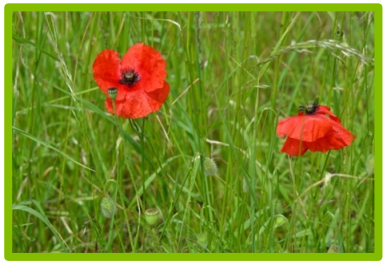
British Wildlife: Odd One Out

Plants






British Wildlife: Odd One Out

Created by the Primary Science Teaching Trust (PSTT) and The Nature Collection

All images taken by and © Susanna Ramsey.

The Nature Collection is an extraordinary collection of animal bones, skeletons, feathers, antlers, skins and photographs and was created by Susanna Ramsey.

We are grateful to Dr Ralf Britz and Ritva Roesler for their assistance in creating this resource.

Guidance for using British Wildlife: Odd One Out

This resource is designed to encourage children to observe closely and to stimulate talk about the features of local plants and fungi and their habitats.

There are five **Odd One Out** activities in this slideshow. Each activity has four **plants or fungi** shown on one slide. All are commonly seen in the UK.

Each **Odd One Out** activity reflects a notable characteristic (described in the slide notes). This may be useful when deciding which activity to use. We suggest that you share only one Odd One Out activity at any time. You can revisit the other activities another time.

Running the activity:

Choose a slide. Ask – **How are these animals similar? How are these animals different?**

Listen to children's suggestions. Encourage children to notice special features of each plant such as their colour, the shape, the number of leaves.

Possible questions to prompt thinking & talking:

- What shape is the flower?
- What colour are the petals?
- Can you see any leaves? What shape are they?
- Can you see any berries?

Then ask everyone to decide which is the **Odd One Out** and WHY. Encourage a reason for every answer given. There is no wrong answer here!

Background science:

The slide notes below each slide provide detailed information about the characteristics of each of the plants shown. This is intended to support teachers' subject knowledge. We are not suggesting that all children should be taught all these facts.

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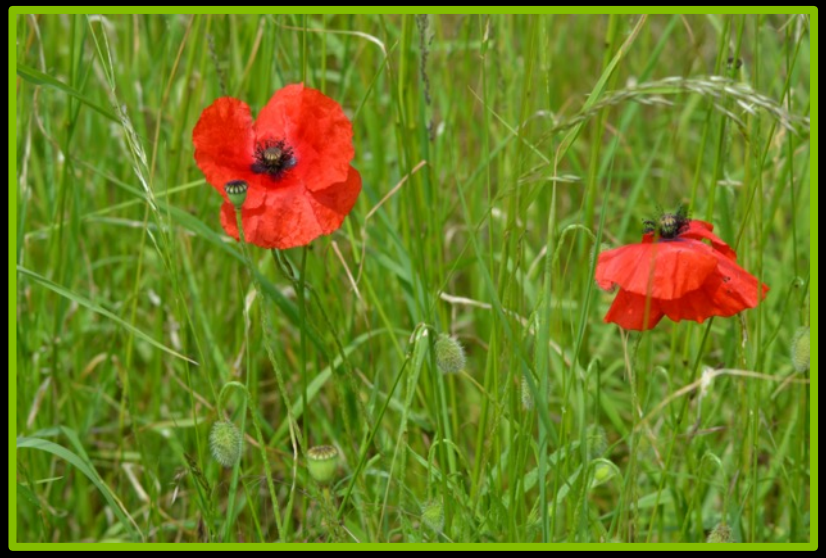
Plants Index

Slides	Possible Theme	Animals
5	Plant or fungi	daisy, poppy, water lily, mushroom
7	Flower shapes	foxglove, wild rose, thistles, comfrey
9	Does it grown on a tree?	blossom, tulip, catkins, leaves & berries
11	Stinging leaves	beech, horse chestnut, stinging nettles, grass
13	Parts of a tree	birch, oak, horse chestnut, beech
15	Blossom / Seasons	spring, summer, autumn, winter

daisy



poppy

water lily

mushroom

Possible theme: Plant or fungi

The mushroom is not a plant. The others are all wildflowers. Trees and flowers belong in the plant kingdom. The mushroom belongs in the fungi kingdom.

Other possible reasons for being the Odd One Out:

Petals: The flowers have colorful petals. The mushroom does not.

Green stalk and leaves: The flowers have a green stalk and colourful petals at the top. Mushrooms have a wide, cream-coloured stalk with a rounded cap, on top.

Texture: Mushroom is soft, thick and spongy to touch. The flowers are soft, thin and delicate.

Size: Poppies are tall flowers. The others are short.

Stamens: Flowers have a centre with stamens and female parts. In the daisy, the centre is yellow. It is black in the poppy. We cannot see the centre of the water lily. Mushrooms do not have these parts.

Pollinators: Flowers create nectar and pollen to attract bees, butterflies and other insects. Mushrooms have no pollen or nectar, so do not attract pollinators.

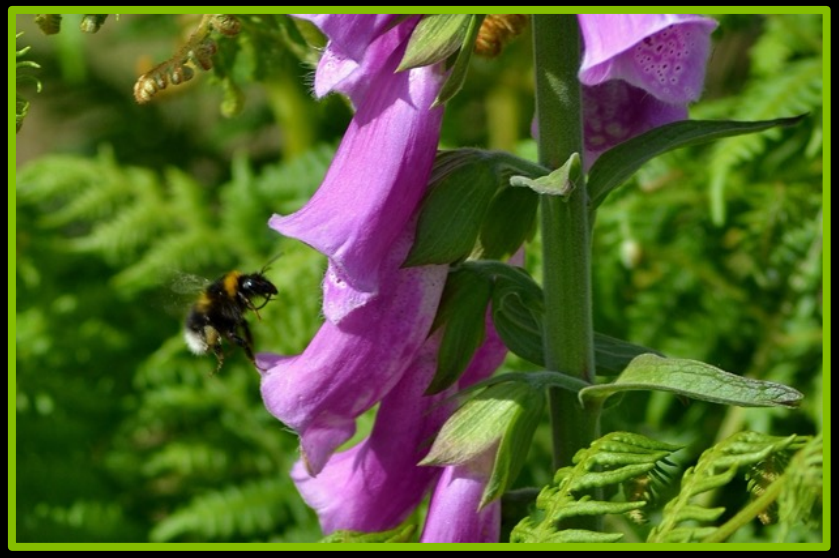
Season: Mushrooms grow in autumn. These flowers grow in summer.

Habitat: Water lily grows on ponds; its roots are in the water. The others all grow in grass, with their roots in the soil.

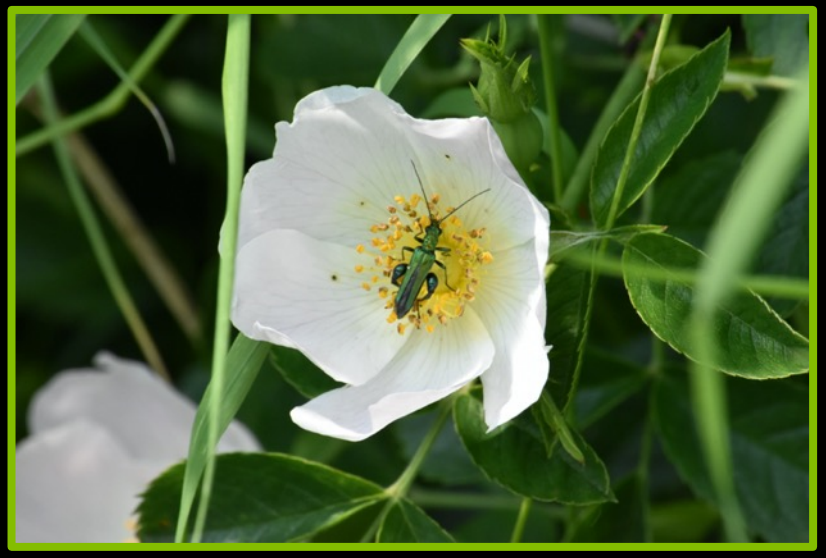
Seeds: After pollination, part of the flower transforms into a seed head, packed with seeds. Mushrooms create tiny spores to reproduce, instead.

Smell: Flowers often smell sweet to attract insects. Fungi often smell bad, like rotten meat, to attract flies. They both do this, so that insects will pick up the seeds or spores and spread them to another place: seed dispersal. This helps with reproduction.

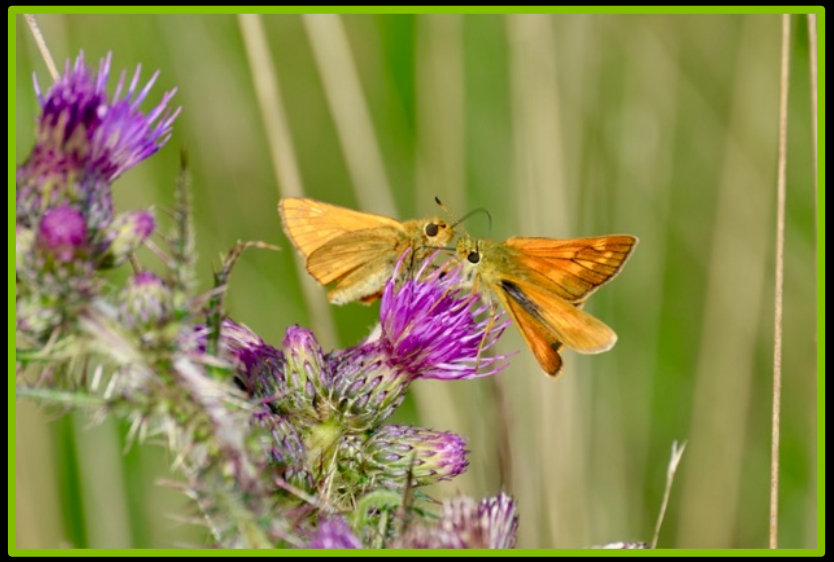
Poisonous: Some mushrooms are good to eat but many are poisonous. Flowers too can be edible or poisonous. Never eat anything you find in the wild.



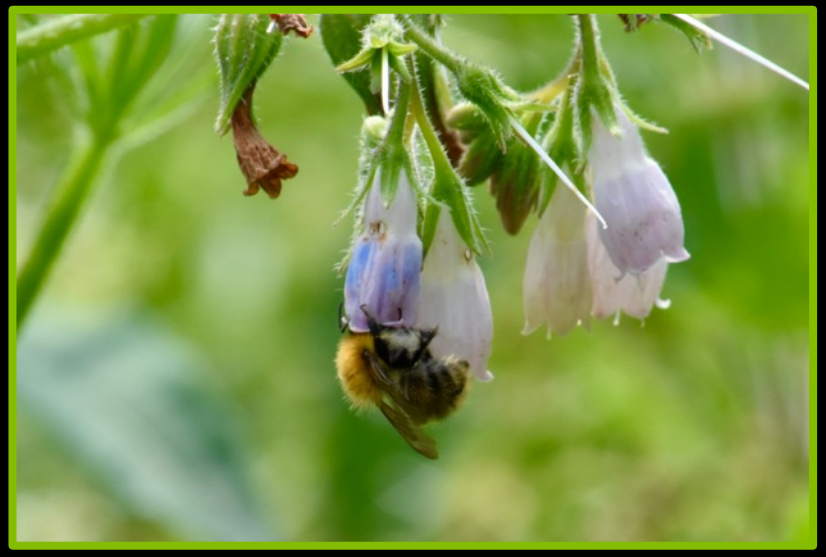
bumble bee on foxglove



beetle on a wild rose



butterflies on thistles



bumble bee on comfrey

Possible theme: Flower Shapes

Foxglove and Comfrey are bell-shaped flowers. Rose is like a wide, open cup. Purple thistle flowers are made up of lots of tiny, tubular flowers. Flowers have evolved different shapes to attract different insects. Some bees have very long tongues and can drink nectar from bell-shaped flowers like comfrey. Some insects have shorter tongues for open flowers like the wild rose. The foxglove has even deeper bell-shaped flowers. The bee must go right inside the flower to reach the nectar and pollen. This makes sure its body will be covered in pollen when it leaves! Sometimes insects cheat and bite a hole in the back of a bell-shaped flower to get to the nectar, without going inside!

Other possible reasons for being the Odd One Out:

Colour: The rose is white. The others are shades of purple.

Stamens and Pollen: You can see these on the rose but not on the other flowers.

Season: These flowers all grow in summer.

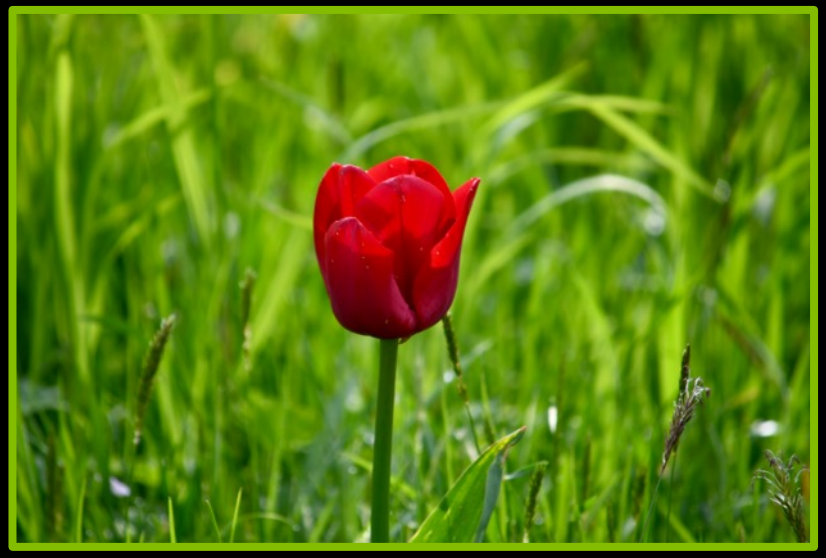
Insects: Rose has a beetle on it. Thistles have butterflies. The others have bumble bees.

Multiples: Thistle flowers grow next to each other. Foxglove flowers grow one above the other. Comfrey grows with a few flowers per stalk. The rose grows on its own.

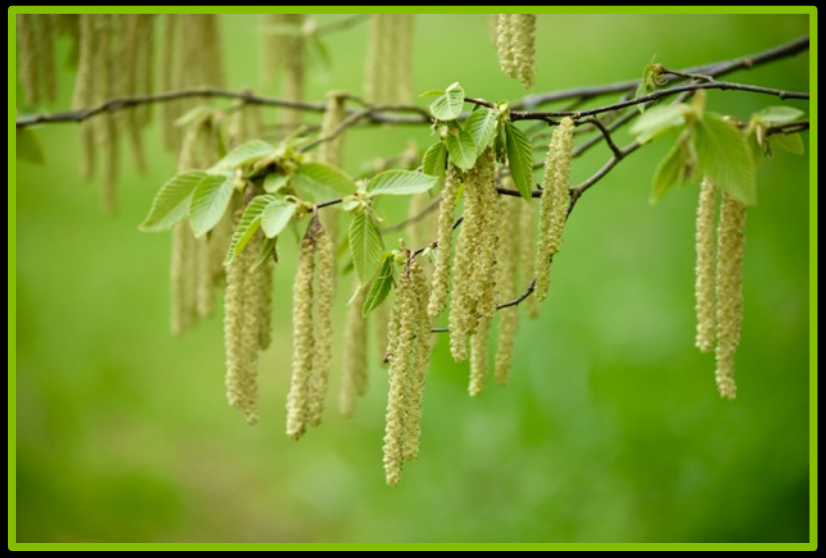
Additional Notes:

- Some bumble bees have long tongues and some have short. Beetles, wasps and flies have short tongues so they like to visit open, flat flowers.
- Butterflies have a long, thin tube-shaped tongue. They cannot fit inside bell-shaped flowers because their wings are too wide. They drink nectar from very small, tubular flowers like thistles.
- Can you see how the insects use their legs to grip the flowers and their antennae to sense what is going on?

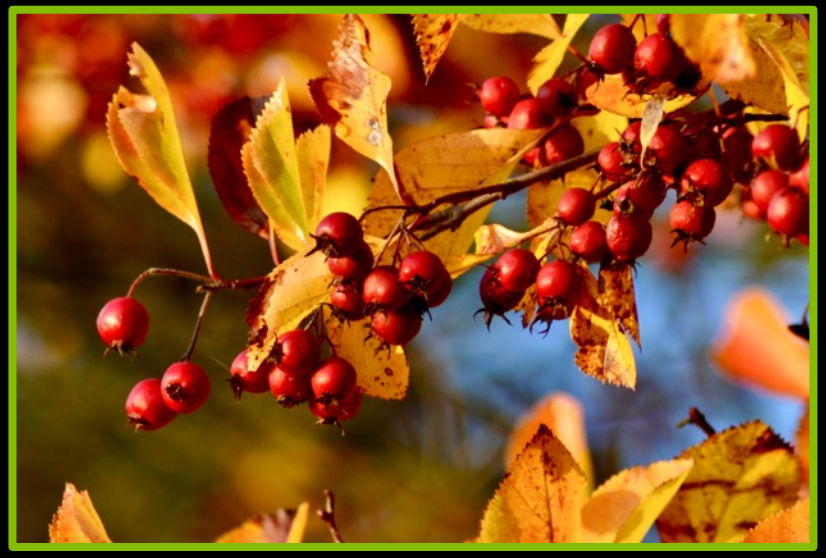
blossom



tulip



catkins



leaves and berries

Possible theme: Does it grow on a tree?

Tulip does not grow on a tree. It has a stalk which grows from a bulb and roots in the soil. Blossom, catkins, leaves and berries all grow on a tree.

Other possible reasons for being the Odd One Out:

Season: Blossom, tulips and catkins grow in spring. The leaves and berries are in autumn. The leaves turn brown and the berries ripen in autumn.

Colour: Tulip and berries are red. Blossom is white. Catkins are yellow or pale green.

Petals: Only blossom and tulips have petals.

Smell: Tulips and blossom might smell sweet. The smell attracts insects. Catkins, leaves and berries do not smell.

Pollen: Catkins are laden with pollen. They are the male flowers of a tree. They have no petals and do not attract insects. Pollen from catkins is dispersed by the wind. Flower pollen is spread by insects. Leaves and berries do not create pollen.

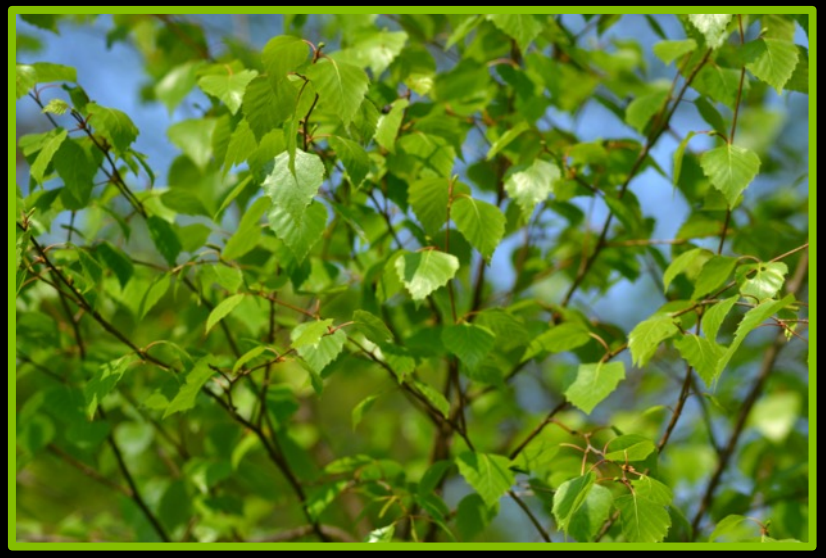
Leaves. They all have leaves.

Numbers: Tulips grow with one flower per stem. Blossom has several flowers on one branch. There are also lots of catkins and berries.

Size: Tulip is the biggest flower and it grows on a tall stalk. The others are all much smaller.

Texture: Petals on tulips and blossom are soft and delicate. Catkins feel grainy. Autumn leaves and berries are hard.

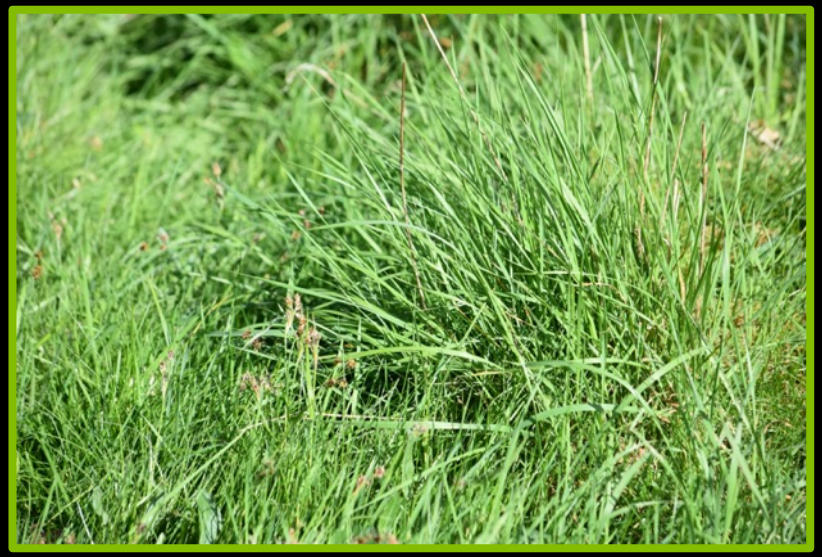
Seeds: Berries contain seeds, which could grow into a new tree.



beech leaves

horse chestnut leaves

stinging nettles



grass

Possible theme: Stinging Leaves

Only stinging nettles leaves can sting you. Nettles are covered in hairs. When a nettle is touched, the hair tips break off and release acid. This causes the painful rash.

Other possible reasons for being the Odd One Out:

Shape: Each horse chestnut leaf has 5-7 leaflets. Stinging nettle and beech leaves have one leaf per stem. They are a similar, oval shape. Grass leaves are long and thin.

Edge: Stinging nettle leaves have a jagged edge. The others have smooth edges.

Width: Blades of grass are leaves. They are very thin. The other leaves are much wider. There are many different types of grass, as there are different types of flower or tree.

Colour: They are all green.

Veins: All leaves have veins. You can see the veins branching out from the base on all except the grasses.

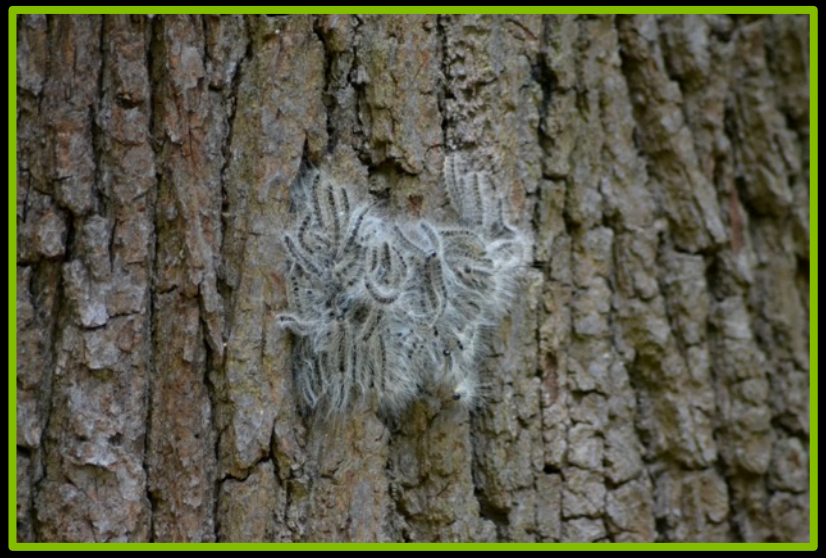
Season: They are all in summer. In autumn/winter, these leaves will die.

Place: Nettles and grass grow out of the ground and have roots. The other leaves grow from twigs and branches, on a tree.

Function: Leaves produce food for the plant, by photosynthesis.

Insects: Leaves provide food and habitats for many different insects. Even stinging nettles are the perfect habitat for some types of caterpillar!

trunk of a birch tree



trunk of an oak tree

twig from a horse chestnut tree

trunk and branches of a beech tree

Possible theme: Parts of a tree

The trunk is the central part of the tree. It is very wide and sturdy. Thick branches grow out of the trunk. Twigs are much smaller and grow on the branches. Twigs are thin and can easily break.

Other possible reasons for being the Odd One Out:

Colour: Birch tree bark is white and brown/grey. The others are brown.

Texture: Beech trees have smooth bark. Oak trees have rugged bark covered in deep cracks. Birch trees have smooth white bark which cracks open to show grey/brown patches.

Direction: Trunks grow upwards out of the ground, towards the sky. Branches grow out of the trunk at different angles. Twigs spread out in all directions from the branches.

Twig markings: Twigs have different markings on them. Twigs from the horse chestnut tree have horse shoe- shaped marks on. These are the scars where the leaves have fallen off.

Season: Beech tree is in autumn. It is in a wood. You cannot tell the season for the other pictures.

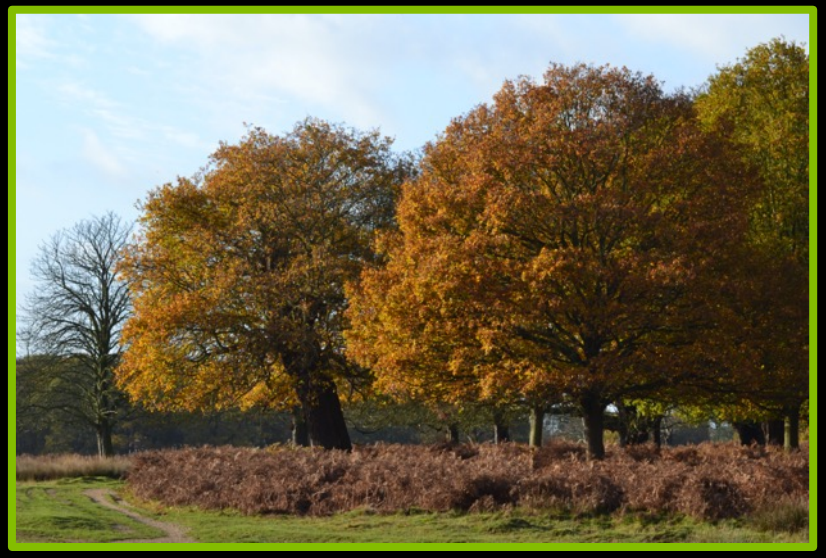
Roots: The trunk has roots which attach it to the ground and stop the tree blowing over. Branches and twigs do not have roots.

Leaves: There are leaves on the beech tree.

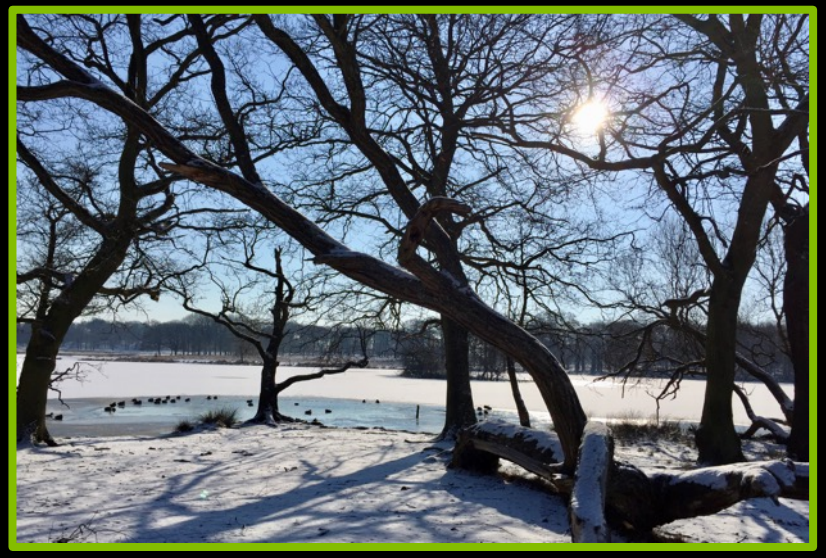
Age rings: Trunks get wider each year, as they grow. You can cut a slice through the trunk and count the number of age rings, to see how old a tree is. You can also do this with branches and twigs but because they started their individual life as a branch or twig much later than the main trunk, their growth rings will be fewer.

spring

summer



autumn



winter

Possible theme: Blossom / Seasons

There is only blossom on the tree in the Spring photo.

Other possible reasons for being the Odd One Out:

Leaves: Trees start to have leaves in the spring and leaves stay on the trees until late autumn. In autumn the leaves are golden brown. By winter, the leaves have fallen off.

Branches: You can see all the branches very clearly in winter. They are hidden by leaves and blossom for the rest of the year.

Roots: The roots and bark of a tree do not change through the seasons.

Weather: The sky is blue in the winter and summer pictures. The sun is shining in the winter picture.

Shadows: There are long shadows in the winter picture.

Pond: The winter trees are by a pond. The spring picture is in Kew gardens. Can you see the big greenhouse?

Animal visitors: Different animals feed on the trees and nest there, at different times of year. Pollinators come in spring for the nectar and pollen. Caterpillars hatch out in early summer to eat the new leaves. Birds come to eat the caterpillars and nest in the branches or inside the trunk. All year round, spiders, flies, beetles and other invertebrates live in cracks on the trunk and branches, Worms and invertebrates live in the soil and leaf litter below the tree. Squirrels live up in the branches all year round. Rabbits might live in a warren, underneath the tree. Trees provide food and shelter for the animals all year round.

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