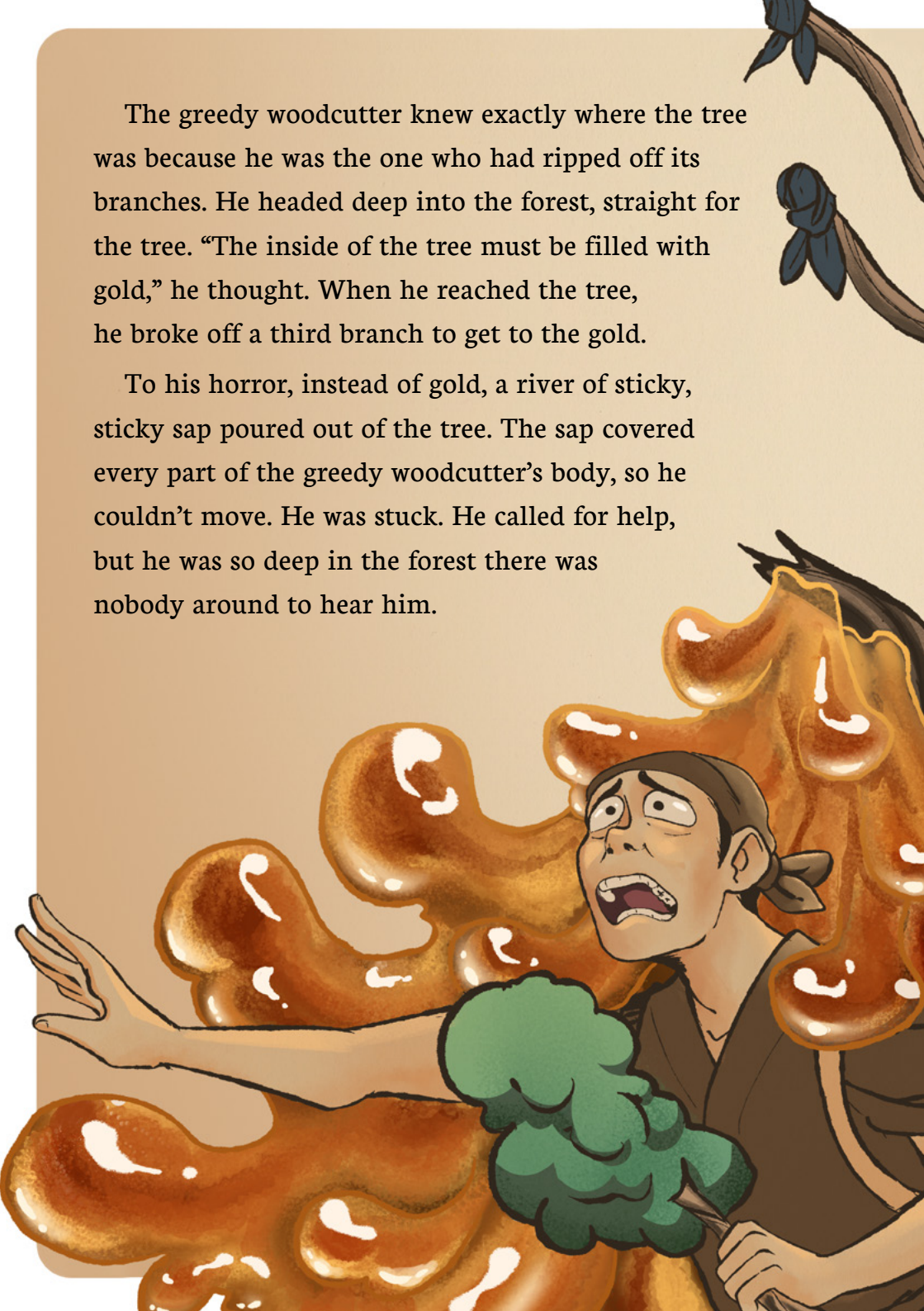
“Where did you get all that gold?” asked the greedy woodcutter. “You are surely the richest man I've ever seen.”

The kind woodcutter smiled and told the greedy woodcutter about the miracle of the sticky, sticky pine. “Deep in the forest, I came across a tree with torn branches. The tree itself gave me this gold.”

The greedy woodcutter's eyes opened wide. He wanted gold like this for himself. “Well done, my friend, and thank you for sharing your story. I will seek out this tree myself!” And he ran off into the forest.

The greedy woodcutter knew exactly where the tree was because he was the one who had ripped off its branches. He headed deep into the forest, straight for the tree. “The inside of the tree must be filled with gold,” he thought. When he reached the tree, he broke off a third branch to get to the gold.

To his horror, instead of gold, a river of sticky, sticky sap poured out of the tree. The sap covered every part of the greedy woodcutter’s body, so he couldn’t move. He was stuck. He called for help, but he was so deep in the forest there was nobody around to hear him.



The greedy woodcutter was held fast in the sap for three days - one day for each branch he had taken. By the end of the third day, he was able to free himself. He knew the tree had punished him for ripping off its branches. The greedy woodcutter was so weak he had to crawl all the way back home.



From that day on, the greedy woodcutter changed his ways. He never hurt another tree, and he passed on the lesson to his children and their children. Today, his descendants know to respect the life of the forest and to look after the trees.



# The Golden Bearing

This beautiful, life-sized golden tree was created by Aotearoa New Zealand artist

**Reuben Paterson**

(Ngāti Rangitihi, Ngāi Tūhoe, Tūhourangi, Scottish).



# Trees and Us

by  
Philip  
Simpson

There are many kinds of trees in Aotearoa New Zealand, and every kind of tree is different. Each one has a different kind of leaf, bark, flower, and seed. Every tree is special.

## Tāne, atua of the forest

In te ao Māori, Tāne is atua of the forest. He created the trees and the birds that live in them. Tōtara was the greatest of the trees because its huge, straight trunk could be used to make waka. Tōtara could also be split into slabs and used for whakairo (carving). The carvings were like the pages of a book telling the history of the whānau. The thick bark of tōtara could be used to make baskets to store food.



Pou at the entrance to Titokorangi Forest, Rotorua, representing Tuteata, a tupuna of the tangata whenua.

# Why are trees special?

Trees help us and all living things on Earth.

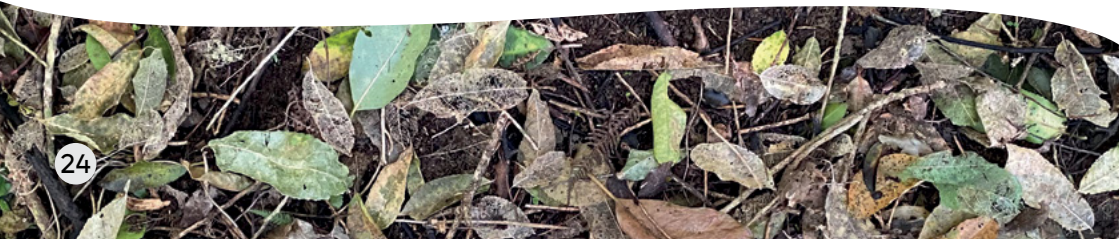
## » Trees provide food for us and other creatures

We get food, such as fruits and nuts, from trees. Bees make honey from the nectar of tree flowers, and nectar is also food for tūi and other birds.



## » Trees protect and enrich the soil

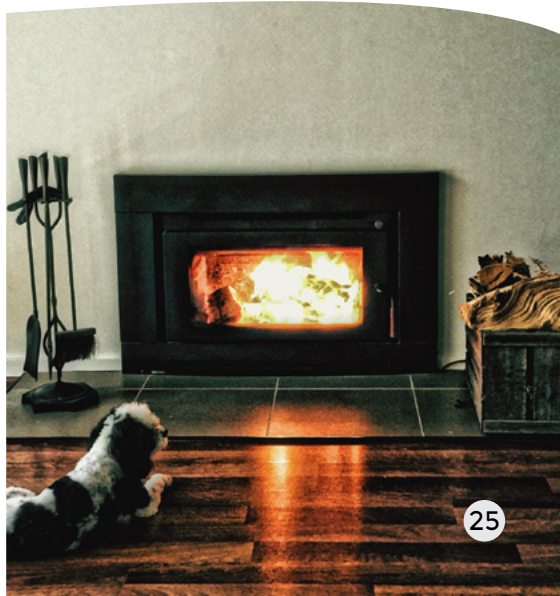
Tree roots hold on to the soil and help prevent it from washing away in floods and storms. When leaves and branches fall to the ground, they rot and break down so that, after a long time, they become part of the soil. This makes the soil rich and fertile, which helps plants to grow.





## Trees provide us with wood

We use wood for building, for carving, for making things such as furniture, bowls, musical instruments, and ornaments, and even for making paper. We also burn wood in fireplaces to keep us warm.





## Trees can provide medicine

Some trees, such as kawakawa and mānuka, have leaves, flowers, or bark that can be used to make medicine.

The oil from mānuka leaves can kill bacteria.



Kawakawa oil can calm itchy skin.

## Rongoā Māori

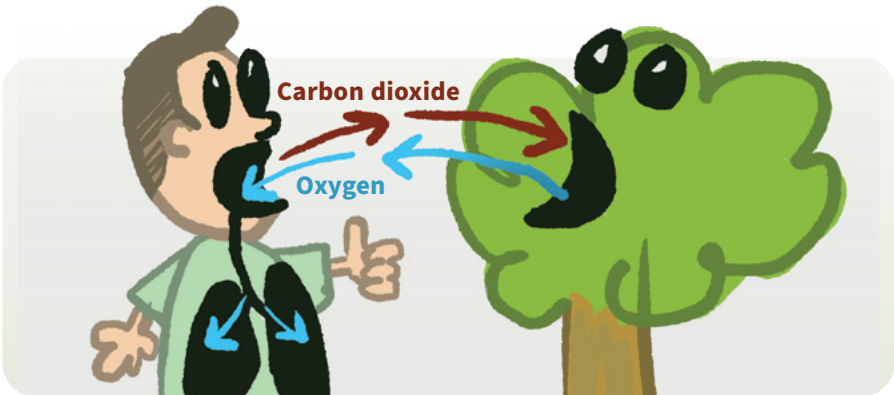
Tipuna Māori knew which trees they could use to help reduce pain, calm itchy skin, clear up colds, or heal wounds. This knowledge of rongoā Māori (traditional Māori medicine) has been passed on and is still used to make ointments, health drinks, and medicines.





## Trees purify the air we breathe

Trees use carbon dioxide from the air to make their food, and they “breathe out” oxygen through their leaves. This is where the oxygen that we breathe comes from. Trees are like the world’s lungs – breathing in and out and purifying the air.



## Trees help prevent global warming

When there is too much carbon dioxide in the air, the air gets warmer. This is called global warming. Global warming makes it harder for all living things to survive. But trees can help stop global warming because they take carbon dioxide out of the air.



# Trees in danger

Trees can be in danger from pests and diseases. Pests such as possums and deer eat the leaves, and this can kill trees. Some kauri trees are being killed by a disease that attacks the roots and bark of the trees. In some places, people are not allowed to enter the forest because the disease can be spread on people's boots and shoes.



A kauri tree killed by disease



## Caring for trees

It's important that we look after trees. When a tree dies, we can no longer use the special gifts of that tree, and the insects and birds that depend on it lose their home. People can help by:

- » planting more trees
- » making sure that people don't cut down too many trees
- » protecting trees from diseases and pests.

We need trees, so we need to take care of them. Imagine a world without trees.



# Leaf Art

by  
Sophie Fern

When you put paper over a leaf and rub it with crayon, all the details of the leaf will show up on the paper. You can use leaf rubbings to create beautiful pictures.

## YOU WILL NEED:

leaves



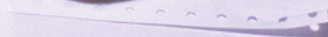
wax crayons



masking  
tape

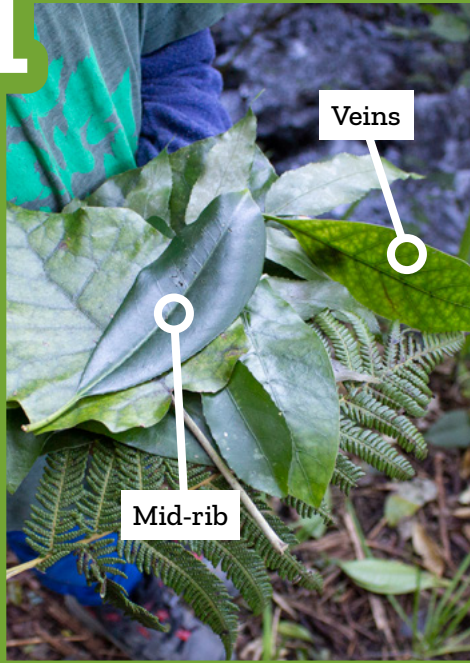


light paper





# 1



Collect some leaves with strong mid-ribs and veins on their undersides.

Leaves from the rangiora tree work well. You could choose one type of leaf or a mixture of leaves of different shapes and sizes.

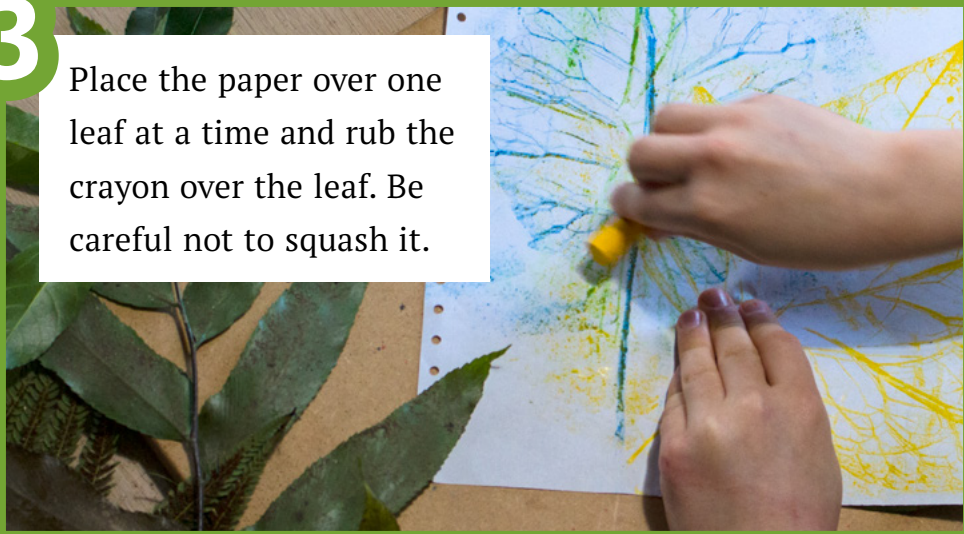
# 2

Place the leaves on a hard, flat surface with their undersides up. Think about how you are going to set them out. You could make a picture using a number of leaves, or you could make a picture of each leaf by itself.



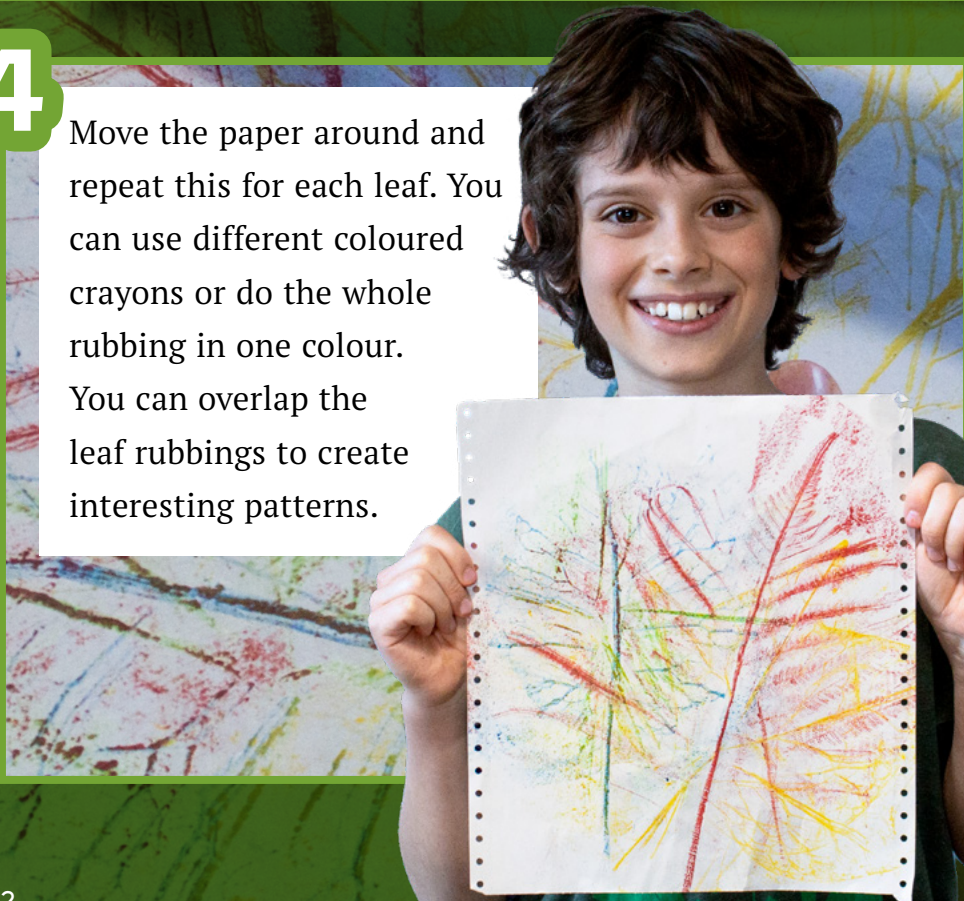
3

Place the paper over one leaf at a time and rub the crayon over the leaf. Be careful not to squash it.



4

Move the paper around and repeat this for each leaf. You can use different coloured crayons or do the whole rubbing in one colour. You can overlap the leaf rubbings to create interesting patterns.



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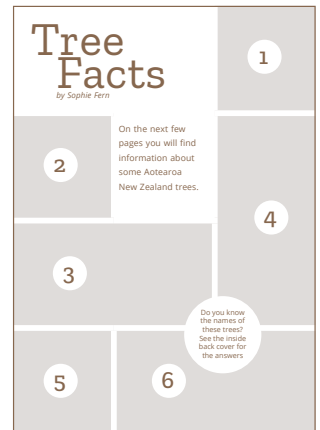
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## Quiz answers for page 10



1. Mānuka
2. Rangiora
3. Kōwhai
4. Tī Kōuka
5. Kauri
6. Pōhutukawa





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  What Is a Tree?

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  Tree Facts

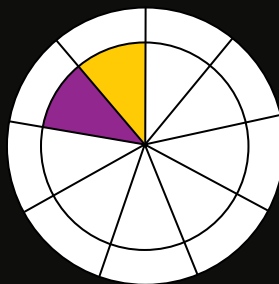
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  Trees and Us

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  The Sticky, Sticky Pine

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