

Growing

A Contextual Research Guide
exploring Home Horticulture

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Growing DATA COLLECTION



Our goal was to discover what motivated people to dedicate their attention to cultivating plants at their homes.

By doing so, we strived to define ***The ideal experience within this activity.***

Over the course of 8 weeks, our team has collected a wide scope of data through various methods:

- Observation
- Interviews
- Sensory-Cue workshops
- online Cultural Probe.

We had 87 participants in total from diverse demographics and locations around the world.

To conduct this study we used research methods patented by **laxtant** and developed through the graduate program at SCAD Savannah.



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What We Need To Grow

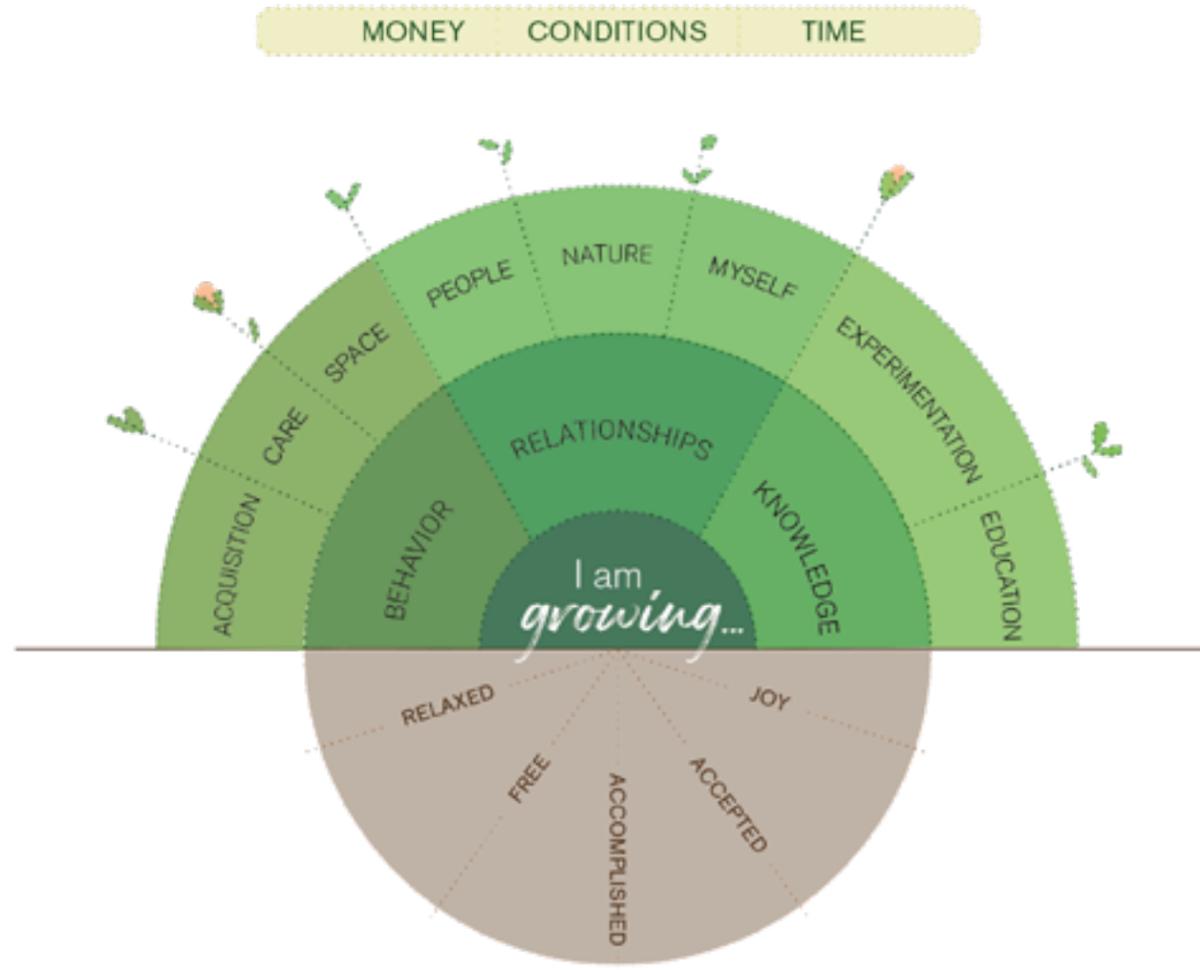
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FRAMEWORK

01.



Growth is the core of home horticulture. It's translated into:

- 5 High frequency emotions people want to feel when engaging in the activities.
- 3 Principal drivers
 - Growth in Behavior *I act*
 - Growing Knowledge *I learn*
 - Growing Relationships *I connect*
- 8 Key features
 - 3 revolving around the actions
 - 3 around the relationships
 - 2 around knowledge.
- 3 Enablers
 - Necessary to truly grow, or that might impede growth.

- Acquisition of plants
- Care of plants
- Conditions within a specific space
- Experimenting through plants
- Educating yourself about plants
- Connections felt with other people
- Connections felt with nature
- Connection with yourself.

All these insights deepen the meaning behind the core value, and are brought to life and into further detail throughout this report.

What you see

This graphic synthetization arranges the core feelings, activities, connections and learning that surround the world of gardening, horticulture, and at home plant care.

02.

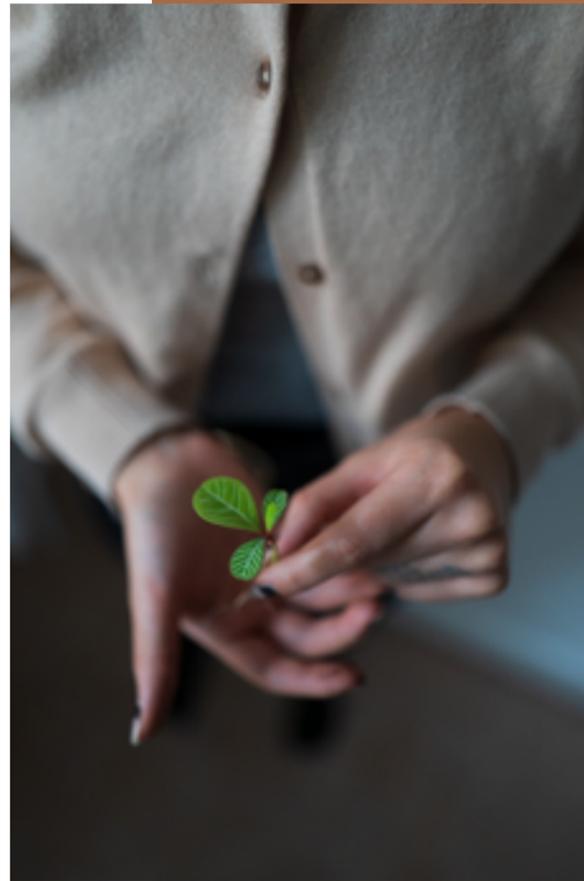
I want to feel **RELAXED.**
I'm growing a sense of calm and peacefulness.

I want to feel **FREE.**
My freedom is growing.

I want to feel **ACCOMPLISHED.**
I'm growing a sense of pride of what I've achieved.

I want to feel **ACCEPTED.**
I'm growing more at ease.

I want to feel **JOY.**
I'm growing happier.



I Grow Emotionally

“The main function that household plants serve is emotional satisfaction.”

“Talking to plants makes me feel better, I tell them I love them, and talk about my feelings.”

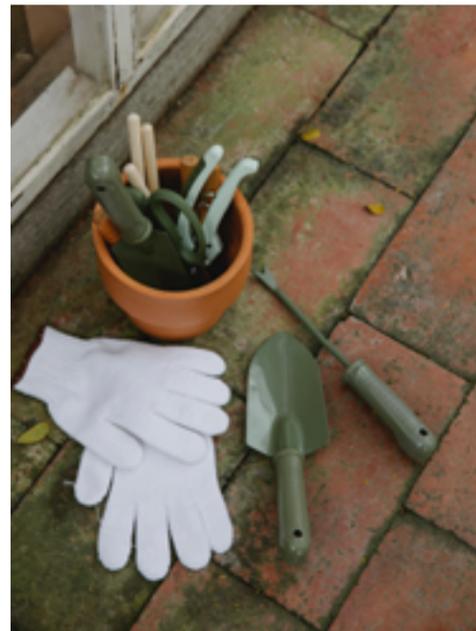
THERE ARE 5 OVERARCHING EMOTIONS STAKEHOLDERS HOPE TO FEEL WHILE GOING THROUGH THE PROCESS OF PLANTING.

These emotions can be felt at some point throughout the ideal experience, in any or *all* of the principal drivers.

For example,
"I feel joy and relaxed while growing my knowledge"

or

"I feel free and accepted while my behaviors promote growth".



JOY



Being in my backyard brings me enjoyment and a feeling of home. The process of planting is fun. I would love to dedicate my time to caring for and nurturing plants. I enjoy having them around.

Talking with people about it also brings me joy. Sharing my feelings and love of plants with other people who have the same interests as me is a type of communication filled with a sense of belonging and happiness: I am sharing what I like and I can get feedback by chatting with people of all ages about plants and get different types of replies; learning from them is positive for me.

I feel trust in interpersonal relationships with other people who love plants and swap with me. It makes me feel like I have been trusted, and I can feel warmth and love from those people. I feel happy and motivated because of this.

Getting some fruits and veggies from my garden brings me joy.

I feel happy to see aesthetically shaped, dramatic, blooming, flowers. Planting flowers makes me happy and nourishes my heart.

FREE

I want to feel free to change my home environment to fit my plants and my care style. If I am feeling lazy, I want my plants to be able to be okay without me.

I feel empowered to make decisions on what plants I can take care of and how to grow them when I have knowledge around the subject.

I am free to learn by experimenting, asking for help through the community, or seeking professional plant care advice.

I want to feel empowered by the fact that I am taking care of a living thing.

I feel empowered when I succeed at saving a plant that is struggling or propagating pieces of plants to grow new ones.

It is liberating to decorate my room without limitations. I hate being in a space that I am not allowed to modify, like a dorm room or apartment.



RELAXED

The connection between me and plants soothes me, makes me feel calm and relaxed.

I like to watch them grow, involve myself in the activities of care; moving plants around to better suit the light, getting my hands into soil to make sure everything is all right.

Taking care of plants is a way for me to slow down, take a step back from the judgement and intensity of society life.

When my space is organized and designed the way I like it, I can feel safe.

I don't have to answer to anybody when I am caring for my plants, which satisfies me and relaxes me.

I feel like I understand others, and that makes me calm. I am able to be at peace with myself as well. **I can reflect and ponder within the space of my garden.**

Being around living things that would never hurt anyone, who depend completely on me, is a relaxing activity.



ACCEPTED

I feel accepted in the community.

By joining online forums, I meet people who have a common interest with me. Talking about plants with people brings me joy. I feel accepted and heard because everyone in the plant community enjoys listening and speaking with me about plants too.

I accept myself.

I am not afraid to fail, nor do I have guilt if a plant dies. I understand that this is the process, and I will become better at planting as long as I can learn from failure. Plants are replaceable. I am able to get a new one if one dies, so I accept it easily no matter if I succeed or fail.



ACCOMPLISHED

By growing plants, I contribute to the world around me. I love watching them grow, thrive, and live, even if it is difficult. I feel proud of myself, and the effort I exert is meaningful.

A new leaf, or even an immature fruit that has fallen off into the soil, could bring me a great sense of accomplishment. It's not necessary for my plants to produce, sometimes I am surprised by natural miracles.

If I can save a dying plant that has been struggling, I feel accomplished.

I love experimenting with my plants. I watch them and try new things to see what happens. **I treat failure as a teacher.** I try my best to learn as much as possible through failure and face it directly. I learn from my

shortcomings so I'll succeed in the future. I embrace my mistakes, and that brings me a sense of accomplishment too.

When I reach a small goal, I will set a new goal. If I learn something new from the internet or professionals and succeed with that advice, I feel accomplished.

When I succeed in building my ideal garden, that means I can design my life and arrange it perfectly, which brings me the strongest feeling of accomplishment.

I gain a feeling of accomplishment watching my plants grow.

I invest effort into them.

Even if I am not perfect at caring for my plants, I love to watch them because it makes me proud of myself.



03.



My Behaviors Promote Growth

ACQUISITION

I acquire my pots and plants in many ways, and I acquire plants for many reasons.

CARE

I invest in the care of my plants and I enjoy taking care of my plants.

SPACE

I divide space as indoors and outdoors.

ACQUISITION

How I acquire plants



I acquire my pots and plants in many ways.

I receive plants as gifts from people who care about me. Sometimes I feel more attached to these plants because they remind me of the person who gave them to me, so I feel worse if one dies.

I purchase plants in-store. When I purchase in-store, I will go to a big box store or a local nursery because they are in a convenient location to me, or to support a small business. When visiting, I will buy plants that I have wanted for a while or feel like I need. Sometimes I avoid going to plant nurseries because I know I will purchase a plant regardless of the fact that I already have too many. Sometimes I will buy plants because I see them and spontaneously want them.

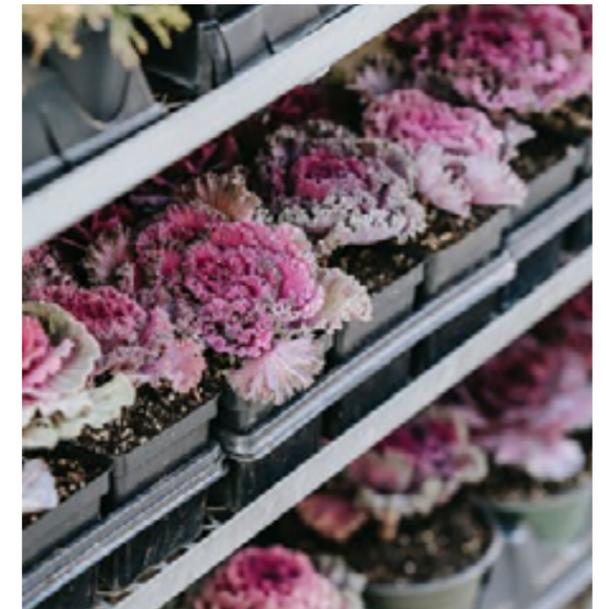
I purchase plants online. I typically purchase hard-to-find plants online because they are not offered in stores near me. I will keep coming back to a business if I have had good experiences with them in the past. Sometimes the seller will help me combat issues I have with my plants in order for them to survive in my home.

Sometimes I participate in plant swaps. I don't do it often because I noticed that people tend to offload plants they no longer want or that are dying. If I am exchanging plants through the mail, I am hesitant to send my plant because I am not sure if they will send a plant back. If it is someone I communicate with often, I trust they will send something back.

Sometimes I even get a plant that is dying and I try my best to rescue it, from my friends or from the trash pile.

ACQUISITION

Why I acquire plants



I acquire plants for many reasons.

Sometimes I am looking for a specific plant and sometimes I am not. When I finally purchase my dream plant, I will move on to another dream or wish-list plant.

I purchase plants that have a function. Plants should do something for me like clean the air or provide food. I use some plants for medicinal qualities. I enjoy the fact that I can cook and eat the plants I grow, so I do not have to buy them at the store.

I purchase plants because they are beautiful. They act as home decor, and fit with my aesthetic. I feel like I should have at least one plant. I like plants that are unique and look cool. I carefully choose my plants based on what will look good with the rest of my home plant arrangement.

I do not like fake plants because they seem unnatural, sad, and look cheap. Sometimes fake plants allow me to decorate with plants without spending much money, and fake flowers never wither.

I buy planters considering whether they have a drainage hole, are super functional, are cute, or if they fit with my space and aesthetic. They should feel durable and look good.

SPACE Indoors

I want Interior spaces to bring me a sense of freedom. I am able to create a space in which I feel most at home.

Through the **distribution of potted plants**, I am able to arrange my indoor space the way I best see fit. In turn, a layer of interaction is added to the space in which my plants and I live.

I can interact more with myself. With the freedom to curate my own spaces, I feel more like myself in my space.

I can interact with my belongings. By seeing plants as a decorative tool, I can arrange an interior space that maximizes my favorite material items.

I can interact with other people. With beautiful plants as conversation starters in my home, as a plant owner, I have a go-to discussion topic when I have guests.

My plants make me feel comfortable in my indoor space.

“ *My plants help the space they are in. My house looks healthier and I feel more comfortable.* ”



SPACE Outdoors

My plants get as much space as they want. When it comes to outdoor space and the behaviors of plants, and me as the owner, the outdoors allow for my plants to take up as much space as they need to grow to their full potential.

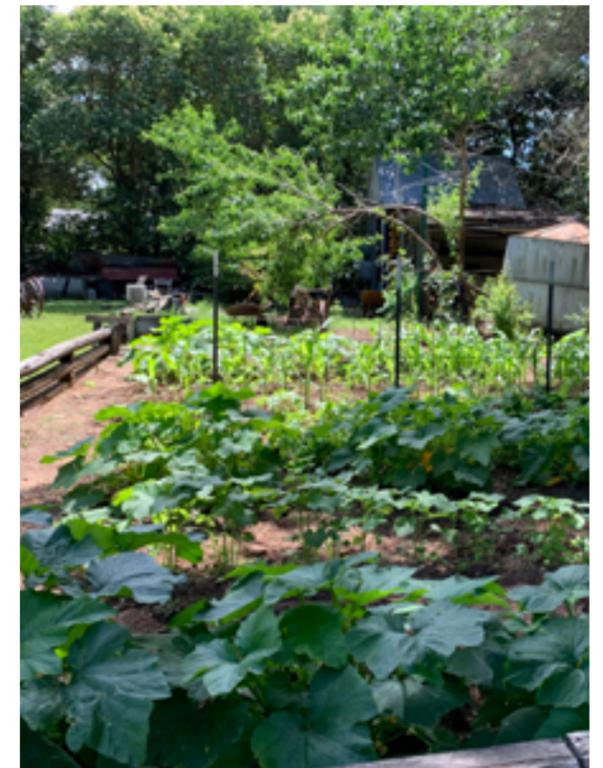
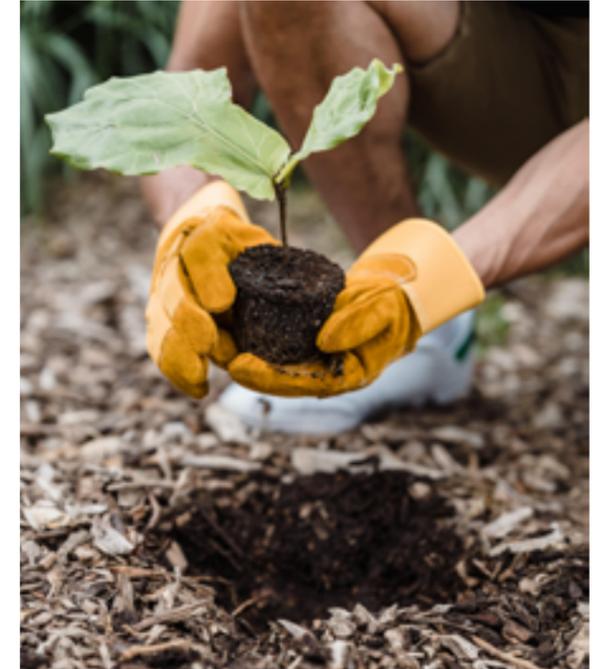
My plants are resilient in their space. By growing my plants outside, I am allowing them to become strong and durable.

My plants get support from nature. Keeping my plants outdoors gives them more sunlight. It also allows the water supply to come from rain, which means I might not need to water them frequently.

Having an outdoor space brings me a sense of nostalgia. Outdoor spaces bring me a sense of nostalgia. Backyards bring me good memories of barbecues and family time.

“ *When plants are outside they give the impression of needing less care and growing larger.* ”

“ *I prefer outdoor plants, and I like being outdoors.* ”



CARE

I invest in taking care of my plants

The process of taking care of plants starts from the day I get my plants.

After I bring new plants into my home, I build a daily routine to take care of them. I check the plant condition, water them, trim leaves, and check for pest problems. Even though I am busy, I allocate specific time for gardening. I might even write down instructions and timelines in a journal or on my calendar to make sure my plants get enough sunshine, water, fertilizer, and prevent pests.

I do not have a specific plant care routine. I check plants every once in a while by sticking my finger in the soil to see if it is damp or needs water. I will look at them casually to inspect for pests then perform the tasks that need to be done. I understand my plants and know what they need intuitively.

It might be hard at the beginning, but after a period I can build my routine easily. I will have more experience understanding plants by observing and giving them what they need.

When I need to move, I try my best to take all my plants with me. If I have to leave for a long time, I will ask someone to take care of them - maybe neighbors and family members. In different seasons, I might move my plants outdoors in summer, to let them get the best sunlight and temperature. In winter I use different techniques to provide extra sunlight and warmth.

“When I get plants delivered, I don't transplant them right away. I take care of seedlings in temporary nursery pots, loosen the roots, water them, and observe them for a few days to let them acclimate to my space.”

“It's not hard to keep my plants alive, but making them thrive is a challenge.”

“It would be so cool to have an indoor landscaper or person who comes and cleans up my plants twice a year! Then I could enjoy my plants more.”



I enjoy taking care of my plants.

I enjoy getting my hands in the dirt - feeling the biology and fungi in soil and understanding what it needs. Taking care of plants brings me mental wellness and joy.

I feel calm when I am staying with plants. It makes me feel like I am escaping from the busy city. I can slow down my life, meditate, and relax because growing plants requires patience. Taking care of plants also soothes my mental health because I love having mother nature and greenery around me.

Plants are like mirrors. They reflect my physical and mental condition and live with me. When I take care of them, I will try to take care of myself to bring a higher quality of life to me and my plants.



“When I can finally keep a plant alive that I have been struggling with in the past, I am overjoyed and feel accomplished.”



“When I work in a garden, I am improving my health. Plant care can serve as a form of therapy, and is a form of self-care. Plants help me to remember to take care of myself.”

However

I enjoy plants but do not enjoy the chore of taking care of plants.

I am busy and don't have much time to pay attention to my plants, and I don't have a schedule or calendar, so I might not know how they are and what they need. My plants' condition might get worse because of this. They could turn miserable and go down fast and even wither or die.

“Bending over to tend to my plants is hard and annoying to do.”

04.

EXPERIMENTATION

I want to experiment a little and through trial and error discover what works for me.

EDUCATION

I want to get a proper planting education from different resources.



I am Growing Knowledge

“I am a part of a couple of different communities where... that wealth of knowledge is very appreciated.”

EXPERIMENTATION

I've spent a couple of years working on my plants. I think cultivating a qualitative garden with various kinds of species takes years and effort, and I experienced failure frequently.

I have my own land and space, some base knowledge, and I am willing to build what I want to build. I can do experiments on my plants to learn through my process.

I conduct my experiments on realistic vision.
I start my experiments by questioning myself and my intentions. Then I do what I can based on resources that are available to me. I treat my experiments as a learning opportunity.

I do smaller experiments at the beginning.
I have my own land and am free to build whatever I want to build. I think that small experiments at the beginning can reduce the fault tolerance. I can try out all the cool stuff that I'm learning.

I start my experiment step by step.
I learn through my experiments gradually, and I keep doing it to learn more and grow my knowledge. I try to do it slowly, so I don't want push myself too hard.



EDUCATION

I want to get proper planting education from different resources.

I want my plants to stay alive and thrive. I want to get instruction on treating my plants, recognizing signs of good and poor plant condition, and learn how to deal with different problems to keep them alive and even prosperous.

Professional

I would like to get educated in a professional gardening school or get instruction from a professional gardener.

I am so obsessed with gardening that I want to learn all the information about my plants. Going to school gives me a systematic knowledge of growing plants. It will enable me to expand my horizons in the field of cultivation in a comprehensive way. I might even want to apply for a job related to this field.

I would go to professionals for help, maybe online Q&A or my neighbor farmer. These people can give me instructions to make it easier for me to start my planting activity. It makes me feel good and unburdened.

I am more likely to take the challenge of growing delicate beautiful plants if I could get guidance from professionals.

“*Nobody is born with a green thumb, I know a lot through reading, researching, and watching videos.*”

Research

I research plant care and advice by myself.

The internet is a strong resource that contains any information I want. I read blogs or watch videos created by the people who grow the same or similar species as I grow, learning from their experience. Videos are helpful because I can learn new things while seeing the environment someone is taking care of their plants in and compare it to my own.

I read books and research what is available to me to look for the expertise to solve my problems.



05.

PEOPLE

I connect with friends, family, and the community at large.

NATURE

I feel connected to nature and the world at large.

MYSELF

I'm learning to listen to my needs and take care of myself.

My Relationships are Growing



PEOPLE



I am willing to have people visit my garden, walk through my place, see and view my property, and ask me questions about my plants.

Sometimes I like to name my plants and other things I have in my garden.

I like to buy planting stuff in a market. I look around, see different people's stalls and I talk with those people. I can bargain with them, communicate with them, and even learn from them. After effective communication with people, I can make my own selection accompanied by some follow-up conversation.

I feel like sellers are glad to help me out and glad to have conversations with me.

I am willing to talk with other people who are also interested in plants and interact with them all day just for plant discussion.

If I love one type of plant, I want to talk with other people about it.

Plants themselves create their own talking points. When people see my plants online or at my house, they often ask me about them, and we begin a long conversation.

I would love to share my plant progress with other people including my family, friends, neighbors, and even people I do not know.

I like to talk to like-minded people who also love plants and gardening.

For me, I think talking with people of different ages is part of the plant journey and it is interesting.





MYSELF

“ If I am doing good then my plants are doing good. ”

Self-improvement

It is good practice to care for plants to face different challenges, successes, and failures.

Planting is a hobby that needs good time arrangement, scrupulousness, and patience. I need to build a ritual and a routine around the regular upkeep of plants and squeeze my busy schedule for gardening. I need to observe plant conditions and learn knowledge to solve problems. I need to be patient with the slow-growing process, accept failure, and get experience for the next try.

To achieve higher life quality, I make an effort in gardening, and that really improves me in many areas.

Self-care

Growing plants makes me take care of myself mentally and physically.

I feel a sense of belonging when I have plants at home. They live with me and provide company to combat loneliness. I treat them like pets or real friends. Sometimes I even talk to them.

Taking care of plants makes me take care of myself, feel more responsible and calm. They make me think about what people need as well. When I am doing good, my plants are doing good, they are a reflection of myself.

“ Growing plants and working in a garden eliminates stress in my life. It is a form of therapy and helps me feel calm, peaceful, and a sense of well-being. ”

“ They kind of just make me feel a little bit more at home because I feel more connected with the world outside. ”

Plants are living things, and planting something, watching it grow into a seedling and eventually into a plant and to continue to do so makes me feel like I am a part of the Earth.

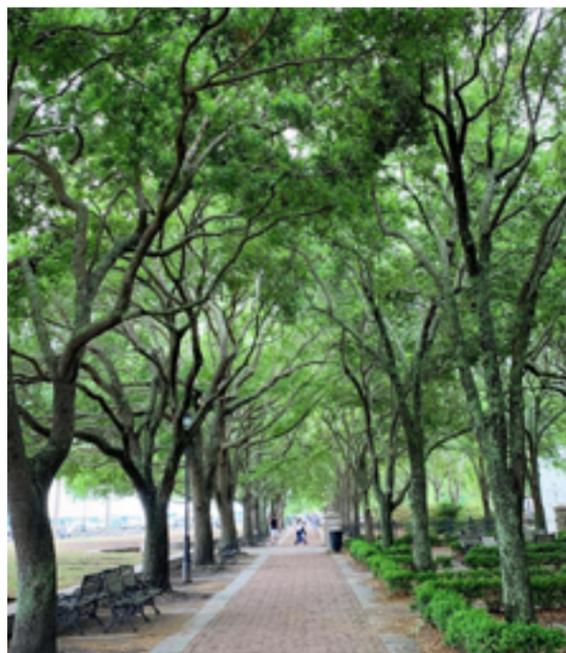
It connects me to the **Cycle of Life.**

When a plant dies it simply transforms its shape and becomes compost.

Taking care of the Earth is healthy, and my plants are a little part of the Earth. Plants purify and make oxygen, and they bring nature into your home.

I feel like I take care of them, and in turn, they take care of me. Everything is intertwined; my plants, myself, the ground, animals, are all part of the same system. We all need each other, and this gives me peace of mind.

“ I hope that through caring for my plants and through learning about more of how they live on Earth, it helps me even when I walk outside ”



Nature

ENABLERS

When money, time, and the conditions for planting are good, that's when I achieve the Ideal Experience. However...



MONEY

Plants, pots, tools, materials, and more can all be too expensive.

I consider pricing the most when I think of acquiring plants or anything. Sometimes I see a beautiful pot, but the price prevents me from buying it.

“ I think price takes the fun out of planting. ”

“ I hate wasting money on plants that end up dying, so I choose to purchase fake flowers to act as inexpensive decoration because I know they will never wither. ”

TIME

Taking care of plants is time-consuming. Doing experiments and growing challenging plants takes more time. It is widely accepted that establishing and maintaining a qualitative garden needs a lot of time & energy.

I have a time budget. I cannot spend all of my leisure time on my plants or doing experiments with them. Even though I squeeze my schedule and put much attention on my plants, I still feel like sometimes I do not have enough time to cover everything.

The learning process takes time. I need this time to spend on my experiments in the planting process, or else I will never improve and my past failures will be for nothing.

“ One reason I don't own plants is that I don't even have time to take care of myself, so how would I be able to take care of a plant? ”

CONDITIONS

My living conditions prevent me from living up to my dream plant potential.

Difficult living conditions include insufficient lighting, extreme high/low humidity, lack of space, incompatible climate. I have to move plants around my house with every changing season to give them proper lighting and temperature.

My indoor and outdoor climate is not suitable for the plants I have, so I modify my space. I have modified my space by adding water pebble trays and humidifiers to increase humidity, adding grow lights to supplement my lack of light, and I have added a heater to a space to provide the proper temperature.

I want to be able to modify my space however I please without worrying that my plants will suffer. I want my plants to be able to take up as much space as they need as they grow larger.

It is a hassle when I have to move my plants and if I ever do. They might suffer if I ever move them long-distance in my car, and I might lose some of them during the moving process.

Big plants can be hard to move due to their size. They take more space, so I would need a bigger house with a big garden instead of a porch or balcony. In order to move, I either have to struggle with bringing my plants with me, throwing my existing plants away, or giving them away.

Beautiful plants need more care and patience. They have strict requirements of humidity and sunshine, which means they look good in the store, but it is hard to keep them alive for more than one month at home. I give up those plants that I cannot care for.

“ If my plants didn't depend on light, I would bunch them together in an aesthetically pleasing way. ”

DESIGN OPPORTUNITIES

There are endless possibilities for stakeholders and designers to intervene and create, with the end goal of helping users achieve the ideal experience of planting, gardening, and home horticulture.

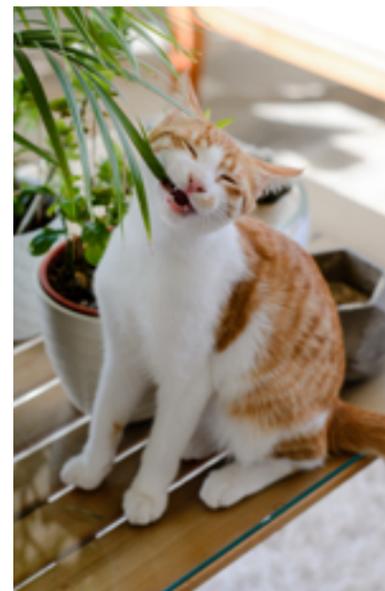
We've identified 4 possibilities to start.



Can plants yell like pets?

As living creatures, the growth process of plants is similar to that of animals. People can gain a sense of accomplishment by raising them through care and observation. However, the feedback that plants can provide is mainly visual and olfactory, and it is relatively passive, which means people need to actively observe to discover their needs. The feedback from the senses of touch and hearing is relatively weak.

The lack of explicit feedback or clear care signals has caused people to occasionally ignore it, just as one plant owner said in an interview, "Plants don't yell like pets." The reason why pets are particularly loved by humans and often regarded as family members is that they can actively provide feedback to humans and enhance the feeling of companionship. Plants need less care than pets, and they do not need a lot of input to provide quite beautiful visual feedback, so we can keep these advantages while bringing improvement to other areas.



With the technical support of various high-tech sensors, we can use containers as a medium to enhance the feedback of plants, actively attract people's attention, and appropriately report their needs. A planter that gives feedback can help personify plants and let people achieve better spiritual comfort in the relationship so that plants don't easily wither, or even die, because of ignorance.

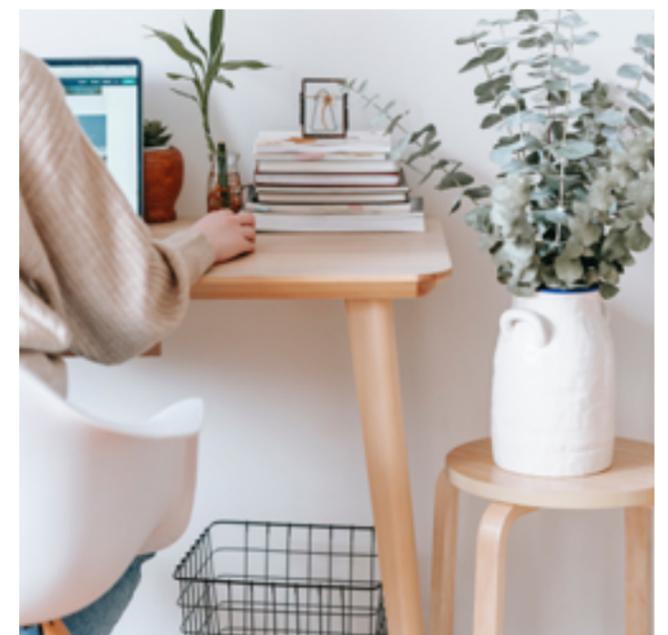


Can we keep our hands clean?

The positive benefit that people get from planting plants is the subtraction between effort and feedback. Some people believe that high prices and time-consuming efforts will reduce the fun of gardening hobby. At the same time, many people's living environment is limited, which does not allow them to create their ideal garden at home. Therefore, can we simplify the routine of caring for plants? Can the plants that people take care of not have to be in their houses, or even need to be real?

With reference to the adoption service of the zoo, we can try to remotely take care of plants. People can complete the routine of daily care on a screen, but in fact, these behaviors occur in remote planting areas. In order to reduce costs, even multiple people can adopt the same plant at the same time, or build a community, which can be even more interesting and enjoyable. If plant care happens in a virtual world, people can challenge more difficult plants almost at no cost, and completely get rid of the guilt that plant death may bring. Both of these two services can use guidance from professional gardeners, which can allow consumers to learn knowledge and get a better outcome.

These services can cooperate with organic farms or desert greening agencies. The former can provide people with fruits and vegetables produced by adoptive plants in the right season, and the latter can make people feel a strong sense of accomplishment in contributing to the protection of nature.



3

Can we build an educational system together?

For many people who love gardening, although they don't mind occasionally failing in experiments and learning slowly, getting professional and correct guidance is still beneficial. However, finding professional guidance is not an easy task and additional compensation may be required. Can gardening enthusiasts share knowledge or even create their own knowledge-base with the help of the platform?

For example, if someone encounters a difficulty, then the person who can give them the most effective guidance is the person who has just overcome the same difficulty. Plant lovers can help each other and share some experience that does not come from textbooks. Sometimes it is far more effective than the experience given by experts. After all, not everyone has professional tools, plant setup, or the same physical environment.

By establishing interested communities on the Internet, people can upload pictures and texts, share their own experiences, ask questions, get suggestions from others, and classify information through tags so that others can retrieve the knowledge they need. It is also a very good experience to meet friends in the same city and conduct offline interactions such as swaps or trades.



4

Can we grow plants in the air?

For urban residents, being wrapped in cold steel buildings might not always be a good experience, so many people are eager to add some vibrant green to the gray. However, the high housing price in the city doesn't allow them to provide large space for their beloved plants. It can also be difficult to obtain enough sunlight and fresh air to allow plants to thrive.

As a result, we can consider new ways of using space and new methods of plant cultivation. It can be difficult to place plants in a flat space, so we can consider placing them in a three-dimensional space, that is, using some shelves and arranging plants according to their demand for sunlight. The shelves can be customizable to expand or close in different situations.

For rooms that need to maintain the cleanliness of the environment, hydroponics and other methods can be used to simply cultivate green plants that are easy to grow since the demand for space is smaller. Although this will limit the choice of plant species for urban residents, some people may not pursue rare plants. In this case, they only need some greenery to decorate their rooms and make them full of vitality.

When considering how to use the limited space most efficiently, pay special attention to windows with good lighting. Shelves can be placed on the inside and outside of the windows. If it is a retractable shelf, plants can be moved in different seasons, which will have a lot of protection for plants.





This investigation was developed throughout 10 weeks, from September to November 2021 at Savannah, with graduate students in the areas of Industrial Design and Design for Sustainability.