Acorn collecting activity

Notes for the group leader

Scottish Borders Council

DISCOVER SCOTTISH BORDERS
Parks & Green Spaces

Overview of Activity:

- Visit your local park in autumn
- Locate and identify oak trees
- Learn about the environmental and cultural importance of two species of oak tree
- Collect 2–3 acorns per child
- Return to school, prepare, and plant the acorns
- Care for the seeds and saplings over the next 1–2 years
- Plant the saplings outside to create a legacy oak woodland

Main Objectives:

- Engage pupils with their local green spaces
- Understand the oak tree lifecycle
- Learn about the environmental importance of oak trees in a biodiverse woodland

Materials Required – In the Park:

- Activity sheets
- Tablet (if not taking print outs)
- Ice cream tub, yoghurt pot, or small flowerpot per child, or one central bucket
- Warm clothes
- Risk assessment and health and safety equipment (wet wipes, first aid kit, mobile phone)
- Small spade (optional, for removing any dog mess)

Materials Required – In the Polytunnel:

- Flowerpots
- Compost
- Plant labels
- Permanent marker pen
- Bucket of water
- Watering can and water
- Optional: gardening gloves, hand trowel, cane or dibber

Activity –
In the Park:

1. Walk around your local park in autumn
2. Hunt down the oak trees using the tree/leaf identification information
3. Collect 2-3 acorns per child from beneath an oak tree and place them in the bucket.
   - Leave some acorns for wildlife such as squirrels, insects, and birds
   - Select acorns that are brown, large, and free of nibbles or holes

Activity –
Back at School:

1. Return to the polytunnel
2. Place the acorns in a bucket of water
   - Plant the acorns that sink
   - Compost the acorns that float (they are likely underdeveloped or eaten by insects)
3. Fill flowerpots with peat-free compost
4. Make a hole in the centre of the compost, place the acorn in the hole, cover with compost – if larger pot 2 can go in
5. Pop in a label with the word 'oak', today's date, and your name
6. Care for the saplings for 1-2 years, keeping the soil moist in spring and summer
7. Once saplings reach 20cm in height, plant them outside in spring

'Mighty oaks from little acorns grow'

Making Space for Nature

At Scottish Borders Council, we are working to strike the right balance between managing green spaces for people and for nature. Across our parks, we're creating wildflower meadows and naturalised grasslands – transforming underused areas into vibrant, biodiverse habitats.

We carefully select and survey sites – such as shaded corners, damp ground, or sloping banks – where naturalising won't impact recreation or access. These areas are then managed to support pollinators and native species, often in partnership with local communities and environmental charities such as Buglife and Butterfly Conservation.

By cutting less often, and encouraging species like yellow rattle, we're helping delicate wildflowers thrive. The result? Healthier ecosystems, richer biodiversity, and greener spaces for everyone to enjoy. This approach also means we can focus more time and resources on maintaining high-amenity public spaces and respond to community feedback.

We'd love to hear from you – let us know what wildlife you spot in your local greenspace.

Autumn activity
In the park

Scottish Borders Council

DISCOVER SCOTTISH BORDERS
Parks & Green Spaces

step 1

Step 1

- Go off for a walk around your local park.

step 2

Step 2

- Hunt down the oak trees.

step 3

Step 3

- Collect 2-3 acorns per person from beneath the oak tree and place in a pot or bucket.

step 4

Step 4

- Select the acorns that are no longer green but ripened to a brown colour.
- Look for the largest you can find and without any nibbles or holes in them – these might have been munched by birds or insects and will possibly not grow.

Autumn activity
At home or school

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step 1

Step 1

- Place the acorns in a bucket of water – those that sink are good for planting.

Step 2

- Place some peat free compost in a flowerpot, make a hole in the centre of the compost and place the acorn in the hole, then cover with a little more compost.

step 2

step 3

Step 3

- Pop in a label with the following information: your name, the date and label it 'oak'.

Step 4

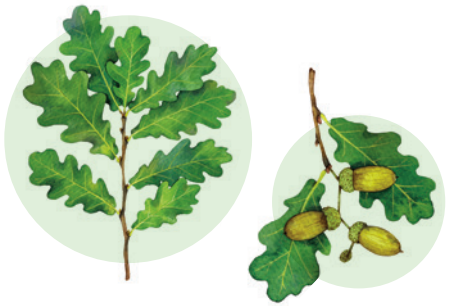
- Look after the saplings for 1 to 2 years, remembering to keep the soil moist throughout the spring and summer months.
- Once your saplings have reached 20cm in height it is time to plant them out in spring.

step 4

Supplementary notes about oak trees

Did you know that out of approximately 600 global species of oak tree there are only two native species of oak in Scotland: the pedunculate oak (Quercus robur) and sessile oak (Quercus petraea)?

These are the physical differences between the two species:

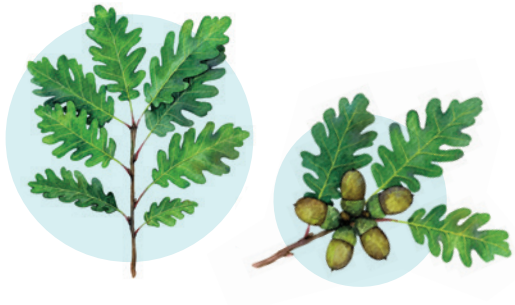


Pedunculate oak
(Quercus robur)

- The leaves have almost no stalks and grow direct from the stem.
- There are 2 'earlobes' at the base of the leaf.
- Lobed leaves – bulbous, earlobes (usually 4–5) are present along the leaf's edges.

Pedunculate oak acorns

- The acorns are attached to the twig by a long stalk, giving the appearance of being similar to a clay pipe.



Sessile oak
(Quercus petraea)

- The leaves have a stalk attachment from the branch.
- No earlobes at the base of the leaves.
- The edges of the leaves merge gradually into the stalk.

Sessile oak acorns

- No stalk on the acorns
- Acorns are mostly in pairs or clusters and have very short stalks.

Family

- Oaks belong to the beech family (Fagaceae).

Lifespan and Growth

- Oaks are long-lived trees, capable of living up to 500 years.
- They grow slowly but can reach a height of up to 40 metres.
- Old oak trees can have a circumference of 10 to 12 metres.

Wildlife Value

- Oaks provide excellent food and shelter for wildlife, outranking all other UK native trees.

Soil Preferences

- Pedunculate Oak: Prefers richer soils.
- Sessile Oak: Can tolerate thin, poorer soils but does not tolerate flooding.

Acorn Production

- Oaks start producing acorns at around 40 years old.
- Peak acorn production occurs between 80 and 120 years, with one tree producing up to 90,000 acorns.
- Young acorns are green and mature to brown before falling.

The Wildlife Value of an Oak Tree

Suggested Learner Engagement

Ask the learners:

- What do you think lives in or on an oak tree?
- How many species of insect do you think one oak tree can support?

Encourage guesses and discussion before revealing the facts below.

Hedgehog

Jay

Purple hairstreak

Tawny owl

Habitat and Ecosystem Role

- Oak trees can live for **over 1,000 years**, meaning they support wildlife for centuries.
- From **fresh leaves in the canopy to leaf litter and dead wood** on the forest floor, oaks provide
  - Habitat for more organisms than any other UK tree species.
  - Their **large size** and **longevity** make them a cornerstone of forest ecosystems, supporting species that have evolved to depend on them.

Biodiversity Highlights

- **1,178 invertebrate species** use oak trees.
  - **257 species** rely exclusively on oak.
  - These insects are a vital food source for birds.
- In **autumn**, mammals like badgers, squirrels, and fallow deer feed on fallen acorns.
- Oak trees support **108 types of fungi**, with **57 species** depending entirely on oak.

Nesting and Roosting Sites

- **Bats and birds** nest or roost in **holes and crevices** in the bark and hollow trunks.
- The **base of the trunk** can be a safe hibernation spot for **hedgehogs**.

Uses of oak trees

Suggested Learner Engagement

Ask the learners:

? How many different uses of an oak tree can you think of?

Encourage learners to think about both historical and modern uses, and how different parts of the tree might be used.

Leather boots

Smoking fish

Timber staircase

Charcoal

Timber

- Oak produces one of the hardest, strongest, and most durable timbers.
- It takes up to 150 years before its timber is ready for use in construction.
- Modern uses include furniture, flooring, and fencing.

Historical and Modern Uses

- Oak has been prized for thousands of years for beams, panels, and doors in churches and cathedrals.
- Shipbuilding: Historically, oak was used in naval construction due to its strength and resistance to rot.
- Small branches and twigs were traditionally used for firewood or charcoal making, fuelling local industry.
- Oak sawdust is used for smoking food, such as salmon, kippers, and bacon.

Medicinal Uses

- Traditionally, oak leaves, bark, and acorns were believed to help with kidney stones, diarrhoea, and other complaints.
- Oak bark contains astringent compounds that were used in herbal medicine.

Food and Drink

- Before wheat was widely grown, acorns were processed into flour for bread making.
- Acorns can be roasted and ground to make a naturally caffeine-free coffee.

Tanning and Dyeing

- Rich in tannin, oak bark has been used to tan leather since Roman times.
- Oak bark is also used to dye wool.

One last thought...

Oak is a symbol of strength and endurance in many cultures and is often used in ceremonial or commemorative planting.

Pests and Diseases – Oak Processionary Moth

Suggested Learner Engagement

Ask the learners:

? **What do you understand by the terms pests and diseases?**

Encourage learners to think about how pests and diseases affect trees, wildlife, and even people.

Oak processionary moth caterpillar

Oak processionary moth

Introduction

- The Oak Processionary Moth (OPM) was accidentally introduced to Britain in 2005.
- It primarily lives in and feeds on oak trees but will also feed on other species.

Identification

- The caterpillars are known for their distinctive nose-to-tail processions in late spring and early summer.
- They build white, silken webbing nests on the trunks and branches, but never among the leaves.
- They leave white, silken trails on trunks and branches in early summer.

Impact on Oak Trees

- Large populations can defoliate parts of oak trees, weakening them.
- This makes trees more vulnerable to other pests, diseases, and environmental stresses like drought and flooding.

Health Hazards

- The caterpillars have tiny hairs containing an irritating substance.
- Contact can cause:
  - Itching skin rashes
  - Sore throats
  - Breathing difficulties
  - Eye problems
- These symptoms can occur through:
  - Direct contact with caterpillars or nests
  - Airborne hairs blown by the wind

Origin and Spread

- Native to southern Europe, where natural predators and climate help control populations.
- Over the past 20 years, their range has expanded northwards, now reaching Scotland, helped by the movement of plants.

Pests and Diseases — Acute Oak Decline

Overview

- **Acute Oak Decline (AOD)** affects both of Britain's native oak species:
  - **Pedunculate oak** (Quercus robur)
  - **Sessile oak** (Quercus petraea)
- Other oak species may also be affected.
- **Mature oaks over 50 years old** are particularly vulnerable.

Symptoms of AOD

- **Bleeding or oozing dark fluid** from small splits in the bark on the tree's stem.
- **Rapid decline** in the tree's health.
- Affected trees can **die within 4–5 years** of the first visible symptoms.

Pests and Diseases — Powdery Mildew

Identification

- Appears as a white, powdery fungal coating on:
  - Leaves (mostly the top surface)
  - Stems
  - Buds
  - Occasionally flowers and fruits
- Starts as small, off-white patches that spread across the leaf surface.

Oak powdery mildew

Impact

- Reduces photosynthesis and growth, stressing the tree.
- Currently has limited impact in the UK, but climate change may increase its prevalence and severity.

Origin

- The most common species affecting oak is Erysiphe alphitoides.
- Genetically identical to Oidium mangiferae, a powdery mildew found on mango.
- This suggests an origin in tropical Asia, likely spread to oak trees through international trade.