A Cookprint, an Ecovore, and a Scientist Walk into a Kitchen...

What do you call the impact you make on the planet when you cook?

It's your cookprint—the entire chain of resources used to prepare meals, and the waste produced in the process.

Defining Your Cookprint

A cookprint starts with food, in your garden or at the farm; it travels to your kitchen and continues in your fridge, freezer, or pantry. The cookprint grows larger every time heat or fuel is added, from a cooktop, oven, or small appliance. Discarded waste, whether it's organic produce trimmings, plastic packaging, or water down the drain, further colors the cookprint. So do the implements you cook with, the way you store leftovers, and how you clean up after the meal.

In short, the cookprint measures every meal's entire environmental impact. It's the total amount of energy and resources (from farm to fuel to fork) used in creating a meal. And it puts the cook squarely in charge of just how big, or how green, that cookprint will be—in ways that include but go far beyond buying organic or local, or eating meat or not.
Why “Cookprint”?

In writing this book, I couldn’t find the perfect term I wanted, so I created cookprint to define the serious but underreported impact of food and cooking on the environment, and how cooks, especially, can change it.

The cook in cookprint is a word of action. Just think of all the decisions, and all the physical steps, that go into answering the age-old question, “What’s for dinner?” Even if you don’t cook, someone cooks what you eat, and that contributes to your personal cookprint. Carbon footprint as a term measures carbon dioxide and other greenhouse gas emissions, but it doesn’t reflect the impact of water usage or focus on the traceable path of food from earth to table.

Shrinking your cookprint forms the foundation of this book. It means questioning the things we take for granted, and making greener choices with every meal. Start by focusing on ingredients—where they come from, how they’re grown, and how they’re packaged. But don’t stop there: consider how you cook your food, the type of energy, the amount of fuel consumed, the amount of water you use—and the amount of fuel and water you waste. In places and times where fuel is scarce, people never take fuel consumption for granted. Neither should we. Does that mean giving up slow-roasted foods or big boiling pots of pasta? Absolutely not! But there are plenty of ways to stretch the fuels we use, every time we turn on the oven or fire up the burner, just by tweaking the recipes or methods you’ve always relied upon. Rethinking recipes and cooking methods is pivotal to greener cookprints.

As this book shows, a cookprint covers even the smallest details. It’s about storing food in ways that use less energy, without sacrificing nutrition or flavor. Like making the refrigerator you already own more energy-efficient, and keeping fruits and vegetables fresh longer (for fewer shopping trips and less spoilage). Saving leftovers in glass containers rather than plastic ones or zipper bags, frying with energy-efficient skillets, and hundreds of other tips are included in the pages that follow.

Take the Cook’s Challenge: Can You Pass the Eco-Test?

If you really want to wire into a greener lifestyle, take this quiz and consider these issues. Do you know which are the greener options; that is, the ones that produce fewer greenhouse gases, use fewer natural resources, or come with a smaller cookprint?

1. Should the pilot light on a gas oven or water heater burn blue or yellow?
2. The refrigerator is the kitchen’s biggest energy hog. What’s the optimum temperature for your refrigerator?
3. Is it better to thaw frozen food in the microwave, in the fridge, or at room temperature?
4. If you’re an eco-friendly cook, should your next cutting board be made of Corian, glass, bamboo, acrylic, or maple?
5. Which of these dried grains requires the least energy to cook at home: basmati rice, medium-grind bulgur, wheat, or quinoa?
6. When it comes to energy-efficient cooking, rank these Asian noodles from least to most cooking fuel used: soba, rice sticks, bean thread, and udon.
7. Which is greener: a charcoal grill, electric grill, or a gas grill?
8. Does a convection oven produce more or fewer greenhouse gases than a traditional oven?
9. Which of these dried legumes cooks the quickest: chickpeas, limas, lentils, or black-eyed peas?
10. According to the U.S. Department of Agriculture (USDA), the term organic, with an official USDA Organic logo, means what percentage of the ingredients are actually organic: 100%, 95%, 70%, or 50%?
11. Do you save more energy if you run your dishwasher at midnight, noon, or 5:00 p.m.?
12. If your garbage disposal breaks, should you (a) call the repair service, (b) replace it with an Energy Star model, or (c) remove it and do without?

Answers on next page.
1. Should the pilot light on a gas oven or water heater burn blue or yellow? Think cool and blue. A yellow flame indicates a hotter temperature, consuming more fuel than necessary to ignite a burner. Better yet, opt for electric ignitions and ditch the pilot light completely.

2. The refrigerator is the kitchen's biggest energy hog. What's the optimum temperature for your refrigerator? In general, 37 to 40 degrees cools sufficiently without wasting electricity. Some foods last longer if kept in the colder sections of the fridge. Store them along the freezer wall (in a side-by-side) or in the back of the fridge; and never in the door. Or spot-chill them with freezer packs. For longer lasting freshness (and fewer grocery trips), keep dairy products at 33 to 38 degrees, meats between 31 and 36 degrees, and eggs at 33 to 37 degrees. Store fresh vegetables and ripe fresh fruits at 35 to 40 degrees.

3. Is it better to thaw frozen food in the microwave, in the fridge, or at room temperature? Thawing overnight in the fridge consumes the least amount of energy safely. Thawing at room temperature risks food contamination, and microwave ovens expend unnecessary power and thaw foods unevenly.

4. If you're an eco-friendly cook, should your next cutting board be made of Corian, glass, bamboo, acrylic, or maple? Glass is more eco-friendly than the man-made materials of Corian and acrylic, but chopping on glass is hard on knives. Bamboo is the most sustainable material, even more so than maple. It's strong, hard, and resists bacteria better than wood. Bamboo's downside lies in its traveling cookprint: bamboo comes from China. Maple hails from North America, but some forests are facing environmental stress. The best answer is to dig deeper: check into new cutting boards made of recycled cardboard, plastic, and cork; they perform well and repurpose materials that would otherwise go to waste.

5. Which of these grains requires the least energy to cook at home: basmati rice, medium-grind bulgur wheat, or quinoa? Bulgur wheat is partially cooked during processing, so at home it cooks in minutes, just by pouring hot water over it and letting it soak. Both rice and quinoa need to cook in boiling water for several minutes, so they consume more energy at home.

6. When it comes to energy-efficient cooking, rank these Asian noodles from least to most cooking fuel used: soba, rice sticks, bean thread, and udon. Bean thread noodles (from soybeans) and rice sticks (from rice flour) soften completely just by soaking, so they take the least energy. Soba noodles (thin buckwheat noodles) and udon (thick wheat noodles) are boiled, though soba cooks faster. Better yet, the new green method for boiled noodles (including spaghetti) cooks them with half the fuel or less. (Chapter 8 explains how.)

7. Which is greener: a charcoal grill, electric grill, or a gas grill? Charcoal is the traditionalist's favorite, but propane and electric grills burn cleaner and make the better choices. Propane gas and electric grills still consume natural resources and release toxins, but charcoal releases more carbon monoxide, soot, and particles. Coupled with lighter fluid, charcoal cookouts also contribute more to ground-level ozone, especially in hot weather. (See page 50 for greener grilling, charcoal chimneys, and low-impact techniques.)

8. Does a convection oven produce more or fewer greenhouse gases than a traditional oven? A convection oven cooks 25–30 percent quicker than a traditional oven, so it produces fewer greenhouse gases. The type of fuel is the same, as are the type of emissions; there are just fewer of them with convection.

9. Which of these dried legumes cooks the quickest: chickpeas, limas, lentils, or black-eyed peas? Depending on type and age, dried lentils cook in just 10–30 minutes of boiling (without presoaking), making them the most energy-efficient of these legumes. To cook lentils with even less fuel, follow the "green flame" passive boiling technique on page 68.

10. According to the USDA, the term organic, with an official USDA Organic logo, means what percentage of the ingredients are actually organic: 100%, 90%, 70%, or 50%? Give yourself a green star if you picked 95 percent. Here's the breakdown: Products labeled as "100 percent organic" must contain only organically produced ingredients. To be labeled simply as "organic," 95 percent of the ingredients must be organically grown; the remaining 5 percent must come from nonorganic ingredients that are approved on a national list. Products billed as "made with organic ingredients" must be made with at least 70 percent organic ingredients, three of which must be listed on the back of the package, and the remaining 30 percent of the nonorganic ingredients must be approved on the national list. All three of these categories may display a certifying agent's logo, and only the last...
one may not wear the USDA Organic label. (Confused? Flip to page 113 for more on labels, logos, and claims to watch for.)

11. Do you save more energy if you run your dishwasher at midnight, noon, or 5:00 p.m.? Because electricity at power plants is generated more efficiently during off-peak hours, midnight saves fuel at the source.

12. If your garbage disposal breaks, should you (a) call the repair service, (b) replace it with an Energy Star model, or (c) remove it and do without? Lose it, don’t use it. Garbage disposals bring unnecessary energy and water consumption to the waste process. Composting, and even regular trash disposal, are better options. Garbage disposals don’t come with Energy Star ratings.

The Eco-Cooking Quiz: Score yourself Light Green if you got six answers correct, Solid Green if you answered nine questions correctly, and Bright Green if you know—and practice—them all.

Boiling Down Your Cooking Efficiency

If Jed Clampett’s oil wells were as efficient as our cooking stoves, he’d still be a poor hillbilly in the Ozarks, not a rich hillbilly in Beverly Hills. Imagine that, like Jed, you strike oil on your property, and you set up four pipelines to capture it. But all your pipes have rusted holes in them. For every 100 gallons of oil entering a pipeline:

- the red pipe spills 93 gallons
- the blue pipe spills 60 gallons
- the yellow pipe spills 86 gallons (and maybe more)
- the purple pipe spills 26 gallons (and maybe more)

You’d be wasting a whole lot of oil. And so do our kitchens. As fuel-efficiency goes, the red line’s a gas oven. The blue line’s a gas cooktop. The yellow line’s an electric oven, and the purple pipe represents an electric cooktop (both of which waste even more energy if their electricity is generated from fossil fuels instead of renewable sources).

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Thermodynamics in Three Minutes or Less; or, What Makes Cooking So Complicated?

Heat is energy. It’s everywhere and it is always on the move, flowing out as it flows in. It rolls the chemical innards of things, excites their molecules to vibrate and crash into each other. When we add a lot of heat energy to foods, it agitates those innards enough to mix them up, destroy structures and create new ones. In doing so it transforms both flavor and texture.


As you read this book, you’ll run across a few terms and processes that are handy to know, if not in detail, at least in principle.

Energy Efficiency

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<th>(amount of energy reaching the food)</th>
<th>Appliance</th>
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<tr>
<td></td>
<td>6%  Gas oven—standard</td>
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<td></td>
<td>7%  Gas oven—self-cleaning</td>
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<td></td>
<td>40% Gas cooktop</td>
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<td></td>
<td>12% Electric oven—standard*</td>
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<td>14% Electric oven—self-cleaning*</td>
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<td>74% Electric cooktop*</td>
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* Electricity Note: These percentages reflect the end-use appliance efficiency. If not using renewable energy, the energy loss in converting fossil fuels to electricity significantly lowers efficiency, as explained on page 26, The Footprint’s Shadow.