



CLOVER

The Fixer



Clover fixes nitrogen from the air using special bacteria in its roots, which is crucial for plant growth.

Species: ~300
Genus: Trifolium
Family: Fabaceae



Clover is in the bean family, the **Fabaceae**. Like other beans, clover is a **legume**: it fixes **nitrogen** from the air using special bacteria in its roots. Small **nodules** in the roots contain millions of these bacteria, which convert atmospheric nitrogen into **nitrates** and **ammonia**.

The clover plant uses these substances to make **proteins**, which are crucial for plant growth. Some are left in the soil, making it rich and full of nutrients for other plants.

Clover is very useful in **agriculture**, and farmers often plant this herb to improve their pastures and crops.

Top Tip Planting clover in your garden will make the soil full of nitrogen to help your other plants grow.

Did You Know?



Clover plants are members of the genus **Trifolium**.



Clover is **trifoliate**, which means they have three leaves.



They have small flowers, which occur in a dense cluster called an **inflorescence**.



You can find clover in your garden, hidden among the grass.



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I.D Guide

- Small green herb
- Three compound leaves
- White or pink inflorescences (clusters of tiny flowers)

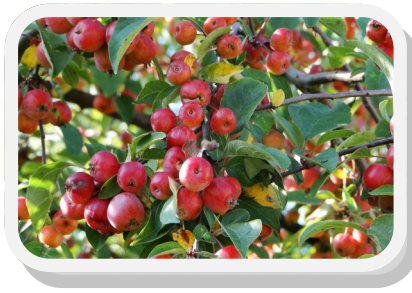
Crab Apple Tree

The Environmental Superstar



Crab apple trees are good for the soil, air, water and wildlife – the perfect all-rounder!

Species: *Malus sylvestris*
Genus: *Malus*
Family: Rosaceae



This plant, like all tree species, keeps the **air** clean, stabilises the **soil** and helps to conserve **water**.

The crab apple tree supports wildlife by providing **shelter**, a **nesting** place and **food**. The fruit of this tree is a **crab apple** or **pome**; they are small and very sour. While humans do not eat the apples, they provide a valuable food source for **birds**; and when they have fallen from the tree, small **mammals** will eat them too.

Crab apple trees are the main ancestor of the modern domestic apple, and are used to help the **cultivation** of its popular descendant.

Top Tip Grow a crab apple tree to bring all sorts of wild creatures to your garden!

Did You Know?



Unlike many trees, crab apples are **singletons** and don't like company! Often you will find just one in a woodland.



Traditionally, crab apples are symbols of love. English folklore says that if you throw the pips onto a fire while saying the name of someone you love, your love is true if the pips **explode**.



The crisp apples that we know and love are descended directly from the small, gnarled crab apple tree.



The pale pink crab apple flowers are heavily loaded with **pollen**, and so the trees are also used as **pollenizers** in apple orchards to facilitate cross-pollination.



I.D Guide

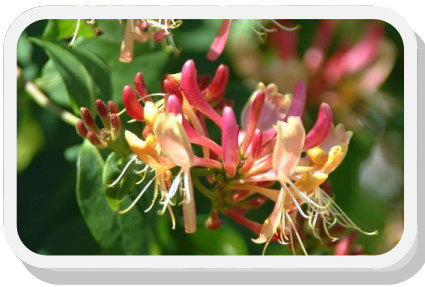
- Small, deciduous tree rarely over 8m in height
- Clusters of pale pink to white flowers, with five petals
- Oval leaves are 3-4cm long, with finely toothed margins
- Small apples (2.5cm across) are green in spring and golden in the autumn

Honeysuckle

The Bat Temptress

Its flowers release a strong perfume at dusk, attracting moths which tempt bats out to catch a juicy evening snack

Species: ~180
Genus: Caprifoliaceae
Family: Lonicera



Twisting honeysuckle vines have **night-scented flowers**, which fill the air with a heavy perfume that is particularly strong in the evening. This attracts **moths** and other insects

You might not have thought about how important plants can be for **bats**, but they are a vital way of attracting **insects**, a **key food source** for these flying mammals.

Honeysuckle is important for other species, too. **Birds** love the bright red **berries** that appear in the Autumn, and the tangling vines provide ideal **shelter** for the nests of smaller birds. Meanwhile, the larvae of certain **butterflies** will eat the leaves to fatten up before pupating. **Bees** are also attracted to the flowers.

Top Tip Honeysuckle flowers can make a good remedy for a sore throat! Collect flowers in a jar, fill the jar with honey, leave in a warm place for two weeks, then strain.

Did You Know?



Honeysuckle flowers can change colour after **pollination**.



In wild honeysuckle (*Lonicera periclymenum*), the creamy flowers turn **yellow** and **pink** when they have been pollinated, telling insects that they would be wasting their energy to visit.



Honeysuckle is useful to humans, and we have used it throughout the centuries in many old-fashioned **medical remedies**. Another name for honeysuckle is **woodbine**.



I.D Guide

- Vines that climb up a trellis, wall or tree
- Trumpet-shaped flowers that are usually white, yellow or pink
- A heavy scent that is particularly strong in the evening
- Clusters of deep red sticky berries
- Grey-green, lanceolate leaves



Rose

The Beauty



The beautiful rose has decorated gardens for thousands of years, and has a long cultural history

Species: ~180
Genus: *Rosa*
Family: Rosaceae



Roses are found all over the world, and the flowers are universal symbols of **love** and **beauty**.

Gardeners often breed roses to enter them into **competitions**, crossing different varieties to make exciting new colours and petal formations. But growing roses can be tricky, as they have many **insect pests** such as aphids, and **diseases** including mildew.

Roses are pollinated by insects, and they form an important part of a garden ecosystem. The aphids that often colonize rose bushes are eaten by **ladybirds**, and the larvae of other insects.

Top Tip Infuse rose petals in hot water to make your own rose water. Use this as a sweet-smelling perfume, a flavouring or to make rose syrup.

Did You Know?



Roses have also been symbols of **war** and **politics**. In Medieval Britain, there was even a **War of the Roses**, in which the red rose symbolized Lancaster and the white rose York.



Roses are used in **perfumes**, using essential oils from the crushed petals. It is possible to make your own fragrant **rose water** by infusing the petals in hot water.



The **Ancient Romans** were mad about roses! Rose petals carpeted the floors of wealthy banquet halls, and were used to flavour wine - a tribute to **Venus, Goddess of Love**.



I.D Guide

- Woody shrubs, climbing or trailing plants
- Fragrant flowers in many different colours, often white, pink, yellow and red
- Red rosehips form when the flower dies
- The leaves are serrated
- The stem is covered in prickles (thorns)



Borage

Star Companion



Borage is a friendly herb that helps other garden plants to grow!

Species: *Borago officinalis*
Genus: *Boraginaceae*
Family: *Borago*



Borage has a blue, five-petalled flower, which is why it is also called the **Starflower**. It is a simple herb, with its blue flowers hanging in clusters.

This helpful little herb looks after other plants, and it is used in **companion planting**, to make its neighbours healthier! Borage attracts **beneficial insects** like **wasps**, which kill pests. **Bees** love borage too.

At the same time, borage **repels** pest insects. This prevents pests like the **tomato hornworm** and **cabbage moths** from attacking neighbouring plants, which is good for gardeners as well as they can use **fewer chemicals** to keep their garden healthy.

Top Tip Grow borage near tomatoes, squash and strawberries to make them healthier, and even improve their flavour!

Did You Know?



The young leaves of borage taste faintly of **cucumber**, and can be added to salads. The blue flowers are tasty and are also often added to salads, as well as drinks.



Traditionally, borage has been used to soothe **asthma**, to increase the milk supply in nursing mothers and to make a **mood-enhancing tea**!



We grow borage to make seed oil, which contains **GLA**, **gamma-linolenic acid** (GLA), a substance the body can't make itself. It is often used as a **dietary supplement**.



I.D Guide

- Green herb that grows to ~1 metre
- Blue or purplish flower with five petals
- Flowers hang in downwards-facing clusters
- Simple leaves, which are edible and taste like cucumber
- Stems and leaves covered in a bristly 'fuzz'



Tomato

The Miracle Worker

Tomatoes have been called a 'miracle fruit' due to their many reported health benefits

Species: 25 000 varieties
Genus: *Solanum*
Family: Solanaceae



The tomato plant is a green vine that produces a familiar bright red **fruit**. They are important plants for humans, as we eat tomatoes in huge quantities in many different forms. **100 million tons** of fresh tomatoes are produced globally each year.

Tomatoes are reported to help the body fight a range of illnesses, from **cancer** to **heart disease** to **obesity**.

Pollinated by the **wind** and partially by **bees**, tomatoes can be susceptible to many garden pests and viruses. Other plant such as borage or carrots can be planted next to tomatoes as **companion plants** to keep them healthy.

Top Tip Tomatoes need lots of sun and lots of water - this will make them juicy and full of flavour!

Did You Know?



Tomatoes are the second most important vegetable crop, after their close relative, the potato.



Although they are commercially categorised as a vegetable, tomatoes are **botanically** a fruit.



Eating tomatoes is good for your **health**! They are high in **Vitamins A, C, K, E** and **B6**, as well as calcium, potassium, manganese and folate



In Spain, there is a popular annual **tomato fight**! 20,000 people come from all over the world to **La Tomatina**.



Tomatoes are closely related to **deadly nightshade**, a toxic plant that you would not want to eat!



I.D Guide

- Vine plant with green, serrated leaves
- Yellow flowers grow on the end of vines
- Red or yellow spherical fruit

The Sunflower

The Bird Feeder

Sunflowers produce stripy seeds that are accessible treats for birds!

Species: *Helianthus annuus*
Genus: *Helianthus*
Family: Asteraceae



The domesticated sunflower has an unbranched stem topped with a single flower or **inflorescence**, which consists of a stunning rosette of yellow petals. The bright petals attract **pollinators** such as honeybees, bumblebees and hoverflies, which come to collect nectar.

Sunflowers also provide food for **birds**, including goldfinches and blue tits. As the petals die and fall in the autumn, they leave a centre packed with **seeds**. These are full of **protein** and **energy** which helps birds gain fat reserves to survive the winter.

In some areas fields of sunflowers are grown for their seeds, which we use to make **sunflower oil** for cooking purposes.

Top Tip The tallest ever sunflower was an amazing 8.75 metres! Help yours grow tall by placing it in a sunny spot; feed and water it regularly.

Did You Know?



The common sunflower was worshipped by the **Incas** because of its resemblance to the sun.



Another member of the sunflower genus is the **Jerusalem Artichoke!**



The flowers do not actually follow the sun! The leaves are **phototropic** and grow towards the light, but it's a different story with the flowering heads.



Sunflowers can be used in **phytoremediation** to improve soil quality, as they are good at absorbing **radioactive** material. Thousands were planted to clean contaminated soil and water after Chernobyl and Fukushima disasters.



I.D Guide

- Tall plants grow to ~3 metres
- Unbranched stem
- Leaves and stem have a covering of coarse hairs
- Single inflorescence of bright yellow petals
- Seeds are stripy