

# SHADE TREE DESCRIPTIONS FOR SCHOOLS

**Shade Tree Options** Planting shade-giving trees is an effective way of protecting people from the harsh rays of the sun. It can be especially effective around schools and playgrounds. Sunburn in childhood increases the risk of developing melanoma later in life.



## Plan your planting

- ✧ Consider the shape of the tree and the shadow cast.
- ✧ Look for broad canopies and dense foliage.
- ✧ Deciduous trees have the advantage of allowing sun through in winter but drop leaves in autumn. These are best planted in winter while dormant.
- ✧ Evergreen trees drop some leaves all year round. This may be a problem for sand-pits, sports facilities or the school swimming pool. April to September are ideal months for planting evergreen trees.
- ✧ Palms have large leaves, which can be removed before they drop.

Plant trees to the north and west of the area to be shaded. Students can work out which areas of the grounds need shade. Avoid underground and above ground cables, pipes, roadways and easements.



## Which tree?

Trees will probably outlive the school so it pays to consult experts before making a decision. With deciduous trees, choose ones that come into leaf early, preferably the beginning of October, when daylight-saving starts. This is the time when UV radiation is increasing to dangerous levels.

Some shade trees, for example walnuts and sweet chestnuts provide nuts as well as shade. Some willows provide thin shoots for basket making or sculpture. Would these be of benefit? In neat, courtyard areas, avoid trees that drop catkins, flowers, etc., that could be a nuisance.

It is tempting to plant big trees so they will provide shade earlier, but smaller trees cost less, are easier to establish and often catch up within a few years.

If planting near play equipment or areas that children congregate ensure a tree species that has low failures (branch breakages - ask an expert). Some species may also trigger asthma or have seeds that are poisonous so again check with experts.

## Planting your tree

Spring and autumn are the best times to plant evergreen, when the soil is moist and rain can be expected. Deciduous planting is best during winter months. Avoid planting in hot, dry conditions.

Water the tree in its container well and let the water drain away before planting. Good preparation of the site will help the tree get established and make rapid growth.

Dig a hole about twice as big as the plant container. If you are planting small specimens, use a commercial tree planting mixture. Otherwise mix compost with the soil, more for heavy or light soils.

Plant the tree at the same level that it was in its container. At the time of planting place a vertical 2m stake alongside the tree without damaging the roots. Firm the mixture around the tree and water well. Drive three more stout stakes into the ground, tying the central stake to this framework. This should protect the tree against most winds.

If required, shelter or shade cloth can be secured to the three stakes or, if animals are a problem, wire netting. Such a structure will also be a protection against lawnmowers, balls and children. As trees grow, an octagonal seat surround offers practical protection.

The following tables provide a description, picture, size at maturity, and preferred conditions for a number of shade trees.

It would be best to discuss your choice with the experts at your local nursery so that site conditions can also be considered in your choice of tree.



### American Sweet Gum (Liquidamber *Styraciflua*)



#### Description:

It is a medium-sized to large tree, with a trunk up to 2m diameter. Commonly also known as the Liquid Amber. American Sweetgum is a popular ornamental tree, grown for its intense autumn colours.

The wood is brittle and the tree may drop branches easily in storms.

The spiked "gumballs" are a great hit with the children.



**Deciduous**

Est. height at 10 yrs: 7 x 5m

Est. height at maturity: 15 x 10m

#### Preferred Conditions:

Moist soils

### Cherry Tree (*Prunus*)

#### Description:



The word cherry refers to both the tree and the fleshy fruit that contains a single stony seed. The cherry belongs to the family Rosaceae, genus *Prunus*, along with almonds, peaches, plums, apricots and bird

cherries. As well as the fruit, cherries are best known for their attractive flowers, and they are commonly planted for their flower display in spring.

**Deciduous**

Est. height at 10 yrs: 5 x 4m

Est. height at maturity: 8 x 6m

#### Preferred Conditions:

Wind shelter, full sun



### Claret Ash (*Fraxinus Raywoodii*)

#### Description:



The tree grows to around 15-20 metres and has dark green leaves that turn to a dark claret red in the autumn. A most attractive and reasonably hardy shade tree.

**Deciduous**

Est. height at 10 yrs: 8 x 5m

Est. height at maturity: 12 x 8m

#### Preferred Conditions:

Will tolerate heavier soils



## European Beech Tree (*Fagus Sylvatica*)

### Description:



It is a large tree that has a typical lifespan of 150 to 200 years. Planted in isolation with good side light the trunk is short with a large and widely spreading crown with very long branches.

The European Beech has several significant requirements: a humid atmosphere (precipitation well distributed throughout the year) and well drained soil (it can not handle excessive stagnant water). It prefers moderately fertile ground, calcified or lightly acidic, therefore it is found more often on the side of a hill than at the bottom of a clayey basin. It tolerates rigorous winter cold, but is sensitive to spring frost.

### Deciduous

Est. height at 10 yrs: 10 x 6m

Est. height at maturity: 25 x 15m

### Preferred Conditions:

Some shelter, good drainage



## Ginkgo (*Ginkgo Biloba*)

### Description:



Ginkgos are medium-large trees, normally reaching a height of 20–35m. The tree has an often angular crown and long, somewhat erratic branches, and is usually deep rooted and resistant to wind and snow damage. Young trees are

often tall and slender, and sparsely branched; the crown becomes broader as the tree ages. During autumn, the leaves turn a bright yellow, then fall. A combination of resistance to disease, insect-resistant wood and the ability to form aerial roots and sprouts makes ginkgos very long-lived, with some specimens claimed to be more than 2,500 years old.

### Deciduous

Est. height at 10 yrs: 7 x 4m

Est. height at maturity: 10 x 7m

### Preferred Conditions:

Suits most conditions



## Golden Weeping Willow (*Salix Babylonica Aurea*)

### Description:



The willows all have abundant watery juice, furrowed scaly bark which is heavily charged with salicylic acid, soft, pliant, tough wood, slender branches and large fibrous roots. These roots are remarkable for their toughness, size, and tenacity

of life. The leaves are deciduous, often elongate but round to oval in a few species, and with a serrated margin. Willows are often planted on the borders of streams in order that their interlacing roots may protect the bank against the action of the water.

### Deciduous

Est. height at 10 yrs: 9 x 9m

Est. height at maturity: 12 x 12m

### Preferred Conditions:

Prefers wet soil, plant min. 20m from drains





## Laurel Magnolia (Magnolia Grandiflora)

### Description:



The evergreen magnolia is a very popular ornamental tree, grown for its attractive foliage and flowers. It is a medium to large tree with a striking appearance, both in leaf and in bloom. The leaves will bronze, blotch, and burn in severe

winters, but most still cling until they are replaced by new foliage in the spring. The large, showy, citronella-scented flowers are white and fragrant, with 6-12 petals with a waxy texture, emerging from the tips of twigs on mature trees in late spring.

Evergreen

Est. height at 10 yrs:  
7 x 5m

Est. height at maturity:  
12 x 10m



### Preferred Conditions:

Moist soils

## Maple (Acer)

### Description:



These form a diverse group of deciduous trees renowned for their magnificent foliage effects often at their best both in spring and in autumn with their brilliant autumn splendour. Most are symmetrical, wide

spreading trees with extremely thick foliage. For all Maples shelter from severe wind is important and soil conditions should be a good well drained acid soil.

Deciduous

Est. height at 10 yrs:  
6 x 4m

Est. height at maturity:  
10 x 6m

### Preferred Conditions:

Sheltered, average soil



## Oak (Quercus)

### Description:



Oaks are magnificent spreading hardwood trees. The flowers are produced in spring. The fruit is a nut called an acorn, borne in a cup-like structure

known as a cupule. Oak wood has great strength and hardness, and is very resistant to insect and fungal attack because of its high tannin content. The leaves and acorns of the Oak tree are poisonous to horses in large amounts, due to the toxin tannic acid.



Deciduous

Est. height at 10 yrs: 8 x 6m

Est. height at maturity: 12 x 10m

### Preferred Conditions:

Will tolerate heavier soils

## Pohutukawa (*Metrosideros excelsa*)

### Description:



The Pōhutukawa is a coastal evergreen tree that produces a brilliant display of red flowers made up of a mass of stamens.

The tree grows to a height of up to 20m, with a dome-like spreading form. Its natural range is in the coastal regions of the North Island of New Zealand. The tree is also renowned as a cliff-dweller, due to its ability to maintain a hold in precarious, near-vertical situations. Some specimens have matted, fibrous aerial roots.

### Native Evergreen

Est. height at 10 yrs:

8 x 5m

Est. height at maturity:

25 x 20m



### Preferred Conditions:

Frost free

## Puriri (*Vitex Lucens*)

### Description:



The Puriri tree has thin bark, is usually smooth and light brown in colour, but can also be very flaky. Puriri is one of the few native trees with large colourful flowers. The tubular flowers of the puriri look rather like snapdragon flowers. The bright colour, the tube shape, copious nectar production and the hairs at the base of the flower tube all point towards birds pollinating this flower (the hairs stop insects from stealing the nectar). Puriri is an invaluable food source for native wildlife, as it provides both fruit and nectar in seasons when few other species produce these, thus it is often used in restoration planting.

### Native Evergreen

Est. height at 10 yrs:

6 x 5m

Est. height at maturity:

15 x 12m



### Preferred Conditions:

Frost free area

## Silk Tree (*Albizia Julibrissin*)

### Description:



The Silk Tree is a very useful shade tree in New Zealand. It gets its ferny leaves in late spring-early summer, just as the hot weather starts. The Silk Tree produces its silky

blooms during January and February, with its soft sweet perfume filling the garden on warm days. The broad crown of a mature tree makes it useful for providing dappled shade. This tree comes with one warning: Don't plant near swimming pools unless you like vacuuming them and cleaning filters!

### Deciduous

Est. height at 10 yrs:

5 x 4m

Est. height at maturity:

7 x 6m

### Preferred Conditions:

Average soil, full sun



### Titoki (Alectryon Excelsum)



#### Description:

It was formerly known as the 'New Zealand Oak'. Spreading tree with a black trunk, new growth is pink. Mature leaves deep green. Often seen standardised as street trees.

Native Evergreen

Est. height at 10 yrs: 7 x 4m

Est. height at maturity: 9 x 6m

#### Preferred Conditions:

Prefers some shelter, frost free



### Tulip Tree (Liriodendron Tulipifera)

#### Description:



Also known as the "yellow poplar" for its beautiful bright golden autumn foliage. They are easily recognized by their general shape, with the higher branches sweeping together in one direction, and their fragrant, tulip-like flowers appearing in late spring with their unusual

green and orange colouring. They prefer a temperate climate, sun or part shade and deep, fertile, well drained and slightly acidic soil.

Deciduous

Est. height at 10 yrs: 10 x 6m

Est. height at maturity: 15 x 10m

#### Preferred Conditions:

Some shelter, moist soils

