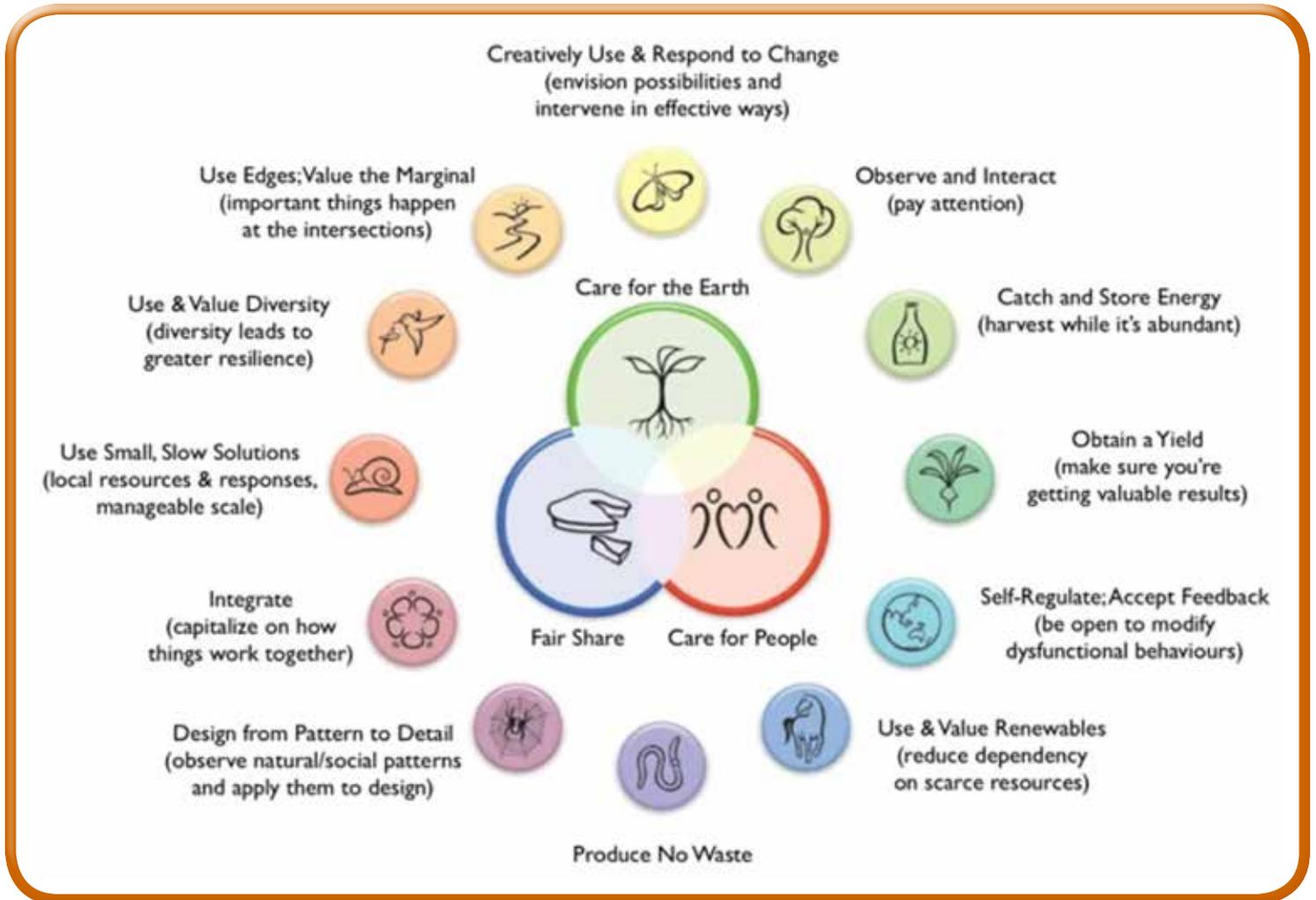


# GROW HAPPY® WITH PERMACULTURE

## PERMACULTURE PRINCIPLES & ETHICS



Permaculture embodies a philosophy that encourages a holistic perspective regarding relationships and life itself. For example, permaculture involves the working relationship between people and communities and the balance of nature. The process consists of observing how nature and plant growth sustain environments.

This means recreating what nature does best for backyard gardeners and farmers, soil yield, companion planting and health promotion amongst crops. It takes one small practice to encourage larger global communities. Permaculture's sustainable practices uphold three intersecting ethics: Care for the Earth, Care for People, and Fair Share. The three ethics build towards permaculture's 12 principles: Creatively Use & Respond to Change; Observe and Interact; Catch and Store Energy; Obtain a Yield; Self-Regulate; Accept Feedback; Use & Value Renewables; Produce No Waste; Design from Pattern to Detail; Integrate; Use Small, Slow Solutions; Use & Value Diversity, and Use Edges: Value the Marginal.

We're carrying all the teachings to create the world we wish to live in and to protect future generations. The best time to grow is now!





# OBSERVE AND INTERACT



Observing is the first step to creating the garden of your dreams!

At first, your garden will be nothing but a sunlit patch of grass. So, bring a picnic blanket and enjoy a little of that sunshine with a snack and a story. Check out the view. Is it lumpy bumpy ground? On a hill? Flat as a pancake? Spot any earthworms? Where does the pathway for the sun go? Is there shelter? What water sources impact your surroundings? What wildlife do you notice?

Ask yourself these questions and make a list. This will help you to choose the most sustainable spot for your garden by following the principles of permaculture.



If you are starting your garden off with seedlings, it is as simple as properly planting the seedling into your freshly enriched soil. If you are beginning with seeds, you will need to complete steps such as supplying peat cups and organic greenhouse pellets, nutrient-rich soil, and a handy watering can. Simply add soil to your peat cup and plant your seed. Be sure to place it in an area with plenty of sunlight and water as often as needed. Watch as your seeds grow into seedlings and move them into the 'Hardening' process when ready.

An alternative method to planting seeds is using recycled egg cartons.



The hardening process better prepares the seedlings for being transplanted into the garden. You will know to start the hardening process when your seeds have grown into seedlings. "Hardening off" a plant can begin by taking your trays of little seedlings outside when the sun is shining and the birds are singing. Begin by placing your seedlings outside. Start with an hour a day and gradually increase your seedling's time outside. Alternate between the shade with a little wind protection and growing more and more into sunshine each day. This can take up to two weeks, but your seedlings may need more time depending on the weather.

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# LAYERS OF PERMACULTURE



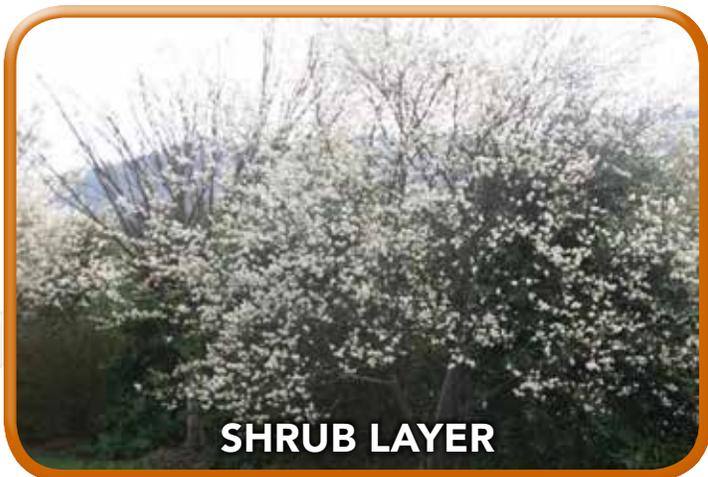
Permaculture has seven layers: there's the canopy layer, sub-canopy layer, herbaceous layer, ground cover, underground and vertical layers. The process involves choosing where you build your garden, how you apply the ground layer, herbaceous layer, shrub layer, and sub-canopy layers.

For instance, when permaculture gardens are planted next to sub-canopy layers, such as an apple tree, it provides nutrients and acts as a fertilizer. Each layer provides the garden with essential nutrients for the soil and helps with delivering shade, repelling harmful insects, and growing healthy crops.



The canopy layer is a source of nitrogen. The trees provide shade to the sub-canopy, herbaceous, and ground cover layers. For example, the canopy layer can include various trees, such as fruit trees. The trees range around 30 feet.

The sub-canopy layer sits underneath the canopy layer, thus getting a lot less sun. This is where a lot of fruit trees will be situated, as in apple, apricot, peach, pear, fig, and pomegranate. These trees usually range between 10-30 metres.



The shrub layer is located beneath the sub-canopy layer. The shrub layer has many benefits including supporting wildlife, providing nutrients to the ground layer, and increasing the health and support of trees and crops. Examples of shrubs include blueberries, raspberries, or serviceberry.



The herbaceous layer is most commonly 1 metre high or less, many culinary and medicinal plants are found in this layer. In the winter if it is too cold, these plants will die back into the earth as they cannot grow in that climate. This layer also provides habitats and food for insects. Some examples of plants in this layer are asparagus, beans, sunflowers, beets, sage, mint and clover.





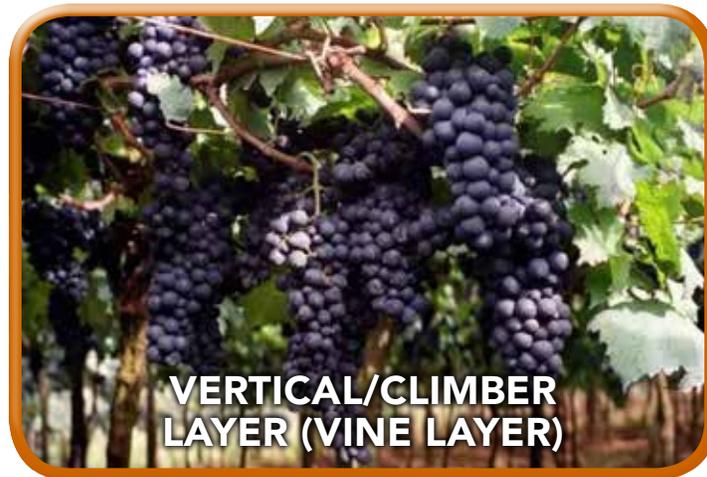
**GROUND-COVER  
/CREEPER LAYER**

The ground-cover layer has many of the same plants as the above herbaceous layer as it is the layer sitting right on top of the earth. This layer does not get very much sun but it is more shade tolerant than others and can usually handle some foot traffic. The benefits of this layer include weed suppression, food for wildlife, and habitats for wildlife. Some examples of plants grown here are lemon balm, mint, strawberries, valerian, oregano, and absinthium.



**UNDERGROUND LAYER**

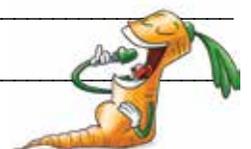
The underground layer sustains the roots of crops. It provides support to the roots of not just the herbaceous layer, but the sub-canopy and canopy layers. The underground layer impacts the distribution of water and can be a source of food. For example, the underground layer can include roots from garlic, onions, or potatoes.



**VERTICAL/CLIMBER  
LAYER (VINE LAYER)**

The vertical or climber layer works with the previous layers to receive sunlight and engage in photosynthesis. The vines and roots are supported by the previous layers and crops planted to achieve this process. Examples can include grapevines or hop.

## **NOTES**



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