

Twenty Pivotal Practices

Twenty sustainable practices turn households and organizations into true leaders for positive change. Here they are, arranged in a logical order so you can start confidently on your journey to sustainability. If you are new to these practices, first work on them in your *own* home and organizations to get hands-on experience. Then work to improve these practices in *other* people's homes and organizations.

1. Grow a community that practices environmental sustainability.
2. Compost biodegradable solid waste.
3. Walk, cycle, or take public transit for local errands.
4. Eat more plants and little or no domesticated red meat (beef, lamb, etc.).
5. Plant a food garden or buy from local farmers who grow regeneratively.
6. Drink more water and fewer bottled beverages.
7. Clean with safe products in minimal packaging.
8. Recycle metal, clean cardboard, and glass; avoid plastic.
9. Seal and insulate attics, basements, and exterior walls.
10. Use LED lighting with motion sensors and daylight dimming.
11. Landscape with native plants using organic methods.
12. Wash clothes in cold water in an efficient machine.
13. Heat domestic water using electric heat pumps.
14. Dry clothes in a condensing dryer or on drying racks or lines.
15. Keep food cold in energy-efficient refrigerators and freezers.
16. Cook with induction ranges and circulating-fan convection ovens.
17. Drive electric vehicles when you can't walk, bike, or take transit.
18. Use electric heat pumps for space heating.
19. Generate solar electricity on-site or subscribe to a solar farm.
20. Flush water-efficient toilets.

Practices Along Pathways

These essential practices guide a household or organization along seven *pathways to sustainability*:



Community



Food



Water



Movement



Energy



Goods



Habitat

For each pathway, you can measure science-based sustainability indicators and score them against safe environmental limits according to the latest research. *Negative* scores show that practices are *unsustainable*—needs are being met in ways that drag Earth's life support systems down out of the safety zone, beyond planetary boundaries, into the danger or extinction zone. *Positive* scores mean that needs are being met in *sustainable* ways, keeping environmental impacts within the safety zone. On your sustainability journey, consider both the milestone scores you aim to achieve and the next steps required to reach them.

Why These Twenty

In 1989, the Earth Works Group published *50 Simple Things You Can Do to Save the Earth*. In the years since Ronald Reagan left the White House, thousands of people have made similar lists. (We just asked an AI how many such lists it can find on the Internet—it says 23,500.) What makes our list different is science. Of the myriad action steps you could take to save our planet, some really do make a huge positive difference, while others barely register an impact. These are the twenty most important practices to do well in every household and organization on Earth.



1. **Grow a community that practices environmental sustainability.**

Understand sustainability, demonstrate best practices, and interact in positive ways with other people.

Start with the end in mind. The fact that sustainability is really a group effort is why growing a community that practices environmental sustainability is #1 on our list. We can keep global environmental impacts within safe limits when everyone is living in a sustainable home, interacting in sustainable organizations, and enjoying a sustainable community. Community indicators you can measure are how well people in your community understand sustainability (by testing knowledge), how many sustainable practices they demonstrate in their own households and organizations (by surveying practices), and how well they interact with other people (by evaluating interactions).

On the community pathway, your starting point is your immediate family. The ultimate milestone is including everyone on Earth in your community, since your actions have larger ripple effects as you grow your community. The global total of everyone's environmental impacts is what matters in the end.

2. **Compost biodegradable solid waste.**

Compost paper, cardboard, wood, food scraps, and yard trimmings to keep garbage trucks off the roads and organic material out of landfills.



While the practice of “learning, doing, interacting” to grow community is very broad, the second practice on our list, composting biodegradable solid waste, is much more focused, at least in terms of action. But an interesting thing about composting is that it naturally encourages you to think more deeply about the goods you bring into your home and eventually must dispose of. Once you get into the habit of composting, you'll start carefully considering things like whether packaging can be composted and whether it contains toxic materials. Composting also affects sustainability indicators along the food pathway, being an essential practice to grow healthy farms and gardens.



3. **Walk, cycle, or take public transit for local errands.**

Use your muscles to get around. Bicycles are best: you can go faster and further and carry more weight riding a bike than walking.



Active transportation—walking, cycling, or taking public transit—is another practice which is very focused in terms of your personal action, but has profound impacts on your community and our planet. In terms of how you move your body, the primary sustainability indicator is very simple: what is your average speed? If you keep track of the total distance you walk, cycle, drive, and fly in a year, you can easily calculate your average miles per hour. This single number packs in a tremendous amount of inferable data: how often you fly and how often you drive for travel, work, shopping, socializing, and other activities. A low-speed life indicates lower environmental impacts than a high-speed life.

4. Eat more plants and little or no domesticated red meat (beef, lamb, etc.).

Eat fruits, vegetables, and mushrooms; limit non-game red meat. A plant-based diet can feed four times as many people per square meter of land as a meat-based diet.



Your diet is a daily choice with perhaps even more profound environmental impacts than how you move about the world. Of course food is the primary pathway to consider here, and sustainability indicators include how much and which types of food you buy. As with the choices you make for movement, what you choose to eat not only has direct impacts on your own health, but also on the health of our shared environment.

**5. Plant a food garden or buy from local farmers who grow regeneratively.**

Grow your own food or buy directly from local organic farms in season to protect our food supply and reduce processing, packaging, and shipping impacts.



A practice closely related to what you eat is what you accept in terms of how your food is produced. Whether you choose to eat a meat-based or plant-based diet is only half the story. The other half is who grows the crops and raises the animals, and what impacts do their practices have on our environment? We're fortunate to have food labeling laws so we can determine the source of our food and know a little bit about the practices used to produce it. But you can have even more assurance about the provenance of your protein when you can talk directly with the farmers and growers yourself. Keeping a food journal that records what you choose to eat with details about the source and certifications (i.e., organic, fair trade, etc.) measures results along the food pathway.

6. Drink more water and fewer bottled or brewed beverages.

Drink filtered tap water, rather than hot drinks or bottled beverages, to save money, conserve energy, and reduce plastic pollution.



Probably the easiest way to save money and the planet at the same time is to drink more tap water. This is something everyone can do; the results are easy to quantify. How much less money are you spending and how much less garbage are you making? You can bottle your own tap water at home in reusable bottles, for literally pennies on the dollar compared to buying bottled water in a store. Beyond infancy, healthy people can meet all of their hydration needs by eating good food and drinking water. All other beverages are luxuries—to be savored, for sure! Because this practice is about water for drinking, we note its connection to the food pathway, but it has implications for the goods pathway, by eliminating unnecessary plastic packaging, as well as the energy pathway, especially if you eliminate the energy demands of brewing a pot of coffee every morning.

**7. Clean with safe products in minimal packaging.**

Choose biodegradable cleaning products free of perfumes, dyes, and synthetic antibacterial chemicals. Buy in bulk for less packaging.

Our seventh pivotal practice, choosing safe, plant-based cleaning products in minimal packaging, has impacts measured by indicators on the goods pathway: how many goods and which types of materials are flowing through your home or organization? The goods pathway is about consuming goods in a sustainable way. When you really examine what you are doing when you are cleaning, you are moving material from inside a building to the outdoors. When you vacuum or sweep, all the detritus you collect, you put outside, either to compost or landfill. When you wipe off a counter or mop the floor, you pour the cleaning water down the drain, where it goes into a septic tank and then a leach field in your yard, or travels through a sewer system to a wastewater treatment plant and then is discharged into your local river, lake, or ocean.

8. Recycle metal, clean cardboard, and glass; avoid plastic.

Recycle paper, metal, clean cardboard, and glass if you can. Rather than filling your bin with “*wish-cycling*,” buy less plastic.



Most of the goods you bring into your home you will eventually discard. Then you have five choices: reuse, compost, recycle, landfill, or divert. Unfortunately, reuse is not a practical option for most items, since it requires coordination among manufacturers, retailers, and consumers. We’ve already listed composting as #2 on our list of twenty pivotal practices. Recycling comes in here at #8.

The point of recycling is to put material back into productive use. Recycling companies do this very well for metal and clean cardboard, but glass is more of a challenge. It’s actually helpful to recycle glass to make new glass; however, shipping glass is expensive. Where crushed glass can’t be recycled, it can be put in bags to mitigate beach erosion or used as an aggregate for construction projects. Turning a high-value product, like a glass bottle, into a lower-value product, such as sand, is called “downcycling.”

Plastic recycling is almost impossible because there are thousands of ways to combine carbon, hydrogen, oxygen, nitrogen, chlorine, and sulfur into plastics, but each one of those plastic materials has a different melting point and requires a different process to recycle. For example, polyethylene terephthalate (PET) and polyethylene naphthalate (PEN) can’t be recycled together. And you’ll need completely different equipment to recycle high-density polyethylene (HDPE) versus low-density polyethylene (LDPE); both are often contaminated with per- and polyfluoroalkyl substances (PFAS). Most “recycling” programs for plastic pick out one or two types of resin from the dozen you might have tossed together for recycling, and then burn or bury the rest.

Reducing your use of plastic is the wiser course than trying to recycle it. In most situations, putting plastic waste in a recycling bin is really “wish cycling,” not recycling. Most plastic waste is buried, burned, or downcycled—no matter how much you wish it could all be recycled.

**9. Seal and insulate attics, basements, and exterior walls.**

Use caulk, foam, and other methods to keep conditioned air from leaking out through walls, ceilings, floors, and around doors.



In homes that have heating or cooling systems to provide comfortable indoor conditions, keeping conditioned air from immediately leaking out is the single best way to get more value from your energy.

10. Use LED lighting with motion sensors and daylight dimming.

Illuminate with light-emitting diodes (LEDs) for five times more light per joule compared to incandescents. Install and program motion sensors and automatic dimmers to save even more energy.



While stuffing insulation or squirting caulk into holes in your basement and attic is a low-tech practice to increase your energy efficiency, upgrading your lighting is an effective high-tech practice. For the same amount of energy, you can get ten times as much light from an LED as you can from a tungsten filament (incandescent lamp). And forget fluorescent lighting, which contains toxic mercury! You’ll probably use less energy per day after you upgrade to LED lighting (unless you decide to install more lights or leave them on all the time). And you’ll also notice an improvement along the goods pathway, as you no longer need to replace light bulbs every year or two. On



average, LEDs last for ten years or more in a typical residential lighting fixture.

In addition to being inherently energy efficient and durable, LEDs are also easy to control—if you select dimmers and motion sensors that are designed to work with LEDs. Adding sensors to turn down or turn off lights when they are not needed saves even more energy, which will be reflected in your average power when you measure your sustainability indicators.



11. Landscape with native plants using organic methods.

Plant and cultivate species native to your area to conserve biodiversity; practice organic landscaping to protect our environment from synthetic hazards.

If you have a yard, you can make it a haven for wildlife. This is a case where thinking globally but acting locally really kicks in. What can you do about biosphere loss? You can protect your little piece of the biosphere, allowing the ecosystem that evolved in your area to persist and continue to evolve naturally. What can you do about deforestation? You can ensure that trees growing on your land reach maturity so they can produce and disperse seeds to sustain future forests. What can you do about aerosol loading? You can maintain deep-rooted vegetation that naturally keeps soil in place and produces clean air. What can you do about pollution from novel chemicals? You can avoid the use of synthetic pesticides. What can you do about excess nutrients in waterways? You can avoid using synthetic fertilizer.

The world is a big puzzle, but you can carefully consider how your little piece fits into the big picture. To mark your milestone on the habitat pathway, you can measure the amount of habitable land that you control, what you allow to live on your land, and what substances you spread on your land.

12. Wash clothes in cold water in an efficient machine.

Clean clothes in cold water, using biodegradable cold-water enzymes to remove stains and odors. Install a filter to trap microfibers to reduce microplastic pollution.



Washing in cold water works best if you use a detergent with biodegradable enzymes to remove stains and odors. Which types of detergents you use and what you do about microplastics—small pieces of synthetic fabrics that break off when you do your laundry—are two factors you can measure to indicate your environmental impacts on water systems. And washing in cold water consumes less energy and lowers your average power, indicating progress on the energy pathway.



13. Heat domestic water using electric heat pumps.

Heat water with an electric heat pump water heater to be up to four times more energy efficient than using conventional electric or gas water heaters.

Water for showers, sinks, and washing inside a home is called “domestic water.” Heating this water is typically the second largest energy expense in a home after space heating and cooling. That’s why choosing heat pump technology, which is much more energy efficient than burning fuel or sending current through a heating element, can lower your average power by a lot.

14. Dry clothes in a condensing dryer or on drying racks or lines.

Wash and dry clothes efficiently without venting using an all-in-one washer-dryer. Hang clothes to air dry to save even more energy.



You can burn fuel, use electricity, or wait for natural evaporation to dry your clothes.

Choosing natural evaporation is the most energy efficient, but least time efficient. In general, whether you spend your time watching TV, writing a spy novel, or hanging clothes to dry does not have a measurable impact on the ability of our planet to support human life. But whether you choose to burn fossil fuel or use solar electricity to dry your clothes does have a measurable impact.

In terms of energy, how you choose to dry your clothes will show up in your average power. Out of all your clothes-drying options, hanging your clothes to dry will have the biggest environmentally positive impact on your average power (i.e., lower it the most). Choosing a super-efficient condensing or heat pump dryer will help nudge you forward along the energy pathway compared to using a conventional vented dryer. An all-in-one washer / condensing dryer allows you to throw in a load of dirty laundry and take out a load of clean and dry laundry, using about half the energy as you'd need to put your dirty laundry in a conventional washing machine, and then transfer it to dry in a conventional vented dryer.



15. Keep food cold in energy-efficient refrigerators and freezers.

Remove or replace older refrigerators and freezers. Refrigeration technology has become four times more energy-efficient since the 1970s.

For decades, you probably have had a heat pump in your home: your refrigerator. The advances in technology that are making heat pumps popular for space heating and water heating have also helped make modern refrigerators much more energy efficient. Like the energy impacts of many other practices, your choice of refrigerator will be reflected in your average power score. Whatever portion of your average power that is due to keeping food and other things cold, you can cut it in half or more if you have an older refrigerator and upgrade to the newest, most efficient technology. And if you have an old refrigerator in a basement but don't really need it, that would be a great appliance to unplug to take an easy step forward on the energy pathway.

16. Cook with induction ranges and circulating-fan convection ovens.

Upgrade to electric induction stoves and convection ovens to cook faster and more efficiently than gas or conventional electric stoves.



If you prepare your own meals, you can choose a high-efficiency electric induction stove top and a convection oven to save time and energy. These technologies, along with microwave ovens, are safer and faster than old-fashioned electric coils or gas burners. After making the upgrade, you can check your average power to confirm that you have made a step forward along the energy pathway.



17. Drive electric vehicles when you can't walk, bike, or take transit.

Drive (or hail) a battery-electric vehicle when you can't walk, ride a bike, or take transit.



If you can't walk or cycle, you can drive an electric vehicle. Like cooking with induction, this leap to better technology will improve your average power sustainability indicator.

18. Use electric heat pumps for space heating.

Use electric heat pumps rather than burning fuel for space heating. Heat pumps are much more efficient than combustion and can be powered by clean energy.



Heat pumps are another technology to move you forward along the energy pathway, with your average power the key sustainability indicator to watch. If you're switching to electric heat pumps from a fuel-burning heating system, you'll also see your electricity energy percentage indicator improve.



**19. Generate solar electricity on-site or subscribe to a solar farm.**

Generate electricity from sunlight on your own property or at a remote site. Solar power is becoming even more practical as batteries improve.



Anywhere you've decided to maintain a building, a sidewalk, a driveway, or a road, you've cleared away plants that would be making productive use of the sunshine that reaches that part of our planet. It's just common courtesy to use modern technology to harness that free energy to meet your needs, rather than destroying more of our planet's ecosystem to meet your demand for electricity. The sustainability indicator to measure is the percent of your electricity that comes from solar power. The good news is that it is very easy to start on the pathway to 100% clean power—get a \$10 solar charger for your cell phone, then work your way forward step by step from there until you're generating all your electricity from sunlight.

20. Flush water-efficient toilets.

Install water-efficient sanitation. What uses the most water inside your home? Probably flushing toilets: North Americans flush toilets five times a day per person.



Last and least, the lowly toilet is the single biggest water user in most homes. In North America, we treat and supply water clean enough to drink to almost every home, only to flush most of it down the drain. You can buy a flush toilet that uses less than a gallon per use, or really get serious about sustainability and try a composting or sawdust toilet that uses no water at all.

