

# Oak

The oak is tall with a strong trunk and wide crown.  
Its bark is tough, and as important  
to a tree as skin is to you and me.

Many woodland oaks are deciduous trees, which means they drop their leaves in winter. Leaves aren't all they drop! Acorns fall in autumn when the woods are amber and bronze. Each is packed with everything a spring seedling could need.

There are over 460 species of oak tree. Although they can grow in all kinds of habitats, for the most part, oaks are native to the northern hemisphere. Oaks can grow to over 40 metres high, and may live for 1,000 years.

Acorn  
Corkin  
Leaf

Spark Leafings treat any damage done to the bark of their tree. Trees are sensitive, even wrinkly old oaks, but they can also renew their bark as they grow.

## Druids

In ancient Celtic times were the keepers of wisdom and knowledge. The word 'druid' means 'ask knowers'.

A tree's bark protects it from harmful insects and fungi and also keeps the wood from drying out. Trees are around 50 per cent water (humans are 60 per cent).

I love hanging out!

# A Tree of Life

From crown to root, the oak is teeming with life - particularly bugs! A single oak can house hundreds of species of insect - not all welcome guests.

## Woodpeckers

Drill into trees when building their nests, and also to find and eat wood-boring insects. Mostly they favour dead wood, so Shield Leafings don't mind them.

In England there are more than 3,000 ancient oak trees, which are aged between 450 and 1,000 years. Ancient oaks are not the tallest oak trees, but for most cases they are the tallest. The Keeper Leafings of ancient oaks often have a similar appearance!

Acorn season!

Will  
Badgers, jays and squirrels

## Oscar

is a Minder Leafing and he knows the importance of the acorn to forest critters. Squirrels are known for hiding or caching acorns to recover later. Sometimes Minder Leafings play hide-and-seek with the squirrels' acorns.

Now close your eyes and count to 100!

Using their long snouts, acorn weevils drill into an acorn to lay their eggs. Lane and Will are Shield Leafings, and they must see to it that enough acorns grow into young trees. Acorns containing weevils will rot, so Shield Leafings BEWARE!

The stag beetle lays its eggs in the dead wood of old oaks, and its larvae (young insects) eat up and break down the wood, turning it into soil for new trees.

Lane

Cat leafing house

I'm feeling a bit peckish myself!

## FLANN NOII

There is an ancient oak in Llandudno called the 'Darth Oak'. In the year, the Square of the Oak had a sit-down dinner for all guests in the hollow trunk of the tree. It is thought to be between 800 and 1,000 years old - one of the oldest trees in Europe.

# Tree Talk

Trees have much to say and, like humans, they have more than one means of keeping in touch. It is up to Link Leafings like Flann to keep the lines of communication open.

Trees in a forest, trees in a city park, even those in your garden are connected via a network of roots and fungi that has become known as the wood wide web.

Much scientific research is being done into the inner life of trees and into how they sense the world around them. Maybe leafings have been listening to their voices since the first trees appeared on Earth.

shhh

rustle

fizz

chatter

creek

whisper

ping!

Listen carefully. Can you hear it? Tree talk.

Parent trees use the wood wide web to nurture their saplings, feeding them with a thick sweet liquid called glucose. Meanwhile, wise old trees that appear no more than hollow stumps are fed water and nutrients via the same network, and kept alive.

Trees look after their babies just like leafings do!

Sometimes dying trees send nutrients to healthy neighbours. Leafings know that together, trees are stronger. It is the same for leafings.

Even when there is no danger, the web is abuzz with tree conversation as all manner of information is passed from tree to tree. In fact, the social life of all plants, it seems, is far busier than humans had presumed.

Trees' voices are not like our own. Most of the sounds that trees produce are either too low or too high for our ears to pick up without the aid of listening instruments. Next time you are among trees - in a garden or in a forest, think of the fizzes, hummings, cracklings, hissing and clicking sounds that are just out of the reach of your senses.

What gossip and chatter might you be missing? The leafings know. Perhaps they'll let you in on the conversation?

Aphid attack! Sound the alarm!

What are aphids? Little sap-sucking bugs!

In times of trouble, the wood wide web sets up an alarm call, so that other trees can prepare their defences.

You'll never believe what he told me...

# Baobab

In Africa, the baobab tree is known as the 'tree of life', and baobab leaflings know a thing or two about surviving. They are among the longest lived leaflings on Earth.

There are six species of baobabs on the island of Madagascar, off the coast of East Africa. Nya's tree is a Grandidier's baobab, and it is one of the trees that line Madagascar's famous Avenue of Baobabs.

Baobab leaflings are tough customers, and their trees are tough too, made to withstand drought, fire and terrorism. But there are hidden threats to their survival, especially the clearing of forests for farmland.

The baobab tree is a native of Madagascar and West and Southern Africa. It is the largest succulent plant in the world, reaching up to 30 metres. It can live for up to 2,000 years.

Leaf



Fruit



Flowers



## A Tree of Stories

With its strange upside-down appearance, great strength and size, is it any wonder the baobab is at the heart of so many African legends?

FLANN NOTE

The Latin 'flammarum' means ghost and in Madagascar flammar are associated with spirits - perhaps because they are active at night

### Trees in Love



### The Hyena and the Baobab

A baobab tree is so tall that God promised each animal with a special gift. To the hyena, the gift was the long neck and the long legs, so that it could reach the top of the baobab tree and look down on the ground. (baobabs in love)

Isiti

Madagascar is home to about half the world's species of chameleons. Just like a chameleon Nya, a Minder Leafling, is an expert at blending in.

Mouse lemurs do have very large and peculiar eyes - spooky! Not to leaflings though.

The blossom leaflings on the Madagascar baobabs have their work cut out as far as the tree's foot-long flowers, and they must work at night, because the baobab is pollinated by nocturnal mouse lemurs, bats and moths.

# Coast & Giant Redwood

Standing tall, redwood or sequoia leaflings seem to look down on the leaflings of other trees. Even the leaflings of the coast and giant redwood can be standoffish with one another.

Beth tribes are impressive, but coast redwood leaflings are the tallest leaflings of all.

Being giants in leafling terms, you'd think the redwood leaflings wouldn't be hard to spot. Well, think again; in trees so tall, it's easy to hide.

Ah, there you are, Flann. I almost tripped over you!



How's the weather up there?



**FLANN NOTE**  
There is a third species of redwood, the dawn redwood. Humans thought that it was extinct, until the 1940s. Then, botanists found living dawn redwoods in central China. If these humans had just thought to ask!

Leaf



Cones

Coast redwood grow along the Pacific coast of North America, while giant redwood are found in the Sierra Nevada mountain range, 300 kilometres to the east. Both conifers grow to heights of 90 metres and more and can live for thousands of years. Coast and giant redwoods are named for their pinkish-red wood. They are also called sequoia trees.

The tallest tree on Earth, a coast redwood, grows in Redwoods National and State Park, California, but its exact location is kept secret. It was discovered in 2006 and is named Hyperion. It stands a whopping 116.07 metres tall – about six storeys taller than the Statue of Liberty.

Walking among these great trees as the fog rolls in, it can feel like you're alone. Of course, there are leaflings above you, but the redwood forests are a habitat for all sorts of other creatures, though they can be a little shy.

CLICK HERE

Hoo-hoo  
Hoo-hoo



CLICK HERE  
Inner bark is phloem  
This moves sugar from the leaves to the rest of the tree.

Cambium layer

This produces bark and expands so that the tree grows wider.

Outer bark

This thick layer acts like a shield.

Heartwood

Found at the centre of the tree. This is old wood, and it makes the tree stable and strong.

Sapwood

This delivers water from the roots to the rest of the tree.

Each ring shows a year of growth.  
How old is this tree?

Hoo-hoo  
Hoo-hoo

