HOW TO PLANT A TREE

In order to ensure that your tree has the best possible chance of reaching maturity, it is important to plant it properly. Always undertake work of this nature safely and responsibly, including taking all steps to ensure that you have permission from the landowner and are certain that no underground utilities are present. Some of the specifics around planting may vary with different tree sizes, but this guidance focuses on trees with a stem girth of around 10cm+, up to the sort of size which can be safely handled by one or two people. It also focuses on planting in soft landscapes. In addition, this guide does not cover additional infrastructure which might be used, such as underground guying (a support mechanism), root cells, tree guards, tree grilles, root barriers or watering pipes. If you are using any of these systems, please follow the manufacturer's guidance.

The hole for a new tree should be no deeper than the root ball/container, but approximately twice as wide. Holes can be circular or square, and different experts have different ideas about which shape is best. In soft landscapes, the soil closest to the surface might be better quality than the material found further down, so consider putting some to one side in order to backfill around the roots once the tree is in place. Measure the depth of the hole against the depth of the root ball before removing any container or hessian. It is very important to ensure that the final ground level around the stem matches the nursery line on the tree, which is the soil mark where the above-ground and below-ground bark meets.

Before setting the tree in place, consider if any formative pruning is required to remove damaged, broken or rubbing branches. It is much easier to do this before planting rather than after. If the tree has a co-dominant stem – i.e. more than one clear central leader – consider pruning back the ones which are not wanted with clean, sharp, disinfected secateurs. However, do not prune the main leader as this will disrupt the tree's hormonal growth pattern. Once the tree is in place and the packaging removed, backfill the hole with some of the material you previously excavated and compact with a boot or the end of a wooden support stake. Keep checking that the tree is straight during this process.

There are many different methods and styles of securing a tree in place after planting, and this choice will be influenced by a range of factors – including the size of the tree. A tree will respond to wind forces by adding new growth to its stem, and it is therefore important that it has room to move in the wind whilst being adequately supported. Crossbeams and diagonal staking are not recommended because they prevent the tree from moving in this way, which can create a weakness. This guidance recommends planting more substantial trees (with a stem girth of 10cm+) with two timber stakes and rubber ties. The orientation of the stakes may be influenced by aesthetics and the prevailing wind direction. Take care when driving the stakes into the ground: consider both underground utilities and operator safety when using a stake driver and be careful not to damage the tree. Sometimes it is easier to install the stakes before the tree is placed into the hole. Always ensure that the stakes are driven through the ground and not the root ball or container of the tree. Ties should be attached at approximately 1/3rd of the total height of the tree. Stakes and ties should always be removed when no longer required. For smaller trees, such as whips, a bamboo cane and suitable tree guard should provide adequate support.

The recommended surface material to use around newly-planted trees is bark mulch. This suppresses competing vegetation, helps retain moisture, breaks down over time to enrich the soil and ensures that grass-cutting equipment is kept at a safe distance from the base of the stem. A depth of 5–10cm of mulch should be applied after planting, ideally covering a circle around the tree of a minimum 1m diameter. Make sure you do not pile mulch directly up against the stem.

As a general rule, the tree planting season in the UK extends from October to March. Deciduous trees should ideally not be planted when they are in leaf. Consider engaging the local community in your tree planting, and if possible it can be beneficial to leave the nursery identification tag in place so that people are able to identify the tree afterwards. Always water your new tree after planting.

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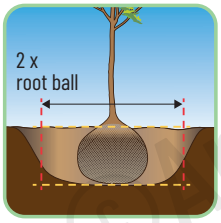
HOW TO PLANT A TREE

Always undertake work of this nature safely and responsibly, including taking all steps to ensure that you have permission from the landowner and are certain that no underground utilities are present.

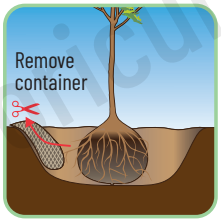
The hole for a new tree should be no deeper than the root ball/container, but approximately twice as wide.

Measure the depth of the hole against the depth of the root ball. It is very important to ensure that the final ground level around the stem matches the nursery line on the tree, which is where you can see the soil mark.

These principles apply whether planting bare-root, rootballed or container-grown trees.

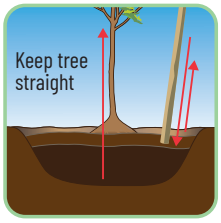


Dig a hole as deep as the root ball and twice as wide

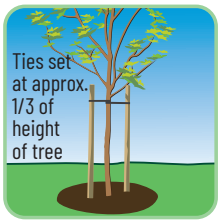


Remove any container or hessian

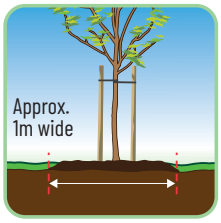
Consider formative pruning before setting in place



Backfill with removed soil, gently compact with stake or boot



Allow for wind movement with two stakes and rubber ties



Add a 1m wide circle of bark mulch, 5–10cm deep

UK planting season is October–March

Avoid planting deciduous trees when in leaf

Always water your new tree

Always consult an arboricultural professional if in any doubt about tree care.

For further information, including an introductory guide to young tree establishment, visit **trees.org.uk**.

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YOUNG TREE AFTERCARE

The years immediately after a tree has been planted are in some ways the most important in its life. This is the time when the young tree is most vulnerable – old enough to be planted out into the landscape, but young enough to still require plenty of care and attention. One of the most important tasks for the first years after planting is watering, which is dealt with in a separate section of this guide. However, there are also plenty of other considerations.

In a soft landscape situation (and in some hard landscapes) the area immediately around the tree will have been covered with organic bark mulch. This helps protect the tree from strimmer damage, removes competition from weeds and grass and is hugely beneficial to the tree overall. However, this mulch will break down sooner than you think and it is important to keep it topped up regularly. More information about mulch can be found elsewhere in this guide (see 'How to plant a tree').

If the tree has been supported with above-ground stakes and ties then these will need to be checked every year after planting. Adjust the stakes and ties as necessary, paying particular attention to ensuring that they are still doing the job they were intended to do. Painting the top of each stake with a different colour depending on the year in which the tree was planted can assist with identification and management. Tree support systems should be removed when they are no longer needed; leaving support systems in place for too long can cause damage to the tree.

Much of the pruning work undertaken with chainsaws many years after planting can be avoided if a tree is maintained in its first few years using hand tools to create smaller wounds from which the tree can recover more easily. Consider removing damaged, dead, broken or crossing branches, paying careful consideration to the future structure of the canopy. Always adopt good biosecurity practices to reduce the risk of spreading disease.

Visiting young trees in the years after they have been planted also provides an opportunity to check their overall health. Whilst detailed diagnosis of a condition will require professional arboricultural input, there are certain problems which should be easy to identify. These might include a failure of the tree to come into leaf in the spring; wilting, yellowing or die back of leaves and shoots; or exudations from the stem.

Around three years after planting the tree should be inspected with a view to deciding whether or not it is ready to be removed from the young tree maintenance programme. If it looks like the tree could do with some more establishment time then simply return the following year until you are satisfied. Once the tree seems secure and established it is time to take away the stake and ties and remove the tree from the young tree maintenance programme. It will now require inspection (and any associated maintenance work) as part of the wider tree stock.

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YOUNG TREE AFTERCARE

Planting a tree is just the beginning... the hard part is making sure that it becomes established in the landscape.

It is good practice to put newly-planted trees on a **young tree maintenance programme** for at least two or three years.

This can be achieved without huge investment, **just some time and attention**.

- Regular watering is critical – refer to the Arboricultural Association watering guidance.
- 1yr — Visit each newly-planted tree at least once a year.
- Remove weeds and grass from the tree pit by hand.
- Check stakes, ties and guards. Do they need adjusting or refastening?
- Check the overall health of the tree: is it OK, or does it seem to be struggling?
- Check for broken, damaged or crossing branches and consider formative pruning.
- Keep mulch levels topped up around the tree.
- ! Careless grass strimming kills young trees – stay well away!

After three years consider if the tree is ready to be taken off the young tree maintenance programme, or if it needs a bit longer. If it is ready then it is time to remove the stakes and ties.

Always consult an arboricultural professional if in any doubt about tree care.

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For further information, including an introductory guide to young tree establishment, visit **trees.org.uk**.

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TREE WATERING

One of the main causes of death in newly-planted trees is a lack of water. In simple terms, water is drawn up by the tree via the roots, through the stem and branches and then exits the tree via the leaves in a process called evapotranspiration. A newly-planted tree will not have an established or extensive root system, meaning that in the summer months when the canopy is in full leaf it will struggle to bring in enough water from the ground to balance what is being lost through the leaves. For the first few years after planting, trees need our help in order to find that water.

Tree watering is an inexact science and there are many variables involved. These include tree species, size, condition, root stock, soil type, location, weather and climatic conditions. It is not realistically possible to take all of these variables into account in a meaningful way and most recommendations will, therefore, necessarily be oversimplified. The advice provided here is based on a collaboration between the Arboricultural Association, the Association of Tree Officers, the London Tree Officers Association and the Municipal Association of Tree Officers. This group of organisations has also produced the tree watering tags referenced within this guide and available online, which can be affixed to newly-planted trees to encourage passers-by to water them.

We recommend that for the first three years after planting, a newly-planted tree should receive approximately 50 litres of water each week throughout May, June, July and August (in the UK). Depending on seasonal variations it may be necessary to start watering trees as early as April and continue as late as September. These 50 litres can be added to the tree in one visit, or spread over multiple visits. Watering will ideally be carried out in the early morning or in the evening, when temperatures are lower than during the day.

Wherever possible, water used for irrigating trees should be sustainably sourced. Harvested rainwater is ideal, and should be used in preference to potable (drinking quality) water. Recycling grey water, such as from baths or washing-up bowls, is also an option to irrigate trees but the impact of soap and detergent on soil structure is not fully understood. However, in times of drought when using potable water is expressly banned, the benefits of grey water likely outweigh the potential risks. In general terms it is of great importance that we seek to move away from using potable water in tree care wherever we can.

A watering pipe is sometimes installed alongside a tree. If a watering pipe is present then approximately half of the water should be poured down the pipe and half added to the ground surface around the tree. Some trees are planted with watering bags; if your newly-planted tree has a watering bag then fill it in accordance with the manufacturer's specification. Try to ensure that the water is actually penetrating the ground and is not simply being intercepted by the layer of mulch on the surface.

Under some circumstances it is possible to overwater a tree, which can in itself lead to health problems. However, in general terms it can be said that the risk of a lack of water is greater than the risk of an excess of water. When planting in clay soils it may be advisable to cut a drainage channel, extending away from the base of the pit and filled with gravel, to prevent waterlogging. If you are in any doubt then please speak to an arboricultural professional. Note also that trees in full leaf can still require watering even when it has recently rained, and that a light shower is not going to be sufficient to deliver the required level of water to the roots of the tree.

PLEASE WATER YOUR TREES!

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LTOA
London Tree Officers Association

ATO
Association of Tree Officers

Municipal Tree Officers' Association
MTOA
The Voice of Municipal Arboriculture

Newly-planted trees need to be watered regularly over the summer months if they are going to become established and thrive.

If you have a tree outside your house, or one that you pass on your daily walk, then you can help.

Requirements vary depending on a number of factors such as species and location, but a general rule is that they should receive at least 50 litres of water per week in May, June, July and August.

Please water regularly during dry periods with as much as you can – Every little helps

Watering should ideally be carried out in the early morning or evening.

3yrs

It is good practice to water trees for the first three years after planting.

If the tree has a watering pipe, then half of the water should be poured down the pipe and the other half on the ground surface around the tree. If the tree has a watering bag, then fill that.

Where possible, water should be sustainably sourced. Harvested rainwater is ideal, but bath water, or water which has been used for washing up, is also suitable.

More information about tree watering can be found in the **London Tree Officers Association** (LTOA) publication *Sustainable water management*, available for free download at **www.ltoa.org.uk**

For further information, including an introductory guide to young tree establishment, visit **www.trees.org.uk**

www.treecare.org.uk | **www.trees.org.uk** | **www.ltoa.org.uk** | **www.ato.org.uk** | **www.mtoa.co.uk**
Tree Care Supporters | Arboricultural Association | London Tree Officers Association | Association of Tree Officers | Municipal Tree Officers' Association

CONCLUSION

We hope that this introduction to young tree establishment proves a useful guide to anyone who is selecting, planting and caring for a new tree. Tree planting can be easy to do, but difficult to get right. If the trees we plant today are to grow into the mature and ancient specimens of the future then a lot of thought and work is required. It is essential to consider where we are planting them, which species we are planting, how we are planting them and then how we are taking care of them afterwards, including appropriate watering.

As the name of this publication suggests, this is just an introductory guide and should not in any way be regarded as a substitute for professional input. Arboriculture is a complex and specialist discipline covering many areas of expertise from growing, contracting, consulting and management to research and academia. For future amenity treescapes to be successful it is important that arboricultural professionals and the wider tree care community work together to share knowledge, ideas and experience for the good of our trees and our communities.

Sitting behind the summary information contained within this guide is a wealth of documentation, books, webinars and other resources which we encourage you to go and explore. Here and on the next page are some recommended resources with a particular focus on young tree planting and care, but this is far from being a comprehensive list and there are many, many fantastic resources about trees out there. Some of these are free to access online; others have to be purchased.

USEFUL WEBSITES

Arboricultural Association: **www.trees.org.uk**

Arboricultural Association Online Learning: **www.trees.org.uk/Learning**

Association of Tree Officers: **www.ato.org.uk**

London Tree Officers Association: **www.ltoa.org.uk**

Municipal Tree Officers Association: **www.mtoa.co.uk**

Observatree: **www.observatree.org.uk**

Perennial: **www.perennial.org.uk**

Plant Healthy Certification Scheme: **www.planthealthy.org.uk**

Sustainable Soils Alliance: **www.sustainablesoils.org**

Tree Alert: **www.forestresearch.gov.uk/tools-and-resources/fthr/tree-alert**

Tree Care Supporter: **www.treecare.org.uk**

Trees and Design Action Group: **www.tdag.org.uk**

FURTHER READING

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Applied tree biology.
Hirons, A. and Thomas, P. (2018).

Arboricultural Association Strategic Plan 2022–24.
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Surface materials around trees in hard landscapes.
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Sustainable water management: Trees are part of the solution.
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The pruning of trees, shrubs and conifers.
Brown, G. and Kirkham, T. (2004).

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Trees – A lifespan approach. Contributions to arboriculture from European practitioners. Editors: Witkos-Gnach, K. and Tyszko-Chmielowiec, P. (2016).

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