

Urban Sustainability: A Guide to Maximizing your Home and Neighborhood

Prepared by Greenisms, LLC



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INTRODUCTION: WHAT IS IN THIS GUIDE?

This guide to Urban Sustainability is a human-centered, friendly, and expert level resource for you to implement small to large scale sustainability practices into your home and community.

Herein you will find resources and self sufficiency checklists, worksheets, and ideas to save money, increase your resiliency, and create a more sustainable home and community. This guide will:

- Teach you to grow \$300 worth of food in a 10'x10' space.
- Provide you with the tools needed to convert your home to 80% off-grid with a \$2,000 investment.
- Upgrade your neighborhood HOA to a self-sufficient, climate ready, producer.
- Give you worksheets and printable resources that lead to a healthier lifestyle.

With a series of tips and tricks, guides to urban agriculture, and worksheets that can help you manage your home in more efficient ways, this guide offers you a substantial list of opportunities to make your home and community a place that grows with you. With even small actions, the cost of this guide will be offset by the savings you will experience and the joy you'll gain. Overall, your capacity to benefit is limited only by your imagination.

Who is this for?

Urban / Suburban homeowners, renters, and aspiring homesteaders - Humans who want to live in a better world, where the value of your space is maximized and intentionally planned.

Do you have questions or a desire to learn about home grown produce? Or about actions you can take to make your home or community more sustainable? Do you want to make a difference in your area as a champion and leader in environmental conservation and responsible living? Do you want to save some cash along the way? This guide is 100% for you!



SECTION I: CORE CONCEPTS OF URBAN SUSTAINABILITY

This section explores the context and the purpose of sustainability; and how it can add value to your life. Section I focuses on the definitions, intent, myths, and realities of what sustainability really has to offer.

What is Urban Sustainability?

According to [Britannica](#):

Sustainability, the long-term viability of a [community](#), set of social institutions, or societal practice. In general, sustainability is understood as a form of [intergenerational ethics](#) in which the environmental and economic actions taken by present persons do not diminish the opportunities of future persons to enjoy similar levels of wealth, utility, or welfare.

However, Sustainability is defined multiple ways depending on the focus or intent of the conversation; Sustainability is equal consideration of:

People  Planet  Profit \$ (or)
Environmental - Social - Governance (ESG)

An entire industry known as - ESG reporting exists to make positive progress towards better social, environmental, and governance decisions leading to beneficial financial changes.

Some companies rely on different standards for this like the **Sustainability Accounting Standards Board (SASB)**, or the **Green Reporting Initiative (GRI)**, but mostly these reporting standards are focused on the same conceptual idea - Sustainability Reporting.

We can learn a great amount of information about a company based on the sustainability reporting metrics and standards that are used to identify impacts and carbon emissions from a company. Incidentally, many of these topics have some crossover for residential homes as well, though the impact reduction is obviously impactful for the bottom line of a company as opposed to the bottom line of a single household.

However, the fact remains that sustainability metrics are not simply for commercial and industrial purposes. This guide is about creating sustainable changes for a community. In it, we will identify basic things that can help you, your family, your friends, relatives, and neighbors make more insightful, and positive impacts on your community. The benefits shared in this guide are not limited to just you!

With simple perspective shifts, and no significant extra effort, you can realize sustainability goals and create your own set of metrics for your home, regardless of what space you consider your dominion. In every case, whether it be a one bedroom apartment or a mansion. You can realize real and noticeable benefits with the tips and tricks included herein.

ESG Reporting -

To learn more about ESG reporting, Greenisms, LLC has composed additional resources focused on educating others about the differences in environmental reporting processes and subjects. Environmental, Social, and Governance reporting is a corporate accountability and reporting format that includes focuses on metrics for sustainability "Key Performance Indicators" or KPI's.

[What is ESG Reporting, and How is it Accomplished?](#)

Additionally, there are compliance reports, for instance, those in California that are required are generally consistent with the California Environmental Quality Act (CEQA).

[Initial Studies and Mitigated Negative Declarations \(ISMNDs\) - Part 1 - What Are They?](#)

[Initial Studies and Mitigated Negative Declarations - ISMNDs - Part 2](#)

But this is all boring and tedious stuff. **Let's get to the real substantive stuff!**

- How can you make sustainable changes that are immediately within your control?
- What can I do to save money and make my life easier at the same time?
- What kind of return on investment can I get for my effort?
- What are some sustainability actions that I won't even notice?
- Who benefits the most from these tips and tricks?
- When can I get started?
- Where can my efforts make the biggest difference?

All of these types of questions will be answered below!

Urban Sustainability -

For the purposes of *this guide*, we define - **Urban Sustainability** - as any action that aims to reduce, reuse, or recycle products or resources in ways that benefit the community, your home, your health, or your environment.

These can be simple things or complex things. The overall goal is that, with a greater audience, we will progress towards a much more sustainable society and culture that allows for the integration of sustainable choices and actions in ways that are almost invisible. Unfelt. Easier. Even Effortless!

These actions can be big or small, and can be as simple as recycling cardboard, or as major and intensive as trying to live a 'zero-waste' lifestyle.

Some actions are much more challenging than others, but the general intent is to save money, benefit your personal ecosystem, or reduce unnecessary waste.

Principles: localization, efficiency, regeneration, circular systems - Core Principles of Urban Sustainability

Urban sustainability isn't just about consuming less or restricting your freedoms or lifestyle.... In fact,—it's about **living better**, designing smarter systems, and creating **resilient neighborhoods and homes**. This framework outlines the four foundational principles that guide sustainable living in an urban context.

We will dive into four main subjects of Sustainability and apply them to urban areas to maximize your potential to utilize these systems to your maximum benefit, regardless of how much space you have available.

 Localization

 Efficiency

 Regeneration

 Circular Systems

These four topics will resurface regularly in this guide, and we will learn a great deal of valuable information for each of them that can be applied to your home, community, workspace, or personal lifestyle.

1. Localization

"Think globally, act locally."

Definition

Localization prioritizes **local resources, networks, and ecosystems**—from food and water to energy and decision-making. The closer the origin of what you consume, the less energy it takes to reach you, and the more accountable the system becomes.

Key Areas

1. **Local Food Systems:** Grow your own food, support Community Supported Agriculture systems (CSAs) and local farmers markets.
 - a. Benefits local business and community organizations
 - b. Fresher, healthier, more nutritious foods for tastier meals
 - c. Great for community engagement, dates, activities for kids or family outings
 - d. Only slightly more expensive, but generally much better quality
2. **Local Economies:** Shop from nearby artisans, use local services.
 - a. Engage with local stores to become a Local
 - b. Easier and more effective networking
 - c. Option to build relationships with new businesses or people
 - d. Fun and engaging "thrill of the hunt" for the best new local spot
3. **Civic Engagement:** Participate in local decision-making, from city planning to sustainability initiatives.
 - a. Engage directly with the City Gov. for more reliable and trustworthy news
 - b. Better engagement procedures create a sense of ownership
 - c. Invest in ideas that are developing before others know about them
 - d. Offer your perspective directly and participate in community development
4. **Resilient Infrastructure:** Emphasize local water capture, energy generation (e.g., rooftop solar), and neighborhood emergency preparedness.
 - a. Using renewable energy saves money
 - b. Working with these organizations helps maintain community resiliency
 - c. Offers educational opportunities to better your career
 - d. Easy way to get involved with local sustainability directly

Actionable Opportunities and Easy Networking

1. **Start a neighborhood garden or seed library.**
 - a. Fresh food, great community, better physical and mental health, cheap and easy

- b. Local farmers markets and community gardens can command greater property value, and increase your

2. Install a rain barrel or greywater system.

- a. Depending on where you live, this can be accomplished with a kit available online, or at a local hardware store. Safety and security starts with water.
- b. Preserving grey water can really benefit the garden or your lawn.

3. Map your 15-minute neighborhood (everything you need within a 15-min walk/bike ride).

- a. Identifying the best and easiest options in a close proximity saves tons of transit time and gas money.
- b. To live and become more comfortable in your community, creating these mental maps can be truly beneficial and supports local businesses

4. Join or form a local repair or barter group.

- a. Sharing tools and resources is a great way to save money and make friends
- b. Bartering saves money and helps people grow closer together with their community. You may have more value in your home than just money.
- c. In small communities such as bartering communities, co-ops, or value trading agreements, you may have the opportunity to make money, share resources, gain valuable knowledge, or access to communities that are otherwise hidden.
- d. Developing a network takes some time and effort, but the benefits are often immeasurable. Like security or friendship for example.

2. Efficiency

"Use less, get more."

Definition

Efficiency means designing systems that **maximize output while minimizing waste**—of time, energy, money, or materials.

Key Areas

1. **Energy:** Use LED lighting, passive solar design, efficient HVAC systems.
 - a. Saving money and energy is easier than you think! Once installed, these will save you money every time they're used.
 - b. Passive systems are more about the original thought, than active effort.
 - i. I.e. once you plant a tree somewhere, you'll have shade for as long as it lives in that space. The shade is a permanent benefit to a single

action.

2. **Water:** Install low-flow devices, drip irrigation, and moisture sensors.
 - a. A timer box and a small irrigation system costs less than \$50 to build, but can provide four times this much money in savings or produce over just one year.
 - b. Saving water is easier than most people suspect. A “low flow” shower head doesn't have to *feel* low flow.
 - c. Integrating smart technologies can be as easy as downloading an app!
3. **Time and Labor:** Use permaculture design to reduce repetitive work in the garden or home. (more for large gardens than small ones, but in the case of a community garden, this has the potential to save TONS of money in soil replenishments and fertilizers.
 - a. *Permaculture* is defined as [a holistic design system that aims to create sustainable and regenerative ecosystems. It involves using natural materials, organic gardening, and strategies like agroforestry and food forests to meet human needs for food, water, shelter, and energy.](#)
 - b. [Permaculture focuses on creating harmonious relationships between humans, agriculture, and nature. It is often associated with closed-loop agriculture or zero-waste farming, where all materials and nutrients used are returned to the soil.](#)
4. **Waste:** Reduce single-use items; streamline routines to reduce consumption.
 - a. Waste reduction in the modern sense of grocery stores and fast food is hard!
 - b. When you grow your own veggies and produce, you have the potential to cut down on hundreds of pounds of waste on an annual basis.
 - c. Every time you harvest greens or tomatoes from your garden, you reduce the wasted plastic in the environment.

Actionable Steps for an Efficient Home

1. **Conduct a home energy audit to determine what improvements can help.**
***See Worksheet 3!**
 - a. Create a budget for some changes
 - b. Purchase energy efficient devices or appliances
 - c. Use recycled or upcycled materials
 - d. Find second-hand stores and shop local
 - e. Old things don't mean poor quality. Find those gems!
2. **Optimize garden layout for sun, wind, and irrigation. Timing is important.**
 - a. Identify some of your favorite veggies or greens and focus in on them
 - b. Make a dedicated space for homegrown produce and veggies
 - c. Use recycled or secondhand gardening tools - it's cheaper anyways!
 - d. Identify your climate zone (discussed in the gardening section)
 - e. Share with your neighbors and your community

3. Retrofit your appliances with smart plugs to monitor usage.

- a. Create schedules using apps or automated timers
- b. Subscribe to energy saving services like OhmHour
- c. Read and understand your electric and gas bills

4. Switch to time-saving compost systems like bokashi or worm bins.

- a. Compost bins don't have to be huge or smelly, even a small kitchen sized compost bin has potential!
- b. Establish a connection with the soil to reinforce your physical and mental health

5. Use open windows and fans to cool the home at the right time of day to cut down on AC.

- a. Even a few degrees change on an A/C can make a noticeable difference on your electric bill, and you likely won't notice a comfort difference either.
- b. Zone controlling the home can be a very effective way to keep the cool air exactly where you want it to be. What's the point of air conditioning rooms you aren't in?

6. Shop at second-hand stores to get quality goods at cheaper prices and reduce waste.

- a. Mentioning this again, There are great opportunities to save money and have a sustainable impact by purchasing lightly used goods. Even cars can be "like new" but cost half as much if you buy them used. Even just one or two years old.

7. Recycle fabrics.

- a. Old shirts and clothing become rags, crafts, rugs, or insulation for an environmentally friendly home made with intentionality. Be Creative!
- b. Use scrap or beat up fabrics for multiple purposes. (reduce, reuse, recycle).

8. Use LED lights and solar operated garden lights to reduce electric bills and save time. *See worksheet 3

- a. Automated devices are always less to worry about. Simplification doesn't have to be expensive or restrictive.

 3. Regeneration

"Leave it better than you found it."

Definition

Regeneration goes beyond sustainability—it's about **actively improving ecosystems** and communities, not just preserving them. It's healing the damage of extractive systems by building **soil health, biodiversity, and social equity**.

All of human history has been about using what the environment has to offer in some manner. Cutting down trees for shelter. Using water from the lakes and rivers. Harvesting produce and animals from the wild to feed us. The modern world has just streamlined and elaborated upon it to create new and improved products. Even the most basic of materials have a complex history. Steel, Cement, Lumber, Copper, etc.

Sustainability isn't about preventing this innovation, or even zero waste, but is more about working with the environmental and natural systems that are already very effective and efficient to minimize negative impacts and damage to these natural systems.

Solar is a great example of this. When you feel the heat of the sun on your face, what you're experiencing is energy flow. Solar panels just capitalize on this limitless energy flow and convert the energy to a more usable form that serves us better. In some cases this is a great use of space, for instance, solar panels that cover a parking lot. In other cases, not so much; for instance when solar panels cover a field.

Once of these example provides all of the benefits of solar energy and more, while the other has a higher ecological cost. Sustainability is about identifying the best place to put solar panels so that their use benefits us the most.

Photosynthesis is the process by which solar energy is used in tandem with carbon and water to help chlorophyll in plants stimulate the growth of a plant. UV lights have been developed to mimic this process. Both tanning salons and indoor agriculture operations use UV lights.

Key Areas

1. **Soil and Plant Life:** Composting, polyculture planting, cover crops.
 - a. Top soil loss causes floods, landslides, poor crop yields, and hotter climates
 - b. Composting and natural systems of regenerative ecosystem management allows for better crop yields, better foods, more manageable natural disasters, and a healthier environment, all with less effort and less intervention.
 - c. Planting crops in cycles is great, but planting multiple crops as companions together is even better. Companion planting and cyclical agriculture are technically two practices that can be combined to triple the benefits.
2. **Biodiversity:** Create habitat zones for pollinators and wildlife.
 - a. Habitability zones are identified in the United States Department of Agriculture (discussed in detail below).

- b. Based on your habitability zone and the climate type, you can make more informed decisions and maximize crops yields
 - c. Habitat can be an entire region, or just a garden bed. Depends on the scale of the creature that depends on it. For a flower, it's habitat is right where it's growing, and it doesn't change. What DOES change is the climate. We have power over both, but at different times and at different levels of significance.
- 3. **Community:** Share knowledge, distribute excess, mentor others.
 - a. Sharing knowledge is a great way to "cut corners" in a sustainable way.
 - b. "Growth takes time" and "Practice makes perfect" but if you can share knowledge and mentor others, distributing your resources helps others make progress faster than they would ever be able to alone.
 - i. Imagine if you had to learn how to culture your own plants. It would take forever, perhaps even generations, without outside help. By relying on the knowledge of others, we can bypass the painful growth period and skip to the production period which makes sustainability easier to implement.
- 4. **Built Environment:** Use salvaged materials, green building techniques, and low-impact development.
 - a. Using "deconstruction" is a great sustainability method that helps to cut down on waste and preserve important things.
 - b. "Salvaged" doesn't mean worse quality. In fact, it can sometimes mean "Better" quality. Everyone always says "they don't make them like they use to" and that's proof of concept right there. If you can recycle, salvage, or deconstruct materials that have been high quality in the past, they have the potential to be high quality once again. No need to waste something that still has great potential.
 - c. Consider bricks or heavy metals or a high quality instrument. These things all retain high value regardless of age. Sometimes even increase in value.

Actionable Steps to Realize Savings

1. *Turn kitchen scraps into regenerative compost for your garden.*
2. *Restore native plants and reduce lawn space for many positive benefits.*
3. *Start a tool-sharing co-op or free swap for cheaper projects and less waste.*
4. *Include wildlife corridors or bird habitats in your garden design.*
5. *Develop better health and save time with a dedicated produce garden.*
6. *Restore local ecosystems by planting natives and removing invasive species.*

4. Circular Systems

"Nothing is wasted in nature."

Definition

A *circular system* closes the loop—**waste becomes a resource**, and outputs feed inputs. This mimics nature's cycles and breaks dependency on linear, throwaway models.

Although the goal isn't always "zero waste", depending on your space and lifestyle and capacity, you can still contribute to systems that support circular economies. Recycling aluminum cans, or scrap metal is a great example. The energy required to mine and obtain raw materials is often greater than the energy to take waste out of the waste stream. Steel is highly valuable and can be used thousands of times. Wood can be deconstructed and reused until it is not structurally stable, and then it can be ground and pressed into ply-wood or particle board. Otherwise, it can be used for fuel, or for insulation. Even sawdust has uses and applications. Depending on the quality and type and location from which a product is sourced, some specific products can be reused and recycled many times over to ensure that the least amount of waste is generated.

Key Areas

1. **Waste Management:** Composting, greywater reuse, upcycling.
 - a. Nutrient rich soil in a plastic bag at a supply store is often very expensive, but composting can be easy, cost effective, and manageable.
 - b. Water stays good until it is polluted or corrupted, but even then, it can be filtered. Every drop of water ever to land on the earth is "Still here" somewhere, even if that's in the ocean. Evapotranspiration is the process by which earth lives and breathes. We can do the same on a smaller scale in the home.
 - c. Upcycling allows us to re-use or find creative alternate uses for products that we typically throw away. With just a perspective shift, one item can become something completely different without any effort at all. (ex. a dirty old shirt becomes a shop rag, a 2L plastic soda bottle becomes a watering can, an old sink becomes a planter, an old computer screen becomes a standing art display)
2. **Resource Loops:** Capture energy, water, and nutrients for reuse.
 - a. Energy "storage" is one of the great industrial sustainability problems. Harvest energy while it is windy or hot, use it when people need it the most.
 - b. Water stays water as long as it is protected from evaporation or transpiration.
 - c. Nutrients for human or ecosystem health are common, but applying them at the right time takes knowledge. Coffee Grounds are a great example of wasted

potential. Instead of throwing them away, apply them to the landscape around you to boost ecosystem productivity.

3. **Product Lifecycles:** Choose products designed for reuse, repair, or biodegradability.
 - a. Just because you have to drink out of a bottle doesn't make plastic the best choice. Reusing aluminum has led to the development of aluminum bottles which are 100% recycled material, keep your beverage colder for longer, and can be recycled yet again. Plastic is much harder to recycle than metal.
 - b. Some innovative grocery store produce bags are made to biodegrade over time. This prevents unnecessary pollution and waste. Using a sewing machine and a few old t-shirts can prevent excessive waste and create a reusable bag that will last much longer. Although we can't prevent material destruction, we can take care of the materials we have to maximize their useful life. See the example at the bottom about Washington with cold water instead of hot water to protect the strength of your clothing and make it last longer.
4. **Community Networks:** Share tools, food, skills, and space.
 - a. As mentioned before, sharing is caring. Why buy a new set of pliers when you can just borrow the same thing from next door? Saves time, money, space, and opens doors of opportunity and networking.
 - b. Upskilling doesn't need to be done alone. By sharing knowledge and resources we have the potential to grow more than we would by trying to do everything ourselves. With a little help, two people together can accomplish far more than two individuals can, alone.

Actionable Steps Supporting Circular Systems

1. Set up a worm bin to turn food waste into fertilizer. Composting is easier than you think.
2. Use greywater from laundry for landscape irrigation, water can do more than one thing at a time, and has the potential to be used infinitely in a closed loop system.
3. Create a "materials bank" for future repairs and projects. Local Co-ops are great communities and can teach you many skills.
4. Design your home and garden as integrated loops— chickens → food scraps → compost → garden → eggs → compost → fresh soil → repeat....
5. Closed loop ecosystems can be big or small, but being one part of the process is equally important. Just because you can't control all steps in the loop, doesn't mean you're not carrying your weight. Everyone has a role to play.
6. Being part of a community serves many purposes. Trying to do everything yourself is a fast track to burnout and disappointment. Zero waste doesn't have to be the goal,

but any sustainable step you can make is beneficial for the good of your community. Even if that community is just your own happy family.

Bringing It All Together - Framework Summary Table

Principle	Focus Areas	Examples of Action
Localization	Home-grown or Locally grown Food, Local Economy, Engage in Local Governance	Grow food, shop local, join city initiatives - Volunteer to build better networks
Efficiency	Energy, water, labor, design	LED lights, drip irrigation, smart systems
Regeneration	Ecosystem healing, Community engagement Healthy living	Compost, pollinator zones, social equity, Environmental Justice opportunities
Circularity	Waste reduction, looping systems, reuse and repurposing products for a second life	Greywater, tool libraries, clothing recycling, vermicomposting

Many circular systems have incredible potential to save money and time, but often require some effort up-front to get started. Not only do cyclical operations work across localization, efficiency, regeneration, and circularity - they often have the potential to teach us valuable self-sufficiency skills, save significant sums over time, and reinforce a direct connection to your environment and community. It is truly a joy to share fresh produce with neighbors. I don't know anyone who doesn't like receiving flowers, or fresh veggies from a home garden. Be the kindness and change you want to see in the world, and you'll receive it in-kind.

Land, then, is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants, and animals. Food chains are the living channels which conduct energy upward; death and decay return it to the soil. The circuit is not closed; some energy is dissipated in decay, some is added by absorption from the air, some is stored in soils, peats, and long-lived forests; but it is a sustained circuit, like a slowly augmented revolving fund of life. There is always a net loss by downhill wash, but this is normally small and offset by the decay of rocks. It is deposited in the ocean and, in the course of geological time, raised to form new lands and new pyramids.

...

A land ethic, then, reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve this capacity.

an excerpt of: The Land Ethic - by Aldo Leopold

Myths & Realities: What People Misunderstand About Urban Sustainability

Many people hesitate to embrace sustainability because they've been misled by myths—ideas that make it seem expensive, difficult, or ineffective. Let's dismantle those misunderstandings and replace them with practical truths that make sustainable living accessible and empowering.

First of all, Sustainability is a journey, and will likely always be a journey. Especially with recent political pressure to bring oil further into the established mainstream and undermine progress towards sustainable and renewable goals, the overarching purpose of Sustainability will always be a case-by-case process of making changes.

Some changes are indeed much more challenging than others. But with even just a small shift in perspective, individual efforts to live more sustainability can be much more possible than many people have been led to believe.

Myth #1: "Sustainability is only for rural or wealthy people."

Reality:

Sustainability starts where you are. Right inside your home, and right on your doorstep. Urban apartments, small yards, balconies, and community spaces are all *ripe* with potential. From container gardening to reducing water and energy waste, city dwellers can have a massive cumulative impact—especially when neighborhood actions ripple through a community.

 *Even one window box or compost bin in a city can model regeneration and inspire dozens more.*

One small 4" container plant can save a much more substantial amount than you may expect.

One craft, project, or hobby can be much more sustainable if done with intentionality, and has the potential to contribute to society more than you may expect.

Some of the best sustainability actions require no upfront cost, and some of the most impactful actions you can take have nothing to do with your home size.

Healthy food is achievable for all people, but requires intentionality and community involvement. Dedicating even just one day a week to eating less meat can have a substantial sustainability impact on the environment and your health.

Myth #2: "It's too expensive to go green."

Reality:

Sustainable practices often **save money** over time. Rainwater collection reduces water bills. Energy efficiency slashes utility costs. Composting and growing herbs or greens can lower grocery spending. Many resources—like local food swaps, repair cafes, or tool libraries—are free or community-run.

💡 Sustainability isn't about buying more eco-products—it's about rethinking the system and doing more with what you have.

It's easy to throw things out once their "intended useful life" has run out, but with just one creative thought or motive, you can turn would be waste, into a beautiful restored creation with inherent value.

Time and money may be valuable resources, but so are environmental and social equity. One tree that you plant may have no impact on you, but the shade or fruit it provides can be very valuable over time.

It's not all about spending big money or saving big money, but about appreciation, perspective, enjoyment, and contentment. You don't have to be a billionaire to make a positive impact on your community. Just one day of volunteer work can make a big difference in someone's life.

🧠 Myth #3: "It's all or nothing."

Reality:

Sustainability is a spectrum. You don't have to be zero-waste or off-grid to make a difference. Every small action—refusing plastic, switching to LED lights, planting herbs—adds up. The goal isn't perfection, it's **progress and participation**.

💡 Imagine if millions of people did a few things sustainably—not a few people doing everything perfectly.

💡 Zero waste is an entire system. Trying to do zero waste by yourself is a monumental effort, but developing and being part of a system that contributes to a zero waste cycle is easier than you might think.

💡 Alternative products are in great supply, and demand. The possibilities for creating just one sustainable change in your perspective or your life have incredibly valuable impacts on your life. From mental and physical health, to relationships, community engagement and more.

Myth #4: “High-tech solutions will save us, not lifestyle changes.”

Reality:

Technology plays a role, but it’s not a silver bullet. Personal and community behavior change—especially in food systems, energy use, and consumption habits—has the power to **reduce emissions and regenerate ecosystems faster** than tech innovation alone. Smart homes help, but **smart habits** matter more.

💡 *Low-tech, ancient methods like composting, seed saving, and seasonal eating often outperform expensive gadgets.*

💡 *The true reality is that it will be both. Technology and lifestyle changes go hand-in-hand. An example is the evolution of the telephone or the TV. News and information used to travel at the speed of a runner, then a horse, then the telegraph, then the radio, then the landline phone, and now it’s evolved to the speed of fiber optic cables. Smart solutions evolve in tandem with lifestyle changes, and sustainability likewise.*

💡 *Communities still need to grow organically. You can’t rush trust and relationships. Much of the time, the closeness to one’s community directly influences the potential for sustainable changes.*

💡 *Teamwork has real power. Smart lifestyle changes will naturally come from cooperation and supportive teams.*

Myth #5: “My choices don’t matter.”

Reality:

Your choices **absolutely matter**. Each home is a node in a larger system. Each purchase, plant, and habit sends a signal to the market, your neighbors, and your family. Local action shapes culture—and culture drives systemic change.

💡 *Real change often starts with one inspired household that invites others in.*

💡 *Solitary homes are often much less capable of inciting change. But with a network, even small choices can influence the bigger picture.*

💡 *Cultural, technological, social, and personal open-mindedness is critical and helpful; not a threat or an attack on your sovereignty.*

💡 *Independence and sustainability will be balance of globalized input and interpersonal input. True sustainability is about efficiency and effectiveness. You can't manufacture a TV or a radio using your own energy. It requires external input.*

💡 *Capitalization on systems built and improved upon by forerunners and innovative industries creates opportunities for sustainability. Especially in an urban environment, real sustainability will be the result of individuals and communities working together to make smarter and more equitable goals.*

Myth #6: "Sustainability is about restriction and sacrifice."

Reality:

It's actually about **abundance, freedom, and well-being**. Sustainable living means fresher food, less waste, lower costs, and deeper community connections. It's about crafting a life that supports health, joy, and regeneration—not depriving yourself.

💡 *Sustainability isn't about doing less—it's about doing better.*

💡 *Sustainability often means better, not worse. it 's about "having cake and eating it too", not avoiding it. (maybe avoid the processed sugar though, for other reasons)*

💡 *True sustainability will provide for those in need while simultaneously meeting or exceeding your expectations. It's not about limiting or restricting your growth, but promoting it in the most efficient way.*

Myth #7: "Cities can't be sustainable."

Reality:

Cities are uniquely positioned to **lead the sustainability movement**. Dense living can lower per-capita emissions. Urban farms, public transportation, walkable design, and community initiatives can make cities incredibly efficient and resilient.

💡 *Cities aren't the problem—they're the opportunity.*

💡 *The greatest number of resources are often concentrated in or near cities and provide great opportunities for people of all backgrounds to contribute.*

💡 *Dirty places represent opportunities for improvement and innovation, while clean and featureless places are much harder to impact in measurable ways.*

💡 *Homogeneous is boring. Diversity is good. Creating spaces where harmony and peace flourish requires perspective, but that doesn't equate to difficulty. Often, it can result in opportunities for joy and connection.*

MYTHS ABOUT SUSTAINABILITY



MYTH: It's only for rural or wealthy

REALITY: Starts at home, right where you are.



MYTH: Cities can't be sustainable.

REALITY: Can lead the movement.



REALITY: Often saves money, reuses resources.



MYTH: High-tech solutions will save us.

REALITY: Lifestyle changes are crucial.



MYTH: It's about restriction and sacrifice.

REALITY: Abundance health, and joy



MYTH: My choices don't matter.

REALITY: Influence market and culture.



Visit www.Greenisms.com/blog for more tips and articles about sustainability!

✓ Bottom Line - Myths versus Realities

Sustainability doesn't require perfection. It requires awareness, small steps, and shared action. This guide will walk you through ways to start, scale, and **reimagine your urban lifestyle** in ways that are practical, rewarding, and truly sustainable. For many reasons, sustainability has much more to add to your life than you would expect. With simple and small actions or perspective shifts, sustainability can expand your horizons and create opportunities you never expected to be possible.

SECTION II: SMALL SUSTAINABILITY: TIPS AND TRICKS FOR APARTMENTS AND CITY LIVING

Organic and Sustainability often go hand in hand, but it is not 100% true. Sometimes organic processes are slow and tedious and prevent maximization. Here in this section we will focus mostly on organic tips and tricks you can implement at home to ensure maximum health and wellbeing, but note that it is not necessarily possible to ensure full and systematic sustainability with entirely organic means. Generally, the process of maximization removes part of the organic process and supplements an infusion of some kind in order to create bigger growth. This can be on a commercial or residential level. Sort of like advertising is for big businesses. Organic business growth takes a lot longer than artificial growth with significant advertising.

Another note: Organic and Genetically Modified Organisms (GMOs) are not mutually exclusive. With intentional biological effort and specific goals in mind, a GMO can be organic and Organics may or may not be GMOs (Think seedless watermelon. That's a genetic modification that resulted in watermelons that don't contain seeds. But just because they have been genetically modified doesn't mean they aren't healthy watermelons. They just won't produce seeds by design. They can still be grown with organic methods and without pesticides or herbicides.)

But generally, the best ways to maximize volumes and size involve *some kind* of interference. In the case of crops, it's usually a pesticide or herbicide and fertilizers that are nutrient boosted. But this sustainability guide is about far more than just produce and contains much more information.

In the next few pages, we discuss topics of energy, sustainability implementation at home, and efficiency with water, waste, and air quality. Even small changes can make a significant impact. Some of the worksheets at the bottom of this guide explain specifics on how to measure these changes over time! With just a little work, you can save 20% or more on your electric and water bills without needing to spend any money at all!



Tips and Tricks for Implementing Sustainability at Home

Practical Actions for Any Space

Whether you rent a small apartment or own a large home, sustainability is realistic, attainable, and achievable. These strategies save money, reduce environmental impact, and improve your living environment.

⚡ ENERGY: Make Every Watt Count

1. **Switch to LEDs and Smart Lighting**

Use LED bulbs—they last 25x longer and use 75% less energy than incandescent. Add smart plugs or timers to reduce phantom loads and automatically shut off lights when not needed. Not to mention they cost about the same as a traditional light bulb.

2. **Unplug or Use Power Strips for Electronics**

Electronics still draw power when off. Use a single power strip for your media setup or desk and switch it off overnight or when leaving home. Use a surge protector to ensure that your equipment stays up and running. Connect the system to an automatic timer or smart plug for even more customizability.

3. **Adjust Your Thermostat (or Use a Smart One)**

In winter, lower your thermostat by 2–4°F and wear layers. In summer, raise it slightly and use ceiling fans. Smart thermostats learn your habits and optimize savings. Who doesn't like being cozy in the winter anyways? This saves 10% on your electric bill under most circumstances. More if you implement some of these other suggestions and changes.

4. **Seal Drafts and Use Thermal Curtains**

Apply removable weather stripping to doors and windows. Thermal curtains can cut heating/cooling loss significantly—even in rentals. In the summer, sleep with windows open to maximize air flow and keep your AC off. Use small fans or contained spaces to turn your home into a natural heat pump. In the hot parts of the day, use the coolest parts of the house. Organic Cotton or Linen, Hemp, and OEKO-TEX are good options for sustainable and more environmentally friendly fabrics. These can be used for years, are easy to wash, can insulate really well, and are also recyclable at the end of their useful life.

5. **Cook Efficiently**

Use lids on pots, match pan sizes to burners, and opt for electric pressure cookers,

toaster ovens, or induction cooktops for quicker, lower-energy meals. Indoor air quality matters. Using vent fans and electric appliances significant cuts down on pollutants indoors. While you can't control what the apartment complex or HOA mandates, or what technologies are available to you, you can make small appliance choices and use cooking methods that provide the same result, but with less combustion or natural gas usage. By making one or two appliance changes, you can reduce your costs by a significant sum.

💡 *Small behavior changes can cut utility bills by 10–20%—without sacrificing comfort. In fact, with effective choices and a little learning up-front, the change will be unnoticed within a short time.*

💧 WATER: Waste Less, Reuse More

1. **Install Low-Flow Fixtures**

Low-flow aerators and showerheads are inexpensive and work in any unit. They reduce water usage by up to 50% without noticeable difference. Some people think that you will notice a drop in water pressure, or feel less water, but with these modern accessories, the overall *feel* of the water will likely be unnoticed, but you will absolutely notice the savings that they provide after a few short months.

2. **Collect Greywater**

Save rinse water from washing produce, cooking pasta, or warming your shower—reuse for flushing toilets or watering plants. Sometimes this is a challenging step to make, but even just a few ounces of water can make a big difference to a plant. Try growing some herbs, lettuce, or spinach in your kitchen windowsill, and water it with “greywater” and it’ll provide you with a bounty you never would have received otherwise.

3. **Fix Leaks Promptly**

A dripping faucet can waste 3,000+ gallons a year. Tenants can usually request repairs, and homeowners should regularly check toilets and under sinks. This isn't only good for saving water, but will also possibly save thousands in renovations or repairs. Maintaining the quality and stability and health of your home is easy, but you do need to watch out for these types of issues. They can creep up on you and cause massive problems when they go undetected. Take my word for it.

4. **Capture Rainwater (Legally)**

Use a rain barrel or basin to capture water from rooftops or balconies. Great for garden beds, potted plants, or outdoor cleaning. Even just a small container on a residential balcony can collect a substantial amount of water over a year. Using rainwater for various things can be very easy once you have the system set up.

5. **Water Plants in the Morning or Evening**

Reduces evaporation and maximizes soil absorption—especially important in dry climates. Water stays water unless it evaporates or freezes, duh. But when you live in a hot and dry place, evaporation happens faster than you'd expect. Watering during the right time of the day, either early in the morning or late in the afternoon really maximizes the absorption, soil health, and plant efficiency. Watering during a hot part of the day can scorch plants, results in high evaporative losses, and does less good than bad. Possibly even killing your grass instead of supplying it.

💡 *Most homes use 30–60% more water than necessary—especially outdoors. Simple changes, like setting your timer for the evening or night can make a big difference and cut down on your water use by a substantial amount.*

WASTE: Reduce, Reuse, and Rethink

1. **Compost Food Scraps**

Use a countertop bin or worm composting setup—even indoors! Check local programs for pickup or drop-off sites if outdoor space is limited. At hardware stores, you can find composting bins that range from just a few cubic feet for one or two pots of soil, up to huge bins that can produce a small mountain of it! With the right knowledge and a small investment, you can start a compost bin that helps you grow more, for less.

2. **Refuse and Reuse Before Recycling**

Skip plastic bags, disposable utensils, and fast fashion. Reuse glass jars, packaging, and even clothing through swaps or repairs. Supporting small businesses that make clothing by hand might be more expensive up-front, but the “price per use” is a key factor that can help you make more informed and more loved purchases. Fast fashion is often very low quality and makes for clothing that you fall out of love with quickly. But when you work with a local designer or a brand that cares about your personal satisfaction, you can maintain a shirt or a pair of pants for a super long time and keep wearing them for years!

3. **Buy in Bulk or Refill**

Reduce packaging by using refill stores (many deliver), or buy staples in bulk. Try reusable containers and bags for storage. Some communities have “zero waste” stores where you can pay for products by weight. Ranging from Whole Foods to local beauty or cosmetics stores, if you bring your own container, they can help you cut down on unnecessary waste, and get higher quality merchandise without the wasteful packaging.

4. **Audit Your Trash**

Take a photo or list your waste for a week—then target swaps. For example, cloth

napkins, beeswax wrap, or bulk toothpaste tablets. The average home produces much more waste than you'd expect. With a few small decisions and some thoughtful audits of your trash, you can identify what the biggest culprits are and make intentional choices to reduce, reuse, or recycle in more effective ways.

5. **Upcycle Creatively**

Turn old clothes into rags, food jars into planters, or cardboard into mulch. Creative reuse reduces demand for new materials. Every product under the sun could likely be used for something else, but what is really required is the inspiration to use it differently than it was originally intended for. Who didn't make a costume out of cardboard? There are many examples of reused and creative ventures using old stuff. Personally, one of my favorite projects was creating a shelf out of an old snowboard and skis. On a commercial scale there are many opportunities for reusing things that have been tossed aside. Wind turbine blades pose an environmental problem, but only when they are trashed instead of reused. In the home, we can create many solutions using every-day objects. The sky is truly limited only by your imagination.

 *The average American throws away 4.5 pounds of waste per day—over 1,600 pounds per year. Worksheet 3 will help you track your waste across different types and can help you create awareness about it. With awareness comes change. Otherwise, this is automatic.*

AIR: Breathe Easy Indoors and Out

1. **Use Houseplants as Air Filters**

Plants like spider plants, snake plants, and peace lilies help filter toxins and increase humidity. Ideal for apartments or window sills.

2. **Avoid Synthetic Fragrances**

Candles, sprays, and cleaners often release VOCs. Switch to natural alternatives like essential oil diffusers, vinegar cleaners, or baking soda deodorizers.

3. **Ventilate with Intention**

Open windows during low-traffic hours. Use exhaust fans when cooking or showering to reduce mold and airborne particles.

4. **Switch to Natural Cleaning Products**

Many cleaners contain harsh chemicals. Make your own with vinegar, lemon, and baking soda—or buy low-VOC, biodegradable brands.

5. **Ditch Carpets or Clean Regularly**

Carpets trap allergens, especially in shared or older homes. Use washable rugs or HEPA-filter vacuums and clean high-touch surfaces often.

💡 Indoor air can be 2–5x more polluted than outdoor air—simple steps make a huge difference. A vent fan may cost a bit, but open windows don't!

✓ Quick Summary Table

Category	Top Tip	Why It Works in Any Home
Energy	Use smart plugs and power managing apps	Easy to install and manage in any room. Managed with an App!
Water	Reuse greywater at home or in the garden (where safe to do so)	No plumbing changes needed—just a bowl or bucket and an eco-friendly detergent!
Waste	Audit your waste stream for efficiency!	By identifying the areas where an excessive quantity of waste is produced, we can become more aware of what changes would make a big difference. (ex. paper towels!)
Air	Add a few low-maintenance houseplants to your spaces.	Low-maintenance and beautiful in any space. Did you know that some houseplants can remove 80% or more of the toxins from the air in just 24 hours?

Although the main goal of this guide is focussed on *quantifiable* or *measurable* sustainability actions and impacts, it is worth noting that personal productivity and motivation play a key role. With a few small changes, you can increase your personal productivity at home!

Take an inventory of your home, and identify all of the aspects that can provide even small benefits unseen to others, but known by you. Your own atmosphere and environment can have significant impacts on your life. Even a small personal piece of memorabilia or a favorite coffee mug can bring positive changes to your daily life. While the summary table above identifies quantifiable things that make for *realized* sustainability, things like **art, music, cultural history, objects reflective of your family history, sentimental things, reminders of your personal progress, cherished personal objects** all can create positive changes and should not be overlooked for their potential to help you maintain a sense of sustainability and positive energy flow in your day-to-day life.

TIPS AND TRICKS FOR IMPLEMENTING SUSTAINABILITY AT HOME

Practical Actions for Any Space

ENERGY

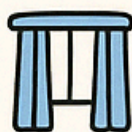
Switch to LEDs and smart lighting



Unplug or use power strips for electronics



Adjust your thermostat (or use a smart one)



Seal drafts and use thermal curtains



WATER

Install low-flow fixtures



Collect greywater



Fix leaks promptly



Capture rainwater (legally)



Water plants in morning or evening



WASTE

Compost food scraps



Refuse and reuse before recycling



Buy in bulk or refill



Audit your trash



Upcycle creatively

AIR

Use houseplants as air filters



Avoid synthetic fragrances



Ventilate with intention



Switch to natural cleaning products



TRANSPORTATION & MOBILITY: MOVING SMARTER IN THE CITY

Transportation is often the largest source of greenhouse gas emissions in urban areas—sometimes over 40% of a city’s total. Shifting how we move not only cuts emissions, but also improves air quality, saves money, and strengthens community ties.

Why It Matters

Climate impact: Fewer car trips = lower CO₂ emissions.

Health benefits: Walking and biking reduce stress, improve fitness, and cut air pollution exposure.

Financial savings: Car-light living can save thousands in fuel, insurance, and maintenance. Community connection: Public transit and shared mobility encourage social interaction.

Mode-Shift Basics

You don’t have to go “car-free” overnight. Or at all...

Instead, think in terms of gradual shifts towards a healthier and more cost effective lifestyle that supports your longer term goals and your health:

30 Days:

Swap 1–2 weekly trips for walking, biking, or transit.

Identify your nearest safe bike route or bus/rail line.

Try a car-share or ride-hail for errands instead of defaulting to your own car.

60 Days:

Increase active/transit trips to 25% of weekly outings.

Store your bike/e-bike in a secure, accessible spot. Make it EASY to pick.

Combine errands into fewer trips and avoid peak traffic hours.

Consider ways to shop more locally! Search for your favorite shops nearby!

90 Days:

Aim for 50%+ trips by walking, biking, or transit.

Sell or store a second vehicle - Insurance savings can be HUGE!

Join a local mobility planning group or attend a city transportation meeting.

Become a local at your favorite stores and get on a first-name basis with people!

Practical Tools & Tips

Walking

1. Use apps or maps to find shaded or well-lit routes.
2. Keep a foldable tote bag for grocery runs.
3. Advocate for safer crosswalks and pedestrian signals.

Biking & E-Biking

1. Invest in a good lock and, if possible, indoor or covered storage.
2. For e-bikes, use battery chargers certified by UL or equivalent safety standards.
3. Choose a model with fenders, racks, and lights for year-round usability.

Transit

1. Learn your city's real-time bus/train tracker app.
2. Get a monthly pass if you ride frequently—it's usually cheaper.

3. Pair transit with walking/biking for “first and last mile” connections.

Car-Share, Carpool & Ride-Hail

1. Sign up for at least one local car-share service and one carpool app.
2. Coordinate with neighbors or coworkers for shared rides.
3. Keep trips efficient—bundle errands into one outing.

Telework & Flexible Schedules

1. Negotiate remote or hybrid work days with your employer.
 2. Use saved commute time for exercise, home projects, or family.
 3. Work in the garden and enjoy a slower speed of life to help you decompress.
-

Budgeting for a Car-Light Lifestyle

1. Track monthly fuel, insurance, and maintenance costs now.
 2. Compare to the cost of transit passes, bike gear, or car-share memberships.
 3. Many households find they can redirect \$3,000–\$8,000/year to other priorities by reducing vehicle use.
-

Community Connection

Get involved in your city’s mobility planning:

1. Join bike/pedestrian advisory committees. Go to town-hall meetings to speak.
2. Participate in “open streets” or car-free day events. Promote walkable cities.
3. Advocate for protected bike lanes, better bus stops, and expanded transit hours.

Community-Specific Tips (For Students, Renters, and Families)

Depending on the stage of life you are in, some sustainability concepts will be more achievable than others simply because of where or how you are living. If you are a student, the control over your environment that you have may be limited. If you are a renter, the control you have over the space you maintain may be limited. If you're part of a family and living at home with others, sustainability practices can benefit everyone but may be harder to get others on-board with! Regardless of where you are in life, sustainability goals and realism is based on individual circumstances and your agency and control over your circumstances. Nonetheless, even small steps can help!

With just a little perspective and creativity, some of the most impactful sustainability actions can also be the most impactful. Even when they're not the most impactful on a sustainability level, they can still be very impactful on a personal level. We all have different talents and abilities, and together we can use them to make significant strides in the world.

For students, renters, and families, structured sustainability is a vast concept when considered as a whole. But for small things, we often just need the idea and a little motivation to make some positive steps. Consider home made gifts, wild bouquets of flowers from a personal garden or field, reusing jars and containers from retail purchases for leftovers, or use them to share with your community.

Once individuals make changes at home, the next powerful step is collaborating within your neighborhood or building. Sustainability thrives in the community. Two individuals together can accomplish more than twice as much as one person can alone.

Scaling Up: Community Level Sustainability

Here are a few easy ways to scale up your efforts:

1. **Shared Tools:** Lawn mowers, pressure washers, even kitchen appliances like dehydrators or canners can be co-owned or borrowed from a local lending library or neighbor. Not only does this provide substantial savings and networking opportunities; it also saves space and time. No more shopping for the "best deal".
2. **Neighborhood Swaps:** Organize clothing, book, toy, or gear swaps seasonally to refresh your household without consuming more. There are so many products out there. Swapping can create fun opportunities to grow closer with your neighbors and stimulate creativity and opportunities to upskill and learn new things. Use the Little Free Library for books. Or participate in a seed collective at the local library. Enhance

your community by trading or participating in a “buy nothing” group.

Check out these initiatives:

[Bring a Little Free Library to Your Neighborhood - Little Free Library](#)

[Seeds for the People!](#)

[BNProject | Find Your Community](#)

3. **Ride Sharing & Carpooling:** Coordinate rides with school, work, or events via local bulletin boards, neighborhood apps, or WhatsApp groups to reduce emissions and fuel costs.
4. **Community Gardens, Edible Landscapes, and Composting:** Turn vacant lots, schoolyards, or even roadside strips into shared gardens. Community gardens not only provide fresh produce but also teach children and adults about food systems, improve food security, and create beautiful, vibrant spaces. For those who can't compost at home, partner with others or a local farm to collect and process food scraps.
5. **Bulk Buying Clubs:** Coordinate group purchases of staples or eco-friendly products to reduce packaging and costs. Even though meat is typically a major contentious point for some people, you can consider buying a full-beef from a local farm where humanitarian and animal-safe practices are implemented. While it is incredibly difficult for one small family to consume a whole cow in a year, splitting this cost among friends and close family can lead to a more sustainable supply chain for those of us who love meat. Full or Half or Quarter beef purchases can result in higher quality, healthier, and even more affordable options that are farm fresh!
6. **Local Skill-Sharing & Repair Events:** Host “fix-it” clinics where neighbors bring broken items—clothing, bikes, electronics—and others volunteer skills to repair them. It keeps items out of landfills and empowers people to learn new skills without spending money. Find organizations to volunteer with or support and the community is much more likely to support you in return!
7. **Emergency Preparedness Networks:** Sustainability is also about resilience. Work with your community to create a **mutual aid plan** for emergencies like heat waves, blackouts, or storms. Shared cooling centers, pooled resources, or buddy systems to check on vulnerable neighbors strengthen both community and sustainability. This Guide offers an Urban Resiliency Checklist at the end as Worksheet #5!
8. **Energy & Resource Cooperatives:** Neighbors can pool resources to install **shared solar panels**, invest in a **community battery**, or run a **tool-sharing co-op**. Collective action helps people access benefits (like renewable energy) that may not be affordable alone. While the agreement and legal details are important, a community sized battery could help create a much more sustainable condo complex or could be of interest to HOAs that are looking to save and invest in sustainable infrastructure for the tenants that live in their communities.

Sustainability Actions by Lifestyle Group

STUDENTS



- Use reusable notebooks and digital textbooks
- Bike, walk, or use public transit
- Reduce fast fashion—swap with friends
- Eat lower on the food chain (vegetarian meals)
- Participate in campus sustainability clubs

FAMILIES



- Start a backyard or windowsill garden
- Buy in bulk and reduce packaging waste
- Involve kids in recycling and composting
- Use hand-me-downs, local swap groups

RENTERS



- Choose efficient appliances and use smart plugs
- Use draft blockers to insulate windows and doors
- Compost using countertop or bokashi systems

Home Decarbonization Pathway — Renters vs. Owners

(Weatherization → Electrify → Solar. Start with the cheapest, highest-impact steps, then scale.)

TL;DR Sequencing

1. Seal & tune the envelope (air sealing, insulation, duct sealing).
2. Electrify the big loads (space heat/cooling + water heat), then cooking & drying.
3. Power it clean (rooftop solar if you own; community solar or green power if you don't).
4. Track + iterate (simple KPIs for bills, kWh/therms, comfort).

Air sealing + insulation typically cut ~15% of heating/cooling costs in an average home; whole-home energy use often drops ~11%.

RENTER TRACK — “Portable, Permission-Light, High ROI”

These moves work in studios, apartments, and rentals—often with no electrician or permit. Use them to lower bills now and build the case for landlord upgrades.

Upgrade	Typical Upfront Cost	Incentives You Might Access	Typical Savings	Simple Payback
Air sealing kit (door sweeps, weatherstrip, outlet gaskets), window film, thermal curtains	\$20-\$150	None (sometimes utility kits)	5-10% of heating/cooling	Weeks-1 yr

Smart plug + standby power audit (kill “phantom loads”)	\$10–\$40/plug	Utility marketplace discounts	1–4% of total electricity	6–18 mo
Portable induction burner (1–2 hob)	\$60–\$150	Some state HEAR rebates include \$840 for stoves (income-qualified ; owner approval may be needed)	Replaces gas cooktop use; comfort & IAQ gains	Behavior-dependent
MERV-13/Higher filter (if your forced-air system allows) + HEPA room purifier	\$20–\$40 per filter; \$80–\$250 purifier	Utility air quality programs (varies)	Air quality & health protection during smoke; minor HVAC savings	Health benefit-driven
Window heat pump / high-efficiency AC (permission likely)	\$400–\$1,800	State utility rebates; some HEAR rebates (income-qualified)	20–40% cooling energy vs. older units	3–7 yrs

Pro tips for renters

1. Ask your landlord to install low-flow aerators/showerhead and smart thermostat (if compatible).
2. If you pay the electric bill, community solar subscriptions can shave ~5–15% without hardware.
3. Induction cooking improves indoor air (no combustion). Consumer testing shows it’s faster and more efficient than gas or resistance electric.
4. Rebates & eligibility: Many Home Electrification and Appliance Rebates (HEAR) are income-based and administered by states; some allow renter participation with owner consent.
5. Get to know your neighbors! It’s way easier to ask for a favor when you know who you are asking! Need to borrow a cooler? Need a ride somewhere? Have an emergency? Knowing your neighbor can make these conversations WAY easier.

OWNER TRACK — “Envelope → Equipment → Solar”

Stage 1: Weatherization (highest ROI, do this first)

1. Air seal + attic/roof insulation + duct sealing.
Cost: \$1.5k–\$6k (home size matters a lot!).
Savings: ~15% on heating/cooling; ~11% whole-home typical.
Incentives: 25C federal tax credit up to 30% of cost, annual cap \$1,200 for envelope; \$150 for a home energy audit. [ENERGY STAR](#)

Stage 2: Electrify the big loads

A) Space heating & cooling — Air-source heat pump (ASHP)

1. *Installed cost:* \$8k–\$15k (ducted), \$3k–\$10k (ductless mini-split; single/multi-zone).
2. *Savings:* Compared to electric resistance heat, 50–75% less electricity for heating; also replaces AC. Payback varies 6–15 yrs by climate/rates. [The Department of Energy's Energy.gov](#)
3. *Incentives:* 25C credit up to \$2,000/yr (30% of cost). HEAR rebates up to \$8,000 for income-qualified households (state-run). Utility rebates common. [ENERGY STAR](#)

B) Water heating — Heat Pump Water Heater (HPWH)

1. *Installed cost:* \$2,500–\$4,500 (replacement).
2. *Savings:* ~\$330–\$550/year vs. standard electric or gas (family of four; usage dependent). Payback ~3–7 yrs after incentives. Provides comfort for the entire time.
3. *Incentives:* 25C credit up to \$2,000/yr; state HEAR rebates up to \$1,750 (income-qualified). Utility rebates are common. [ENERGY STAR](#)

C) Cooking — Induction range

1. *Installed cost:* \$1,000–\$2,500 (range) or \$60–\$150 (portable burner).

2. *Incentives:* No federal 25C credit for stoves; HEAR offers up to \$840 (income-qualified) in many states. [Home Electrification and Appliances Rebate Program | ENERGY STAR](#)
3. *Notes:* Faster/precise, great indoor air quality compared to combustion cooking.

D) Electrical panel / circuits (to “make room” for electrification)

1. *Typical cost:* \$1,000–\$3,000 for panel upgrade; branch circuits vary.
2. *Incentives:* 25C allows up to \$600 for “panelboard” and related equipment when needed to enable other qualifying upgrades and meeting code. [IRS](#)
3. If you’re considering an Electric Vehicle, A panel upgrade may be required anyways! Make sure to ask your electrician about the different tiers of electrical service required for the different types of EVs on the market. A typical electrical panel may not have enough juice for a shiny new EV that just came onto the market. Upgrading will be worth the amount you save in time and gasoline costs.

Stage 3: Power it with clean electricity

Rooftop Solar (if you own your roof)

1. *Typical size:* 6–8 kW; *Rule of thumb cost:* system price varies by market; apply 30% Residential Clean Energy Credit (25D) through 2032. Payback ~6–12 yrs depending on rates, net-metering, and sun. [IRS](#)
Community Solar (if you can’t or don’t want panels)
 2. *Cost:* Usually \$0 down subscription; *Savings:* often 5–15% bill credits; check local programs.
 3. Often Solar Panels will pay off within 5 to 7 years after installing them, even if you need to pay for them up-front. Be sure to discuss your bills with your sales representative, and ask them detailed questions! Complete the Provide Worksheet #3 to get an idea of how much electricity you need to generate to get your electric bill all the way down to zero! Or even a consumer credit!
-

Which Path First? (Decision Helper)

1. Your AC is dying in the next 2 years? Replace with a heat pump instead of a new AC—small marginal cost, big savings. [ENERGY STAR](#)
 2. Electric resistance/baseboard or propane/oil heat? Heat pump usually delivers the fastest payback. [ENERGY STAR](#)
 3. Water heater is 10+ years old? Swap to HPWH and grab the \$2,000 25C credit. [ENERGY STAR](#)
 4. Drafty rooms / high bills? Start with air sealing & insulation before equipment.
 5. Can't do rooftop solar? Subscribe to community solar or choose a green power option from your utility/CCA.
 6. Live in an apartment building? Or own a townhome? Consider appliances inside the home that make a difference and use the [Home Electrification and Appliances Rebate Program | ENERGY STAR](#)
-

Incentives & Financing — Quick Guide

1. 25C Energy Efficient Home Improvement Credit (federal): 30% of eligible costs up to \$3,200/yr (envelope \$1,200 cap + heat pump/HPWH \$2,000 cap + \$150 audit). Available through 2032. Use IRS Form 5695. [IRS](#)
2. 25D Residential Clean Energy Credit (federal): 30% for rooftop solar, batteries, geothermal, etc., through 2032 (then phases down). Use IRS Form 5695. [IRS](#)
3. Home Energy Rebates (HOMES & HEAR) (state-run, IRA):
 - a. HOMES: performance-based rebates for measured or modeled whole-home savings.
 - b. HEAR: point-of-sale rebates for electrification (e.g., up to \$8,000 heat pump HVAC; \$1,750 HPWH; \$840 induction; \$4,000 panel; \$2,500 wiring; \$1,600 insulation/air sealing) — income and state rules apply.
4. Utility rebates: Many utilities offer extra \$\$ for heat pumps, HPWH, weatherization. Check your provider's marketplace.
5. Financing: On-bill financing, low-interest green loans, and PACE (where available) can reduce upfront cost; always compare APR to expected bill savings

Eligible ENERGY STAR Products and Maximum Rebate Amounts for the Home Electrification and Appliances Rebate (HEAR) Program*

Applicability	Upgrade	Maximum Rebate Amount	ENERGY STAR Certification Required?
- Appliance purchase carried out for single family home / multifamily building: - As part of new construction - To replace a non-electric appliance or - As a first-time purchase with respect to that appliance	Heat Pump Water Heater	\$1,750	Yes
	Heat Pump for Space Heating/Cooling	\$8,000	Yes
	Electric Stove, Cooktop, Range, or Oven	\$840	Yes
	Electric Heat Pump Clothes Dryer		Yes
- Homeowners or renters - Up to 100% of cost for < 80% AMI	Insulation, Air Sealing, and Ventilation	\$1,600	Yes
Not to exceed 50% of cost for 80-150% AMI	Electric Load Service Center Upgrade	\$4,000	N/A
	Electric Wiring	\$2,500	N/A

Maximum Combined Total: \$14,000

* Within the scope of the program requirements, states may choose to restrict program eligibility to a narrower set of households, existing conditions, and/or technologies than is allowable under the law. States are not required to offer Home Energy Rebates for all technologies or all household types identified within the Inflation Reduction Act.

Safety, Codes & Good Practices (applies to renters & owners)

1. Electrical: Confirm ampacity before adding big electric loads; panel upgrades may be required (25C may offset \$600 for enabling panel work). [IRS](#)
2. Air quality: During smoke events, prioritize HEPA filtration or a clean air room; plants are great for wellbeing but don't replace filtration/ventilation.
3. Privacy: Smart plugs/thermostats collect usage data—review device privacy settings before connecting.
4. Permits: Heat pumps, HPWHs, and electrical work often require permits/HOA approval.
5. Greywater: If you reuse laundry water outdoors, use plant-safe detergent (avoid boron/salts) and follow subsurface irrigation and local codes.

Example “Stacked” Scenarios

Renter, 1-bed apartment (electric heat, pays utilities)

1. Air-seal + thermal curtains (\$120) → portable induction (\$120) → community solar (10% bill credit) → window heat pump (\$650 after rebate).
2. Result: 10–25% bill reduction + better comfort/IAQ; <2-year blended payback on first three steps.

Owner, 1,600 sq ft home (gas furnace + old electric water heater)

1. Weatherization package (\$3,500; net ~\$2,450 after 25C).
 2. HPWH install (\$3,200; net ~\$1,000–\$1,450 after 25C + utility/HEAR if eligible).
 3. Ducted heat pump at AC end-of-life (\$11,000; net ~\$8,000–\$9,000 after 25C + utility).
 4. Rooftop solar 7 kW (30% 25D credit applied).
 5. Result: 20–40% site energy cut from envelope + HPWH; further cuts with heat pump; solar offsets remaining kWh; typical payback ~6–12 yrs depending on rates and sun. [ENERGY STAR](#)[The Department of Energy's Energy.gov](#)[IRS](#)
-

Add this KPI block to your dashboard (Check out Worksheet #3 for a fillable version!)

1. Energy: kWh & therms per month per person; peak events joined.
2. Heating/Cooling: Average setpoints; filter change dates.
3. Water heating: HPWH kWh/month (from load monitor, if available).
4. Solar/Community solar: kWh produced or % bill credit.
Track before/after for each project to verify savings and refine your next step.

Where to look up incentives: IRS Form 5695 & guidance, state Home Energy Rebates portals, and your utility marketplace are the most reliable, current sources for eligibility and amounts. [IRS](#)

SECTION III: ENVIRONMENTAL REAL ESTATE INSIGHTS

Maximizing Property for Sustainability (design, passive heating/cooling, etc.)

The distinction between **quantifiable value** and **unquantifiable value** is central to how we make decisions, assign worth, and structure society. These two types of value often overlap, but they stem from different ways of understanding and measuring significance.



Quantifiable Value

Definition:

Quantifiable value is measurable, countable, and typically expressed in numerical terms.

Examples:

1. Money (price, revenue, wages)
2. Time (hours worked, delivery times)
3. Physical quantities (weight, volume, distance)
4. Metrics (KPIs, ROI, user engagement)

Use Cases:

1. Business and finance: Profit margins, sales figures, MSRP
2. Science and engineering: Data, statistics, measurements
3. Policy and economics: GDP, inflation rates, unemployment rates

Benefits of Quantifiable Costs:

Enables comparisons; Facilitates optimization; Provides accountability and traceability; Supports data-driven decisions; Creates measurable and trackable progress.

Limitations:

1. Can reduce complex things to simplistic numbers; Misses nuance and subjective meaning; Often incentivizes short-term or shallow metrics; fails to consider the following.
 2. Doesn't tell the whole story of how or why a specific metric is valuable or not. Sometimes can be used to make something LOOK valuable, but actually fails to mention that it can be harmful or even potentially dangerous.
-

Unquantifiable Value

Definition:

Unquantifiable value refers to intangible, subjective, or immeasurable qualities that are nonetheless real and impactful. In fact, sometimes unquantifiable value is more sought after than quantified value for a number of reasons, usually rooted in values and effort.

Examples:

1. Beauty
2. Love or Appreciation
3. Integrity or Honesty
4. Trust and Accountability
5. Cultural heritage
6. Spiritual fulfillment
7. Environmental harmony
8. Social cohesion

Use Cases:

1. Ethics and philosophy
2. Art and design
3. Relationships and community life
4. Mental health and well-being

Benefits:

Captures meaning beyond numbers; Reflects deep human needs and desires; Encourages holistic, long-term thinking; Supports authenticity, culture, and identity.

Limitations:

Difficult to measure or prove; Hard to prioritize in systems driven by quantifiable metrics;
Often overlooked in formal decision-making

Why It Matters

In modern life—especially in business, politics, and technology—**quantifiable value dominates**, often because systems require measurable inputs to function. Yet **unquantifiable value** often defines what makes life worth living. Sometimes things with quantifiable value fail to identify how harmful or beneficial it can be to rely only on recordable metrics. An example of this would be using the herbicide Roundup to kill weeds in the garden. There are downsides that aren't easy to identify with numbers or metrics.

For example:

1. A family dinner may have no economic return, but immense emotional and cultural value. Some people would give anything for just one more date with a partner.
 2. A community garden may not generate much money, but builds resilience, relationships, and beauty. A community that can survive an economic downturn is valuable, but how?
 3. An artwork may not “solve a problem,” but could shift a worldview. Have you ever had an emotional response to a song or a painting or a production or movie? How much was that worth to you? - Here's a funny and somewhat related question - If you could listen to a song or watch a movie for the very first time again, what song or movie would it be, and why? This is a mental exercise in unquantifiable value and how it can impact you.
 4. When you listen to your favorite song or smell your favorite flower or herb, the value it has for your mental wellbeing isn't clearly measurable, but may still be apparent to you. Doesn't it lift your spirits to smell BBQ in the air? This can be nostalgic, which is related.
-

Balancing the Two

Healthy systems and **meaningful lives** require integrating both types of value:

Area	Quantifiable	Unquantifiable
Work	Salary, productivity	Purpose, team culture
Education	Test scores, graduation rates	Curiosity, critical thinking
Urban Planning	Cost per square foot	Sense of place, walkability
Healthcare	Treatment success rates	Patient dignity, peace of mind

Final Thought

"Not everything that counts can be counted, and not everything that can be counted counts." – William Bruce Cameron (often misattributed to Einstein)

Quantifiable value builds structure; unquantifiable value builds meaning. When they work together, we build not just systems that function, but lives and societies that thrive.

What to look for in a sustainable home

How do we balance quantified value and unquantified value in a home? Sustainability has a great deal to say about this question. When discussing value with a realtor, you're likely only going to focus on the Quantifiable data. The cost of the home, the mortgage, the amount of the payments, the remaining useful life of the plumbing or the roof. Whether it has enough parking for you, or the right number of bedrooms or bathrooms or square footage.

Sustainability is about far more than these numbers though. When determining the total value of a home, a sustainability minded person will consider the unquantifiable values of a place, a property, a community, or the potential. One of the most common “unquantifiable” values in a home that often has a significant “quantifiable” impact on the price of the home is the View, or the location.

Realtors will use location, location, location to upsell a home without really diving into what ABOUT the location makes the home valuable.

Environmental factors in appraisal & value

Accountants will tell you that all things can make it onto a spreadsheet and that all numbers need to net to zero in order to balance the statement. But regenerative sustainability is about creating value out of seemingly thin air. The earth, the soil, the water, the trees, the environment as a whole have deep and layered value that is hard to put into a real estate listing or an accounting spreadsheet.

Sustainability is about finding this value and highlighting it so that others see it and begin to account for it too. While it may be true that accounting is still critical and the purchase of a home or an apartment isn't always the perfect situation, finding these areas where value is overlooked is also important because it can create a sense of confidence and contentment even though the circumstances aren't always perfect.

Retrofitting existing homes for ecological efficiency

Green Roofs, Vertical Gardens, Green Walls, Water Features, and landscaping that provides both adequate drainage and water retention are ecological additions to a home that won't necessarily be included in any type of appraisal report used for a real estate transaction. They may focus on whether or not you have a pool or a koi pond, but not the actual benefits those things provide in terms of the “micro-climate” that makes your property livable.

If you've ever walked through a soccer field, you can feel the difference in humidity and temperature and you notice the reduction in glare and reflection that can take the strain off of your eyes and body. These are realized benefits of grass and living ecosystems that are often left without full consideration.



SECTION IV: SCALABLE ORGANIC GARDENING TOOLKIT

Urban Gardens - How to Maximize your Space

But First! A short history lesson -

Anthropological Example: The Three Sisters

Corn, Beans, Squash - known as the three sisters to native americans, and many central american indigenous people groups. When planted together, these three species maximized the yield due to the symbiotic relationships between them.

Corn provided tall and stable structure to the climbing beans - squash provided ground cover and attracted pollinators - and beans created soil nutrient stability with nitrogen, and helped to reduce erosion by tightly gripping the soil with its root system. Together, these three sisters supported each other, and created a tasty and healthy meal when roasted over the fire together. Many other similar examples exist! Below, you'll see a real life example of how this can be applied in small spaces.

Click the link below to see the step by step method to plant and harvest the three sisters!



COMPANION PLANTING THE OLD FASHIONED WAY WITH A 3 SISTERS GARDEN

corn, pole beans & squash

**THE CORN SUPPORTS THE BEANS, THE BEANS ADD NITROGEN
AND THE SQUASH SHADES OUT THE WEEDS**

- 1) Plant the corn after danger of frost has passed.
- 2) Plant the pole beans when the corn is 5 inches high.
- 3) Plant squash seeds one week later.



IMAGE CREDIT: MOTHER EARTH NEWS



www.gmofreeusa.org
www.facebook.com/gmofreeusa
www.facebook.com/gmofreecanadagroup



[Plant a Three Sisters Garden: Corn, Beans, and Squash | The Old Farmer's Almanac](#)

Examples of Urban Companion Planting:

Even small garden boxes have the potential to provide a ton of produce. In the image above, basil, oregano, thyme, and two different types of onions all live happily together and can provide more than enough for a small family on a patio. This garden box can be bought by itself from a hardware store, or made with a little creativity and elbow grease. Even a 3 square foot garden box like this one has the potential to provide enough produce to pay for itself over a season or two of usage. Consider a garden fresh bunch of green or white onions every week or two, and enough basil to last you all year! Even saving just \$0.99 at a time once or twice a week can add up to hundreds of dollars a year!

“Cyclical agriculture” and “Companion planting” have many benefits for the environment, the gardener, and the economy.

Vegetable Garden Companion Planting: How to Maximize Your Garden with Cyclical Agriculture

Scaling these spaces up to meet your needs and capacity has great potential to reduce your grocery budget and increase the healthy array of food in your diet. Companion and Cyclical planting schedules have the capacity to handle multiple types of produce together during three or four seasons of the year. With just a little planning and a little knowledge of your local seasonal changes, you can easily get a great garden going in whatever extra space you have, even spaces as small as a windowsill.

Environmental benefits of Home Gardens:

1. Reduced soil erosion and runoff - benefits the ecosystem
2. Improved soil fertility and productivity - benefits the flavor and quality of food
3. Increased water retention and conservation - saves on time and water use
4. Reduced use of pesticides and herbicides - organic is always better quality!
5. Reduced greenhouse gas emissions - better air quality doesn't hurt!

Economic benefits of Home Gardens:

1. Increased crop yields and easier maintenance - More to go around
2. Reduced costs of production - Just a few dollars for some packs of seeds!
3. Increased profits - both residential and commercial savings
4. Less Inequality over time - Save other people the effort and get better food too!

Health benefits of Home Gardens:

1. Increased access to fresh, healthy food - Plus it's good for the mind and body!
 2. Reduced exposure to pesticides and herbicides - trustworthy sourcing!
 3. Improved mental and physical health - Both the gardener and consumer
 4. More variety in the diet when planned accordingly - try new things when you want
-

Cyclical agriculture and companion planting can be applied to all shapes and sizes of home gardens in a variety of ways.

The size, location, depth of soil, and sunlight exposure in your garden, as well as your desired outcome will all determine what best practices you need to implement to ensure success.

You may be surprised at how much you can get out of even a small area.

With planning and intent, you can save hundreds of dollars a year!

Good Choices for Companion Planting:

Tomatoes, Garlic, and Basil -

In one 12 -18" pot, a large bushy beefsteak tomato, 7 -10 cloves of garlic, and a small basil plant can coexist very well together. While the garlic takes a minimum of 90 days to grow, and is best planted in a big row, a small patio can handle a few pots that each support a trio of delicious produce. The tomato is tall and bushy, and when the lower branches are trimmed effectively, there is quite a lot of space left surrounding the main stem. Enough to plant two rows of 5 heads of garlic, and one or two well-maintained basil plants.

Suggested Recipe: Roma Tomato basil and garlic pasta sauce practically on tap!

Savings: **\$5 per jar** of organic pasta sauce times **10 jars of sauce** from this one pot makes for a total savings of **\$40 after buying the seeds and thrifting a nice container** from a local estate sale or second-hand store.

Carrots and Onions - In two neat rows close together, (even 5 linear feet is enough!)

Onions can be grown in bunches, or in rows, and carrots do well when evenly spaced out such that the bulky root has space to expand. Since onions bulb on the surface and have shallow roots, and carrots build their structure underneath the surface and have short and generally thin tops, Onions and carrots do not interfere with one another when placed close together. If you have a small, but deep garden bed, carrots and onions can be planted close together, allowing for maximized harvests of both!

Bok Choy and Bell Peppers -

With an additional row or large pot, Bok Choy can be one of the best producers for salads, soups, stir fry, or even fresh wraps. It grows in a low lying bundle of pretty leaves, and can be grown right next to a pepper plant without interfering with the peppers. While it takes a little time to get both of these plants going, the Bok Choy will stay low to the ground while the peppers stand more upright, giving each other space and allowing for a delicious mix to add to your favorite dishes. In either a pot, or in a garden bed, these plants do well together, and can produce enough for a few meals a week once they are strong and producing well.

Suggested Recipe: Stir Fry! Harvest carrots, onions, bell peppers, and Bok Choy go very well together. Chop into chunks, and fry them in some avocado oil to add to a stir fry of rice or noodles. Add some cooked pork, chicken, or flap steak, or other veggies to make it more complete.

Savings: Onions are \$0.99 each bunch, and Carrots are \$3.00 per bag. With a row approximately 4 feet long, you can save \$50 on these produce items!

Examples of Bad Companion Choices...

Potatoes and Tomatoes - Both of these are in the Nightshade family. This means that planting these two types of produce together would cause both to compete for the same nutrients in the soil, leading to poor harvests. Also, tomatoes can be determinate or indeterminate (Explained in the garden section in detail) meaning that they may be ready at inconvenient intervals and harvesting one may disturb the other.

Strawberries and Cabbage or other Greens - Strawberries can actually stunt the growth of cauliflower, cabbage, and collared greens because of the soil conditions and space they require. Strawberries like to crawl around. (*Hint! Hang a pot with strawberries so that they stay off the ground! Keeps them contained and producing longer*)

Cucumbers and Herbs - The delicate flavor of cucumbers can be impacted by the strong flavors that oregano, thyme, and rosemary tend to have.

Onions and Beans - These types of produce require different conditions to be successful. Beans can climb and impact the stalk of the onions and the onions can impact the soil quality required for healthy beans. Overall these two don't particularly cooperate.

Carrots and Beets - Planting them adjacent to one another can cause space issues. Since both of these are root crops, they will require similar nutrients and may compete with one

another for space. However, interspacing rows of these crops would give you the best of both. Just Not when they're on top of one another. *see the spacing guide.

Some examples include:

1. Rotating crops on a three-year cycle to ensure soil health (buy a Soil ph and Temperature monitor at the hardware store)
2. Use compost to provide balanced nutrients and rehabilitate soils.
3. Planting nitrogen-fixing plants to improve soil fertility
4. Planting companion plants that repel pests or attract beneficial insects
5. Using organic methods of pest control, like decoy planting or neem oil

Space Specific Garden Suggestions, Tips, and Tricks!

For Small Spaces - Container & Balcony Gardens (apartments/condos/townhomes)

You really don't need an extensive amount of space to be successful at keeping a home garden. Even a small windowsill or patio has great potential for gardens. Residential communities, apartments, condos, and townhomes often have a small balcony or doorstep that is still an excellent place to grow some fresh produce. Make due with whatcha got!

Here are some of the most effective, efficient, and productive types of plants that can be grown in even a small pot. Some of these are available at the grocery store, but growing these from seeds doesn't take much commitment or effort.

Getting Started: Key Considerations

1. **Light:** Observe your balcony's sun exposure. South-facing balconies get the most sun, perfect for tomatoes, peppers, and squash. East- and west-facing spaces are ideal for leafy greens and herbs. Check out the table below for suggestions!
2. **Containers:** Use pots, window boxes, recycled buckets, windowsill garden containers, or vertical planters with lattices. Make sure they have good drainage, and please be sure that it doesn't damage the balcony or floor. Even sandbags can be used as planter. Just fill them with some soil and pop some seed potatoes in, and watch them grow!
3. **Use vertical spaces:** To maximize your harvests take advantage of climbers! Vines like snap peas, cucumbers, and cherry tomatoes, or hanging pots for strawberries can give you more from the same space!
4. **Soil:** Use a high-quality organic potting mix. Add compost or worm castings for extra nutrients. If you have the home compost system we discuss at the end of this section, you can supplement soil with your own blend of nutrient rich and fresh compost!
5. **Watering:** Small containers dry out faster—water consistently. Consider self-watering pots or drip systems for convenience. Plastic pots can get really hot in the summer time! Be sure to shelter the sides of those from the direct sun so the roots of your plants don't bake. Otherwise, use ceramic pots that you find at the garden center or second-hand store to stimulate healthier plants!

6. **Raised garden beds**, like those in the photo below show how even a shallow or small garden space can provide a surprising abundance of produce. When companion planting and cyclical agricultural practices are utilized, a bounty of veggies that will stay fresh all year can be gained from spaces as small as a few square feet.

For Medium Sized Spaces - Raised Beds, Small In-Ground gardens, and Large Patio Gardens

Homes and residential dwellings have a huge variety of options when there is enough space for 5 to 10 different kinds of veggies. In the best case, and with some practice, management of a residential garden space takes minimal effort, can be put on a timer box, and controlled with precision!

A tomato garden can have five or more types all in one compact area, but be warned, some tomatoes can get HUGE, Like up to 10 feet tall, or more! Based on your cooking needs, you could choose cherry tomatoes, beefsteak tomatoes, roma tomatoes, or others for a mix of everything. There are even dwarf tomatoes that you can buy, which stay as small as one or two feet tall.

With a 5' x 5' garden bed or 25 square feet, you can grow tomatoes, peppers, cucumbers, zucchini, and herbs ad salad greens all in one space!

Garden fresh omelettes anyone?

Here is an example of a 25 square foot garden bed schedule:

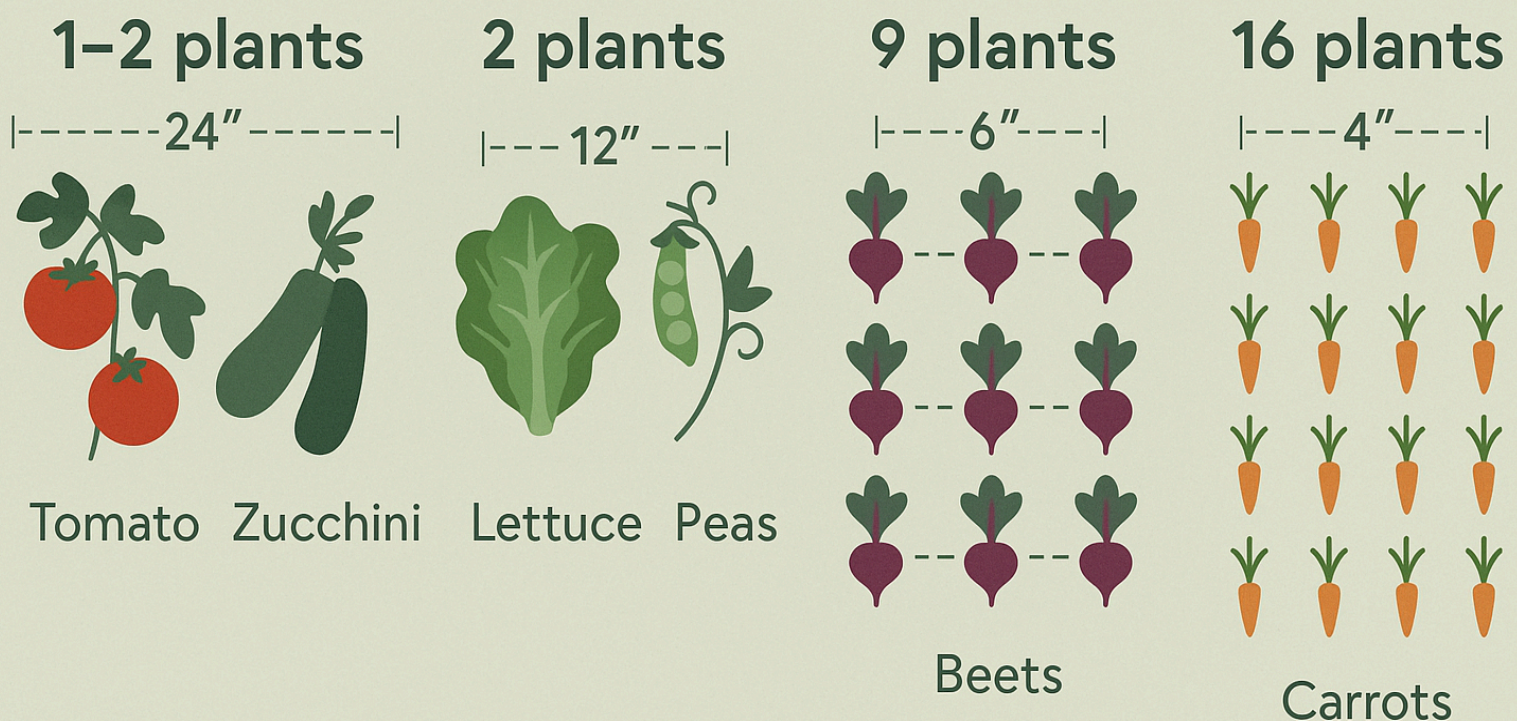
🌿 Best Garden Strategy for 25-100 sq ft Space

A garden doesn't need to be huge to provide a huge amount of produce. With a little space management, some planning, and some intentional selections made with the seasonal changes of the year, you can get many pounds of fresh produce from a small area. The key is making wise choices and managing your garden as it develops.

✅ Goals:

1. Year-round productivity (3-4 planting seasons)
2. Balanced diet: greens, roots, protein-rich veggies, flavor/herbs
3. Companion planting & soil health
4. Minimize inputs (fertilizer, water, time)

Plant Spacing for a 25 Sq Ft Vegetable Garden



It doesn't take much money to get started, and in fact, it can cost less than \$10 to start a pretty full garden. In the image below, I used free coffee mugs, free plastic pots leftover from previous gardening escapades, and a grand total of 6 cups of water to get things started. The seeds usually cost about \$3 per packet, but I have been saving them for a while, so I didn't need to buy any this time around. If you search for deals and buy at the right time of year, you can often find packs of seeds for \$0.99 and get the entire garden looking lush and full within 8 weeks for less than a total investment of \$15. Just getting a few pounds of tomatoes, some good harvests of spinach or bok choy or green onions will pay for this investment within 2 months. Delayed gratification, but great money savings over time.

Photo Below: Peat Pods are a great way to start seeds!



Top 10 Garden Staples for Balanced Nutrition & Seasonal Rotation

Crop	Nutritional Benefit	Season(s)	Notes
Basil	Flavor, pollinator attractor	Summer	Thrives next to tomatoes
Carrots	Root veg, vitamin A	Fall–Spring	Long-keeper, sow in succession
Garlic	Immune support	Fall–Spring	Space-efficient, long season
Green Beans	Protein, nitrogen-fixer	Summer	Pole beans maximize vertical space
Kale	Leafy green, rich in iron	Fall–Spring	Cold-hardy, continuous harvest
Lettuce	Quick leafy harvest	Fall–Spring	Great for turnover crops
Peas	Protein, early harvest	Late Winter – Spring	Cool-weather legume
Radish	Fast root crop	All seasons	Perfect for gaps & turnovers
Spinach	Abundant Greens for Diverse Recipes	Cool Seasons, Early Spring	Quick Growing, Plentiful,

Tomatoes	Vitamin C, lycopene	Summer	Needs staking or tomato cages
Zucchini	High-yield summer veg	Summer	1 plant can feed a household



Seasonal Planting & Turnover Schedule for a 25 sq ft Garden (5' x 5')*

Month	Key Activities & Plantings
January	Start peas, lettuce, carrots (seeds); prep soil
February	Add kale, spinach; succession sow lettuce
March	Plant radishes, green onion sets; start tomato indoors
April	Transplant tomatoes & basil; plant zucchini & beans
May	Mulch; succession beans & radishes; monitor watering
June	Peak harvest: zucchini, beans, basil, lettuce
July	Sow more carrots & radish; harvest tomatoes
August	Plant fall peas, kale, chard; remove spent squash

September	Add garlic; sow spinach & lettuce; compost summer crops
October	Harvest peas; kale growing; radishes fill empty spots
November	Maintain garlic; pick kale & spinach
December	Clear frost-damaged plants; plan rotations

*Remember that your personal climate zone has a lot of weight when determining when to start seeds and transfer them outdoors. Read your seed packets for vital and interesting information!

The USDA Zone map can be found towards the end of this guide. Review the map to determine what zone you are in, and then use the corresponding seed information or map figure on the back side of the seed packet to determine what the ideal time to start seeds in your community is. Based on the average temperatures, remember to start your seeds before or after frost, so that they can sprout without freezing or scorching!

Temperature, Sunlight, and Water

are the main factors that will determine your success!



Yield Expectations from a 25 sq ft Garden
(with care and attention, you can save hundreds!)

Crop		Yield Estimate per Season

Tomatoes (2 to 4 varieties)	2 - 4	10+ lbs per plant! (over 3 to 6 months)
Green Beans	5 - 8	2 - 4 lbs average, up to 10 lbs
Kale	3 - 4	Up to 30+ leaves/week
Carrots	30 - 40	~5 - 8 lbs
Radishes	50 (succession)	3 - 4 lbs (quick turnover)
Zucchini (1)	1	15 - 20 large fruits
Garlic	20 bulbs	1 - 1.5 lbs
Lettuce / Spinach	6 - 10 (succession)	1 - 2 heads/week
Snap Peas	12 - 20	2 - 3 lbs
Basil (1-2)	2	Weekly harvests for sauces/drying

Annual total food value:

- ♦ ~80-100 lbs of produce/year = Satisfaction you grew your own stuff
- ♦ \$200-\$300+ market value - Imagine 12 hours at \$25 an hour = \$300
- ♦ A hundred or more servings of fresh food = Priceless

Note that much of this harvest projection will depend on regular care and at least *some* regular maintenance and attention. The concept of starting a garden does not specifically

save time, but can save money and you will gain other benefits which make up for it. The time you spend at the market will decrease, and the time you spend in the garden will increase. This is a good trade off- if you ask me. Sustainability and home gardening are a journey and you will likely make mistakes. Things happen that will cause setbacks. Don't get discouraged! These skills are acquired over time, and lead to delicious food that is more satisfying because YOU grew it yourself!

Tips for Managing a Small Garden Year-Round

1. **Rotate beds:** Legumes (beans/peas) → Leafy greens → Fruiting crops → Roots → Compost → Repeat
2. **Use vertical space:** Trellis peas, beans, and tomatoes to promote climbing and health
3. **Interplant & succession sow:** Radishes with carrots, lettuce between tomatoes
4. **Compost & feed:** Refresh soil in fall and spring with compost or worm castings
5. **Plan a pause:** Let one square foot rest per season to manage soil health

If you don't want a vegetable garden, but enjoy flowers, One fun and sustainable thing you can do is something I lovingly call a "flower bomb". Buy a native mix of flower seeds, find an area that is at least 1 square foot, but up to 25 square feet, and scatter the seeds. Turn the dirt at least 2" deep, and then water the ground regularly to prevent scorching.

With just a little care, you can grow an abundant array of beautiful flowers in the garden to attract bees and butterflies. Birds and other pollinators of all kinds will make themselves comfy there in your flower bed. This is a fantastic way to brighten up your home, make a lasting impact. A once empty pile of dirt can become a vibrant and colorful and edible garden for you and your community before you know it!

Transitioning to Food Forest Principles (larger yards)

Large properties have the potential to feed the entire family for most of the year! By creating a system and dedicating a few garden beds to each type of crop, or each season, a garden with 100+ square feet of space has the potential to feed a family of 4 for most of the year.

With a few varieties of plants, and a chicken coop, you could reduce your grocery budget by more than half!

The real trick is picking what specific types of food you want to eat ahead of time. By making intentional selection, you are able to schedule your food forest far in advance. This isn't about meal prepping or making every week a planned series of repetitive dishes, but is about projecting how much the family will need. For instance, 5 to 10 lettuce plants is enough for a family of 3 or 4 to eat lettuce multiple times a week, but requires some turnover and continuous planning to keep it going all year. In the summer lettuce "bolts" or starts to flower, and needs to be watched. Once the flowers start to form, the leaves begin to taste bitter. You can prevent this by pinching the flowers off and continuing to harvest lettuce leaves to stimulate more growth!

Soil Health Basics

Soil Health Basics: The Foundation of Any Garden

Healthy soil is the beating heart of a thriving garden. Whether you're growing in a backyard bed, a balcony container, or a community plot, understanding soil health is the first step to sustainable success.

What Is Healthy Soil?

Healthy soil is **alive** — it teems with microbes, fungi, worms, insects, and organic matter. It retains water, drains excess moisture, and supplies plants with nutrients in a natural, balanced way. Great soil also resists erosion and sequesters carbon, making it a powerful climate ally.

Key Components of Healthy Soil

1. **Organic Matter (Compost)**

Feeds soil life, improves structure, and helps retain moisture and nutrients. Aim for

5–10% organic matter in your soil.

2. **Minerals**

Balanced ratios of sand, silt, and clay give soil its texture. A loamy mix (40% sand, 40% silt, 20% clay) is ideal for most veggies.

3. **Biology**

A rich community of microorganisms breaks down organic matter and supports root health. Fungi like mycorrhizae extend plant nutrient uptake.

4. **Structure & Aeration**

Soil should be crumbly, not compact. Air pockets allow roots and microbes to breathe.

5. **Moisture Retention**

Good soil holds moisture like a sponge without becoming soggy. Mulching helps retain this balance.

Simple Practices to Improve Soil Health

1. **Add compost regularly** — top-dress garden beds with ½–1 inch each season.
2. **Avoid synthetic fertilizers** — they can damage microbial life.
3. **Use mulch** — straw, leaves, or wood chips protect soil and feed it as they break down.
4. **Plant cover crops** — like clover or peas during the off-season to fix nitrogen and prevent erosion.
5. **Practice no-till or low-till** — disturbing soil less preserves microbial and fungal networks.

Know Your Soil: Quick Tips

1. **Do a squeeze test:** If it crumbles when you open your hand, it's good. If it forms a ball or stays soggy, it may need compost or drainage.
2. **pH matters:** Most vegetables prefer a pH between 6.0 and 7.0. Soil test kits are inexpensive and widely available.
3. **Smell it:** Healthy soil smells earthy and rich, not sour or chemical-like.

Soil Is a Living System

Treat your soil like a living organism — feed it, protect it, and don't overwork it. In return, it will nourish your plants, reduce pests and disease, and regenerate year after year. Some plants need specific types of soil to really flourish, but most plants will do great with a balanced fertilizer, compost mix, or with just a little bit of attention and care. Soil is one of the most critical aspects of sustainability. Without soil, plants have a hard time growing roots. Roots keep the top layer of the earth intact and this helps with water retention, prevents flooding, and creates healthier ecosystems that will thrive. Once topsoil is gone, ecosystems take a very long time to recover.

Nitrogen, Phosphorus, and Potassium (NPK) and Why these are Important!

NPK ratios are one of the most important things to understand when it comes to **soil fertility** and **plant nutrition**. The acronym **NPK** stands for:

N = Nitrogen

P = Phosphorus

K = Potassium

These are the **three primary macronutrients** that plants need to grow, and they're listed in that order on fertilizer packaging.

What Do NPK Numbers Mean?

If you see a fertilizer labeled **10-10-10**, that means it contains:

- 1. 10% Nitrogen**
- 2. 10% Phosphorus**
- 3. 10% Potassium**

The remaining 70% is usually made up of **inert filler** or other nutrients (like calcium, magnesium, or micronutrients) that help spread the fertilizer and improve soil structure.

Different ratios are formulated for different plant needs. Some plants need more nitrogen like most green leafy plants. While some fruiting bodies need more phosphorus and potassium to support the growth of fruits or flowers.

What Each Nutrient Does

Nutrient	Function	Signs of Deficiency
----------	----------	---------------------

Nitrogen (N)	Promotes leafy growth and deep green color	Yellowing leaves, stunted growth
Phosphorus (P)	Supports root growth, flowering, and fruiting	Purplish leaves, poor flowering/fruit
Potassium (K)	Improves overall vigor, disease resistance, and drought tolerance	Browning leaf edges, weak stems

Some types of plants use different nutrients than others. Citrus trees and berries like acidic soil. Leafy veggies and greens like to have a lot of nitrogen. Flowers need potassium to grow strong roots and bulbs. Each plant has it's own preferred soil diet. Based on what kinds of plants you are growing, it can be easy to get overwhelmed by these requirements, but fear not! Gardeners can compost an array of organic food waste to help create a balanced and nutrient rich soil that will work for just about everything with ease! Read the composting section next!

Examples of Common Ratios & Uses

NPK Ratio	Best For	Example Use
5-10-10	Root crops or flowering plants	Beets, carrots, bulbs
10-10-10	General-purpose gardens	Balanced veggie beds
20-5-10	Lawns and leafy greens	Lettuce, kale, turfgrass
3-4-6 (organic)	Slow, steady feeding	Tomatoes, container gardens

Tips for Using NPK Wisely

1. **Test your soil** before applying fertilizer. Don't guess!
2. **Too much nitrogen** = big leaves, no fruit (common mistake with tomatoes).
3. Use **low-nitrogen blends** in late season to avoid stimulating new growth that won't survive winter.
4. Organic gardeners can use compost, worm castings, or alfalfa meal for gentle, natural NPK boosts.

SECTION V: HOW TO START COMPOSTING AND MAXIMIZE YOUR GARDEN - SEASONAL PLANTING SCHEDULES BY USDA ZONE

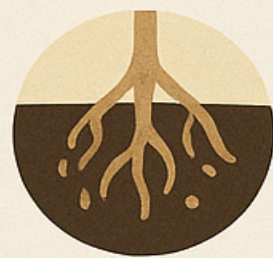
COMPOSTING 101

Turn food and yard waste into nutrient-rich compost for your garden.

Reduces
Food Waste



Conditions
Soil



Fights
Climate
Change



**COMPOST
PROVIDES:**



Boosts
Foliage



Stimulates
Roots



Supports
Plant
Health

**BOOST YOUR
COMPOST
WITH:**



Eggshells



Grass
Clippings



Shredded
Leaves



Wood Chips

Waste & Circularity: Beyond Compost

Reducing waste is more than tossing banana peels into a compost bin. Urban households generate tons of **e-waste, textiles, furniture, and construction debris** every year—materials that, if captured and reused, can fuel a truly circular economy. Circularity means designing waste *out* of the system by extending the life of products, repairing instead of discarding, and ensuring materials re-enter useful cycles.

E-Waste: The Fastest Growing Waste Stream

Electronics contain valuable metals like gold, cobalt, and copper—but they also leach toxic chemicals when landfilled.

1. What to do:
 - a. Use manufacturer and retailer take-back programs (Best Buy, Staples, Apple).
 - b. Find certified e-waste recyclers (look for **e-Stewards** or **R2 certification**).
 - c. Extend device life through battery replacement and repair shops.
 2. **Quick tip:** Hold a neighborhood e-waste drive to consolidate drop-offs and reduce the hassle for individuals.
-

Textiles & Fashion Waste

Fast fashion has made clothing one of the largest waste categories, with 85% of U.S. textiles ending up in landfills each year.

1. Better pathways:

- a. Donate only **wearable quality** clothing to thrift stores.
 - b. Join clothing swaps or Buy Nothing groups for hyperlocal exchange.
 - c. Explore textile-specific recycling drop-offs (some cities accept unusable fabric scraps).
 2. **Repair culture:** Mend torn seams, patch denim, or host visible mending workshops. Small repairs extend life and add personality.
-

Repair & Right-to-Repair

From phones to toasters, many items are discarded when a simple fix would add years of life.

1. **Repair events:** Look for or organize a “Repair Café” or “Fix-It Clinic” where volunteer tinkerers help neighbors troubleshoot appliances, clothing, or bikes.
 2. **Right-to-repair resources:** Campaigns across the U.S. are pushing for laws that require manufacturers to provide spare parts and manuals. Check **iFixit.com** for guides and advocacy updates.
 3. **Skill-building:** Even learning basic sewing or small appliance repair can save hundreds of dollars annually.
-

Material Exchanges & Local Networks

Circular systems thrive when materials have pathways back into circulation.

1. Options:
 - a. **Furniture:** Habitat for Humanity’s ReStores, local reuse warehouses.

- b. **Construction/demolition debris:** Material banks where wood, bricks, and fixtures are cataloged for reuse.
 - c. **Neighborhood groups:** Buy Nothing, Freecycle, Craigslist “free” section.
 - 2. **Depaving and deconstruction:** Reusing concrete, brick, and wood reduces the embodied carbon of new projects.
-

Quick Start Checklist

- 1. **Audit your waste:** Track landfill, recycling, compost, textiles, and e-waste for one week.
 - 2. **Prioritize repair:** Before tossing, ask “Can this be fixed or repurposed?”
 - 3. **Plug into networks:** Join a local Buy Nothing group, tool library, or repair café.
 - 4. **Set a household goal:** Cut landfill waste by 25% in 6 months through better diversion.
-

Impact Snapshot

- 1. **E-waste recycling** can recover up to **90% of metals**.
- 2. Repairing clothes extends their lifespan by **9 months**, reducing carbon footprint by ~20–30%.
- 3. Construction debris makes up **~30% of urban landfill waste**; reuse programs slash embodied carbon in new builds.

THE WASTE HIERARCHY

REFUSE



REDUCE



REPAIR



REUSE



RECYCLE



ROT



APPENDIX AND BONUS TOOLS

Printable Worksheets:

1. Worksheet #1 - Property Profile Worksheet
2. Worksheet #2 - Food for a Year Worksheet
3. Worksheet #3 - Home Audit and KPI Recorder
4. Worksheet #4 - Basic Sustainability KPI Worksheets

Examples of successful programs and organizations

There are many examples of successful implementation of cyclical agriculture and companion planting in small home gardens. Here are a few:

1. The [Rodale Institute](#) is a research and education organization that has been promoting sustainable agriculture for over 70 years. They have a successful program that teaches people how to use cyclical agriculture and companion planting in their home gardens.
2. The [Victory Garden Initiative](#) is a non-profit organization that helps people start and maintain victory gardens. Victory gardens were popular during World War II, and they are making a comeback as people look for ways to grow their own food.
3. The [National Gardening Association](#) is a non-profit organization that promotes gardening and horticulture. They have a website with resources on cyclical agriculture and companion planting.
4. [Naturalist For You](#) is a non-profit that focuses on reconnecting individuals with local wilderness and nature. Although cyclical agriculture and companion planting are not wilderness subjects, Naturalists can help interpret interactions between ecosystems and help individuals come to a deeper understanding with their garden through educational activities and programs.

Worksheet #1: FILLABLE PROPERTY PROFILE OVERVIEW

 **Address:**

☐ **Assessor's Parcel Number:**

 **Property Size:**

 **Property Description (in simple terms):**

 **Elevation (ft or m):**

 **Climate Type:**

 **USDA Agricultural Zone:**

 **Flood Hazard Risk (zone or notes):**

Physical conditions + construction

 **Property Conditions (age, materials, construction):**

 **Local Environment (aesthetic, surroundings):**

 **Sunlight Exposure:**

1. Longest Day: _____

2. Shortest Day: _____

Planting + growing schedule

 **2025 Planting Calendar:**

Season	Jan	Feb	Mar	Apr	May	Jun	Jul	Au g	Sep	Oct	Nov	Dec
--------	-----	-----	-----	-----	-----	-----	-----	---------	-----	-----	-----	-----

1st Planting

1st Harvest

2nd
Planting

2nd Harvest

Off Season

Community + infrastructure

Nearby Places & Distances:

1. Grocery Stores: _____
2. Hospitals / EMS: _____
3. Schools: _____
4. Parks: _____
5. Public Transit: _____

Community Features (parks, walkability, etc.):

Weather + environmental factors

Weather Averages:

Average Wind Patterns:

Typical Rainy Season:

 **Typical Dry Season:**

 **Storms / Environmental Hazards:**

 **Fire Hazard Level:**

 **Wildlife/Biology Observations:**

 **Soil Type / Geology:**

 **Nearby Hazards / Risks:**

 **Sound + air quality**

 **Air Quality Index (AQI):**

 **Noise Pollution Types:**

1.  Traffic Noise: _____

2. 🚂 Trains / Crossings: _____
 3. ✈️ Air Traffic: _____
 4. 🚒 EMS Sirens: _____
 5. 🚧 Construction Noise: _____
-

17 Real estate listings

1. **Zillow Link:** _____
 2. **Redfin Link:** _____
 3. **Broker/MLS Link:** _____
-

Pros & cons

Pros Cons

Property wishlist factors

**Required / Must
Haves**

**Critically Important /
Wants**

**Nice to
Have**

Overall summary

(Key opportunities, risks, and suitability for sustainable living)

Worksheet #2: Food for a Year!

Plant Name	Approximate Number Needed	Date Seeds Started	Date Transplanted	Number Planted
Asparagus	25 Plants			
Bok Choy	10 plants			
Broccoli	15 Plants			
Bush Peas	50-75 Plants			
Cabbage	10 Plants			
Carrots	120 Plants			
Celery	10 plants			
Corn, Sweet	100 row feet			
Cucumbers	4 to 6 plants			
Dried Beans	50 plants			
Garlic	50 to 75 plants			
Green Onion	25 to 30 bunches			
Kale	30 to 40 plants			

Lettuce / Baby Greens	25-35 plants			
Onion Bulbs	100 plants			
Peppers	5 to 7 plants			
Potatoes	50 row feet			
Shelling Peas	100 row feet			
Snap Peas	40 row feet			
Summer Squash	4 plants			
Sweet Potatoes	8 plants			
Tomatoes	10 to 12 (mixed varieties)			
Winter Squash	2 to 4 plants			

***Remember to adjust your planting date by your USDA zone.**

See Worksheet 3 for KPIs with your Garden Harvests!

If you follow this recommended allotment, you'll save hundreds of dollars on produce!



Asparagus
25 plants



Bok Choy
10 plants



Broccoli
15 plants



Bush Peas
50-75 plants



Cabbage
10 plants



Carrots
120 plants



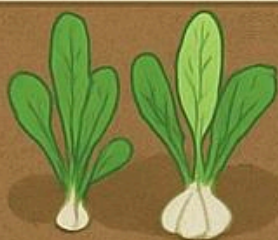
Sweet Corn
100 row feet



Zucchini
10 plants



Dried Beans
50 plants



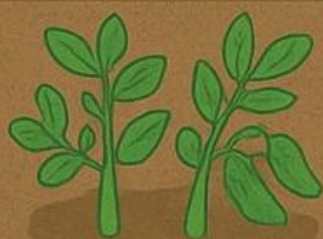
Green Onion
25 to 30 bunches



Kale 30-40
Spinach 30-40



Winter Squash
2-4 plants



Dried Beans
50 plants



Garlic
25 to 30 bunches



**Remember your
USDA Zone!**

Worksheet #3 - Plant Requirements and Tips

Plant	Approximate Number Needed	Preferred Soil pH	Soil Type & Drainage	Sunlight	Notes	Best NPK Fertilizer
Asparagus	25 plants	6.5–7.5	Well-drained sandy loam	Full sun	Heavy feeder	10-10-10 balanced
Bok Choy	10 plants	6.0–7.5	Loamy, moist	Full/part sun	Fast grower	5-10-10 (higher P,K)
Broccoli	15 plants	6.0–7.0	Moist, fertile loam	Full sun	Cool season	10-10-10; side dress N
Bush Peas	50–75 plants	6.0–7.5	Loamy, well-drained	Full sun	Fix N	Low N, 5-10-10
Cabbage	10 plants	6.0–6.8	Moist loam	Full sun	Cool season	10-10-10
Carrots	120 plants	6.0–6.8	Loose sandy loam	Full sun	Avoid stones	5-10-10
Celery	10 plants	6.0–7.0	Rich loam, moist	Full sun	Needs water	10-10-10; steady N
Corn, Sweet	100 row ft	6.0–6.8	Well-drained loam	Full sun	Heavy feeder	16-16-8 or high N
Cucumbers	4–6 plants	6.0–7.0	Well-drained loam	Full sun	Trellis helps	5-10-10
Dried Beans	50 plants	6.0–7.5	Loamy	Full sun	N fixer	Low N, 5-10-10

Garlic	50–75 plants	6.0–7.0	Loose sandy loam	Full sun	Plant fall	5-10-10
Green Onion	25–30 bunches	6.0–7.0	Moist, loose soil	Full sun	Succession plant	10-10-10
Kale	30–40 plants	6.0–7.5	Moist loam	Full/part sun	Hardy	10-10-10
Lettuce/Baby Greens	25–35 plants	6.0–7.0	Moist loam	Full/part sun	Succession crop	5-10-10
Onion Bulbs	100 plants	6.0–7.0	Loose loam	Full sun	Long season	5-10-10
Peppers	5–7 plants	6.0–6.8	Well-drained loam	Full sun	Warm season	5-10-10
Potatoes	50 row ft	5.0–6.0	Loose sandy loam	Full sun	Avoid fresh manure	5-10-10
Shelling Peas	100 row ft	6.0–7.5	Well-drained loam	Full sun	Cool season	Low N, 5-10-10
Snap Peas	40 row ft	6.0–7.5	Well-drained loam	Full sun	Climbing ok	Low N, 5-10-10
Summer Squash	4 plants	6.0–6.8	Well-drained loam	Full sun	Space hungry	5-10-10
Sweet Potatoes	8 plants	5.5–6.5	Sandy loam	Full sun	Vining	5-10-10
Tomatoes	10–12	6.0–6.8	Well-drained	Full sun	Stake/cage	5-10-10

	plants		d loam			
Winter Squash	2-4 plants	6.0-6.8	Well-drained loam	Full sun	Long season	5-10-10

Definitions:

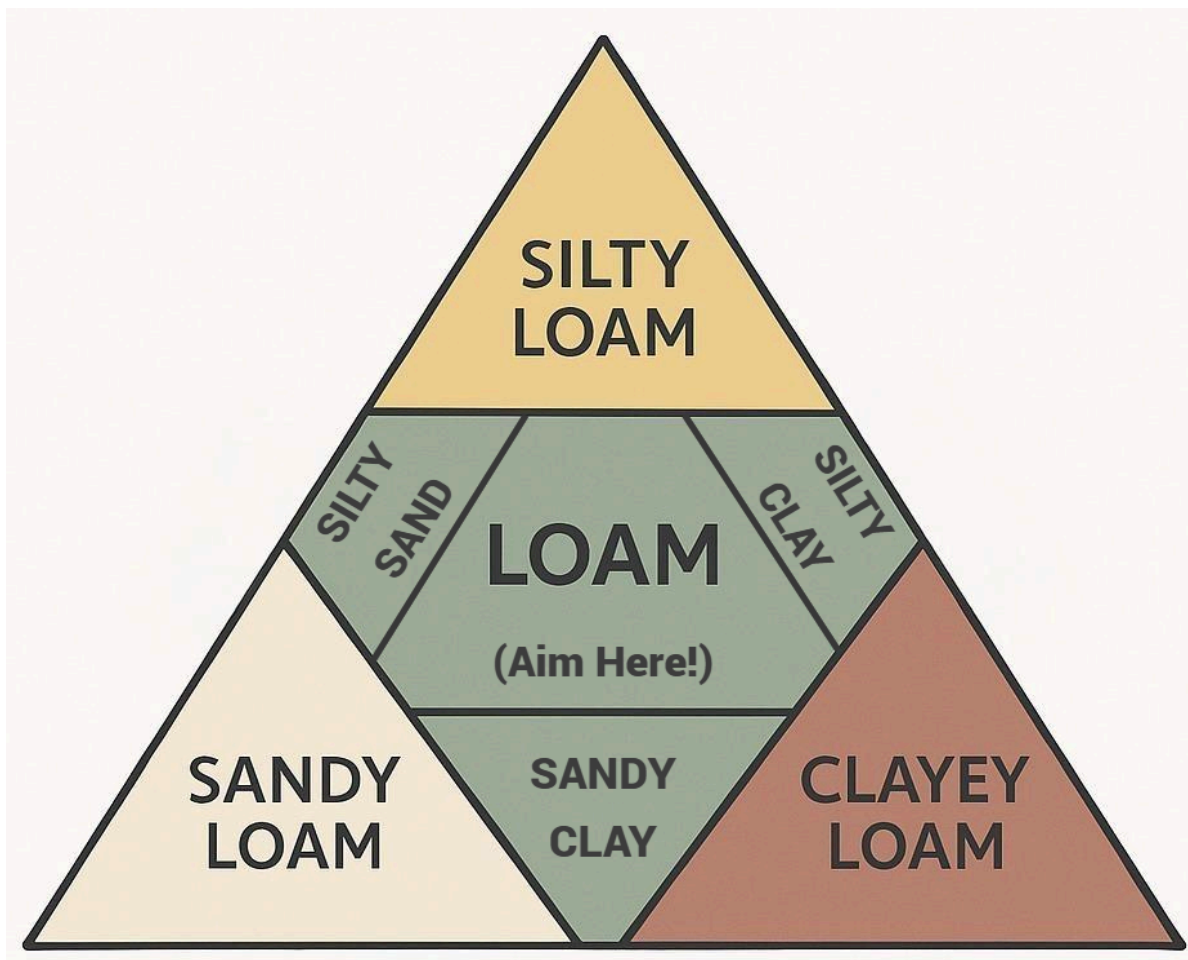
N - Nitrogen

P - Phosphorous

K - Potassium

Loam - Equal parts Sand, Clay, and Silt - Aim for this for optimal soil quality in most cases.

pH - Acidic 3.0 - 5.9, Neutral 6.0 - 7.9, Basic 8.0 - 11.0



Worksheet #4: Basic Sustainability KPI Worksheets

This worksheet helps renters and owners track simple, high-impact sustainability Key Performance Indicators (KPIs).

Fill it out monthly or quarterly to measure progress and find savings opportunities.

1. Energy

Track electricity and heating use. Reductions save money and cut emissions.

What you need: Utility bill (kWh, therms, \$ amount).

Month	Electricity (kWh)	Gas (therms)	Cost (\$)
January			
February			
March			
April			
May			

June			
July			
August			
September			
October			
November			
December			

2. Water

Measure household water use and irrigation. Lowering usage reduces bills and stress on local supply.

What you need: Water bill (gallons or cubic feet). (Conversion: 7.48 gallons per cubic foot)

Month	Gallons Used	Cost (\$)
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

3. Waste

Track trash, compost, and recycling. Reducing landfill waste often lowers costs.

What you need: Estimate or weigh weekly bags/bins.

Instructions for effective use: Track waste in categories to see where cuts could yield savings or increase compost outputs.

Month	Trash (lbs)	Recycling (lbs)	Compost Produced (lbs)
January	Week 1: Week 2: Week 3: Week 4:		
February	Week 1: Week 2: Week 3: Week 4:		
March	Week 1: Week 2: Week 3: Week 4:		
April	Week 1: Week 2: Week 3: Week 4:		
May	Week 1: Week 2: Week 3: Week 4:		

June	Week 1: Week 2: Week 3: Week 4:		
July	Week 1: Week 2: Week 3: Week 4:		
August	Week 1: Week 2: Week 3: Week 4:		
September	Week 1: Week 2: Week 3: Week 4:		
October	Week 1: Week 2: Week 3: Week 4:		
November	Week 1: Week 2: Week 3: Week 4:		
December	Week 1: Week 2: Week 3: Week 4:		

4. Mobility and Transportation Cost Planner

Track how often you walk, bike, or use transit instead of driving. Reduces costs and emissions.

What you need: Record miles traveled or % trips per mode.

Week	Vehicle Miles	Bike/Walk Miles	Public Transit Trips
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

5. Food & Garden

Track harvests and food waste reductions. Even small gardens make an impact.

What you need: Estimate produce weight and waste avoided.

Month	Food Harvested (lbs)	Food Waste Reduced (lbs)
Jan	100	100
Feb	150	150
Mar	200	200
Apr	250	250
May	300	300
Jun	350	350
Jul	400	400
Aug	450	450
Sep	500	500
Oct	550	550
Nov	600	600
Dec	650	650

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