

# Get to know a tree

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## Introduction

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Trees are nature's superheroes. They take in harmful carbon from our atmosphere and turn it into oxygen. They're vital for the health of both us and our planet.

This activity - or 6 mini activities - prompts young people to explore and experiment, unearthing hidden information about a local tree before pulling this all together to form a profile of their new leafy pal. Review the activities and deliver 4 or more of these.

## Duration

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2-3 hours

## Location

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Head to any local green space that has trees and choose one. We recommend visiting a forest or woodland with a selection of big, old trees.

## Topics

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Biology



Maths



English

## Learning Outcomes

Young people will:

- Develop knowledge about trees and their biology.
- Develop their observing and recording skills.
- Develop an appreciation for trees, including their impact on us, the environment, and their endurance over time.



## You Will Need

- Each activity requires its own small set of resources. See below for more information.

# Follow These Steps

## 1 Identify your tree

**You will need:** Pens, paper and access to the internet

Before we go any further, let's identify the species of your tree. Make some observations in response to the following questions:

- What do the leaves or needles look like?
- What texture and colour is the bark?
- How big is it?
- What is its shape?
- What is on the ground around your tree?

Take some pictures or sketches of your tree.

Once you have this information, speak to a local expert, visit your closest library or head to the [Woodland Trusts website](#). These are great sources of information that will help you to understand what your tree is.



## 2 How old is your tree?

**You will need:** 1/2 tape measures

The circumference of a tree can be used to estimate its age.  
The average tree will increase its circumference by 2.5cm in a year.

Follow these steps to estimate its age:

- Measure 1m up the trunk of your tree.
- At this height, use your tape measure(s) and measure around the trunk of the tree.
- Calculate your measurement to the nearest centimetre.
- Divide this figure by 2.5. The answer will give you the approximate age of your tree in years.

## 3 Make a tree timeline

**You will need:** Pens, paper, a computer and internet or library access.

Now that you know how old your tree is, it's time to do some research. Throughout the lifetime of your tree, what significant historical events have occurred, both locally and nationally?  
Speak to a local expert, visit your closest library or research online.

Make a visual timeline and plot the events along it, branching out like, well... a tree! Adding images, icons and stats will bring your timeline to life.

Finally, take a moment to reflect...

Our nature is an enduring, silent bystander of everything that human beings do. It's a constant friend as time passes. Thousands of people may have walked past your tree. Generations of animals will have called it home. And hundreds of children will have swung from its branches. And yet here it remains, ready for more.



## 4 Who calls your tree home?

**You will need:** Pens and paper.

Your tree is probably home to lots of different types of wildlife. And if they don't call it home, they probably pop in for a visit, a snack or maybe just for a moment's peace before scampering on to their next destination.

Get comfy and sit back before your tree. Take some time to simply observe. Jot down what you see. You might spot different types of birds, insects and squirrels. You might even spot nature's most curious creatures, interacting with your tree...human beings!

Head back to your learning setting and make a visual representation of your findings. You could put an image of your tree in the centre and feature animals around it, like a spider diagram. You could also add a little information about the animals that you spotted.

## 5 How much carbon does your tree hold?

**You will need:** Pens and paper.

Trees are nature's greatest asset in the fight against climate change. They capture, hold and convert large amounts of carbon from the atmosphere.

A tree's biomass is a measure of its dry mass of woody and leaf matter in kg. The carbon content of a tree is approximately 50% of its biomass. The other 50% is made up of hydrogen, oxygen, nitrogen and other elements.

- At about 1m from the ground, measure the circumference of your tree.
- Use the conversion table below to approximate the biomass of your tree. Use the nearest value to the circumference of your tree.



| Circumference of tree (cm) | Biomass (kg) |
|----------------------------|--------------|
| 50                         | 106          |
| 100                        | 668          |
| 150                        | 1,964        |
| 200                        | 4,221        |
| 225                        | 5,771        |
| 250                        | 7,641        |
| 275                        | 9,842        |
| 300                        | 12,410       |
| 325                        | 15,350       |

Divide your tree's biomass by 2 to get the approximate amount of carbon your tree is storing in kg.

## 6 Transpiration

**You will need:** Ziplock bags, rubber bands, pens and paper

Transpiration is the loss of water from the leaves of trees through the stomata – the tiny, microscopic spores that are dotted on it's surface .

To see how much water a tree loses through its leaves, follow these steps:

- Cover a crop of leaves with a plastic bag (ie. a zip lock sandwich bag).
- Secure the bottom tightly.
- Leave the bag in place for an hour.
- After an hour, review the contents of your bag. How much water has accumulated?
- If other members of the group have investigated different types of trees, how do your findings compare? Why do you think this is?



## What Next?

- Pull together all of your findings to create a bold, visual and attractive tree profile. Present all of the information across a wall display and invite others to learn more about your new leafy pal. Also, give your tree a name! Your tree is a living thing too!

## How Can This Activity Connect to Eco-Schools?



This activity can be used to support work on the Eco-Schools Healthy Living topic. Getting out into nature, pausing and connecting to it's brilliant detail is a great way to improve mental wellbeing. It's also a great way to develop empathy for our natural world.