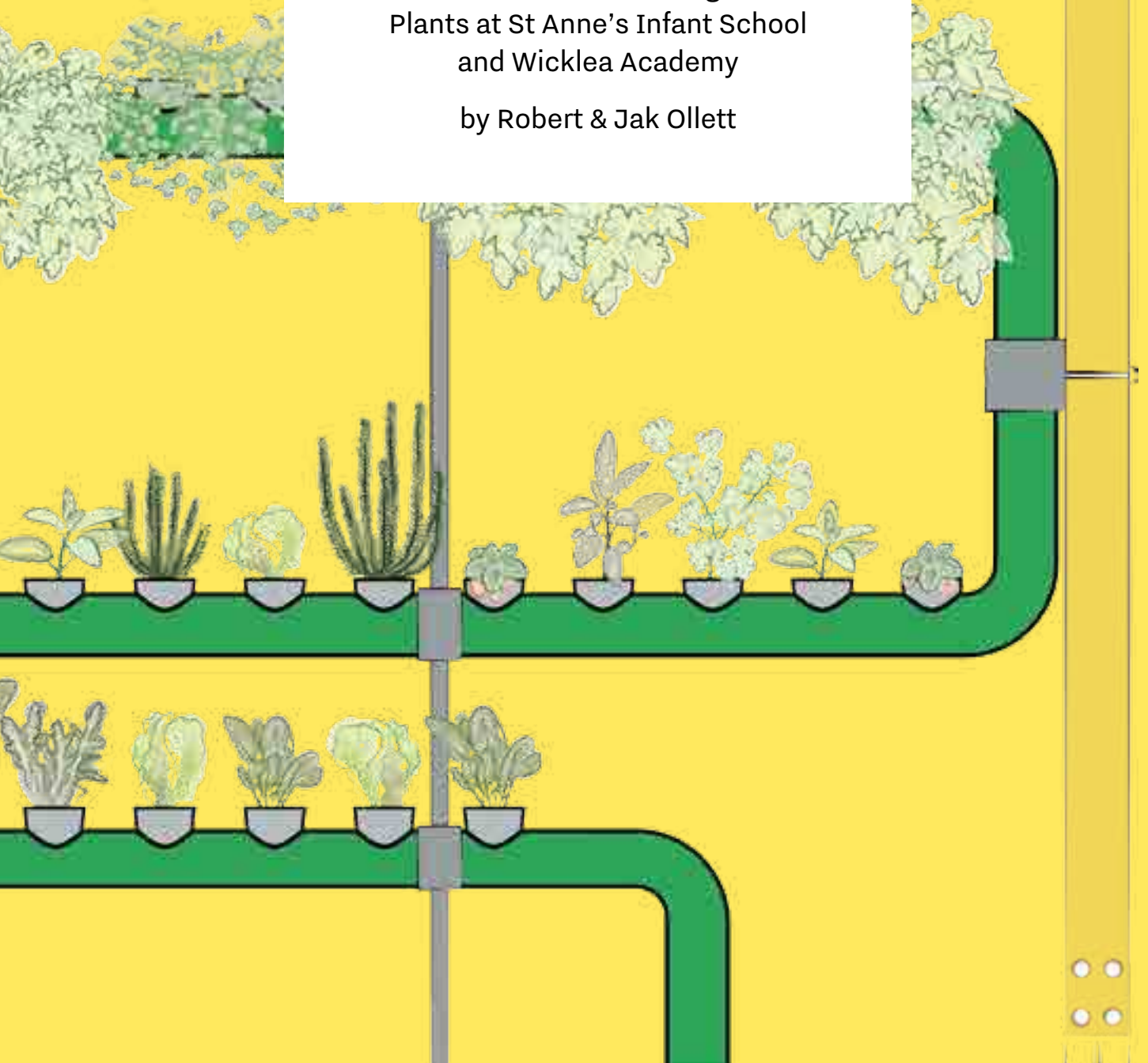


# The Cascading Garden Handbook

A Guide to Growing  
Plants at St Anne's Infant School  
and Wicklea Academy

by Robert & Jak Ollett





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# 1 The Cascading Garden

The Cascading Garden has been specially designed for your school. It has been designed to teach you how to grow some brilliant plants throughout the year. Some of those plants you can eat. Some of them are great for attracting insects. Others look great or smell great!

## What is a Cascading Garden?

The word ‘**cascade**’ means to flow or fall from one level to the next. Have you ever seen a waterfall? If you have, you have seen water cascade! We have called your garden a cascading garden for two reasons.

The first is that the watering system for the plants cascades through the different levels.



The second is that some of the plants cascade too, by trailing down.

## 2 How It Works

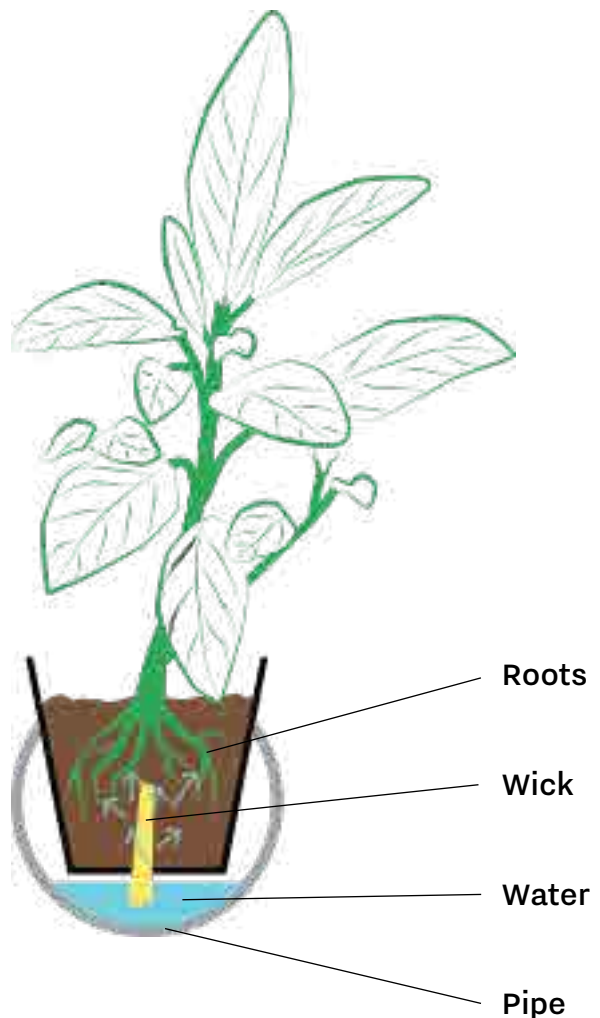
Your garden works in a unique way. Most of the time we water plants from above using a hose pipe or watering can. But this isn't perfect because you can over or under water your plants, or even just forget to water them! As you'll find out, different plants like different amounts of water.

Instead the Cascading Garden works by providing water from underneath the plant. The plant is then able to access water whenever it needs it by a special thing called **Capillary Action** which you will learn all about in your science classes.

The reasons that this is the best way of watering plants are:

- plants get water when they need it
- they always take the right amount of water
- nutrients in the soil aren't washed away

This means the plants in your Cascading Garden have the best system for everything to grow really well.



### 3 Planting for the Cascading Garden

The way you plant for the Cascading Garden is a little bit different to how you normally plant. Luckily, it's a simple and neat way of planting. Things you need:



a big bucket



a seed OR a seedling



some soil



perlite



vermiculite



a 1.5 Litre Plant Pot



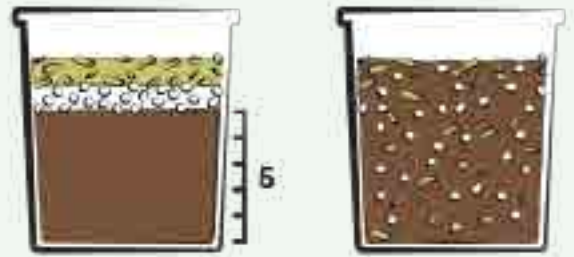
a piece of fabric  
about 3cm wide  
& 10cm long



a stick (such as  
a chop stick)

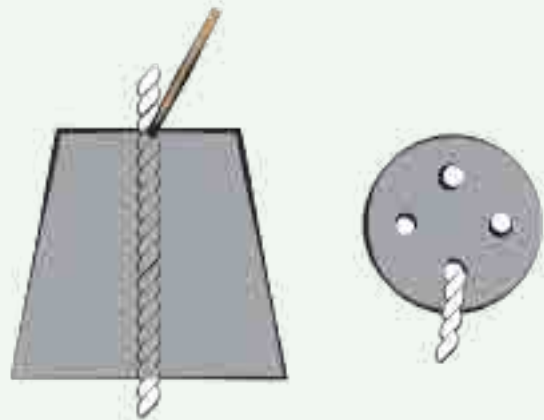
# Step by Step Guide

1. Mix together 5 scoops of soil with 1 scoop of perlite and 1 scoop of vermiculite in a big bucket. This is a special measurement we call a 5:1:1 ratio.



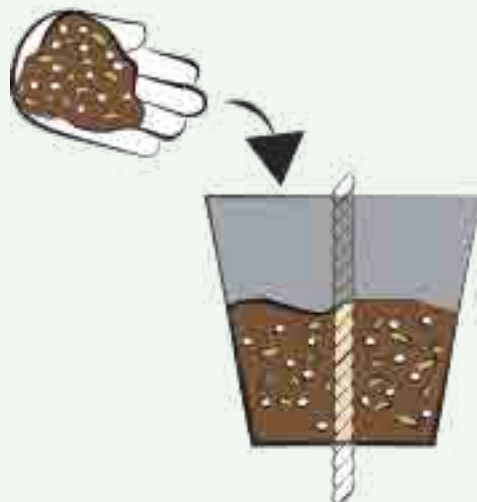
2. Put the pot upside down and use the stick to poke the string through one of the holes.

Make sure you leave about 3–4cm of string from the bottom of the hole & that the string reaches the top too.



3. Loosely fill the pot with soil mix.

It's good to try to keeping the string as vertical and as close to the centre of the pot as possible. This is so the string is near to the roots of the plant.

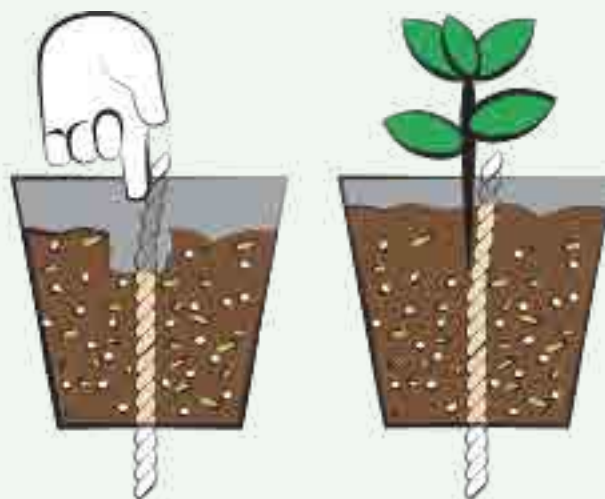


4. Poke a hole in the middle of the soil.

Then place the seedling or the seed in the hole and fill with soil.

Push the soil gently around the seedling to make the soil firm.

Finally, put a bit of unmixed soil on top to finish the planting.



5. Check that there is enough string to touch the bottom of the pipe. If there isn't, simply pull a bit more string from the bottom.

When you are happy, place the pot into the Cascading Garden.



## 4 Technical

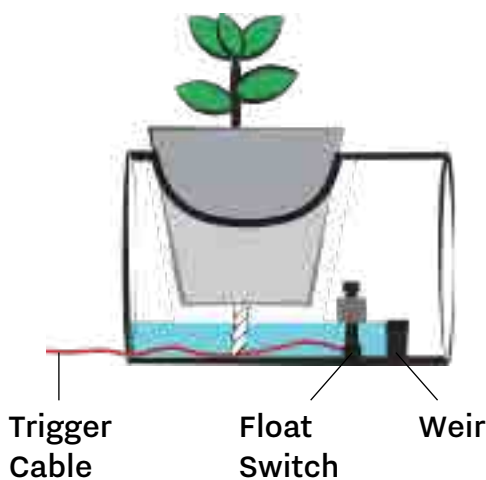
The Cascading Garden is watered by a **sub-irrigation** system that is controlled by a simple but really neat **switch**.

Switches, as you might have learned in your science classes, can be turned off and on (**triggered**) in a number of different ways. For example, a light switch is normally be turned on/off by pushing it.

The switch used in the Cascading Garden is called a '**float switch**'. A float switch can be triggered when

- (a) water reduces down to a certain level or
- (b) when water fills up to a certain level.

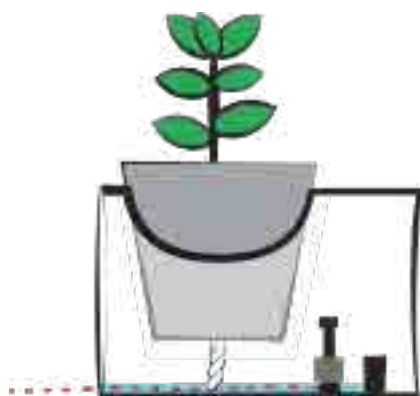
Which way do you think the float switch works for the Cascading Garden? (see below for answer!)



The pipe when it is full of water.

Do you see the position of where the float in the float switch is?

Answer: (a) the water reduces because the plants use the water!



The pipe when it's low on water.

Do you see where the float in the float switch is now? When the float drops to this level it triggers an electrical signal tell the solenoid valve to release more water until it fills the pipe again.

## 5 Plants

All sorts of plants can be grown in the Cascading Garden. You can grow plants in this garden that smell nice or feel good to touch. These are called sensory plants because they affect your senses! They have these special symbols:



**Smells Good!**



**Feels Nice!**



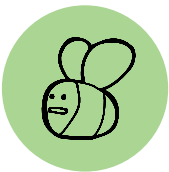
**Looks Great!**

You can grow plants here that tasty and good for you. These are called edible plants. They have this special symbol:



**Tastes Good!**

You can also grow plants in the Cascading Garden that are attractive to bees and other bugs. These are called biodiverse plants. They have this special symbol:



**Good For Bugs!**

Different kinds of plants need different kinds of things. Some plants need lots of sun and almost no water (have you ever touched a cactus? Owch!). Other plants like almost no light and love lots of water such as ferns!

We call these things environmental conditions and if you get the right plant with the right conditions, they are likely to do well!

All of the plants that are grown in the cascading garden are matched to the conditions. To help you understand why some plants will do better than others you can use the guide here. Some plants are really unfussy and will grow well with lots of different environmental conditions!

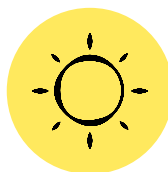
Plants like different amounts of light. Some want to be in the sun all day, and others like it shady. The special symbols for light are:



Full Shade



Part Shade

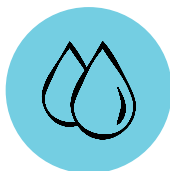


Full Sun

Plants also like different amounts of water & the special symbols for water are:



A Little Bit of  
Water



Lots of  
Water

# Trailing Ivy

## An Evergreen Cascading Curtain!



Ivy (*Hedera helix*) is an amazing wildlife plant. It's an evergreen that provides nectar later in the year for insects and seeds for birds to eat in the winter.

It clambers, climbs and crawls growing up trees & walls. If you see Ivy in the woods growing up a tree maybe there's a family of birds living in it...?

### Did You Know?

Ivy is also an fantastic house plant — it actually cleans the air in your house, making it a healthier place to live in!

### Care Guide

When the ivy gets too long cut it back. Cutting it back also encourages ivy to become more bushy and strong.



# Wild Rocket

Peppery, Spicy & Easy To Grow Salad Leaves



Rocket (*Eruca vesicaria sativa*) is one of those leaves that you never forget once you have tried them. Why? because of its distinct, peppery taste! It's best to eat the leaves when they are fairly young, otherwise they get too spicy and bitter. Rocket is also very easy to grow — sprinkle a few seeds, water, and watch them go!

## Did You Know?

Rocket is called rocket because of the rocket fast speed it can grow at!

## Looking After Rocket

Rocket can grow all year round but remember to pick some of the leaves when they are young to eat.



# Lettuce

## Grow Your Own Salad!



Lettuce (*Latuca sativa*) is one of the most popular plants grown around the world because it's refreshing and great in salads! It comes in all different colours, shapes and sizes.

Lettuce is easy to grow and can grow for most of the year. Maybe you'll grow different kinds of lettuce in your Cascading Garden?

### Did You Know?

The darker the lettuce leaf, the more nutritious it is!

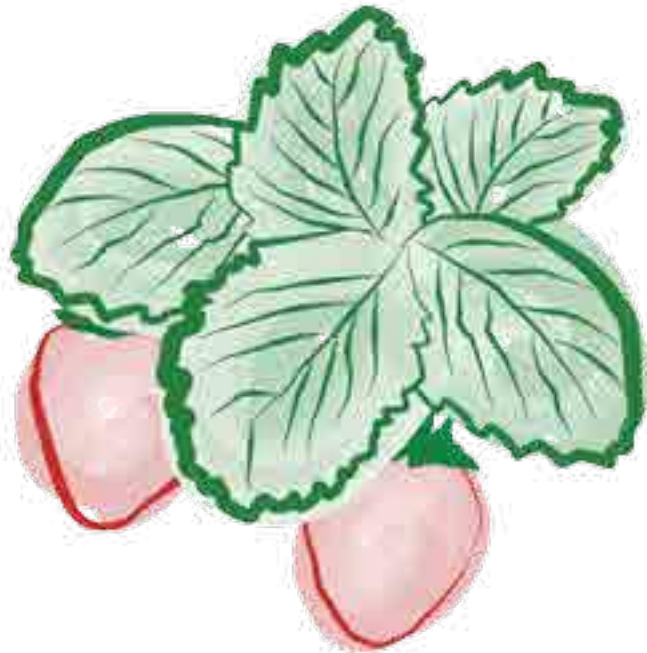
### Harvesting Lettuce

Using a technique called 'cut & come again' means you can get to enjoy eating even more lettuce. When the leaves are big enough, simply cut a few of the outer leaves. The lettuce will keep growing. When the centre of the lettuce begins growing tall, harvest the whole plant.



# Wild Strawberry

Everyone's Favourite Red Berry!



You've definitely tried strawberries before but did you know that there are many different types of strawberry? They all have slightly different qualities – for example, some are sweeter than others and some taste more floral. You have wild strawberries (*Fragaria Fresca*) growing in your garden – they produce small fruit, but they are super tasty!

## Did You Know?

6 strawberries provide 100% of the recommended daily amount of Vitamin C for children!

## Tip

When you see the trailing leaves, gently put them back in the soil and they will grow into another strawberry plant.



# Sage

## The Wisest Herb Around



Sage (*Salvia officinalis*) is a herb from the Mediterranean that has made a happy home for itself in Britain. Sage is really easy to grow and is a wonderful sensory plant. Its leaves are slightly furry and when you stroke them gently they give off a lovely smell too! Sage is also tasty too — it's great with pasta & roast chicken.

### Did You Know?

Sage is also a medicinal plant. It's great as a tea with honey if you have a sore throat!



# Lemon Balm

A Bee Friendly & Scented Herb



If you gently brush the leaves of the Lemon Balm (*Melissa Officinalis*) plant, you'll know why it's called that! It really smells great, just like lemon! Lemon Balm is also very attractive to bees so it's a great for having a biodiverse garden too. You can also use the leaves in salad or add a couple to a lovely, fresh lemonade!

Did You Know?

Lemon Balm is also a traditional medicinal plant. A few leaves in hot water can help to get rid of a stomach ache!



# Rosemary

## An Aromatic Evergreen Herb



Rosemary (*Rosemarinus officinalis*) is from the Mediterranean and is brilliant. It smells great when you rub the leaves, it tastes great when you have roast potatoes, lamb or beef. Bees and butteries love it too! Rosemary also flowers early in the year which means bees have a great source of pollen.

### Did You Know?

Rosemary is part of the mint family along with some other herbs you might know such as Basil, Lavender and Oregano!

### Care Guide

Rosemary benefits from being 'pruned' in the Spring or Summer. Simply cut about 4 or 5cms from each stem. This encourages the rosemary to grow new shoots and become bushier. It also means you have some yummy rosemary to eat.



# Heucherella

## A Cascading Ever-Colour Changing Plant



Heucherella (pronounced 'hew-che-rella') 'Sunrise Falls' is a really beautiful cascading plant. It provides ever-changing colours in the Cascading Garden all year around. You might have to cut this one back sometimes as it likes to grow & trail & gets quite long!



# Spinach

Makes You Strong!



Spinach (*Spinacia oleracea*) is one of nature's super foods. It's rich in Iron which is essential for your body to produce healthy red blood cells. It's also bursting with Vitamin A, B, C & K & helps keep your skin & eyes healthy. It is also rich with protein.

Spinach leaves are best eaten when they are young. You can eat them raw in a salad, but the best health benefits are when they are cooked for 2 minutes.

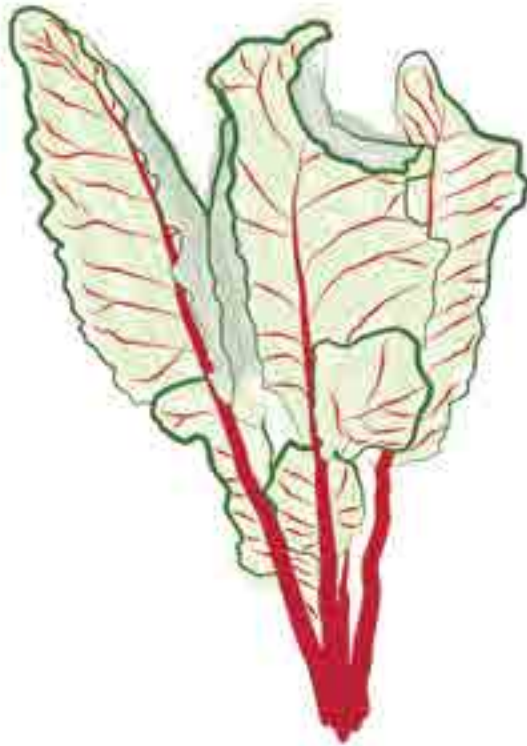
Did You Know?

Spinach grows really well through the winter as long as it gets lots of sun!



# Rainbow Chard

Super Colourful & Healthy Greens!



There are many different kinds of Chard (*Beta vulgaris flavescens*) and they are all beautiful & super colourful! Chard is also easy to grow and can grow outside for most of the year. Even better, Chard is tasty and extremely healthy!

## Did You Know?

Chard is packed with loads of essential vitamins and minerals such as vitamin K, A & C as well as Magnesium, Potassium & iron.

## Harvesting Chard

You can also use the 'cut & come again' technique (the same as lettuce) with Chard too.



# Geranium

## A Sensory Dream



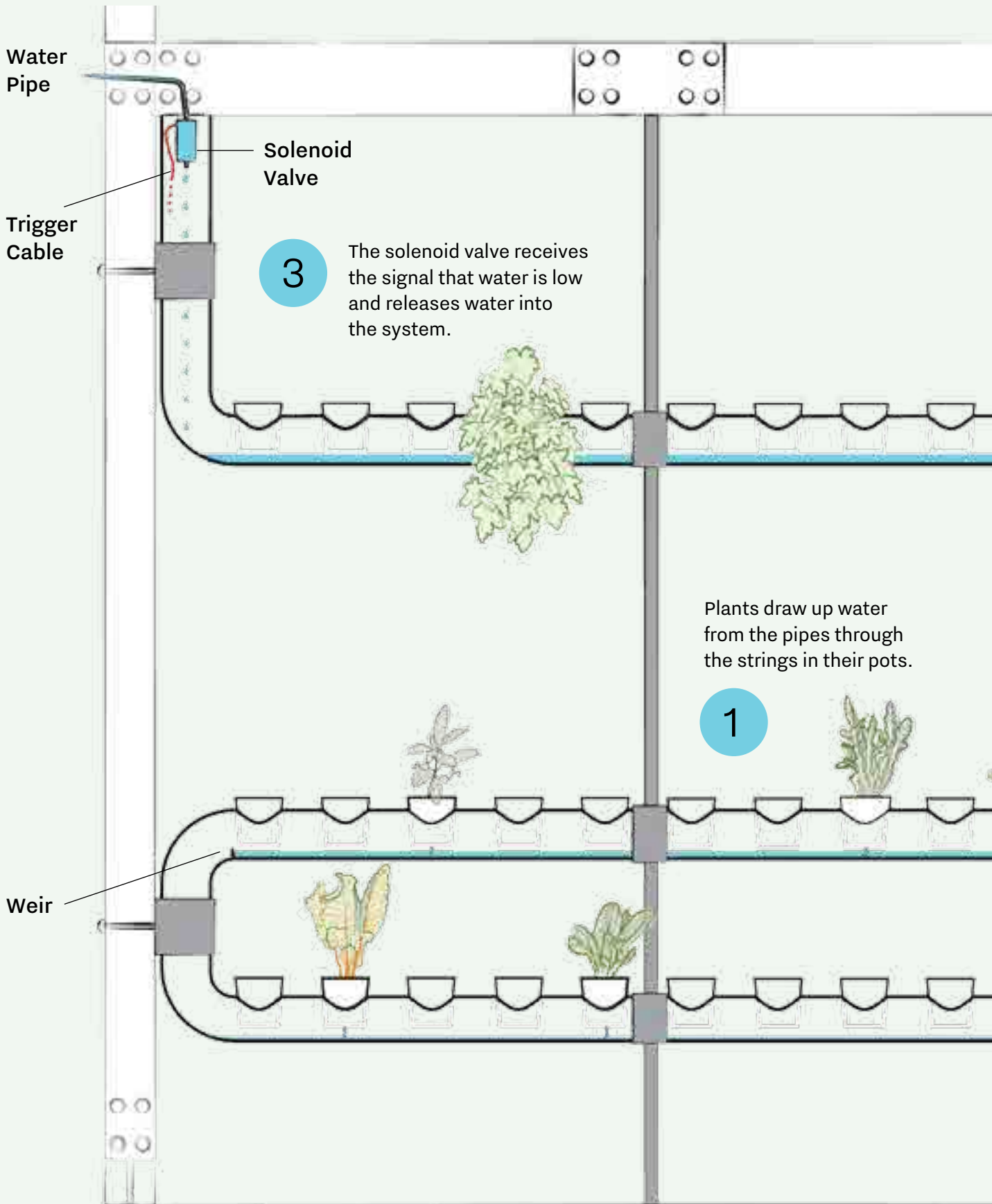
These Geraniums (*Pelargoniu*) are one of the most sensory plants you can get! If you rub the slightly furry leaves gently, they give off wonderful smells. There are a couple of different kinds of Geranium in your garden — what do their smells remind you of? Scented Geraniums also attract butterflies in the summer too!

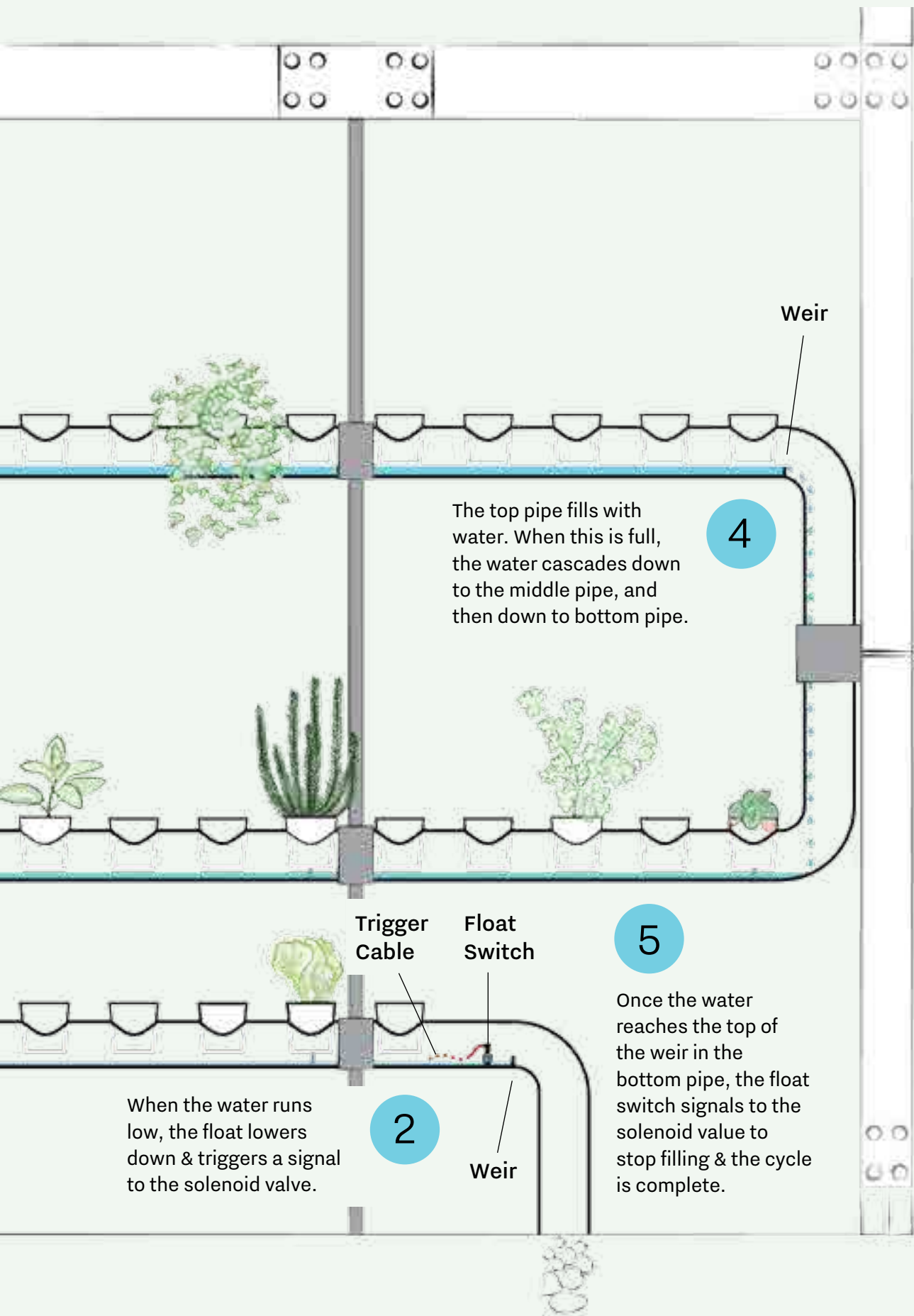
### Did You Know?

Scented Geraniums come all the way from South Africa, Australia & New Zealand.



## 6 How the Cascading Garden Works

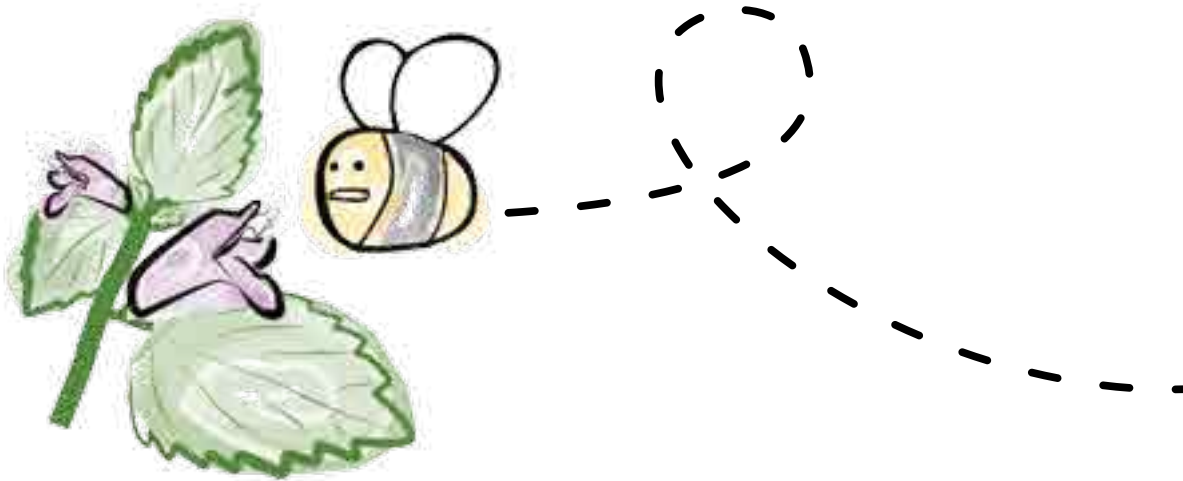




## 7 Bees, Bugs & Butterflies

Plants & insects have a very important relationship. Bees, bugs & butterflies come and **pollinate** plants when they are flowering.

They are attracted to the bright colours & the smells which tell the bee or butterfly the sugary pollen is ready to collect for them to eat. While the insect's are buzzing about busy collecting pollen, they are also helping the plant because as they travel about they brush pollen against other flowers which fertilises the egg cells in the flower. This is how most plants make seeds.



It's really important to encourage bees, bugs & butterflies into your garden with different kinds of plants. Having lots of variety in your garden is called Biodiversity. Biodiversity is important because it helps to develop a healthy and balanced **Eco-system**.

## 8 More Plants

Now that you know all about how the Cascading Garden works, it's up to you to get learning, growing and planting what you want! We've included a guide for you to add more plants to your book.

There are lots of extra plants that are already planted in the cascading garden that you can research, illustrate & write about. These include:

- Curry Plant (*Helichrysum italicum*)
- Lavendar 'Cedar Blue' (*Lavendula angustifolia*)
- Golden Marjoram (*Origanum aureum Gold*)
- Cotton Lavender (*Santolina chamaecyparissus*)
- Roman Chamomile (*Chamaemelum nobile*)
- Myrtle (*Myrtus communis*)
- Corn Salad / Lamb's Leaf Lettuce (*Valerianella locusta*)

There are also loads of fantastic plants you might want to grow such as:

Tomatoes, nasturtiums, mint, sunflowers, beans, sweet peas, radishes, coriander, parsley, lemon balm and many more!

So maybe you also want to save some space as when you grow a new plant maybe you want to add it to the handbook?

**Plant name**

.....  
**Drawing of plant**

... make it as detailed as you like!

.....  
**Plant property icons**

.....  
**Plant description**

... what do you know about the plant?

Do you know any special or interesting facts?

Is there any useful information to share with others?

Plant name

.....

Drawing of plant

.....

Plant property icons

.....

Plant description

Plant name

.....

Drawing of plant

.....

Plant property icons

.....

Plant description

Plant name

.....

Drawing of plant

.....

Plant property icons

.....

Plant description

Plant name

.....

Drawing of plant

.....

Plant property icons

.....

Plant description

## 9 Eudaimon

The Eudaimon design practice was founded in 2009 by the Ollett brothers. Their name hints at their background roots and reveals their design practice vision: to inspire flourishing and balanced living through design.

Their works are an exploration of the theme of nature and sustainability in the built environment. Their world is one in which the questions that they are posed are philosophically investigated and often answered with practical and unusual responses. The results are works of functional environmental art that reference and expose the underlying processes and materials that contribute to the world as we experience it. Their aim is to create works that invite people to enjoy and engage in a space that contains subtle layers of meaning which ultimately leaves one feeling uplifted. [www.eudaimon.co.uk](http://www.eudaimon.co.uk)

## 10 More Info

Plants for a Future: an amazing source for researching plants with a purpose whether edible, biodiverse, herbal or medicinal. [www.pfaf.org](http://www.pfaf.org)

Incredible Edible Bristol: grow food in unusual, unused & sometimes unloved places. They also work with schools to create educational Programmes including St Anne's Infant & Wicklea. [www.ediblebristol.org.uk](http://www.ediblebristol.org.uk)

Organic Plants (Delfland Nursery): a great place to buy in-season organic plant and seedlings. [www.organicplants.co.uk](http://www.organicplants.co.uk)

Feed Bristol: is Avon Wildlife Trust's community food-growing project located in Stapleton, Bristol. [www.avonwildlifetrust.org.uk/feedbristol](http://www.avonwildlifetrust.org.uk/feedbristol)

Bristol Food Network: aims to support, inform and connect individuals, community projects, organisations and businesses that share a vision to transform Bristol into a sustainable food city. [www.bristolfoodpolicycouncil.org](http://www.bristolfoodpolicycouncil.org)

Bristol Healthy Schools: is a programme available to all Bristol schools wishing to improve the health and wellbeing of their pupils, staff and local community. [www.bristolhealthyschools.org.uk](http://www.bristolhealthyschools.org.uk)

Soil Association: is the UK's leading membership charity campaigning for healthy, humane and sustainable food, farming and land use. [www.soilassociation.org](http://www.soilassociation.org)

The Severn Project: produce high quality salad leaves and herbs in urban farms in Bristol. The project also has a positive social impact working with people who face significant barriers to the workplace. [www.thesevernproject.org](http://www.thesevernproject.org)

## Primary Capital Programme:

The Cascading Garden is a public art project commissioned as part of the Primary Capital Programme (PCP) in Bristol, a project designed to transform primary schools across England into state-of-the-art learning environments.

The Primary Capital Programme commissions are developed by Arnolfini and Foreground who are working in partnership with Bristol City Council and the Local Education Partnership. This programme offers a unique possibility to develop an extensive series of art commissions with established and emerging artists in dialogue with Bristol primary schools. The commissions are intended to improve the experience and the environment of schools, and to initiate dialogue and reflection with the school community.

## Art and the Public Realm Bristol

Bristol is one of the leading cities in the UK for public art commissioning and for its programme of projects with artists of local, national and international significance. Its programme focuses on the development of visionary public art works across the city, outside of the conventional gallery and museum setting. To date over 100 commissions have been produced within a diverse range of contexts including hospitals, schools, and public spaces. For further info see: [www.aprb.co.uk](http://www.aprb.co.uk)

## Arnolfini

Arnolfini is one of Europe's leading independent, contemporary arts organisations, welcoming more than 500,000 visitors annually. Since its foundation in 1961, Arnolfini has built an international reputation for commissioning and presenting innovative, experimental work in the contemporary arts, always with a strong emphasis upon audience engagement. Many thousands of artists and performers have been involved with Arnolfini during this time, often gaining their first opportunity before going on to long-term success. The fully accessible converted warehouse situated on Bristol's historic harbourside also contains one of the country's best arts bookshops as well as a café bar serving the best in local and seasonal produce.

## Credits

Commissioner: Arnolfini [arnolfini.org.uk](http://arnolfini.org.uk)  
Funders: Bristol City Council  
Artwork concept and design: Eudaimon Design  
Fabrication: Eudaimon Design & Toby Riches  
Installation: Eudaimon Design & Counterwork  
Planting Workshops: Incredible Edible  
Handbook Design: Polimekanos  
Handbook Illustrations: Robert Ollett

With Special Thanks to: Packer Studio,  
Jessica Rolls, Ellie Jeffs & Aldo Rinaldi



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