COLD SPRING SCHOOL / JUNE 2020

INDEPENDENT STUDY

URBAN GARDENING

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URBAN GARDENING ISN'T MEANT TO FEED A NATION

But that's not really the point

Urban gardens are meant to make cities greener, get people outside caring for the land, feed, and spice up your everyday dishes. If you couldn't tell, this ebook is about Urban Gardening. Let me backtrack a little bit. Every year at Cold Spring School, each sixth grader choses a topic relating to sustainability. The reason I chose this topic is because I have always had a love for all things food (except fish), and I realized that the core of all food starts as a plant. CITIES ARE GREY! THEY ARE BECOMING OVERPOPULATED, AND DUE TO THIS, SMALL SUSTAINABLE FAMILY RUN FARMS ARE FADING AWAY!!! And with them goes fresh, healthy food, so urban gardening can add color and life back into cities. The other reason I wanted to study urban gardening, is because I want to teach people who don't necessarily have access to fresh food, how to achieve it on their own. Some challenges I faced throughout my study were being in quarantine and not having access to use the Cold Spring grow lights, the newspaper pots I tried to make completely falling apart, and the soil I thought I had turned out to be mulch. Some of the features you will be seeing in this ebook include documentation of my project, a video tutorial on how to make pots out of recycled materials, a history of how urban gardening was born, some benefits to urban gardening, the truth about lead, how to run an urban garden, instruction on how to grow a few basic plants, and a Q and A with the author. A question I still have about my topic is how can we spread knowledge about how useful urban gardening is? Some things I am proud of in my study are all the work I put into my paper and growing seedlings.

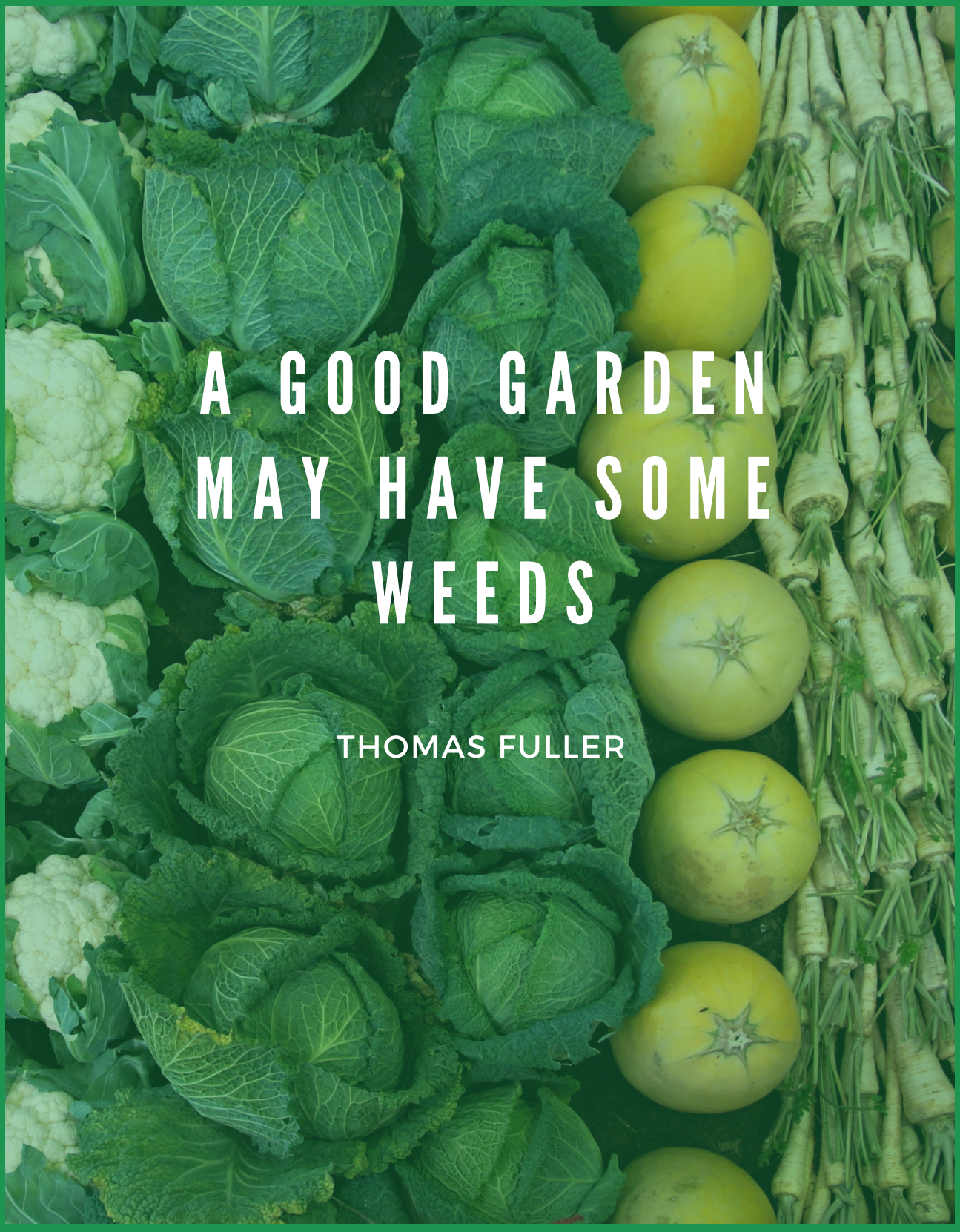
VICTORY GARDENS

HOW URBAN GARDENING WAS BORN

During World War I and World War II, the United States had to feed their armies plus all the people who were allied/working for the U.S. As a result, most of the food that U.S. farmers produced went overseas to the battlefront. As you can imagine, there was not enough food left for the citizens of the U.S. which meant that the citizens of the U.S. not only faced the threat of losing the war but also they faced hunger. George Washington Carver, the inventor of many useful things including hundreds of products using the peanut, sweet potatoes, and soybeans, came up with the idea that not just farmers can grow food.

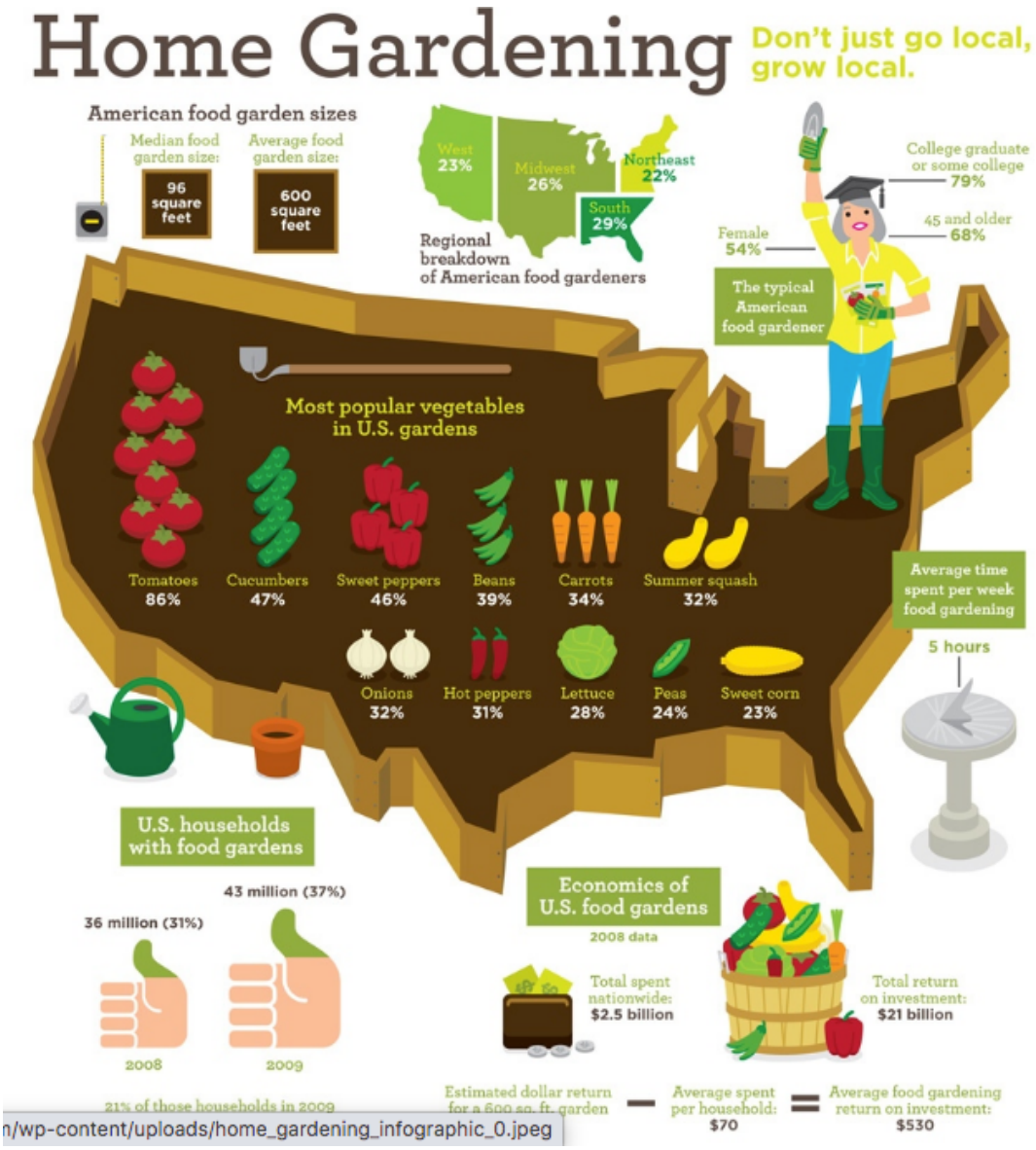
Carver believed that Americans can grow their own food all over the U.S., not just the farmers. He thought they could grow their own food in places like school and company grounds, parks, window boxes, backyards, or just any available vacant lots. He marketed the idea as "Soldiers of the Soil" and "Victory Gardens."

After WWI ended, people returned to relying on farmers to grow their food. During WWII, the Victory Garden idea caught on again, and people started growing their own food. This method was called Urban Gardening, and that's how it was born.


A GOOD GARDEN MAY HAVE SOME WEEDS
THOMAS FULLER

Gardens and Cities Are Not an Obvious Duo

When many people think of a garden or a farm, they think of luscious tomato plants, bright orange carrots, pigs happily rolling around in the mud, and happy cows grazing in the grass. Unfortunately, this is not always true. Big industrial farms are taking over small sustainable farms due to the growing population. That is where urban gardening comes in.



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BENEFITS OF URBAN GARDENING

One of the benefits to urban gardening is access to fresh produce.
“People need to realize how powerful the transformation of soil can be.”
“We've gotten so far away from our food source. It's been hijacked from us. But if you get soil, plant something in it and water it, and water it, you can feed yourself. It's that simple.” says Ron Finley, who teaches people how empowerment is important in urban gardening and that it also improves your health.
**Here is a compiled list of the benefits of urban gardening:

(These benefits to urban gardening were adapted by the author from The Ecology Center March 1, 2016, Urban Vine 29 Surprising Benefits of Urban Farming, HowStuffWorks By Shaun Chavis Aug, 27, 2018, freightfarms.com)

1. **Reduce Carbon Emissions** By localizing produce, urban farms cut down on the significant amount of fossil fuel consumption necessary to transport, package, and sell food. The average meal has traveled 4,200 miles just to get to your table. Urban agriculture helps consumers reduce their “foodprint” by providing them the opportunity to purchase food that was grown within their community.

2. Learn a Very Rare Skill ... The Ability to Grow
According to the United States Farm Bureau, only 1 in 50 American citizens has any farming experience (2%). This means the average person on the street is far more likely to have other interesting skills, like speaking a foreign language (over 15% of Americans are bilingual).

3. Innovative Techniques
As city spaces lack the wide-open, fertile grounds of traditional farming methods, urban farmers are tasked with finding creative solutions to challenges like waste, space, resources, and energy. As a result, more efficient innovations are created to improve the quality and quantity of food that can be produced with the least amount of resources. For example, the vertical aquaponic systems of The Growing Experience in Long Beach produce 3-4 times as much produce as traditional farming methods, all while using significantly less water.

4. Job Creation
From window box herb gardens to large community spaces, these farms create opportunities to involve the community. Urban farms create job (and volunteer) opportunities in big cities, where poverty and hunger are often persistent issues. An increase in small businesses stimulates local economy and supports the community by creating jobs right where people live.

5. Economic Growth
By virtue of their proximity to consumers, urban farms stimulate the local economy by circulating income throughout the region. Without a complicated distribution network, farmers are more connected to their market and able to adapt quickly to demand, maximizing profit. In addition, many of these organizations (Farmer's Markets) are structured in a way that brings additional benefit to the community and support to low income populations by stabilizing food costs and, in many cases, offering discounted or free produce. (Note that you have to get a permit in order to sell food).

6. Community Building
Gardens create more than just healthy, delicious food. Urban agriculture brings people together with a shared interest — food. The overall health of a community is benefited by increasing its capacity to create an environment that truly sustains its residents. Most urban farming projects require a high level of social organization, giving many individuals in the community a vested interest in its success.

7. Public Health
Because of increasing urban populations, residents in cities suffer from malnutrition and a variety of other diet-related health issues. Bringing nutritious food to local communities has many direct health benefits including reducing the risk of harmful conditions like heart disease, obesity, diabetes, and more. Involving individuals in the garden itself provides an opportunity for exercise and a deeper connection to agriculture.

8. Food Quality
Smaller scale, local markets provide the opportunity for farmers to foster more unique varieties of produce. These farms preserve biodiversity by cultivating heirloom varieties or those with lower shelf-stability. The proximity and connectedness to market allows for fresh, nutritious produce to become available to communities that rarely have had access to this in the past.

9. Food Security
While there may not be a shortage of food in most regions, access is often an issue, especially in urban areas. 17.6 Million Americans still lack access to healthy food. Urban agriculture helps to correct this by reducing the price of healthy food by eliminating the middleman and increasing the opportunity for community members in need to participate in the growing of this food. Many urban farms also adopt charitable models in an effort to support communities in need through direct donation or by providing either discounted or free produce.

10. Education
Urban Agriculture addresses another issue inherent throughout our current food culture—a disconnection to where our food comes from. By involving children and adults alike in education around sustainable, local agriculture, farmers increase the health of our future food systems.

11. Creating Edible Landscapes
Urban agriculture is an excellent solution for vacant and underutilized lots scattered throughout cities. Urban Gardening projects also make efficient use of rooftop space. Community gardens and raised beds instantly transform spaces into more vibrant and edible landscapes, and they give individuals an opportunity to take stewardship of common land and become more involved in their communities. More urbanites are using services like Farmscape to revamp their backyards and rooftops into garden oases, which has proven to enhance property values.

12. Green Space
Lastly, agriculture in cities provides something obvious—more green space. This contributes to the health of city ecosystems in a variety of ways. Greenery adds aesthetic appeal, reduces runoff from precipitation, provides restful spaces for the community, and counters the heat island effect by fixing carbon through photosynthesis.

Me (left) helping my teacher Clancy (right) build a raised garden bed

"GARDENING
is cheaper than
THERAPY
and
you get
TOMATOES"
Urban Gardeners Republic

Why would you even bother to grow your own food when you could just buy it at the supermarket?

One of the problems with our current food system is the corn-money cycle. Farmers, as some of you know, are not the world's richest people. To increase revenue farmers try to produce and sell more corn, but the more corn they sell, the lower the price goes and the less money they make.

One of the benefits of Urban Gardening is the peace of mind that comes with knowing what is in your food, so you don't have to worry about pesticides. According to Michael Pollan, in the Omnivore's Dilemma, he states that the U.S. government allows farmers to spray toxic chemicals onto fields. The gas/fertilizer is so toxic that they don't let a single human enter the field for five days! And yet, they just go sell this pesticide-treated food all over the country. You probably eat it all the time. Great thought, isn't it?

You might be thinking, "Well, I thought corn was a veggie, and therefore is automatically healthy. So is it really bad?" That is because you are probably thinking of delicious, sweet corn on the cob, and don't get me wrong, I love corn! The only thing is, corn is in practically everything, from toothpaste to yogurt, to makeup to gum. Corn is in everything nowadays, but it wasn't always like this; in the 1970s (and before) the U.S. government helped farmers grow all kinds of crops, but when they discovered how corn (and soybeans) could be utilized so well they only helped profit those kinds of crops. Only supporting farmers who grow specific crops is something called subsidies. Subsidizing, nowadays, is the government basically paying farmers to grow only corn or in some cases soybeans. You might be thinking, well, if the government is paying the farmers extra, then it must not be so bad. Unfortunately though, the U.S. government only pays the farmers about ¾ of what they need. Reasons for that could be that farmers need to buy fertilizer or the government only subsidizes hybrid GMO crops, so each year farmers need to go back and shell out more money to purchase new seeds. However, it wasn't always like this.

What are the problems with our current food system?

For most of the 1800s and early 1900s, many farmers lived in financial comfort. To be sure, their physical work was still often difficult if not outright backbreaking, but in addition to corn, farmers grew other crops like apples, oats, potatoes, wheat, plums, grapes, strawberries, and pears. Farms also had animals like horses, cattle, chicken, hogs, ducks, geese, mules, sheep, bees, and turkeys. A typical farm, in short, had a lot more than just corn.

Did you know that corn is a grain? Or that corn is in ⅔ of all items in a supermarket? What about how sugar-free items actually contain High Fructose Corn Syrup? HFCS is derived from corn. Corn syrup (taken from corn starch), which has been treated with enzymes, converts glucose into fructose. This fructose is mixed with corn syrup to create the right level of sweetness. The ratio of fructose and glucose is roughly 50/50 and has a similar sweetness to table sugar. Varieties with higher fructose levels are used and the higher the fructose level the sweeter it becomes. HFCS can be found in soda, candy, sweetened yogurt, salad dressing, frozen junk foods, breads, canned fruit, juice, boxed dinners, granola bars, store bought baked goods, breakfast cereal, sauces and condiments, snack foods, nutrition bars, cereal bars, sports drinks and energy drinks, coffee creamer, jam and jelly, ice cream, and more. All I ask is that next time you eat something with high fructose corn syrup, just think about this: some of the foods on this list are often mistakenly assumed to be healthy, but nothing could be further from the truth.

THE TRUTH ABOUT LEAD

Many people do not garden. Time, knowledge, and personal interest are among the main reasons that they don't. However, due to the limited scope/length of this paper, I will focus here on one main culprit: Lead.

Many people do not garden. Time, knowledge, and personal interest are among the main reasons. However, due to the limited scope/length of this paper, I will focus here on one main culprit: Lead.

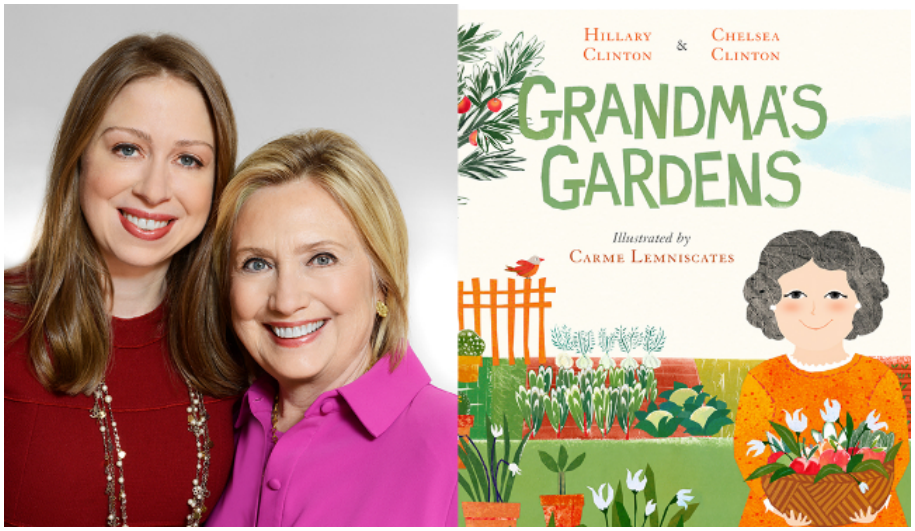
Did you know that children under the age of two are more likely to get lead poisoning because their gut is more absorbent? For example, if a child was left in a backyard for no more than a couple of minutes, one of their toys could fall into the dirt and absorb the lead in the dirt, only for them to stick it in their mouth seconds later. “Most importantly, a child's rapidly developing brain is highly vulnerable to lead toxicity,” said pediatrics professor John Rosen, Director of the lead program at the Children's Hospital at Montefiore Medical Center, Bronx, N.Y., "Lead can be extremely dangerous for young children and can affect their lives forever, it is better to be conservative and safe and not ever be sorry about excessive lead exposure."

A solution to lead poisoning would be to test your soil. The way you go about doing this is to go online and order such a test from BrickHouse security, for $29.99. An alternate option is to go to your nearest Home Depot, and buy LeadCheck Instant Lead Test Swabs (2-Pack) for $10.47.

If the test indicates that you have lead in your soil, don’t worry. You can opt for a raised bed with a floor. Many people use such a bed regardless, as it keeps the garden in place and protects it from weeds. Many people living in cities are not homeowners, and they rent their apartments/houses. This means that their landlords can tell them they are not allowed to garden. The main problem however, is not landlord approval, but access to actual green space. Here are some statistics on which cities have how much green space. New York City leads the pack with 27 percent public green space followed by Austin, Texas (15%), San Francisco (13.7%), and Los Angeles (5%). Most landlords will grant you permission to garden, if you present them with a good enough reason, unless of course you have an evil, pollution-loving landlord, which hopefully won’t happen.

White House Gardens

First Lady Michelle Obama joins FoodCorps leaders and local students for the spring planting in the White House Kitchen Garden, April 2, 2014. (Official White House Photo by Amanda Lucidon)



Hillary and Chelsea Clinton talk about their book, Grandma's Garden

How to run an Urban Garden

Raised beds are a good option for those who have some groundspace whether it's concrete or grass (dead grass in most cases). Raised beds are good because they help keep out stuff from the ground. Window boxes and pots are good for people without much groundspace, they don't hold as much space, but by using them and buying your soil, you know that your plants won't be contaminated. Container gardens, various random objects that can hold plants, have the same pros and cons as window boxes and pots, but by using various objects you have around your house, you can save the earth by using plastic containers that would otherwise become pollution. If you know that your soil does not have lead in it, then you can grow your flowers/veggies/herbs/ there. Also, if you plan to continue your garden throughout the years, make sure to rotate the plants so you don't end up growing the same plant in the same space over and over again. Doing this causes the soil to be emptied to its nutrients and necessary vitamins in order for the plant to successfully grow. In soil, there are three main nutrients. They are nitrogen, phosphorus, and potassium. In addition, there are several other nutrients that help promote plant growth. For instance, calcium, magnesium, and sulfur also play a part in plant development.

Once you have your soil and the place you are going to grow your plants ready, you will need to get seeds. Before you start planning some big plant like lettuce, consider your space. If you are growing from a raised bed or a big window box, lettuce would be fine. You also need to consider how deep you need the space to be. Root vegetables, like carrots, need at least 12 inches of soil to grow.

Once you have purchased your seeds/ seedlings, read on the back of the package how often you need to water the plant. Also think of how much it rains or how much natural water the plant will get. Some plants, like tomatoes, need to be watered everyday while others only need to be watered once a week.

Conclusion

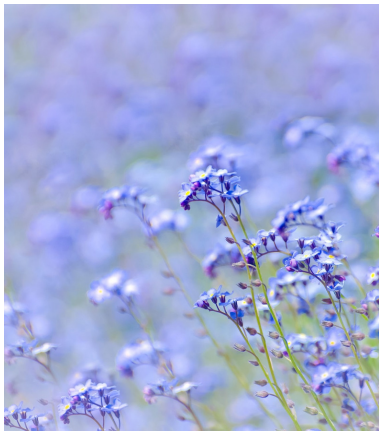
Dear reader,

The purpose of this paper was to uncover the interesting world of urban gardening. I showed that urban gardening is not just growing some flowers in your window box but so much more than that. It is a way to connect with nature, especially if you are living in a city. It is also a way to avoid eating unhealthy foods and lots of corn in disguise. I hope that you enjoyed reading this paper and will consider starting an urban garden of your own (don't worry, you can do this in the winter too).

In doing so, you will help the environment. You will help the people and space around you. And most importantly, you will help yourself.

Alma Goren-Eisenberg
Class of 2020

Q&A



These questions are from Clancy Emanuel

1. Why is it called "urban" gardening?

-Because you are gardening in urban settings. My definition of urban is a place with a bigger population, a city.

2. Can I live completely off urban gardening?

-Theoretically, If you put enough time and effort, if you have a landlord that lets you garden on a big scale, and if you are not too busy, then yes.

3. How do I garden in the winter?

-You need either grow lights, or a window that lets in a lot of light, (like our classroom) and the room needs to be at least 70+ degrees, and other than that, just make sure to try to water your plant every day because it won't be raining inside.

4. Who are some awesome urban gardeners that I should be following on social media?

-Well, as you might know, I don't have a phone not to mention social media, so I apologize that I can't answer this one.

5. What are some simple ways that I can get started?

-If you want to get started any time before late April-May, I recommend getting a seedling tray so your seedlings won't freeze outside. Once your seedlings have sprouted, pick where you will plant them, and go ahead and plant. Just make sure it is after the last frost.

6. How much money will I save by doing urban gardening?

-It depends on how much you grow and how much the fresh produce costs wherever you live.

The following questions are from Ziv Eisenberg AKA my dad

1. Are urban gardeners demographically distinct? In other words, do categories like gender or age matter? Are women, for example, more likely to practice urban gardening than men? Are people who were born after 1980 more likely to practice urban gardening than people who were born before 1980?

-Well, it doesn't really make a difference, I would assume that older gardeners would have more time on their hands after they retire.

2. Michelle Obama famously created a garden in the White House. Did the publicity effectively promote urban gardens across the country?

-Yes, she definitely promoted urban gardening by starting a garden.