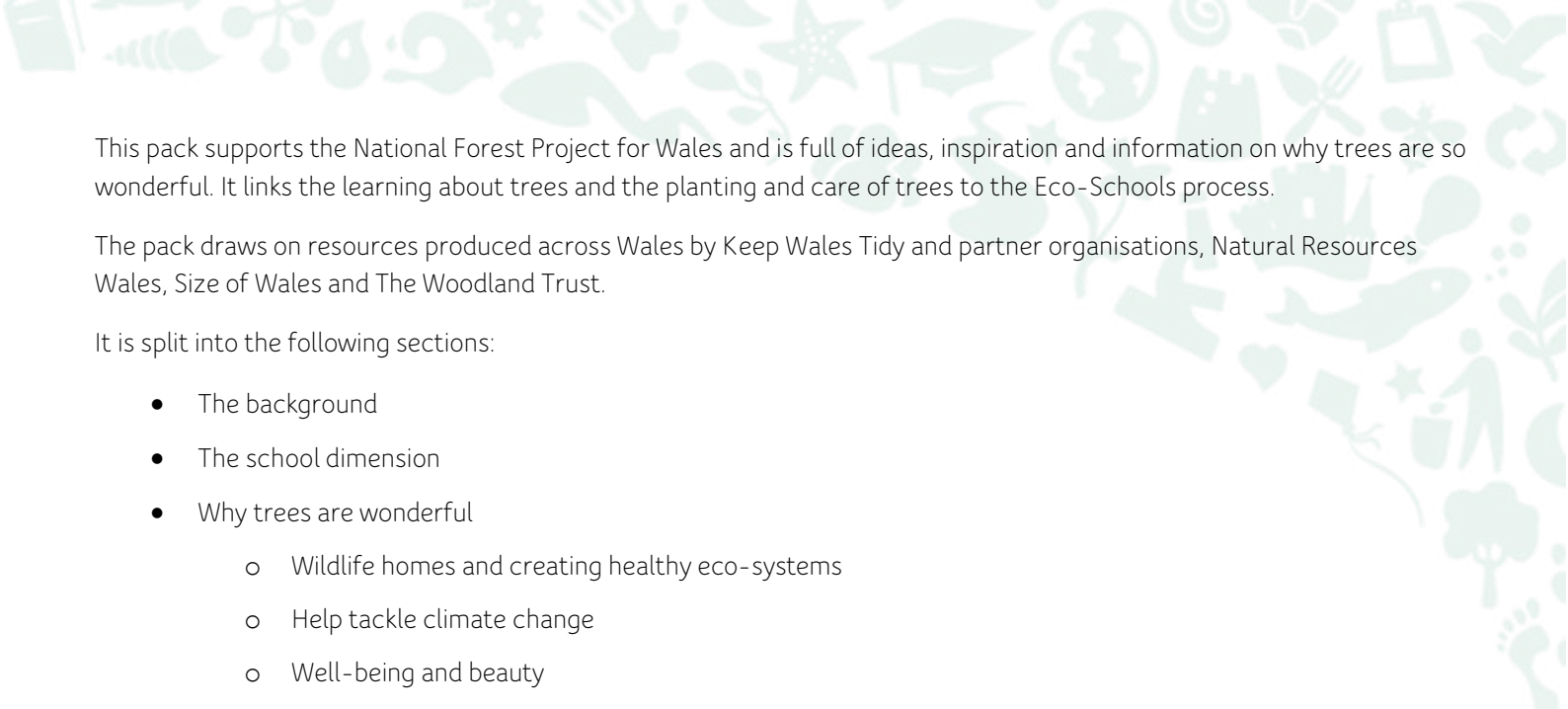


National Forest Project for Wales

Teacher's Activity Pack



cadwch keep
gymru'n wales
daclus tidy



This pack supports the National Forest Project for Wales and is full of ideas, inspiration and information on why trees are so wonderful. It links the learning about trees and the planting and care of trees to the Eco-Schools process.

The pack draws on resources produced across Wales by Keep Wales Tidy and partner organisations, Natural Resources Wales, Size of Wales and The Woodland Trust.

It is split into the following sections:

- The background
- The school dimension
- Why trees are wonderful
 - Wildlife homes and creating healthy eco-systems
 - Help tackle climate change
 - Well-being and beauty
 - Improving air quality
 - Providers of shade
 - Protection against flooding
- Activities to Explore Trees
- Caring for your Forest and linking to the Eco-Schools programme
- Helpful organisations

Background information

The Welsh Government have created a plan for a National Forest, running the length and breadth of Wales. It is planned to be an ecological network protecting nature and addressing biodiversity loss and is designed to create new woodlands as well as restore our unique, ancient woodlands.

Trees and forests are crucial to climate change mitigation and adaptation, highlighting another major aim in creating a natural solution to the global climate emergency. Welsh Government aspirations are for a long-term project matching the scale and ambition of the Wales Coast Path.

The National Forest – the school dimension

Our world needs more trees and well managed forests if we are to tackle climate change and keep the earth habitable for future generations. Engaging schools is crucial in developing a connection between young people and nature and building a generation of tree guardians.

22 Eco-Schools across Wales have been highlighted to create woodland in their school grounds and become Tree Guardians, learning how to plant and look after their trees going forward as part of their Eco-Schools action plan. They will also understand the value of trees in creating healthy eco-systems, shade, protection against flooding and as a haven for biodiversity.

The Woodland Trust 'working wood tree pack' has been chosen. This contains 400 trees and will include silver birch, rowan, wild cherry, oak, field maple, grey willow (these native trees are suited to the Welsh climate). 400 trees will be planted in each school meaning 8,800 trees will be planted across Wales as part of the Schools Forest Project.

Every sapling is UK sourced and grown to minimise the risk of importing and spreading tree pests and diseases.

Why trees are wonderful!

Wildlife homes and creating healthy eco-systems

Trees are a vital part of our eco-system and provide a home for a huge range of insects, birds and animals as well as food for them, such as fruit, seeds, bark and nuts. If the woodland area is small, the range of biodiversity it can support will be more limited, however if woodlands are linked up by natural 'corridors' such as hedgerows this will make the available habitat much larger and help wildlife to thrive. A study showed that more than 2,300 different species are known to use native oak trees as their habitat and that 326 of those species are completely dependent on the oak.

Mitigate against climate change

During photosynthesis trees take in carbon dioxide and release oxygen in its place, which we need to breathe. This CO₂ is stored inside trees as carbon, therefore while a forest is living it acts as a huge carbon reservoir, keeping the carbon dioxide out of the atmosphere.

Well-being and beauty

Trees and woodlands are good for our health and improve our quality of life. Research has shown that being amongst trees and woodlands can make us feel healthier and can help people recover from illness more quickly. Trees and woodlands provide places for us to enjoy ourselves through exercise, play and relaxation.

Improving air quality

Industrial human activities, such as the burning of fossil fuels, release toxic chemicals and particles into the air. Concentrations are worse in crowded urban areas. Particles, odours and pollutant gases such as nitrogen oxides, ammonia and sulphur dioxide settle on the leaves of a tree. Trees absorb these toxic chemicals, effectively filtering them from the air.

Providers of shade

Trees are a natural way of providing shade to protect from UV rays during the sunnier summer months. As trees transpire water this also helps to cool the air in the vicinity.

Protection against flooding

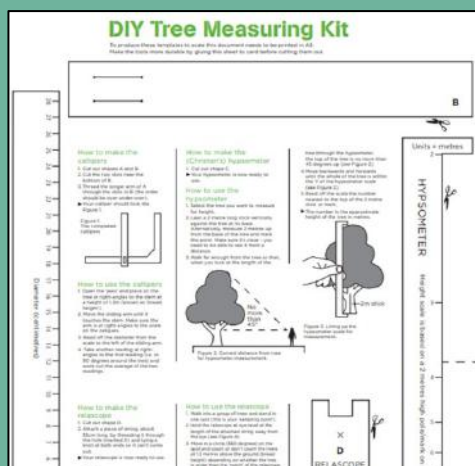
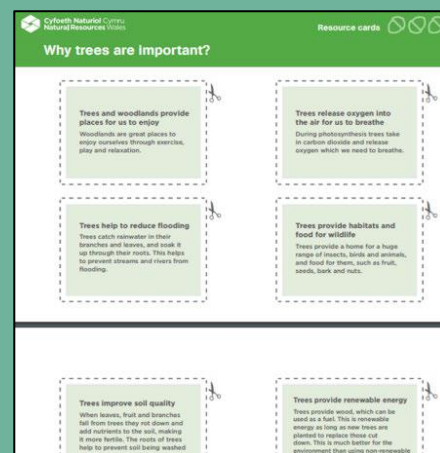
Trees catch rainwater in their branches and leaves and soak it up through their roots. This all helps to slow down the water on its way into streams and rivers and prevents them from flooding.

Activities to explore trees

Highlighted here are a selection of resources and activities that can be used to support the learning and understanding of trees and woodlands. The activities are most suited for linking to the curriculum for Key stages 2 and 3.

Why are Trees Important?

A simple [activity plan](#) and [resource cards](#) to explain the many benefits that trees and woodlands provide for both people and the environment.



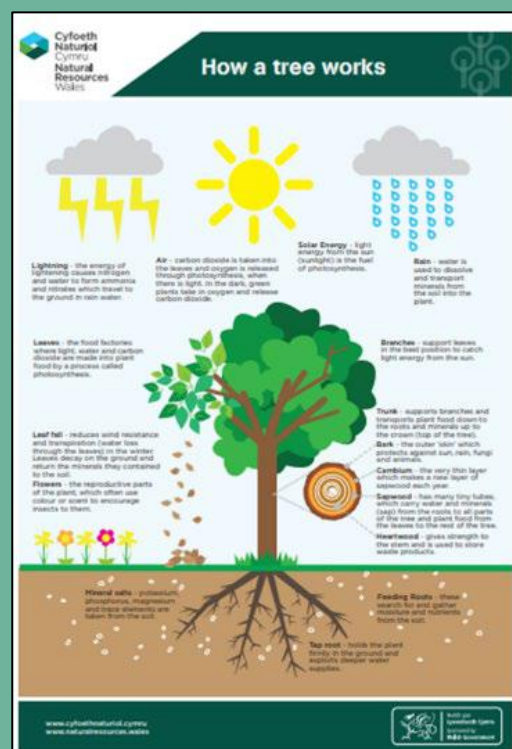
Measuring trees

From measuring tree height to discovering the age of a tree, here's an [activity plan](#) and [measuring kit](#) to help embed an understanding of numerous mathematical concepts whilst making the most of the outside classroom.

How a tree works

This [activity plan](#) will get your learners moving by getting them to build a human tree and acting out the various functions of the tree's parts.

The [poster](#) can be used as an aid to the 'How a tree works' activity or as a reference for learners.





Helping wildlife

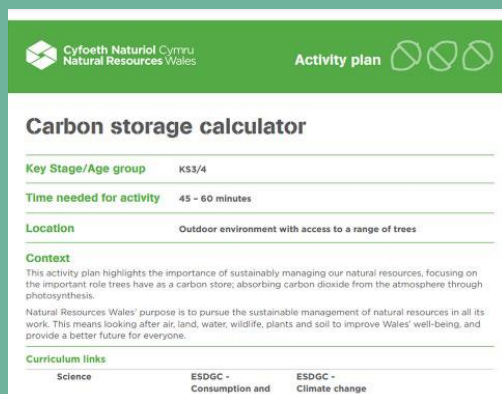
The Woodland Trust have a range of resources and ideas how you can use natural materials found in woodlands in activities to help wildlife.

There are also ideas how to make your wooded areas even more wildlife friendly.

Tree identification activities

Download a worksheet and see how many of the different trees you can find.

There are also a number of other identification resources and interactive activities available at the [Woodland Trust website](#).



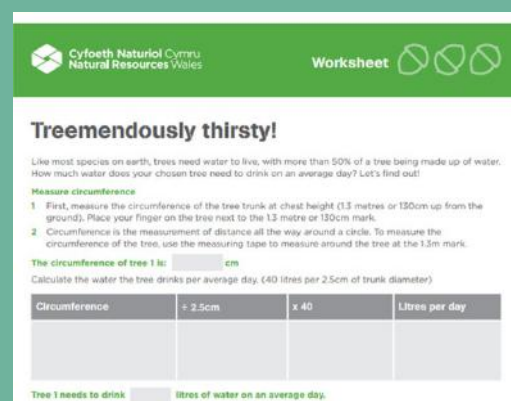
Trees and carbon

Trees and carbon [activity plan](#) highlights the important role trees have in absorbing carbon dioxide from the atmosphere through photosynthesis storing it as carbon in the form of wood.

The [Carbon storage calculator](#) activity can be used to describe how trees combat climate change by storing carbon.

Trees and water

This [activity plan](#) and [worksheet](#) explain how trees take in water and how much water trees need to survive.



Seed dispersal

Cyfoeth Naturiol Cymru
Natural Resources Wales

Activities and Games

Activity 2: Get set, grow!

This activity is in the form of 'tag' and explains to learners what a seed needs to germinate and the factors that affect germination rates.

Supporting information and resources:

- 5 containers e.g. buckets
- 5 sets of Resource cards - Get set, grow!
- Safe space to run
- Hi-vis jacket or mask to denote the bird/animal

Prior to activity set the containers in a spread-out pattern over your chosen area (ideally a flat area with no trip hazards).

Fill each container with one set of element cards e.g. 'light'. Ensure you have enough copies in each bucket for each member of your group.

To set the scene, discuss with your learners what a seed needs to germinate i.e. the five elements: light, water, air, food and warmth.

Choose one or two learners to wear the hi-vis jackets and be hungry birds, squirrels or other animals that are going to try to eat (tag) the 'seeds' - the rest of the group.

The 'seeds' mission is to collect one of each of the five element cards whilst avoiding being eaten by a bird or animal. If the 'seeds' successfully collect one of each of the five element cards they can germinate and grow into a tree. At this point they stop and stand still in the shape of a tree.

After playing the game a couple of times discuss issues that may affect germinating seeds e.g. birds and animals eating them, drought, shade from other trees or a hard winter. Play the game again introducing more predators - what affect does this have on the number of seeds that successfully germinate?



A range of games and activities to help describe how trees and other plants use different methods to disperse their seeds and the elements seeds need to germinate successfully.

Fun activities

Some ideas for using trees and woodlands for creative and exciting activities



Leaf fireworks



Christmas scavenger hunt

Further materials can be found on the resources sections of the Natural Resources Wales and Woodland Trust websites.

Caring for your forest and linking to the Eco-Schools programme

Eco-Schools is a programme giving young people the opportunity and a voice to make a positive difference in relation to the environment. The after care of the trees is vital and gives young people the opportunity to become Tree Guardians, looking after the trees so they grow and flourish.

The chart below highlights tasks that need to be completed:

[illegible]

Monitor forest (every month)										
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This after care can be linked directly to the following steps of the Eco-Schools programme:

- Action Plan
- Measuring Progress (Monitoring and Evaluation)
- Informing and Involving
- Linking to the Curriculum

Below is an example, yearly, Eco-Schools action plan which highlights how these after care tasks can be built into the Eco-Schools action plan as well as a strategy to create an understanding of the project in the wider community:

Target	Action	Who	Cost	Timescale	How will we measure progress? (Monitoring)
To Combat Climate Change – Tree Management	Measure tree growth – height + girth – once per year Check health of trees – monthly Remove weeds in tree guards/mulch area – fortnightly Check bark mulch – replace if needed – Monthly Water in very dry periods	Y5 class (Primary) Eco-Committee (Secondary) Site Manager Gardening Club (If school has one) Above to be involved in all tasks	None	October Monthly March – November March – November April – Oct	Create a school ground tree scrap book – Take a picture and record growth each year/highlight trees that do not survive (replace). Yearly wildlife surveys highlighting the full array of creatures that make their home in the new woodland – add to scrap book. Record people's comments as the woodland grows highlighting use of area and well-being
To Combat Climate Change – Tree Management	Regular liaison with ground maintenance team so trees don't get damaged	Site Manager Headteacher	None	Throughout year	Monitor damaged trees
To Combat Climate Change – Inform school community of importance of school woodland	Woodland Display – virtual/display board Regular updates to wider school community – updates to governors/parents	Y5 class (Primary) Eco-Committee (Secondary) Gardening Club (If school has one)	None	Throughout year	Yearly Eco-Schools perception questionnaire – what % of people are aware of the school woodland and do they understand the importance – Is it increasing?

There is an emphasis on understanding Eco-actions within the Eco-Schools programme, hence linking actions to the curriculum. The activities promoted through this pack and the resources highlighted through the Helpful Organisations section below will support this important step.

For further information and resources relating to Eco-Schools visit: www.keepwalestidy.cymru/eco-schools

Helpful organisations

Natural Resources Wales



[Natural Resources Wales learning resources](#)

Woodland Trust

The Woodland Trust are the UK's largest woodland conservation charity.

They create havens for wildlife by planting millions of trees every year, campaign for new laws to protect ancient woodland and restore damaged ancient woods so they can breathe again.

The Woodland Trust's Green Tree Schools Award encourages outdoor learning and inspires pupils about trees, woods and wildlife. Through the award, your school can take part in fun, practical projects while helping the environment and improving your grounds. It is completely free and the Woodland Trust provide resources and support to help you get the most out of it.



Your pupils can also earn certificates in recognition of their achievements and a special plaque to display in your school.

<https://www.woodlandtrust.org.uk/>

<http://treetoolsforschools.org.uk/>

<https://www.woodlandtrust.org.uk/support-us/act/your-school/green-tree-schools-award/>

Size of Wales



'An area the size of Wales' is frequently used to measure the rate of forest destruction. Through Size of Wales, we are turning that negative use of the country's size on its head.

Thanks to the brilliant support of Wales, Size of Wales successfully reached the target of helping to protect 2 million hectares of forest (the size of Wales!) in 2013. Soon after, they decided the obvious next step was to double this impact and aim to protect an area of rainforest twice the size of our nation!

Size of Wales encourages the people of Wales to help tackle climate change by taking simple positive actions. They work with [schools](#) and businesses to raise funds for forests and raise awareness of the importance of forests in tackling climate change.

<https://sizeofwales.org.uk/>

Outdoor Learning Wales

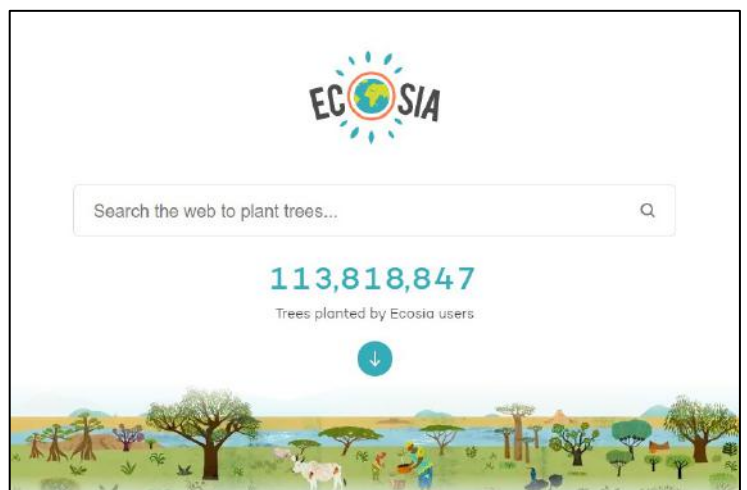
Outdoor Learning Wales (OLW) is a national network facilitated by NRW that aims to increase the understanding, appreciation and sustainable use of Wales' natural environment.

<https://www.outdoorlearningwales.org/home>

Ecosia

This search engine organization use the profit they make from your searches to plant trees where they are needed most. Get the free browser extension and plant trees with every search.

<https://www.ecosia.org/>





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