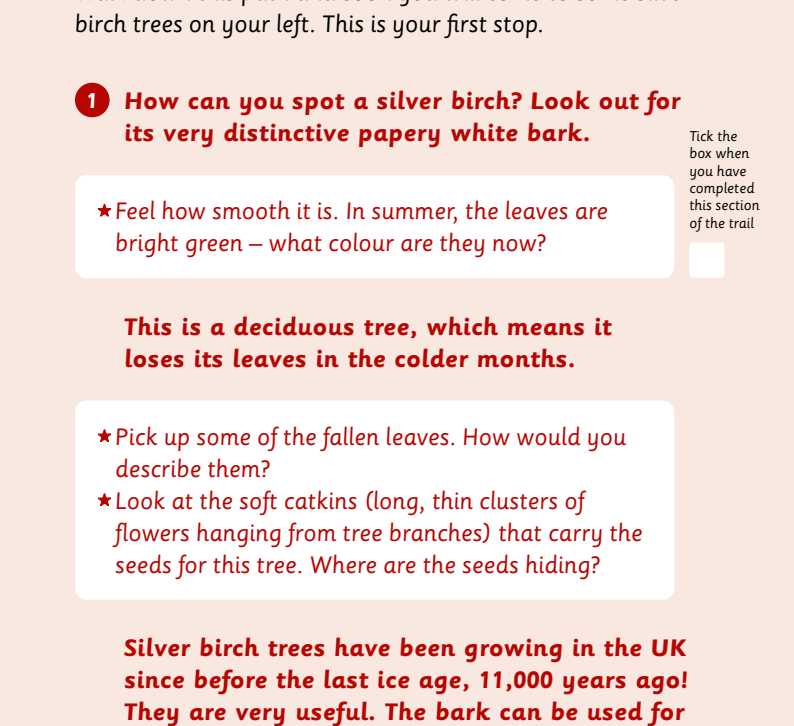


Royal Botanic Gardens Kew

Autumn family trail

Welcome to the 45-minute autumn trail. Make sure you collect a fallen leaf and a seed from the ground for each tree as you go along, so you can compare them at the end.



Key

Trail route	Toilets	Shop
Café	Accessible toilets	Water
Restaurant	Baby change	Information

Start at Victoria Gate

As you exit the ticket barriers, you will see a pathway straight ahead of you, with the Temple of Bellona on the left. Walk down this path and soon you will come to some silver birch trees on your left. This is your first stop.

1 How can you spot a silver birch? Look out for its very distinctive papery white bark.

- ★ Feel how smooth it is. In summer, the leaves are bright green – what colour are they now?

Tick the box when you have completed this section of the trail

This is a deciduous tree, which means it loses its leaves in the colder months.

- ★ Pick up some of the fallen leaves. How would you describe them?
- ★ Look at the soft catkins (long, thin clusters of flowers hanging from tree branches) that carry the seeds for this tree. Where are the seeds hiding?

Silver birch trees have been growing in the UK since before the last ice age, 11,000 years ago! They are very useful. The bark can be used for paper, the wood for furniture and the twigs make 'besom' brooms – look out for witches carrying them this Halloween!

- ★ Collect a leaf and a catkin.

➡ **TAP** to find out a tree secret.

When you have finished here, keep walking straight up the path. Further up, you will see a black pine tree on your right-hand side. Stop here a while.

2 The black pine is a hardy tree that is often found growing near the coast because it is very resilient to salt, harsh winds and drought.

- ★ Did you notice that this tree has not lost any of its leaves?
- ★ Take a closer look at the leaves – what words would you use to describe them?

This coniferous tree is an evergreen, meaning the thin, needle-like leaves store water and do not fall in the autumn, unlike the leaves of other trees. The thick bark protects the tree from the cold. Instead of growing fruit or flowers, the pine grows cones to carry its seeds. Have a look at one – has it been nibbled? The squirrels who live in the Gardens love to eat the seeds buried deep inside. Collect a pine needle and a pinecone.

➡ **TAP** to find out what else likes to make its home here.

Just ahead of you on the left is the grassy pathway of the Pagoda Vista. A vista is a wide avenue with a beautiful view at the end. Did you know Kew's vistas are an important part of our heritage and landscape, and they are protected by an Act of Parliament? On the top right-hand corner of the map, you will see a Turner's oak. That's your next destination.

3 The Turner's oak is a hybrid of two different oaks – the holm oak and the English oak. It was first bred in Essex in the 18th century. This is a very strong tree with a thick trunk.

- ★ Give this tree a hug! Can you reach all the way around it?

Take a closer look at the bark. Touch it.

- ★ What is it like?
- ★ Use some adjectives to describe what you can feel. Collect a leaf and an acorn.

➡ **TAP** to discover an amazing story about another Turner's oak.

Continue along the Pagoda Vista and keep your eyes peeled for another tree on the right-hand side. Have you noticed that every tree has a label? Check them and find the Norway maple acer. That is your next stop!

4 The Norway maple gives us a display of magnificently coloured leaves at this time of year. The leaves start off a dark green, then fade to yellow before turning red. What makes leaves change colour? Trees use sunlight to live and grow – the green pigment in their leaves (chlorophyll) changes sunlight into energy in a process called photosynthesis. This slows in the autumn because there is less sunlight. The green pigment breaks down and allows other chemicals of different colours to stand out.

- ★ Use these brilliant colours to create some leaf art! Collect some fallen leaves and arrange them in a pattern. When you've finished, leave it behind for someone else to enjoy! Collect one of the five-pointed leaves and a seed pod.

➡ **TAP** to use your detection skills to find out more about this tree using its label.

It's time to carry on walking along the vista. This time, look out for a tree on the left-hand side. The branches of this tree hang down to make a secret hideout! It's a linden tree. Can you spot it? Remember you can look at the label to double check you're right!

5 Walk under the branches of this linden tree. Doesn't it feel magical to be surrounded by its overhanging branches? It feels like a secret place.

- ★ Have a sniff... what can you smell?

The distinctive, earthy scent of autumn is caused by fallen leaves, which give off a musky sweet smell as they decay and the sugars within them break down. These leaves will eventually break down and make new soil to support the tree.

- ★ What other smells remind you of these autumn months?
- ★ Collect one of the linden tree's flat leaves and a little seed bundle.

➡ **TAP** to explore what else likes to hide in the safety of trees.

Carry on up the vista. Your final stop is the holm oak on the left-hand side, just as you reach the Temperate House.

6 Remember the Turner's oak you saw a little while ago? Well, this is a holm oak, one of the two types of oak tree used to make that new variety. It is also sometimes called a holly oak.

- ★ Can you tell why it is part of the holly family?
- ★ Have a look at its trunk. What describing words would you use to explain how it looks?

In Ancient Rome, the strong wood of this tree was used to make cart wheels.

- ★ Is it an evergreen tree or a deciduous tree?
- ★ How can you tell?

In Ancient Greece, holm oak leaves were used to make crowns.

- ★ Collect one of its prickly leaves and an acorn.

➡ **TAP** to investigate our tree collection.

Want to keep this adventure going?

- ★ Keep walking down this vista and you will reach the Great Pagoda. Can you see it? It was completed in 1762 for Princess Augusta, founder of Kew Gardens. The building is decorated with brightly coloured dragons. See if you can count how many there are!

- ★ See if you can find the ancient Turner's oak from the story. It's on the opposite side of the Gardens, by the Princess of Wales Conservatory.

Continue to enjoy the Gardens with one of our themed trails.

More activities...

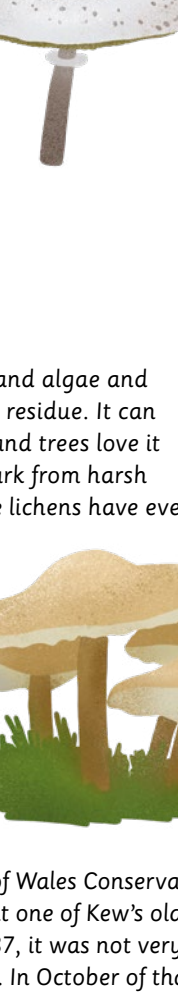
1 ★ Have you ever listened to a tree?

You may have heard the wind rustling its leaves and its twigs cracking underfoot, but how about what is happening inside?



- ★ Try it now! Listen...

You might hear the quiet popping sounds as water passes up the trunk of the tree or a deep rumbling sound produced by the tree vibrating. The tree takes up the water from the soil and releases water vapour into the air through the leaves – this process is called transpiration. Our Kew 'tree gang' is working with Kew scientists to identify which trees are struggling with climate change and lack of water in the summer months, making sure we plant trees that can cope in the future.



➡ **BACK TO TRAIL**

2 Autumn is the time when mushrooms pop out of the ground. You may have seen some on your walk today. Mushrooms are fruiting bodies connected to vast networks of fungi, and they can take many forms.



- ★ Examine the bark of our pine tree – can you spot any lichen?

Lichen is a combination of fungus and algae and often looks like a brightly coloured residue. It can grow anywhere, but it loves trees and trees love it too! Lichen helps to protect tree bark from harsh weather – did you know that some lichens have even developed their own sunscreen?

- ★ Investigate other trees you visit to see if they have any fungi growing on or nearby them.

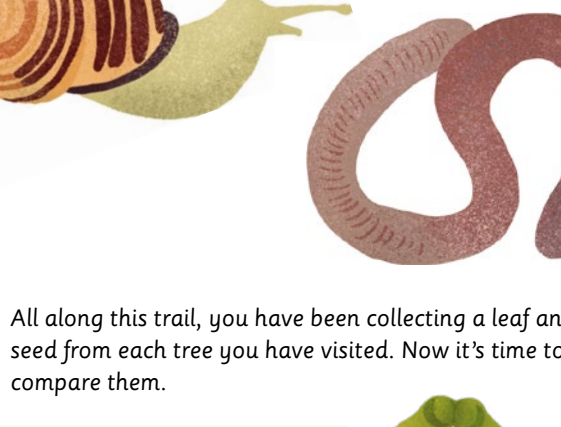


➡ **BACK TO TRAIL**

3 The Turner's oak near the Princess of Wales Conservatory was planted back in 1798, making it one of Kew's oldest trees. It's over 16 metres tall! In 1987, it was not very healthy and looked like it might die. In October of that year, there was a huge storm that nearly uprooted the tree, but its huge branches acted like a sail and the tree settled back into the ground. Astonishingly, it started to thrive! This taught Kew's 'tree gang' that trees like to have soil that is aerated, not compacted, and now they inject air onto tree roots to keep them healthy. This proves that we can always learn from our elders! (That's a tree joke! Get it?)

- ★ Can you make up any tree jokes?

➡ **BACK TO TRAIL**



4 Let's take a closer look at the label on this tree. It tells us a lot about it.

- ★ Can you match the information with the place on the label it is shown?

Common name ☐

Latin name ☐

Year it was planted ☐

Country of origin ☐



- ★ Check out some of the other plants and trees at Kew as you walk around today and look at their labels.
- ★ Can you write one for a tree or plant where you live?

➡ **BACK TO TRAIL**

5 Trees provide important protection to many living creatures who choose to make these their homes. Birds build nests high up in their branches, small mammals live in holes in the trunk and under the roots, and insects reside in the cracks of the bark.

- ★ Have a good look around this tree and the others near it – what evidence can you find that it is used by a living creature?
- ★ Can you actually see any creatures?
- ★ What are they?



➡ **BACK TO TRAIL**



6 All along this trail, you have been collecting a leaf and seed from each tree you have visited. Now it's time to compare them.

- ★ Lay them out and look at them.

You have seen both deciduous and evergreen trees, and collected seeds that are hard and seeds that look more delicate.

- ★ Think about shape, appearance, texture, colour, size and leaf edge. Can you think of any more ways you could compare them?
- ★ Can you remember which leaf and seed belonged to which tree?

➡ **BACK TO TRAIL**

Thank you for visiting today.

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Kew

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