Personal Garden

USER MANUAL

GARDEN MANAGMENT

04

Garden Management

INTRODUCING GROWING

Scan here to learn more about Garden management.

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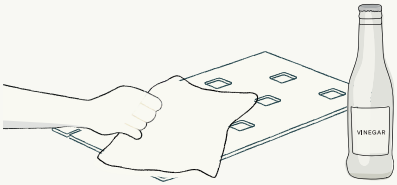
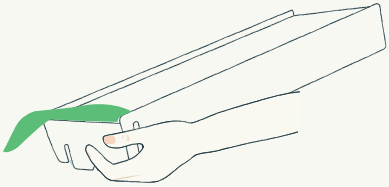
3-month cleaning

It is important to clean your Garden in between generations of your plants to maintain a healthy Garden and prevent pests from entering.



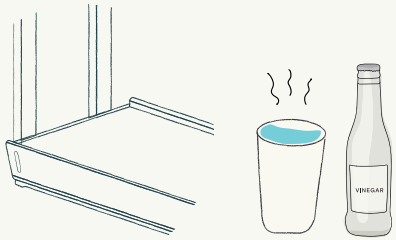
a. Remove plants

Start by removing all of your plants from your Garden and wipe down Tray Lid with vinegar.



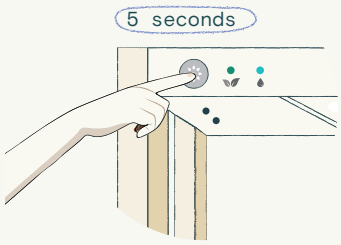
b. Dirty water

Separate Water Tray from rails and pour out dirty water from Tray.



c. Refill

Replace the Tray in your Garden. Refill Garden halfway with warm water and add 1 cup white vinegar.
Let sit for 5 minutes.

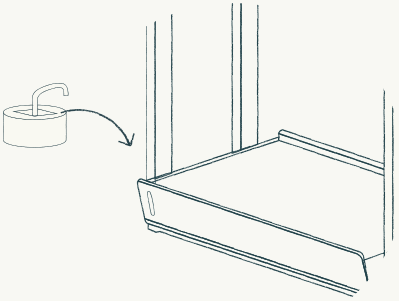


d. Cycle Pump

Press and hold your light button for 5 seconds to start a 5 minute Pump cycle . Once your Garden has stopped cycling, unplug your Pump and remove it from your Tray.
Repeat step “b. Dirty Water”

c. Wipe clean

Press and hold your light button for 5 seconds to start a 5 minute Pump cycle . Once your Garden has stopped cycling, unplug your Pump and remove it from your Tray.
Repeat step “b. Dirty Water”



d. Replace Pump

Replace the Tray in your Garden and place pump back in Water Tray. Refill the Tray with fresh water.
Your Garden is ready to use again!

Hydroponic Nutrients

- Add your plants to your app when you start them.
- Your App needs to know how old your plants are and what type of plants are in your Garden in order to calculate Nutrients!
- Once your starter Nutrients run out, remember to order more.
- If you are growing any plants with fruits or flowers remember to order Blossom.

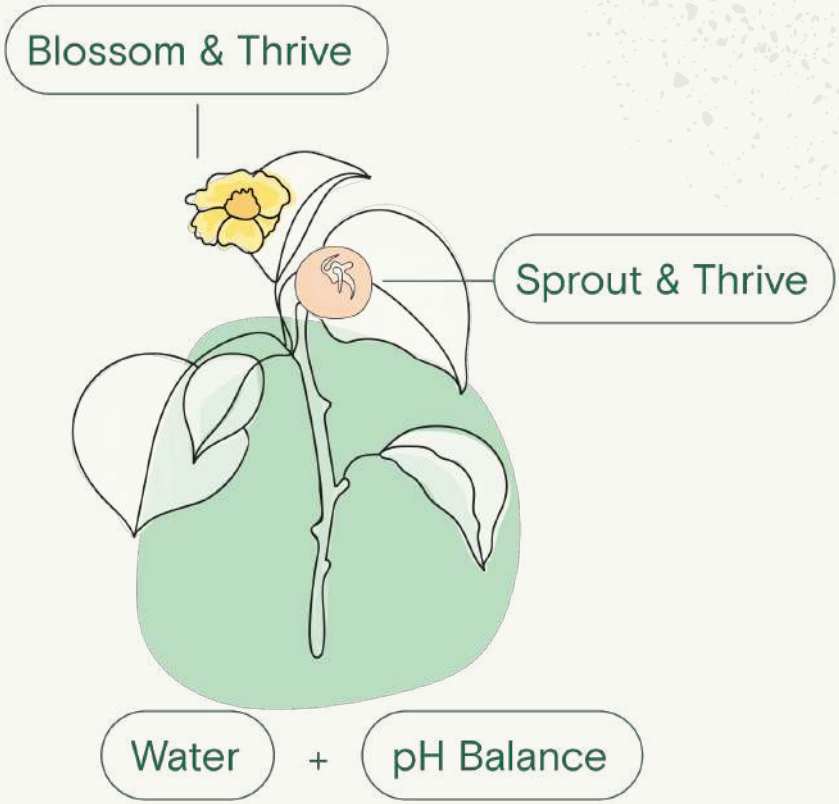
Always wait 5 minutes in-between adding different Nutrients!

3 types of Rise Gardens Nutrients

Plants need different levels of Nutrients at each stage of growth. When plants are germinating, they only need water and light to grow. This is why you use your Nursery! As they grow, plants need different amounts of micronutrients and macronutrients. This is why we provide both Sprout and a Blossom Nutrients.

`Sprout` has the right macronutrients for early growth, while Blossom has the right macronutrients for flower and fruit production.

`Thrive` has all of the micronutrients plants need and so you will use it throughout your plants' growth.



Why should you add water between nutrients?

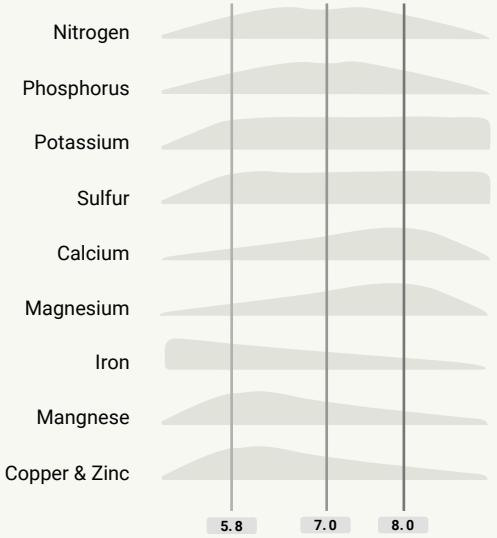
Our Nutrients are separated into 3 parts for a reason. They are concentrated in order to lower the shipping cost and decrease our carbon footprint. However, if Thrive and Sprout / Blossom interact in their concentrated form, they will make a solid called a precipitate that the plant cannot take up.

NOTE: These solids can also clog your pump!

In order to stop precipitates from forming, you need to dilute the Nutrients when you add them to your Garden. By following the app's guidance, you will add Sprout or Blossom, add water, add Thrive, add water, then add pH Balance (and if there is still room, you top off your Water Bin until it's full).

What is PH and how does it impact plants?

pH is a measurement of how acidic or basic your water is. Nutrients can only be absorbed by plants in a specific range of pH, and every nutrient is different. For hydroponics the sweet spot is 5.8. At this pH, the plants are able to absorb the largest amount of Nutrients (see graph: thickest bars on all nutrients), and therefore you should always be as close to 5.8 as possible.



What is PH made of?

Your pH Balance is made from acids that help to lower your pH. Your tap water has a high pH and therefore you must add pH Balance to help keep your Gardens's pH close to 5.8.

Nursery

When a seed is first growing, it needs a warm and humid environment for germination. Our Nursery protects your seed while it is young to provide the healthiest seedling possible for you to add to your Garden.

Seedlings cannot absorb nutrients, so once you add nutrients to your Garden you should start any new pod in your Nursery.

When using the Nursery, make sure to do the following in order to succeed:

- Never add Nutrients to your Nursery.
- Always keep your water level below the max fill line.
- Never let your Nursery run out of water.
- Keep your Nursery under the lights of your Garden.
- Keep your humidity dome on while the plants grow to increase temperature and humidity until the seedlings reach the dome.
- Check your Nursery every day for sprouts.
- Empty and refill with fresh water once a week.

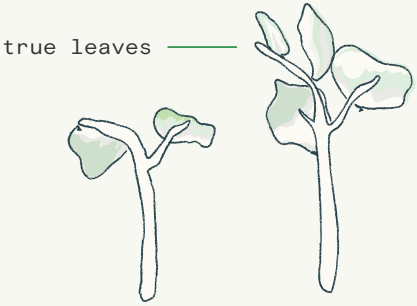
Microgreens can be grown 100% in your Nursery

Our new Microgreens are sure to provide a flavorful and Nutrient-dense punch to any meal you prepare. You can grow microgreens can be grown 100% in the Nursery. Or move them once they've sprouted.

When to move to Garden?

Our plants are ready to be moved into the Garden when they sprout their second set of leaves. These are the “True Leaves” and signal that your plant can absorb Nutrients.

NOTE: If you wait more than 2 days past the growth of your True Leaves, your plant may become leggy and tall and may grow slower than normal.



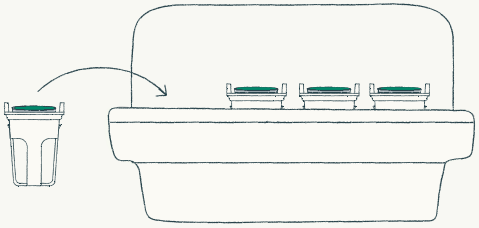
Be patient!

Some herbs can take up to 2 weeks to sprout!
That means 3 weeks in your Nursery!

Curated for hydroponic succes

The 4 pod capacity ensures staggered growing in order to maximize Garden yields & continuous harvesting.

This redesigned Nursery is slim in profile allowing you for more flexibility in storage whether in use or when empty.



Our Plant Pods

Basic ingredients

Our plant pods are made from an organic peat moss and coco coir and provide the perfect blend of air, organic matter, and water. These are the 3 basic ingredients for germinating your seeds.

Our pods alredy have trace Nutrients to acceleterate germination and growth. They are also dry and can rehydrate so you don't have to stress about keeping them moist.

Hand-selected seed pods

The pods are hand-wrapped in tinfoil, allowing plants to grow through while shading the top of the pod to prevent algae. They are labeled with our doughnut stickers so you never have to guess what is growing. Inside each plug are hand-selected seeds with enough extra to ensure they sprout .

Shelf stable for over a year

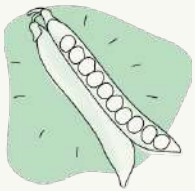
We have packaged and tested our seed pods to ensure that they last more than one year stored. This means that you can buy seeds and use them later.

Seeds storage

Store seeds in a cool location with low light, low humidity and consistent temperature.

Thoroughly tested

Our plant science team extensively tests all seeds in a various environments to ensure gardening success for beginner and expert gardeners alike.



Our seeds

Our seeds are selected from a range of seed providers to give you the best hydroponic growing experience possible. Each new variety is tested in our lab for germination success, growth, and flavor.

Seedless Pods

We also offer Seedless pods so that you can experiment with your own seeds!

Scan here to learn more about our Plant Pods.

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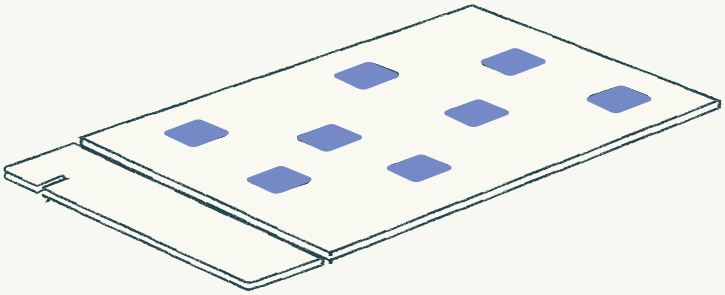
Plant Spacing Guide

GROUP A

These plants are small enough where they can grow next to each other without crowding, so you don't need to leave any empty spaces.



Group A Plants

- Amaranth
- Arugula
- Beans
- Chamomile
- Chives
- Cilantro
- Dandelion
- Dill
- Endive
- Fennel
- Lavender
- Lettuce
- Marjoram
- Mustard
- Oregano
- Pak Choi
- Parsley
- Rosemary
- Sage
- Sorrel
- Stevia
- Thyme

Scan here to learn more about Plant Spacing.

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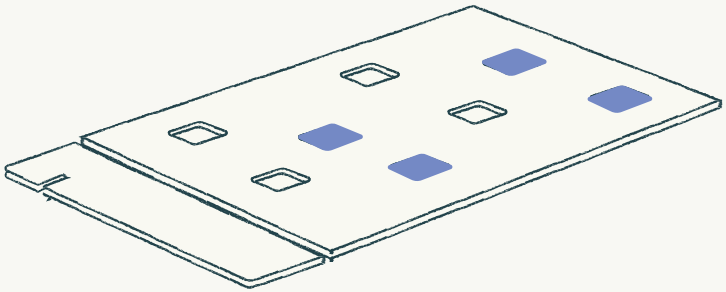
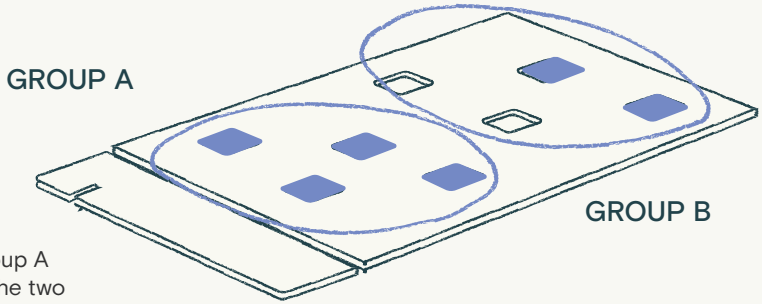
GROUP B

These plants are larger than Group A plants, so be sure to space them out and only grow 4 at a time.



Group B Plants

- Basil
- Beets
- Catnip
- Celery
- Kale
- Lemon Balm
- Lemongrass
- Mint
- Pea
- Peppers
- Shiso
- Tatsoi
- Tarragon



To grow plants from both Group A and Group B, put Group A plants in the four leftmost holes and Group B plants in the two rightmost holes, leaving a space between the groups.

Soil vs. Hydroponics

What's the difference between soil and hydroponics?

In soil, microorganisms break down organic matter (old roots, manure, leaves, etc.) into its basic nutrients. Plants take in these basic nutrients and break them down further into elements that they turn into leaves, stems, flowers, fruits, and roots. Soil can run out of key nutrients over time as plants use up the Nutrients. This is why farmers have to add fertilizers to their fields. Organic fertilizers are made from things like manure, compost, bloodworm, and other sources of living biological waste. Inorganic fertilizers are made by humans and can consist of things like Epsom Salt and Iron dust.

In hydroponics, there is no soil to house those microorganisms, so fertilizer must be added in order to grow plants. In most cases, using organic fertilizer in hydroponics would cause a lot of filtration issues and may lead to unintended bacterial growth if not oxygenated properly. This is why we use inorganic nutrients in our system. Our nutrients dissolve into the water and are immediately ready to be absorbed by the plant because it does not have to wait for the nutrients to be broken down. This is how you are able to grow your plants without soil.

↖

Scan here to learn more about Hydroponics' benefits.

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For Hydroponics

Ions are atoms and molecules that give off a positive or negative charge. In hydroponics this is important because we use ions to figure out the amount of nutrients to add so your plants are happy.

HARD WATER

In most cases, your tap water comes from a municipal water treatment plant. The water is cleaned, and minerals are added to protect pipes and keep things out of your water. During this process things like Calcium and Magnesium may be added to your water. When these minerals are abundant, your water is considered hard. These extra minerals can make it hard to control pH which is vital to healthy plant growth.

SOFT WATER

Water softeners work by replacing ions (like calcium and magnesium) with a salt ion. Most softeners use either Potassium Chloride or Sodium Chloride ions as replacements. Although Potassium is a nutrient for plants, its presence in your water can throw off your nutrient balance because our nutrient mixes also supply Potassium. Sodium can be damaging for your plants as it can block necessary nutrients from getting to the plant (essentially using salt water to water your plants).

Best type of water for hydroponics

The best water to use for your Garden is RO (Reverse Osmosis) water, which uses a membrane to keep out unwanted ions, or distilled water which uses evaporation to keep out ions. If you have a water softener you may see growing issues with your plants and may need to consider using another water source if your plants start to fail.

Hydroponic water filter chart

TYPE OF FILTERING	OKAY FOR HYDRO?
RO water / Distilled Water	Great!
Unfiltered Tap Water	Good
Softened Water (Potassium Filter)	Not Good
Hard Water	Bad
Softened Water (Sodium Filter)	Very Bad

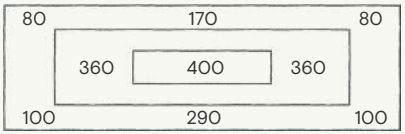
Lights impact in growth

Lights specifications

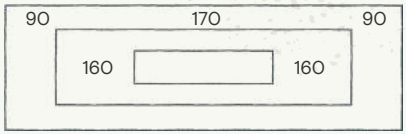
Grow Lights are specialized, full spectrum lights that are designed to aid in photosynthesis. Our Engineers have designed our own custom Grow Lights to use in our Rise Gardens.

Our customized LED grow lights are made up of 3 types of lights:
Red, Blue and White.

Light intensity map PPFD



6 inches from the lights



12 inches from the lights

Note: plants will flourish under most high-intensity lighting conditions, and will always grow better if they receive more light. The highest intensity of Grow Light in your Garden is centered in the middle of each level.

How much light does my plant need?

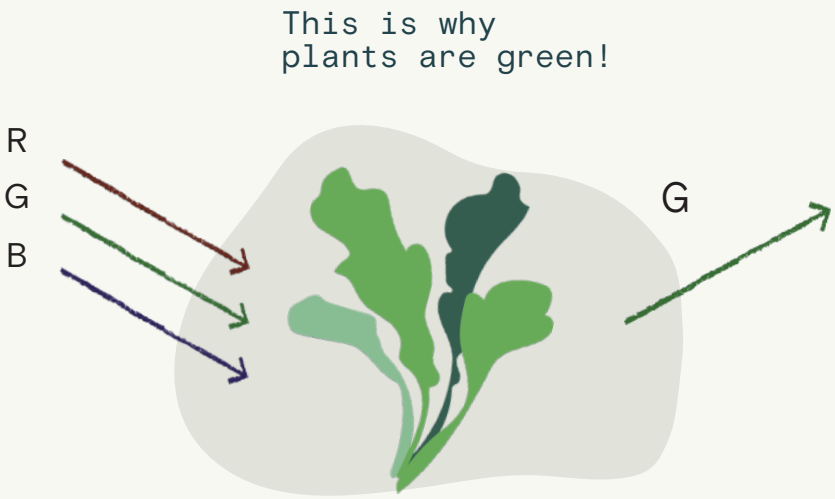
Remember that we have seven types of plants that our Plant Scientists have found to grow well in a Rise Garden:

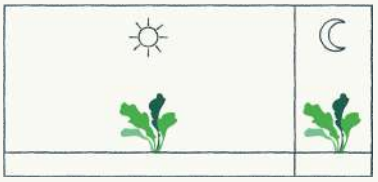
- Little Greens
- Herbs
- Big Leafy Greens
- Fruiting plants
- Flowers
- Vining plants
- Root plants

Each of these plant types requires various light intensity, depending on the stage of growth that they are in. The following table is an estimate of which plant types require various amounts of light.

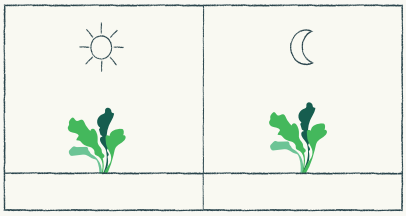
	Day 7	Day 21	Day 90	
Lettuce	80	300		
Kale / Swiss Chard	80	300	300	300
Basil	80	200	200	250
Thyme / Oregano	80	200	200	
Chamomile	80	200	200	
Tomato	80	300	350	400
Pepper	80	300	300	400

Following the table, match your plants to your Garden based on the Light Intensity map shown above.





Long day plants



Short day plants

More light info

Within the light spectrum, there are different wavelengths of light. When the lightwaves are moving fast, we see them as the color blue, when they are slow, we see them as red.

Plants use energy from the light to make sugars and grow during photosynthesis. However, they don't use the green spectrum as much and thus it is reflected back at us when we look at them.

This is why plants are green! This also means that when you choose lights to grow plants, you want to focus on the Blue and Red. However, some research has found the other wavelengths can benefit plant growth and thus you should also include a full spectrum of White light.

Dark vs. Light

As the seasons change, the hours of light and dark shift and plants respond. There are a couple groups that plants can fall into: Long-Day and Short-Day. Your Garden defaults to 18 hours of light and 6 hours of dark. If you are growing only Lettuce you can change it to 24 hours.

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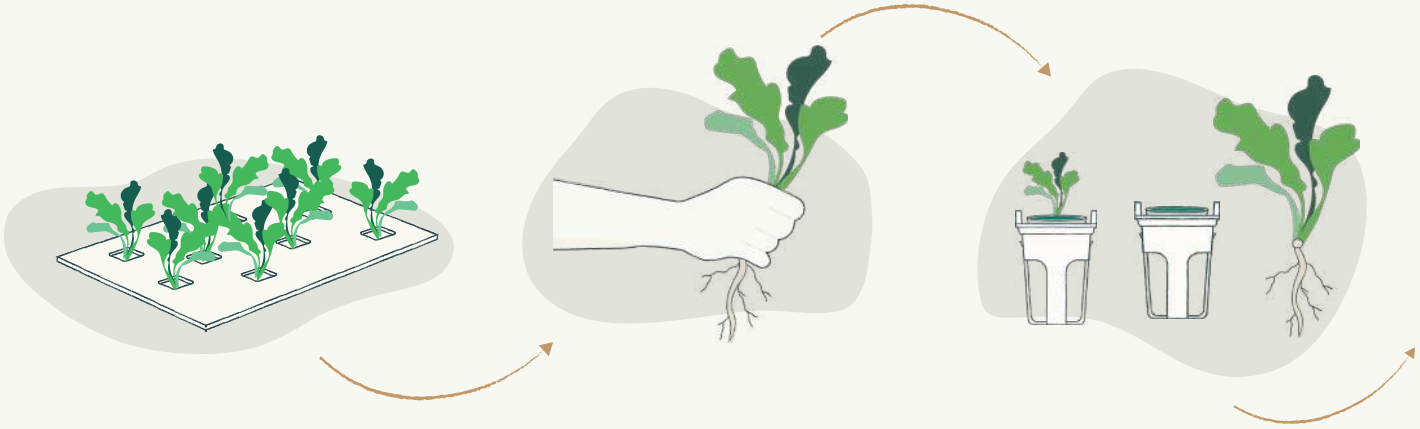
From Garden to soil

Rise Gardens' Systems are great for starting plants that you want to transplant outdoors. Here's how to do it:



a. Remove plant

Remove your plant from its tray by carefully untangling the roots from near-by plants. Be careful to break as few roots as possible. An important step in separating roots is to identify the tap root, which is the main root coming down from your plant. It will be thicker than all other roots and is vital to the plant's water uptake. The other roots surrounding the tap root make up the fine root mass. You can break 20% of your fine root mass and your plant will be perfectly healthy. Breaking too much root mass, can cause plant health issues.

b. What about Net Cup?

Once your plant is safely removed from the tray, you can make a decision about your Net Cup: Do I leave it on the plant and dig it up later or try to remove while preserving the roots?

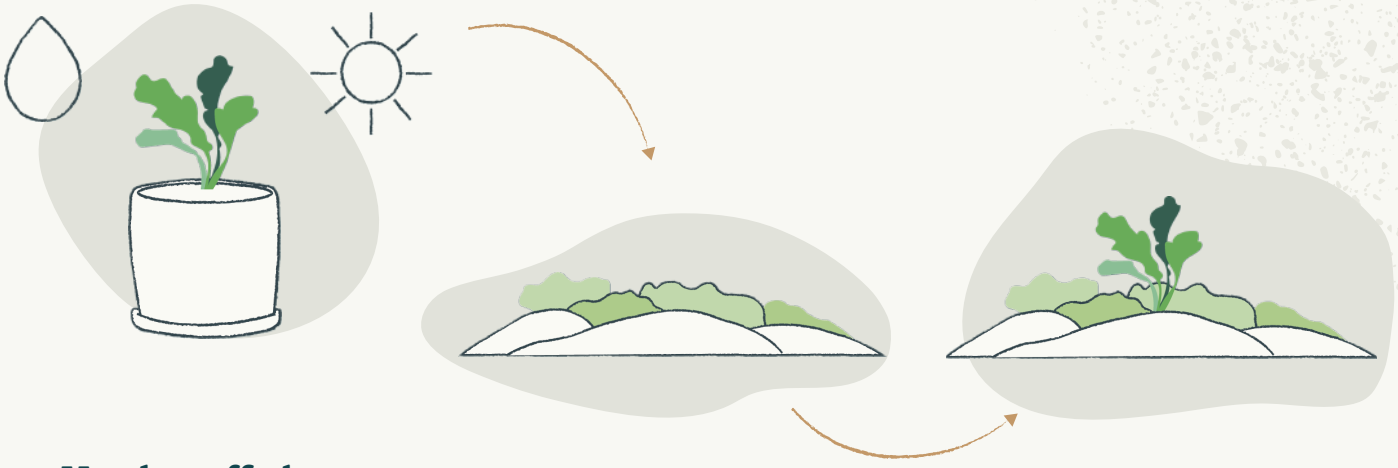
NOTE: Our Net Cup is made from ABS PLASTIC and therefore is not biodegradable, so if you plant your Net Cup into your outdoor Garden, you can leave it in the soil and pull it out when you harvest your plant. ABS will not de-stabilize and leach chemicals into soil -it would require heating to 400°C in order to do so. This means that it is completely safe to bury your Net Cup and recover it later.

When should you bury your Net Cup?

When your plant roots have grown through your Net Cup and you will damage them by removing it.

When should you remove your Net Cup?

When you can pull the Net Cup off without damaging the roots.



c. Harden off plant

In order to keep your plant from experiencing shock upon transplanting outside, you should harden off your plant. This means putting your plant into an environment that is at a halfway point in temperature / humidity between your house and your garden.

The best way to harden off a plant is to place it in a pot with soil and leave it in a sunny area, like a porch or a shaded spot outside, for at least 2 days. This will acclimate the plant to an outdoor environment and you can control the moisture level better. It is important to water the plant immediately upon transplanting to keep the roots alive. It is perfectly natural for your plant to flop during this process as a result of losing some root mass. Make sure to water your plant if you see this happening. If you are careful with the roots the plant will thrive and do better than root-bound plants grown in flats. Once your plant has acclimated to soil, you can keep it growing in its pot outside, or you can transfer it into your soil bed.

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