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## **Teach From the Heart**

- Put your heart and soul in your teaching.
- The best teaching is not formulaic or impersonal, it is personal.
- The act of teaching requires you to explore your own sense of identity.
- If you do not fully know yourself, you cannot fully know your students, and therefore, you cannot connect with them, relate with them.









For a more traditional runny yolk, cook it instead at 62 °C, 144 °F, but cook an extra egg or two, because yolks are very fragile at this temperature, and arrange it on plates. for fruit leather or beef jerky. O'Reilly Media, 2008. Natural starches are composed of two types of polymers, amylose (which is better at gelling) and amylopectin (which thickens by binding up water). My coauthors Chris Young, Maxime Bilet, and I, along with the rest of our team, created a six-volume, 2,438-page cookbook that aimed to be the definitive resource on the history, techniques, and ideas behind this culinary revolution. At a minimum, use a reliable thermometer and the step-by-step procedure above to check the temperature of the oven in the center, where the food will bake. Interestingly, none of these tools completely replaced its predecessors. tart, fizzy raisins. Correctly following the steps of a recipe is only part of the cooking process; you also need to keep food safety in mind so that the people you feed don't become ill. Nathan and his team also applied their cariosity and willingness to experiment to the pantry. Marinara sauce see page 112 Full-fat ricotta cheese 400 g iy« cu| 121% © Spread a generous spoonful of marinara sauce see page 112 Full-fat ricotta cheese 400 g iy« cu| 121% © Spread a generous spoonful of marinara sauce across the bottom of a microwave-safe dish that is 12.7 c m / 5 in square. These include humor, whimsy, satire, and nostalgia, among others. The pressure continues to rise until it is stabilized by the valve. (B) Repeat steps 3-7 three times with the remaining egg mixture. It's the norm for a conventional oven to be off by 14 \*C / 25 °F or more from the temperature to which it is set. Columbia Univer- Thompson, D. Many human hearing, but you may hear a slight humming noise. Stir until the sugar dissolves, and then bring the mixture to a boil over high heat. C O U N T E R T O P TOOLS CONVENTIONAL Cooking is as old as humanity itself---it may even have shaped our evolution. 12 Place the tart pan on a baking sheet, 13 Remove the beans and parchment carefully. Wild Fermentation: The Flavor, Nutrition, and Craft of Live-Culture Foods. Barron's, 2009. potato flour-flour made from finery ground. You can greatly reduce the risk by adhering to safe cooking times and temperatures. is usually tacky, even sticky, while the center of the food Increase the air temperature and has a leathery texture. Keep alcohol and cigarettes away from a blowtorch, and read and follow all manufacturer's instructions. Remove as much air as possible from the bags, and seal them. Add lemon juice or more liquid if needed to thin the sauce. cohere—to stick together or bind as part of the same mass. That criticism is undeserved: microwave ovens do an excellent job for many cooking tasks. To prove this to yourself, bring your hand close to the base of the flame from the side (carefully!). Torrington, CT 06790 800-492-7464 waringproducts.com deep fryer Scales microplane.com microplanes moschetti.com pasta machine Pacojet circulators combi oven XXI Scientific Ingredients Ingredients Ingredients Sourcing North America Europe Notes agar (agar agar) widely available at Asian and specialty food markets, health-food stores, gourmet supermarkets chefrubber.com le-sanctuaire.com iherb.com msk-ingredients.com infusions4chefs.co.uk solegraells.com Powder or granules are preferred. INGREDIENT WEIGHT Panko bread crumbs Acup © Microwave at 1,100 W until fully tender, about 4 minutes. T h e silicone disc must He flat and seal tightly in the base of your nonstick frying pan. I I ' m i l l \*T | Cook the whole eggs sous vide for 40 minutes. T h e silicone disc must He flat and seal tightly in the base of your nonstick frying pan. I I ' m i l l \*T | Cook the whole eggs sous vide for 40 minutes. T h e silicone disc must He flat and seal tightly in the base of your nonstick frying pan. I I ' m i l l \*T | Cook the whole eggs sous vide for 40 minutes. of potato starch; they are not interchangeable. The smoke points of common oils are listed on page xxii. Parboil the macaroni for 2'/i minutes. 1900 Polaris Parkway Columbus, OH 43240 800-METTLER mt.com Microplane 614 SR 247 Russelville, AR 72802 800-555-2767 Moschetti, Inc. Although this omelet recipe is made only with eggs and cream, modern versions almost always contain a filling of some kind; some of our favorite combinations are listed on the previous page. Comte—aged French cow's milk cheese with a buttery, nutty flavor. That is an inefficient process. frequency—how often a periodic event repeats within a given interval of time. The foam can block the steam valves and pressure-release vents. Dishes You Can't Wait to Make. Hainanese chicken rice—simple chicken preparation originating in Hainan, China, that is especially popular in Singapore and Malaysia. If the only way to get your top-shelf temperature down to 3 °C / 37 °F is to have the bottom shelf at a freezing temperature, so be it. Pros: handles both soft fruits and fibrous vegetables, with an attachment for citrus; machines designed to eject pulp are easy to dean Cons: if not designed to automatically clear pulp, Hie basket clogs quickly. That's amazing. Onion, thinly sliced 280 g f j PA cups 56% (D Vacuum seal the ingredients together. Move the probe to various spots in your oven, if you're curious. To add body to the sauce, use an immersion blender to thoroughly mix in a little xanthan gum. So when you eat fish that is properly cooked to the temperatures we call for in our recipes, you must accept that it isn't pasteurized. Artisan, 2008. C Garnish each cooked fillet. conventional oven, convection oven, steamer, or sous vide water bath can do: steaming, proofing, incubating, and baking. If you do not have a siphon, simply refrigerate the coffee beans in the cold liquid for 12 hours, strain, and then continue at step 1. That's why its texture is so silky (that, and the fact that it's half butter). tortellini en brodo-northern Italian dish of tortellini served in a rich chicken broth. sake-Japanese, mildly alcoholic beverage made from polished rice. We encourage you to step Accept at the outset that you won't like everything you try. Troy, OH 45374 800-348-0251 berkelequtpment.com sheer Biro Manufacturing, Co. 1114 W. Review ingredients listed on the packaging for clarification. coconut milk—liquid, usually clear or nearly clear, drained from the interior of a whole coconut. But once the flames of ignition have died and the coals are glowing hot, neither briquettes nor hardwood charcoals have any flavor left to impart. Measure 35 g for use in step 7. (Sugar ther- thermometer, but a \$10 instant-read thermometer is also fast, mometers perform fine at high temperatures, but delicate glass accurate, and easy to place just where you want it. While the husks are baking, cut the kernels from the cobs. lardon-narrow strips of fat or bacon, fried crisp. compound butter-butter that has been softened, blended with flavorings, and then chilled again. If need be, a good not as accurate as you might think. magnetron—electronic device that generates microwaves. The high temperatures inside the cooker also promote browning and caramelization, reactions that createflavorsyou can't get otherwise in a moist cooking environment. Their performance at very low temperatures—those most useful for Modernist recipes—is typically even less predictable and consistent. With Nouvelle and other precursor movements as a springboard, pioneering chefs such as Ferran Adria and Heston Blumcnth.il began to think in more systematic ways about how to create new experiences for diners. VARIATIONS Hazelnut Gelato Substitute hazelnut butter and hazelnut oil for the pistachio butter and p l H t l i l u oil. Ruhlman, M. Ideas in Food, blog.ideasinfbod.com Child J., Bertholle, L., and Beck, S. Where to buy: kitchen-supply stores Cost: \$80-\$200 29 COOKING UNDER PRESSURE when the pressure gauge shows 1 bar/15 psi. 3 0 1 /4tSp 0.04% 3 210 g the recipe works with any kind of nut butter, whether you buy it commercially or make your own by using a powerful Mender, such as a Vitamix. Lr: 232-233:235 Nathan Myhrvold: 226-227 Ryan Smith: 228-229; 231: b: 234 • t p t r - i l: R« -. Liquid soy lecithin is not the same as soy lecithin powder. Traditionally, the Berbers in Morocco harvested the fruits of the Argan tree by feeding them to herds of goats. 3. Unlike the wet-bulb temperature, humidity in the atmosphere is not a factor in the measurement. Similar to Italian biga and American sourdough, posset—delicate dessert of sweet cream thickened by coagulation. © Cook the whole eggs sous vide for 40 minutes. 291 1 CLAMS IN CHOWDER SAUCE YIELD: four servings (360 g/30-40 TIME ESTIMATE: LEVEL OF DIFFICULTY: 1 hour overall, including 45 minutes of preparation and 15 minutes keepsfor 1 day when refrigerated moderate SPECIAL REQUIREMENTS: pressure cooker, aerolatte, whey protein isolate (optional) STORAGE NOTES: In this lighter take on the classic soup, clams are dressed in a warm, foamy sauce. Ajo bianco, one of the original forms of gazpacho, was made from white bread, garlic, almonds, and grapes, rather than the tomatoes used most frequently today for the base. Inexpensive microwave ovens achieve their power levels by turning the microwave ovens achieve their power levels by turning the microwave generator on and off several times asecond. biltong—South African term for dried, spiced meat similar to jerky. If you to harden. Once the oven reaches its set temperature, place the oven-safe lid of a 20 c m / 8 in nonstick frying pan into the oven to preheat for about 15 minutes. Poached chicken is served with savory rice, a spicy dipping sauce, and a bowl of the flavorful poaching broth used to cook the chicken. Because of its high fat content, hazelnut gelato does not look at smooth as pistachio gelato does, but its mouthfeel is just as creamy. Spread a generous spoonful of marinara sauce evenly across the bottom of a microwave-safe dish that is 12.7 cm / 2 In deep. modernistpantry.com chefrubber.com le-sanctuaire.com solegraells.com infusions4chefs.co.uk Iota type creates soft, elastic gels. Remove the pan from the oven, lift out the silicone disc and cool the cooked omelet sheet slightly. You might also record how long ittakes your oven to preheatfrom room temperature to various set points; you can then more accurately estimate the total time that baking recipes will require. fino sherry—pale, dry Spanish

fortified wine. It is important to understand, however, that all of the recipes in this book were developed and tested by weighing the ingredients. A cone shape maximizes the force as you press the solids of a stock or sauce into the bottom with a ladle. Ecco, 2003. Generally the walls of the pot should rise at least 10 cm / 4 in above the oil so that there are no spillovers. Robuchon, J. Once upon a time, some well-meaning officials decided that food safety recommendations. There are so many potentially great cheese mixes and accompaniments that it was hard to pick just the six that we have space for here. VARIATIONS M i c r o w a v e d Sea Bass, Tilapia, H a l i b u t, o r Sole To make this recipe with other kinds offish, use the cooking times given below. McLagan,). Some large companies have cheapened "organic" into a marketing buzzword by lobbying for loopholes in government regulations. 0 Repeat step 3 twice more for a total simmering time of the cooking times given below. about 2 hours. If the crust still looks slightly wet, bake it for an additional 2-3 minutes. © Bake until golden brown, about 12 minutes for a single piecrust or 8-9 minutes. Has a fresh, slightly tart flavor. Use water to obtain a clear, pure flavor. There are, after all, only so many ways to cook meats, vegetables, and grains. That's the weight of live lobsters you need to buy to feed nine people. 10 Combine the spices with the measured cheese mixture. San Marzano tomatoes—cultivar or type of Italian pear or plum tomato prized for its robust flavor. Much like the Modernist movements that transformed fine art, architecture, dance, music, and other cultural disciplines throughout the 20th century, Modernism in cuisine first emerged from groundbreaking work by top professional chefs, but it is quickly becoming a strong influence on popular culture as well. Thicker pans and thick to the thickness of the pan. Used to make tortillas and tamales. These new molecules literally go up in smoke, coating the food with the unmistakable flavor of grilled food. Press the dough firmly allow the gluten to rest and the butter the dough into four equal parts, and roll into the interior edges of the pan. Aduriz, A. These are all fair points. Iepicerie.com modernistpantry.com chefrubber.com infusions4chefs.co.uk le-sanctuaire.com modemistpantry.com chefrubber.com infusions4chefs.co.uk le-sanctuaire.com modernistpantry.com chefrubber.com infusions4chefs.co.uk le-sanctuaire.com don't have shells, use whole shrimp (with the heads on), which are relatively inexpensive and easy to find. Cheese Pastry Cream This savory variation makes an excellent cheese dip or unsweetened filling for cream puffs. Nathan Myhrvold s culinary trek has been more direct and distinct in recent years, but that same seed was planted long ago, well before his successes in business. Collected in early spring. This recipe combines the advantages of both kinds of dough and was the best by far. fish eye--lumps formed from incomplete dispersion of a starch or hydrocolioid gum in water. A pressure cooker is essentially Just a pot with a semi-sealed, lockable lid and a valve that controls the pressure inside. r; 167: t, ur; 168: r; 169: ul; 170-175 Chapter h \$mmu\$ Cooked VegetableSoups Melissa Lehuta: 180-181 ' h.ipici 5\*. Microplane and other brands have created graters in a range of coarseness to suit every application. see page 71 © Combine in a pot, stir until dissolved, and then bring to a simmer over medium heat. Since then, however, we have discovered that the carrageenan isn't necessary if you add less liquid, as we do here. But the creative freedom was alluring, and soon I was catering dinners and small parties. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Eggs 200 g 4 large 100% © Preheat a water bath to 72 °C/162°F. Fruit leather that won't stick Beef jerky stays so flexible in part because of its'high fat content. As you might imagine, eating feces is a bad idea for lots of reasons, but for food safety the point is that gastrointestinal illnesses are transmitted by germs (pathogens) in the feces. This led to my becoming head chef of the Modernist Cuisine project and ultimately a coauthor of both that book and Modernist Cuisine at Home, as well as an inventor on 10 patents. The do not. Egg white 300 g l'/bcups/ 10 whites 100% © Blend by using a whisk or immersion blender, and then strain. 374 MODERNIST CUISINE AT HOME Place the blended and strained egg yolks into a rip-top bag, remove as much air as possible from the bag by using the waterdisplacement method (see page 58), and seal it. Often accompanied with sliced cucumbers and tomatoes. (D Preheat a water bath to 80 0C/176°F. (At very high pressures, it rises farther and reopens the ventto release the excess steam.) The valve regulates the pressure inside the cooker to a preset level: typically 0.7 or 1 bar/10 or 15 psi above atmospheric pressure; this value is called the gauge pressure. 11 Remove the pan from the oven, lift out the silicone disc, and cool the omelet sheet slightly. Bloomsburv USA. Example: This four-serving recipe calls for 500 g/1.1 lb of cooked lobster meat, which is the 100% ingredient. meat, mayonnaise, apple, chives, tarragon, and pepper—not to combine all the ingredients in the recipe. Lc; c, r; 104-107; 109; 111; 112:1, c, r; 113; ul. Chelsea Revealed: The Hows and Whys of Successful Green Publishing, 2003. For electromagnetic waves, the number of wave crests that pass a point in a second. The smallest particle size a blender can sor is a better match for thick, chunky foods, and attachments achieve depends on the speed of its motor and how long you can allow this t o o l t o slice and dice dry ingredients. Rotate the pie a half-turn midway through baking. Cold soups—robust, refreshing, and complex—are popular in Italy, Spain, France, Scandinavia, and Russia. When making cold, creamy sauces or soups, you have to compensate for this phenomenon by adding more salt, sweetness, or acid than you would for warm foods. Alternatively, use a mixture of 0.65 g of iota carrageenan and 0.5 g of iota carrageenan. Drain and discard the skins. Equally impressive, they have now found ways to realize the power of many of those precision cooking techniques in home kitchens that don't have a lot of fancy equipment. Microplane—brand of kitchen rasp, used for fine grating or shaving. Life takes unexpected twists and turns, however. achiote tree. Pay attention to browned spots. @ Cook until most of the cheese water has been absorbed and the macaroni is just al dente, about 7 minutes. Remove the pot from the heat. Usually monitored by using a probe attached to a digital thermometer. Remove as much air as possible from the bag by using the water-displacement method (see page 58), and seal it. Cookbook. f I • w? VOLUME SCALING dams) unattended Whey protein isolate, which we have a second add to make the broth foamy, is a protein derived from milk. Cool to room temperature, and then break into pieces. 6. 11 Reheat the tamales by steaming them over boiling water for 15-20 minutes. We recommend pressure cookers with built-in spring-loaded pressure valves such as those made by Kuhn Rikon or Fagor, or jigglingweight pressure cookers. When it comes to heating food evenly, the metal In Modernist cooking, pots and pans are best the pan is made from is the least important factor. pst-abbreviation of pounds per square Inch, a measurement of barometric pressure. 146 MODERNIST CUISINE AT HOME While the eggs are baking, line a baking sheet with parchment paper, and spray the paper with a light coating of cooking spray. O Blend the cauliflower into a smooth puree. I do believe that we will become more questioning of the way we prepare foods. We will wonder Is this the best way to make mac and cheese? •••• Ryan Smith: 155: b; 162: t; 166; b Chris Hoover: 91: r; 102; 103: t; 116: t; Chapter 2: Conventional Chapter 11 ' anritas Chris Hoover: 154-155; 166-167 Ryan Smith: 05: b; 11: LI; 13; 14: ur, LI; Tyson Stole: 07: ul. Black Dog & Leventhal, 2001. Many people were skeptical that it would interest a wide audience. 8415 N. But a thicker pan less agile. To do that, you need a good digital thermometer that includes an oven-safe probe and wire lead, as well as some patience. 3 S4|\*1| -\jM, Carrots, thinly sliced 200 g 2 A cups 40% (D Cook sous vide for 3 hours. Charging the siphon- inserting the gas cartridge. Wolfert, P. The Wild Table: Seasonal of Paris: The New Cuisines of Austria and the Foraged Food and Recipes. Sometimes that's true. o f North America 3760 Industrial Dr. Winston-Salem, NC 27107 336-661-9893 carpigiani.com ice-cream machine C h a m p i on Juicer / Plastaket M f g . You can start small—all you really need is a burlap sack, soil, and seeds. It should be a I dente. You can shave hard cheeses and chocolates into fluffy, snow-like mounds, or make a fine citrus zest. You don't need to own a dedicated fryer. shiso—Japanese term for perilla, an intensely flavored annual with jagged edges in the mint family. Naturally occurring at high concentrations in a wide variety of foods, including milk, cheese, tomatoes, mushrooms, and especially seaweed. and Voltaggio, M. Like conventional ovens, each microwave oven has its own idiosyncrasies. Otherwise skip to step 5. A pan that burner—ideally one that is about as wide as diffuses heat perfectly from one edge to the other the pan itself—any pan, even a cheap and thin would have to be so thick that you couldn't lift it. unevennoss of the burner, use a pan having a thick bottom. elBulli 20032004. Artisan, William Morrow Cookbooks, 1997. David Kinch, chef at Manresa in Los Gatos, California, gave us the idea to use strawberries in place of tomatoes. Cook fresh juice, and then cool it before adding the gelling agent, or substitute canned or frozen fruit. Items our mothers or grandmothers used regularly, like the pressure cooker, have been dusted off and put back to use as thoroughly modern
tools. MODERNIST CUISINE \* v > \* 1 ^ ^ ^ Golden enoki mushrooms \* / J i m Kb ITU 'j£ Hi Raspberries MODERNIST CUISINE Copyright © 2012 by The Cooking Lab, LLC All rights reserved. Nathan's work has followed the same process. precision—the fineness with which an instrument can discriminate in its measurements among slightly different values. If you can't find black bean and chili paste, replace it with a combination of garlic black bean sauce and sambal ulek, a salt-cured chili sauce (use a 2:1 ratio by weight). Start timing the cooking as soon as the cooker reaches the target gauge pressure given in the recipe. With that small change, the dish takes on the cleanest, brightest ffieese flavbTi; of any mac and cheese we've ever had. fermentation—the modification of a food by the deliberate growth of microorganisms in it, such as using yeast to make wine or bread. Line a baking sheet with parchment paper. The Kitchen as Laboratory: Reflections the Chef's Craftfor Every Kitchen. canning jar—heat-tolerant jar made of thick glass and having an airtight, resealable screw lid. A B O U T THE RECIPES XXI Refined and Unrefined Oils Fundamentally, all oils are composed of various kinds of fats. Arrange the cooked whites on It, and cover them with another sheet of sprayed parchment paper. Phaidon, 2008. We find that Microplanes are more versatile than zesters and much sharper than box graters. chicharron—crispy fried pork skin. Ginger, peeled and cut into coins 10 g 2-3 coins 2.2% Shaoxrngwine 5g 5mL/l]/4tsp 1% Soysauce 25g 20 mL/4i/4 tsp 5.6% © Pour half of the wine into each bag. A cartridge holds eight grams Of gas, can be used only once, and costs about 50 cents. Add more cartridges to create progressively thicker foams. Ten Speed Press, 2010. The Big Fat Duck Cookbook. spr.iydried juice powders are also useful, but often contain additional ingredients 9t\d may not be as flavorful. Any residue of bleach that remains will be so faint that it will not affect the taste or the safety of the food. Measure the performance of your oven. For a few months, I staged at The Fat Duck with Heston Blumenthal and the development team in his lab to create new dishes for the restaurant and to work on his last Perfection series book. But it is worth the effort to make your own once in a while. Clark, M. Blend the butter mixture into the thickened liquid. (D Cool the beans in the remaining syrup, and refrigerate them. LI; Chapter 1: Countettop Took vnapter 1 u: vliees \* Melissa Lehuta: 230:231: ul. •., -.ig Broiler gas is supplied through this small pipe. Banking the coals prevents th£intense heat of direct grilling from, burning the surface of the food before the interior is fully cooked. FAT-FREE" MAC AND CHEESE five servings (750 g/4 cups) PA hours overall, including 30 minutes of preparation and PA hours unattended serve immediately; cheese water keeps for 5 days when refrigerated orfor up to 6 months when refrig those in tea leaves and coffee beans, dissolve in water. Then we aerate the eggs in a whipping siphon to make them foamy and light. Making the sauce as afluidgel (see page 98) results in a cleanerflavorand much greater stability. Ecco, 2005. Volume measurements are difficult to make accurately, and they vary greatly @ Initial ingredient preparation steps, such as cutting and grinding, are indicated following the ingredient name and should be performed before you begin cooking. Use 1 g of Knox brand powdered gelatin for every 500 g of pastry cream; the recipe above, for example, yields 500 g, so would require 0.9 g of gelatin. Refrigerate a gelatin mixture for at least 4 hours to set it, but do not let it freeze. Preheat the oven to 260 "C/500 °F. In cooking, "Modernist" means basically what it does when it is applied to other areas of the arts. All of the heat flow- form similarly—and never mind that the weight ing upward from beneath a pan must go some- of such a pan would make it impossible to lift! where. C U S T A R D S A N D PtES L »«Ay re 14 Cool the crust to room temperature, and then trim any excess crust from the margins of the pan. The biggest disadvantage of the pressure cooker is that you can't just lift the lid and taste for doneness. 10 Spread another generous spoonful of marinara sauce over the top. Available canned. O Pressure-cook the tamales at a gauge \*"\* pressure of 1 bar/15 psi for 20 minutes. For egg recipes, see pages 146 and 152. Microwave ovens vary widely in their power of yours before cooking, and adjust the power of yours before cooking, and adjust the power of yours before cooking. butchers term for large sections of the whole animal. We use a cast-iron skillet, but a countertop sandwich grill (or panini press) works well, too. 5% see page 119 0 Saute the shells in the base of a pressure cooker over medium heat, stirring often, until golden brown, 6-8 minutes, © Remove the shells from the pot, and reserve them for use in step 9. Can cause color changes in foods. There is a good reason for that: our recipes reflect the larger Modernist revolution underway in cooking, the Art of Eating. Made by salting, pressing, and aging fresh ricotta. It freezes well and makes a wonderful soup base. shirred—baked in a small casserole or dish; often referring to eggs. malic acid—acid derived from apples and many other fruits. In Search of Perfection: Reinventing Kitchen Classics. Kitchen Simple: Essential Recipes for Everyday Cooking. MODERNIST CUISINE AT HOME '• 1 Soak the dried corn husks in warm water until they become pliable, at least 30 minutes. This makes a terrific amuse-bouche or snack for special guests. - 'mi •"-•. DessertFourPlay: Art of French Cooking. Where can you find the best ingredients? First, most home ovens have only crude temperature controls. P r e s s u r e - C o o k i n g in C a n n i n g j a r s Several recipes in this book take advantage of cooking in canningjars (also known as Mason jars). Instead, enclose the food in a sous vide bag or put it on a plate and cover it loosely in microwave-safe plastic wrap. 10 Combine the reserved cheese water and the sugar in a medium pot. Honey 4g ltsp 1.3% Chives, thinly sliced lOg VA cup 3.3% Tarragon, minced 5g § Tbsp 1.7% Salt to taste The mushrooms should be processed just until they are minced. TO MAKE AHEAD The egg whites can be made up to 24 hours in advance. The microwaves deposit energy a couple of centimeters deep into the food, not just at the surface. Through experimentation, you can determine the best cooking settings for various dishes. They come in three varieties: Silpat-style mats made of heavy-weave fiberglass mesh coated with food-grade silicone, silicone-coated parchment paper, and pure silicone mats. efficiency—the amount of energy required to operate it during that period. Summer brings chanterelles, purslane, miner's lettuce, and wild berries ripe for the picking. © Use the stock in warm or cold dishes. Elbow macaroni is the classic pasta for mac and cheese, but any kind of pasta works. The Science of the Oven. Smilhfield, RI 02917 800-426-6287 hannainst.com pH meter Henkelman BV PO Box 2117 5202 CC's-Hertogenbosch Netherlands (+31)73 62136 71 henketman.com vacuum sealer Hi-Tech Vacuum, Inc. Asian fish sauce-(gartim, nam pi a, nunc mam, muria) clear, salty condiment or seasoning made from salted, fermented fish. • • 290 - • - 555 r. Use an immersion blender. If a foam rises on the surface, allow it to dissipate, or skim it off with a spoon. Whisk together the mushroom puree, yolks, cream, albumin powder, and salt thoroughly to make the mushroom base. Mrs. ur, LI; 76-77; 79 Melissa Lehuta: 02-03; 06:1; 07: ur; mc. Fancy up your fried fish and other crispy dishes with perfectly flat, fried herbs. maitake—(hen of the woods) wild mushroom prized for an excellent savory flavor. anardana—(dried pomegranate seeds) Indian spice of air-dried pomegranate seeds, or arils, often used as an acidic agent for chutneys and curries. Place in a zip-top bag, and use the water-displacement method (see page 58) to remove as much air as possible. Each has its advantages. Ultimately, my stranges and disadvantages. culinary journey has given rise to both Modernist Cuisine and Modernist Cuisine at Home—a way to make a contribution of my own to the world of cooking. When you pressure-render chicken fat for Home Jus Gras (see page 93) or make a carotene butter for Caramelized Carrot Soup (see page 178), taste the result by itself and imagine other applications. Soy sauce 36 g 30mL/2Tbsp 12% © Simmer until thick but still fluid, about 1 minute. Newer microwave ovens use.inverter technology to control the strength of the microwave still fluid, about 1 minute. Newer microwave ovens use.inverter technology to control the strength of the microwave ovens use.inverter technology to control the strength of the microwave still fluid, about 1 minute. at least 80% of the time, the contaminant is fecal matter (either animal or human). 3 Toasted-sesame oil 2g 2mL/ /atsp 0.4% Scallion, green parts only, finely julienned 3g ITbsp 0.7% Peanut oil 50 g 55 m L / 3 # Tbsp 11% 0 Microwave each fillet at 800 W until the fish becomes opaque and flakes easily, 3Vi-5 minutes, and then remove it from the bag, and scrape off the scallion and ginger. Henderson, F. The Italian pistachio nut is often sold shelled. Best for: fish (40-55 \*C / 105-131T); eggs such at steamed omelets, fried eggs, and custards (65-82 \*C/ 150-180 T); vegetables (85-100 "C185-212 C'F). as needed Safety tips for pressure-cooking: seepage 33 s\*> \[email protected] fftj fg K. City of Industry, CA 91745 800-330-0388 sunpentown.com induction burner Taylor Company 750 N. The approach we prefer is to cook our food sous vide or by some other method that is easy to control, and to then use the grill only for a final searing that imparts a great flavor and crust. TO MAKE A H E A D After step 5, place cooked eggs in a bag or siphon, and hold in a 55 "C/131 °F water bath for up to 1 hour. Season generously
with salt and lemon juice. Lc 90: uc, ur, LI; 91: ul, urn, LI. Two distinct groups of people swear by charcoal grills: briquette devotees and those who favor hardwood or lump charcoal. Salted yuzu kosho. The fact is that the conditions of combustion—how much air gets to the coals and how they are distributed—make a much larger difference than the source of the charcoal. see page 354 see page 354 see page 350; jm^ No need to heat the #hole oven to bake a sponge cakejjust aerate the batter with a whipping siphon, and then dispense it intcfa paper cup. You can, for example, program one of these ovens to first sear a roast, and then cook it for many hours at low temperature, and finally to hold it warm until serving time. Safety tips far pressure-cooking: see page 33 88 MODERNIST CUISINE AT HOME , ... r VEGETABLE STOCK YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL OF DIFFICULTY: S REQUIREMENTS: USED I N : \$00 g/2 cups 344 hours overall, including 30 minutes of preparation and 3 hours unattended keepsfor 5 days when refrigerated or up to 6 months when frozen f?; g easy %%M sous vide setup, vacuum sealer ^ ^ Vegetable Risotto (see variation on page 332), Quinoa with Pistachio Pesto and Asparagus (see variation on : page332). '[f.' • -•••,\*!»"-•• '\$'- ly to capture the subtle, Making stock sous vide is the best way specially if you have time to nuancedflavors of the vegetables—especially infuse the liquid overnight in the refrigerator. Winter is a slow time for foraging, but wild mushrooms are still available in some areas. Shake vigorously for 5-10 seconds. 10 The custard can be served warm or cold. They develop the characteristicflavorsand textures of foods so quickly that what is conventionally a long; labor-intensive process becomes one hardly more time-consuming than a casual saute\* Risotto takes seven minutes instead of 25 (for a recipe see page 328). Repeat steps 7-12 three times with the remaining ingredients: skip step 10 the last time. Familiarize yourself with the manufacturer's instructions for understanding when your cooker is fully pressurized, and depressurized. Marjoram, cress, and lemon balm maybe added, fingerling potatoes—varieties of waxy, thinskinned, slightly sweet potatoes that grow in long, narrow oblongs resembling fingers. Clarkson Potter, 2002. The salad mixed with a creamy, tart dressing of lettuce puree: a chickpea salad with tuna con fit and no greens at all; and the delicate grain quinoa tossed with cauliflower and apple to make a kind of Modernist tabbouleh. and Brugu6s, S. Preheat the oven. Tierno, P. Made from malted grains. are pressed from nuts or seeds are usually available Animal fats and clarified butter share many in both virgin and roasted forms; roasting adds of the properties of refined oils. For example, when making 750 g of cheese slices, use 21 g of sodium citrate. The basic process is the same in each case. © Measure 500 g / 5 0 0 mL/2 cups of the mushroom stock. Following a few simple rules makes cooking at home a lot safer. and techniques for cooking a dash of alcohol to a gravy, tilting the sauce to the edge of the pan, and letting the flame burn off the alcohol. It was an extremely memorable evening spent with his viewpoints on food and cooking techniques. Classic Cooking. © Spread one quarter of the alcohol. It was an extremely memorable evening spent with his viewpoints on food and cooking techniques. mushroom base onto a round silicone mat in a layer 2 mm/Vie in thick. Use plenty of oil, and don't worry about the food becoming greasy. Bronx, NY 10471 877-890-5244 myspicesage.com herbs, spices, and tea Penzeys 12001 W. sponding step in the recipe. The Science of Cooking, Springer, 2001. You don't necessarily understand why it does what it does. Arrange an ice bath alongside. radiation—energy that flows through a medium or space via electromagnetic waves. Trotter, C. These include foods with a lot of starch, such as fruits; foods with with the next steps to refine the texture. Unsalted butter, cubed 35 g Smoked salt to taste 2V4Tbsp 7% ® Whisk into the warm gravy to thicken it. The basic design has not changed in generations. Shell each egg, and clean off the whites to isolate the perfectly cooked yolk. So the temperature can fluctuate by tens of degrees from one spot to another. ABOUT THE RECIPES SAFETY TIPS FOR LIGHTLY COOKED FOOD Lightly cooked food should be prepared in much the same way that we recommend preparing all food. NOT YOUR PARENTS' SUPERMARKET Since the invention of the self-service grocery store in 1916 supermarkets. Chapter 22 on Dishes for the Microwave (see page 342) presents a variety of recipes that illustrate the strengths of this tool. Cold soups often get a bad rap, too. Touchstone, 1993. Water 500 g Jack cheese, finely 275 g grated 500 mL/2V& cups 4 cups 100% 55% 55% Sugar 2g Vitsp 0.4% Dry macaroni 180 g VA cups 36% Salt to taste VARIATIONS Mac and Fontina Cheese. 550 g / 6 cups of vound Fontina, finely grated Fold in: Pressure-Caramelized Onions (see page 127) or 75 g of Mushroom Puree (see page 150) Mac and Parmesan, finely grated Fold in: Creamed Spinach (see page 199) or thinly sliced sun-dried tomatoes (D Puree until smooth. Vintage, 1998. Our solution is to cook the yolk separately from the white and to then reassemble the two parts just before serving. The one major difference is that lightly cooked food should be discarded. Kappa type creates firm, brittle gels. Solutions to Common Problems When Thickening and Gelling Modern gelling agents and thickeners, such as gelatin, agar, xanthan gum, and Wondra, are incredibly versatile and practical. My interest in cooking was so strong that I might have become a chef, had my interest in other things—particularly math and science— not intervened. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Water Cauliflower, thinly sliced 150 g 100 g 150 mL/H cup V/z cups 30% 20% © Combine the cauliflower and water in a pot, and simmer until very tender, about 30 minutes. Allow the oil temperature to recover between batches. We don't recommend using them for baking when you want to create a golden crust; otherwise, they are fine.; 100 m l. forced convection—heat transfer that occurs when a fan or pump is used to move a hot fluid (such as air or water) across a food, french—butchers technique of cleaning and scraping away meat to expose the bone for a more elegant presentation. elBulli 1994-1997. Unique in its ability to transform oils into powders that melt back into oils when wetted. The lid also cuts off the supply of fresh air, starves the fire, and cooking temperature. If you like the flavor of truffle oiladd a few drops at step 4. Convection makes a bigger difference when heating thinner foods than 't does thicker foods, but there is no simple rule that applies in all cases. We predict that they will eventually become quite common as they become increasin 2008. Two inexpensive pieces of equipment are absolutely essential to all Modernist cooking techniques: a reliable digital scale and an accurate digital probe thermometer. microwave—an electromagnetic wave with a wavelength ranging from about 0.3-30 cm / 0.1-11.8 in and a frequency of 1-100 GHz. mirin—sweet Japanese rice wine similar to sake but with a lower alcohol content. Place the dish in a baking pan to catch any bubbling sauce and prevent burning. But lower drying temperatures almost always yield better texture and flavor. In most cooking situations, it's hard to detect a difference between the two kinds of power control. For instructions on equipment topics. To finish, combine the rice mixture and broth in a pot, and simmer until al dente, about 4 minutes. A precision valve meters the forceful flow of liquid from the siphon. Little, Brown and Company, 2001. When writing your own recipes, you can use the tare button in two handy ways to record the weights of the ingredients you use. over the top. Ridge Ave. Add enough water to cover the rack so that the pressure cooker can build up steam. To make the cheese slice recipes Jf here, use the instructionsforthe Perfectly Melting Cheese Slice on the previous page
with the ingredients and quantities given below. You can make a marmalade of minced bacon and apple by adding a bit of reduced apple juice or maple syrup to serve as a binder. A countertop unit with one element sells for \$75-\$250, depending on its features. In this book, we focus on technologies such as the sous vide water bath, the pressure cooker, and the whipping siphon in our illustration of how home cooking can evolve in a more actively Modernist direction. Remove as much air as possible (see page 58), and seal the bag. i — • .. If you prefer more fully cooked clam meats, see the table on page 286 for sous vide time-and-temperature combinations. If you're cooking the food in a water bath or combi oven, sear it afterward so that the crust doesn't . For example, you don't perceive the true saltiness of ham -which has triple the salt content of most foods— because it's both cold and fatty. If your microwave oven is more powerful than 800 W, lower the power level accordingly. THE SCIENCE OF COOKING WITH MICROWAVES Why does frozenfoodcooked in a microwave oven become piping hot In some places yet remain frozen in others? II Viaggio di Vetri: A Culinary Journey. Used to impart a tart taste to many beverages. Penguin Press, 2006. Strain the stock, and use it warm or cold. Combine the roasted vegetables with the pressure-cooking in the stock. the form of evaporating water vapor. 1 L/4V4 cups 100% 200mL/?8Cup 20% © Combine with the browned chicken parts and ground chicken in a pressure cooker, and oil in aerosol form. The result is this book, Modernist Cuisine at Home. v Preheat an oven to 220 "C/425 °F. Piave vecchio is aged and dry, similar to Parmesan. Drain the rice, reserving the broth. Combi ovens are not as adept as we'd like, however, at holding temperatures below 60 °C / 140 °F. Place the corncobs, toasted husks, and water in a pressure cooker, and pressure cooker, and pressure cook at a gauge pressure of 1 bar/15 psi for 30 minutes. Prized for its nutty, buttery flavor and meaty texture. Raw and lightly cooked food should not be served to anyone who has a compromised immune system. Think of the colander that you use to drain water from pasta or ball-shaped tea strainers (which we use to infuse broths with herbs). And most ovens offer no control over one of the most important elements in baking: humidity. At the same time, we realized that we had the right team and resources to bring the Modernist cuisine revolution to an even wider audience of home cooks by developing less complex recipes that require less expensive equipment Toss the vegetables in 4 0 g / 4 0 mL/ V> 3 Tbsp of neutral frying oil, and roast them in the preheated overt until they turn dark brown. It's important to realize that overpressurizing the cooker doesn't make the temperature inside it any higher-it merely causes the safety valve to release steam, which allows the water inside to resume boiling. making smaller tarts, divide the dough into four equal pieces, and roll out each one separately. Essential Cuisine. Now cooks at all levels have been discovering that foraging for wild ingredients presents a whole new realm of possibilities. That's is a disaster if it breaks.) Equally worthless are the classic metal important because the accuracy of the thermometer depends spike-and-dial meat thermometers. Lambda type thickens but does not gel. In general, the food is less formal; you'll find recipes for Crispy Skinless Chicken Wings (see page 254) and Grilled Cheese Sandwiches (see page 318). fiddlehead ferns—tender, edible coiled sprouts of the fiddlehead fern. and seat it. Black trumpets are preferable to portobellos when you can find them. The organic movement focuses on growing food without using chemicals. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Hoisin sauce (Lee Kum Kee brand) 20 g 20mL/4tsp 7% © Combine in a pot, and bring to a simmer. The variations listed below are just a starting point; cashew and almond butters also make delicious gelati. Kitchen Mysteries: Revealing the Science of Thompson, D. That improves the consistency of cooking by making the temperature throughout the oven more even. We just squirt some onto the food or coals with a spray bottle. INGREDIENT WEIGHT © Puree in a blender until smooth. The more air in the foam the less concentrated its flavor, so use a very strong liquid when making a foam to serve as a garnish or sauce. freeze-dried fruits and vegetables and outdoor stores infusions4chefs.co.uk lyofood.com sosa.cat Buy whole fruits and vegetables and grind into powders as needed for best results. You can add or substitute any other filling at this point. Main St. Marblehead, OH 43440 419-798-4451 birosaw.com meat erin Cambro 5801 Skylab Rd. Huntington Beach, CA 92647 800-833-3003 cambro.com food storage Carpigiani C or p. Here's a'trick for tender fruit leather: add 3%-4.5% of a neutral-tasting oil to the fruit puree. But sustainable forms of aquaculture are now in operation. So either vou sacrifice h bechamel, or you Chemistry to Jam^pFKraft, w h o i n . Fold the reserved cauliflower puree into the mac and cheese. In addition to those mentioned in the contributors section above, we benefited from the expertise, advice, material support, and valuable assistance of the people and companies listed here. Lambda type thickens without gelling. Too little gelling agent or starch was used. Mix them with the grated Gruyere and panko bread crumbs just before you use them. Of the 1,500 or so recipes in it, probably half could be made in any home kitchen. Once the oven is hot, place the ovensafe lid of a 20 cm / 8 in nonstick frying pan in the oven to preheat for about 15 minutes. By catalyzing myriad chemical reactions, the intense heat forges these charred juices into molecules that convey the aromas of grilling food Made in Spain: Spanish Dishes for the American Kitchen. Remove the bok choy from the bag, shake Microwave the bok choy at 1,100 W f o r 2 minutes in the bag or plastic wrap. Used commonly by Modernist chefs in making spherical gels. Where to buy: kitchen-supply stores Cost: about \$80 for Fagor; about \$200 for Kuhn Rikon An electric pressure cooker could hardly be easier to use: just plug it in, press the "high pressure" button, and set the digital timer. Use any extra syrup as a topping for yogurt or pancakes, or freeze it for up to 6 months. Shaoxing wine—one of the most famous Chinese rice wines, originating from the eastern province of Shaoxing; similar to dry sherry. Little wonder, then, that our craving for the flavor of food charred over an open flame is practically universal. Some combi ovens are selfcleaning, and certain models are programmable as well. between the chef and the diner, with food as the medium, and the goal to be thoughtprovoking and memorable as well as extraordinarily delicious. Company e new gadgets you seeinydurlocral kitchen-supply store to those for sale at the home improvement center. The t i m e required t o cook vegetables in a microwave depends on the thickness t o we h i c h you cut t h e m, as well as on their density and water c o n t e n t Drier vegetables cook more evenly if you seal the vegetables in a bag or under microwavesafe plastic wrap on a plate w i t h a little water. Sous Videfor the Home Cook. In an electric oven, the broiler element is made of resistive wire Inside a metal lube that glows red hot as current passes through it. Whisk to distribute the starch evenly (do not blend, as that can produce a gummy, consistency). Within a couple years, I was working directly for Bill Gates, and in time I became Microsoft's first chief technology officer. Our first thought was that more oxygen equals more heat. Wrangham, R. Our approach eliminates the risk of curdling the custard and also opens up a virtually endless variety offlavorand texture combinations, some of which are presented on the next page. CookWise: The Secrets of CookWise: The Secrets NOTtS: LEVEL OF DIFFICULTY: SPECIAL REQUISITION and 4Vi hours (i kg/4 cups) 5 hours overall, including 30 minutes of preparation and 4Vi hours unattended best when frozen moderate tee-cream machine, tapioca starch, xanthan gum, pistachio oil This gelato has become a signature dish from Modernist Cuisine-, we serve it at most of our events. Soy sauce 8mL/IV2tsp 2% ® Place the filled jars on a rack or trivet in the base of a pressure cooker, and add 2.5 cm/1 in of water. The sauce may bubble over, so it's a good idea to place a plate underneath the dish. Curefishbefore grilling it by soaking it in a solution that's 3.5% salt (3.5 g of salt for every 100 g offish), 2.5% sugar, and 0.2% lemon zest. For the heat to reach the center of the food, it must move by the slow process of thermal conduction. Use 0.2-0.3 g per 100 g for a sauce closer in thickness to salad dressing or ketchup. Do not overfill it. Pocket scale Standard kitchen scale Accurate to: 0.01-0.1 g / 0.0004-0.004 oz Typical max. N-Zorbit—brand name that National Starch uses for tapioca maltodextrin. 13 Repeat steps 7-12 three times with the remaining ingredients; skip step 10 the last time. Use an immersion blender to blend in each addition until it has melted and is completely smooth. Norton & Company, 2005. © Kill, blanch, and clean the lobsters; sec page 284 for instructions. Salt © Season, and serve warm or cold. Thick items won't cook quickly. Cooking with Over 230 Great-Tasting Recipes. The paper towels absorb steam, so the eggplant doesn't get soggy. In this chapter, we peer inside some of the appliances we've cut in half to get a closer look at the science and technology that make them tick, and we examine the features that are most useful to have. Dehydrating food takes hours or days, so it's tempting to use higher temperatures to get the job done sooner. MODERNIST CUISINE AT HOME P. © Rinse the clam meats in cold water. Has a nutty flavor. It tastes like ginger with a little more pepper and a light camphor aroma. Panko bread crumbs 20 g 2Tbsp
10% Sodium citrate Gruyere cheese, finely grated Tapioca starch •'. Alternatively, mix the powder into the liquid in a countertop blender, and then transfer the mixture to a pan. denaturing—the unfolding of a protein, which makes it nonfunctional. Quickly cool the rice mixture by spreading it in a thin layer on the frozen baking sheet. edamame—Japanese name for green soybeans, often sold in the pod. The number of cartridges you need depends on the temperature of that liquid. MICROPLANES Ask chefs how they feel about their Microplanes, and they'll likely say they can't live without them. They are well worth the \$35-\$75. Keep in mind that whole muscles generally are sterile on the inside (thanks to the immune system of the animal); any contamination is much more likely to be on the surface of the meat. Use paper towels to soak up excess moisture, which can cause violent splattering when it hits the oil. kalbi-(galbi) Korean word for "rib." Usually refers to sliced short ribs. These are certainly not dishes that home cooks whip up any night for dinner. Similar to locust bean gum. Yet while these revolutions were transforming so many areas of art and popular culture in the last century, people were mostly still eating the same old-fashioned, traditional food. © Drizzle the hot peanut oil over the garnished fish. © Boil until fully dissolved and hydrated, 1-2 minutes. - ^ © Remove the bag from the water bath, and immerse it in ice water until the mixture has cooled completely. food, and always apply analytical thinking and creativity to constantly advance the face of cuisine. 8 in. Measure 4 0 g / 4 0 mL/V4 cup of the drained oil, and set the beef aside. Fennel, minced 25 g 37bsp 17% Carrot, minced 25 g 37bsp 17% Carrot, minced 25 g 1/4 cup 17% Sweet onion, minced 25 g 37bsp 17% Carrot, minced 25 g 37bsp 17 rice) 150 g 3 100% (D Stir into the vegetable mixture, and cook until the rice turns shiny and translucent, about 2 minutes. Scribner, on the Science of Good Food: The Ultimate Reference on How Cooking Works. Martha Stewart's Cooking School: Lessons and Recipes for the Home Cook. -5& S COUNTERTOP BLOWTORCHES Used property, a blowtonehesltakefoTbandy portable broilers. Niles, IL 60714 800-229-7569 cuisinetechnology.com R at i o n a 1 / A k r o Ltd. But if the Will it diffuse heat evenly across its surface? Escoffier, A. When the mushrooms are brown and the shallots are tender but not brown, it is time to add the water, soy sauce, and honey. Due to the effects of rounding, you may notice that, say, 20 mL is paired with 3/2 tsp in one recipe, but in another the volume given is 20 m L / ! 1 / \* Tbsp. sodium citrate—the salt of citric acid. The goal of this chapter is to make you more familiar and comfortable with a wider set of ingredients. vital wheat gluten—(gluten flour, gluten powder) extracted, dried gluten containing two proteins, glutenin and gliadin, that together give a dough its strength and elasticity. I began learning about a new trend in experimental cooking techniques, which led to my first cookbook, Modernist Cuisine: The Art and Science of Cooking. Cover the omelets on the baking sheet with another sheet of sprayed parchment, and place them in the oven for lVi-2% minutes to reheat Scrambled Egg Pudding, warm (optional) see variation on page 144 200 g Chives, minced 5g 1 Vfecup 133% Divide the warm scrambled eggs evenly among the omelet sheets. sity Press, 2009. 10. consomme—thin, flavorful, and very clear liquid. Peterson, J. The cooker should not hiss loudly. Slowly pour the warm fat into the jus mixture while mixing with an immersion blender. You can find it at health-food stores, but do not confuse it with sweet or flavored whey powders soldforprotein shake mixes. If you have a potatoricer, you can find it at health-food stores, but do not confuse it with sweet or flavored whey powders soldforprotein shake mixes. from the cooked chicken at step 6. You may need to buy new pots and pans, however, because pure copper and aluminum pans will not work. Season the soup with the remaining egg mixture. soy lecithin—see lecithin. When that cooked lobster and dressed lobster salad keep for up to 1 day when refrigerated You might think it's hard to improve on an old-fashioned lobster time includes a substantial amount of unattended and tomato leather add a Modernist twist. © Check the rice for tenderness. Move the flame evenly and quickly to avoid scorching or further cooking tile food. Wiley, 2009. Farmers' Markets Nearly every community now has a farmers' market. equilibrate of its environment, equilibrium—state in which no change occurs because of the balance between opposing forces or rates of reaction. If you desserts at home is challenging, but modern appliances make freeze the mixture t o o slowly or w i t h t o o little churning, it much more feasible than the old-fashioned approach of the crystals will grow. I want to share my gratitude with everyone who has been deeply connected to making Modernist Cuisine and Modernist Cuisine at Home possible. It was in this kitchen that Nathan began his journey to develop an entirely new way to consider ingredients, technology, and artistry in the preparation of the food we all eat and love, from tomato For all of us who cook regularly, this book opens up a whole new world of possibilities Depressurize the cooker. Gelatin will gel a liquid containing up to 36% alcohol, but the gels taste best when the concentration is 10% or less. © Measure 240 g/245 mL/1 cup of dam juice for use in step 9. MODERNIST CUISINE AT HOME m An electric spark ignites the flow of gas. The result easily matches or even exceeds the quality obtained by slow-cooking sous vide. The Cake Bible. Insert one or two more cartridges of carbon dioxide; do not dispense any of the gas. If the food has a lot of fat in it, consider wearing safety goggles. First, get rid o f your old analog thermometer; it cannot be thermometer can serve in place of a fancy sous vide cooker trusted. 1 cup 30% Garlic cloves »8 2-3 cloves 16% © Boil until tender, about 2 minutes. Until the outside of the food keeps it cooler than the air around it. Italian biga, French poolish, and American sourdough are all types of preferment. Can also be used as a thickener or stabilizer. We tested ail our recipes OH an oven that outputs 1,100 watts. Toss the raspberries in sugar, and then use the water-displacement method to seal them together in a zip-top bag while excluding as much air as possible. We've come up with a variation on the theme in an attempt to explain the Modernist principles we cook by. Ginger Pastry Cream At step 2, omit the cinnamon stick and vanilla seeds, reduce the amount of sugar to 57 g / 5! f. Tbsp, and add 100 g / ty cup of freshly ground black pepper. The food is allowed to equilibrate with that temperature. Serve them hot. Then continue with step 7. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Crimini mushrooms, thinly sliced 300 g 4 cups 75% © Saute in the base of a pressure cooker over high heat until the mushrooms and shallots turn golden, about 12 minutes. ingredient Local Sourcing North America Insta Cure #1 (Prague p o w d e r #1) widely available where sausagemaking supplies are sold; also try sporting goods/outdoor stores that cater to hunters, or ask your butcher sausagemaker.com Insta Cure #2 contains additional sodium nitrate and should not be used as a substitution. Analog thermometers are all but useless at low t e m - (see page 63). All volumes have been rounded to the nearest measures that are available from kitchen-supply stores, including half tablespoons, thirds or eighths of teaspoons. Check the texture. As we did extensive research for Modernist Cuisine (where we cover this topic in greater detail), we found numerous puzzles, inconsistencies, and mistakes in food safety regulations. Cooked lobster meat, from above ) We rate recipes as easy, moderate, or advanced in difficulty Mayonnaise is\* page 108 k Cranny .Smith apple. A tray of ice under the food humidifies the circulating hot air, which both accelerates heat transfer and slows the evaporation of juices from the food. A conventional pesto eventually separates into coarse solids floating on watery. liquid, with a big slick of oil on top. HOW TO Use a Siphon CARBONATING Create a sparkling drink or give porous food a surprising fizz. P^rfJ 8 Add the cheeses into the liquid, one spoonful at a time, while the mixture simmers on the stove. Often used as a sauce or condiment. Continue with step 10. | Speed is not the only reason to use a microwave oven. (13 i P ^ Cool the cheese slightly—it should remain fluid—and then measure 450 g / 2 cups for use in the next step. Partially seat the bag, cover it with a mallet to crush the shells. So when you microwave vegetables in plastic bags, the water-1 ad en food heats up, but the dry plastic doesn't. In the spirit of Modernism we encourage you to use the recipes in this book as a starting point for your own experiments and creative exploration. offal—organ meats. mrxH OMELET FILLINGS Eggs pair well with so manyflavorsthat the variety of tasty filling combinations for omelets is almost infinite. Salt 4g ltsp 2% © Preheat the oven to 190 °C/375°F. Just before serving, finish cooking the grain by stirring in the reserved liquid and simmering it in a pot until it becomes al dente. 6 Stir the warm cheese sauce into the pasta. 1 . The fanciest new ice-cream makers d o the churning is always better. find that the flavor is not as good as when using the seeds. 3 Whole milk lOOg 100mL/ /ocup 100% Sugar 64 g 5Tbsp 64% (D Combine in a pot, and whisk over medium-low heat until the sugar and salt dissolve completely. Traditionally, you add liquid a little at a time, and then you stir constantly to create the starch slurry and keep it evenly dispersed The first glimmers of a transformation in the kitchen did not begin to appear until Nouvelle cuisine gained traction as a named movement in the 1970s. You may
find that you need to warm the gelatofor10 minutes before serving it if it has been in the freezerfor24 hours or more. Peel the omelet sheet carefully from the silicone, and transfer it to the prepared baking sheet. He didn't just raise the bar when his highly anticipated book set finally came to print in 2011, he brought it to a new plateau. Phaidon, 2011. Potter, 2012. i°) Recipe tables are divided by colored lines that group ingre- @ Variation recipes change some of the steps or ingredients in the main recipe to dients into blocks. / 4 cup 20% 0.4% • • • ® Peel the skin from the rhubarb, and reserve the peelings. Releasing a pressure cooker lid while its contents are still hot can splatter boiling water or food all overthe kitchen—or you. coconut oil, refined 195 I mum.. Scallion, white parts only, 25 g julienned 5-6 scallions 5.6% © Combine, and mound half on top of each fillet in the bag If you're using off any excess water from it, and arrange it on plates. Myosin constitutes half of all the protein in muscle. Proper hands with soap and water for a full 30 seconds and using a nailbrush to clean under your nails. Adding a little xanthan gum thickens the gravy; there is no need to boil off water, and with it many flavorful aromas. For example, if the drippings weigh 200 g, measure 0.3 g of xanthan gum. Press a protective layer of parchment paper over it. But now chefs, following the examples tffat Jean-Georges Vongerichten set in tile 1980s with his jttfce vinaigrettes, are using juices to replace stocks and alcohols in recipes for sauces and broths. Sous-vide: Cooking in a Vacuum. To save time, you the step that describes it; when a number can substitute store-bought ingredients, as we indicate by putting appears in the picture, it indicates the corre- the ingredient name in lowercase. The walls are thicker or darker in some spots than in others, and some parts of the wall are closer to the burners or heating elements than others. Jaccard—brand name of a handheld meat tenderizer containing several slender, sharp blades used to cut through tissues, julienned—cut into thin sticks. alkaline—having a pH value greater than 7. Savory m a r m a l a d e s The concept of a savory marmalade may seem odd at first, but marmalade is an excellent form for a flavorful warm condiment. A1 ford J. It has a thin yellow skin with a pungent citrus aroma, a slightly sweet taste, and mild acidity. Often seen sprinkled on hummus. H Stocks, seepage 84 Spice Mixes, see page 124 M •\* VARIATION: Brown Fish Stock After step 3, panfry the fish bones in 30 g / 3 0 mL/2 Tbsp of neutral frying oil until they brown, 4-6 minutes. Some gelling agents cannot tolerate high levels of salt, acid, or certain minerals. The table below lists the telltale signs that something has gone wrong, as well as the most likely causes of these occasional problems, Problem Possible Causes Solutions Clear lumps that look like fish eyes appeared in the liquid. The recipes steer you back here because we consider these basic elements to be intrinsic parts of the flavor and refinement of those dishes. WHAT IS M O D E R N I S T CUISINE x ix ABOUT T H E RECIPES Unless you own a copy of our earlier book, Modernist Cuisine, the recipes in this book probably look different from those you are used to seeing in cookbooks. Taco stands and sushi bars are now ubiquitous, and people are also increasingly aware of regional culinary nuances, such as the differences among Thai, Vietnamese, and Malaysian foods. Rockton, IL61072 800-255-0626 taylor-company.com ice-cream machine Thermo Fisher Scientific 81 Wyman St. Waltham, MA 02454 781-622-1000 thermofisher.com water bath Thermo Sensors C or p. Increase the cooking time in step 4 to about 30 minutes. Sprinkle with one quarter of the sugar. It is important to use raw nut butter in this case because the flavor of roasted nut butter dashes with that of the strawberry j u ice. Then place it in the freezer until the gelato is firm, at least 4 hours. Widely used in Japanese sushi, sashimi, tempura, and salads. Our favorite grain and flavor combinations appear on pages 330-333. That's because water isn't the only thing that vaporizes during drying: aromas do, too, and the higher the drying temperature, the more pronounced the loss. A jet of steam or fog from an overextended pressure valve means that the pressure cooker is overpressurized, and for safety's sake the valve is relieving the excess pressure. temper-various culinary meanings include heating slowly and gently, and progressively warming a mixture by adding a hot liquid. I : n » . : j£& i'-fig\* Button m u sh rooms, thinly sliced ^ 50g % cup 10% Tomato, chopped 50 g Vi cup 10% Chives, sliced 10g Vicup 2% Italian parsley, chopped 10g 3Tbsp 2% Coriander seeds 1g Itsp 0.2% Black peppercorns Thyme H ltsp 0.2% 1-2 sprigs Fresh bay leaf lg 0.5 g 2 leaves 0.2% 0.1% Star anise, crushed 0.5 g Vipod m% 0.1% [§].'-Strain. For example, long tweezers mike handling food less cumbersome, and a paintbrush is useful for applying even layers of sauce or oil. homogenized—mixed with sufficient shearing force to break droplets into very small sizes. Arrange the bok choy leaves, ham, barley, and vegetables artfully on plates. Kodansha International, 2007. © Puree immediately in a blender. Never cook with infused oils, however: as soon as they are heated, they lose Tl their aroma and begin to develop off-flavors. Alternatively, parcook in a pressure cooker at a gauge pressure of 1 bar/15 psi, for the time indicated in the table, and then quickly depressurize the cooker by running tepid water over the rim. Several common limitations of these appliances conspire to make it difficult to get even, consistent results. Pour one quarter of the egg white mixture into each of the pans. Make sure your thermometer can display temperatures up to 260 °C / 500 T. MODERNIST CUISINE AT HOME Openthesiphonby holding it upright, pressing a cloth against the nozzle to contain any liquid, and slowly releasing the gas. bar-metric unit of measurement of barometric pressure. 200 g 3 cups 100% © Add gradually to the simmering liquid. Work in batches if necessary. Bake 2-3 minutes more if needed. pomelo-(pommelo) giant, semisweet citrus fruit thought to be the ancestor of the grapefruit Native to Malaysia. KM sauce to carrot soup, from hamburgers to roast chicken. @ Sprinkle the toasted bread and cheese crumbs over the assembled dish. plate, add water, and then tightly cover the plate w it h microwave-safe plastic wrap. You can enhance the flavor of the juice or lemon oil for lemon juice, right before serving, • Chemical .changes also cause juice to brown quickly. • • ' ".«-'•• -.""T - • 1 1 cup 40% (D Place in a pot with 500 g of the syrup, and simmer over medium-low heatfor 30 minutes. citrate, an emulsifying salt, to produce lithe cheese flavor i n t o t h e w a t e r that see page 314 FURTHE R. 'READING-iN/V/i vwippastass&page 3-378 wo&tstable emulsions: see pages££06-213 dffl&MgMoaErnist emulsifiers: seepages 4-214-217 gjpngesesforfondue, raclette, and other uses: V2-22S, h I slices of.any cheese you want, the d o o r ^ y is open to fantastic grilled cheese • s a n d w i c h e s . LogsdonJ. (Don't let water run into the pressure valve.) Some cookers have a manual quick-release knob or dial; be sure to read the manufacturer's instructions on how to use this feature safely Serve it hot VARIATIONS Bok Choy Medley Baby bok choy, halved A u t u m n Flavors Bok Choy 300 g 4 medium heads Baby bok choy, halved Pressure-Cooked Barley, warmed 60 g see page 184 4Tbsp Broccoli-Gruyere Puree see variation on page 181 Iberico ham, sliced paperthln 40 g 8 pieces 24 e Cauliflower florets 32 g 8 florets Romanesco cauliflower florets 32 g 8 florets Pickled Honeycrisp apple, finely diced see page 130 Brussels sprout leaves 12 g 12-16 leaves Comte cheese, grated 8g 4tsp Spinach Butter, warm see variation on page 121 ITbsp Hazelnut oil 4 g 12g -1 ml 1 tsp Meyer lemon zest, grated 1g 1 tsp Follow steps 3-5 above to cook the bok choy. At the same time, it's wonderful to see people embracing local ingredients. © Cook sous vide for 30 minutes. MODERNIST CUISINE AT HOME I SAFETY TIPS FOR BLOWTORCHING The risk of getting burned while blowtorching food is similar to that of oil splattering while deep-frying. Heston Blumenthal at Home. Studio, 2010. A quick sear of the surface with a blowtorch sanitizes it even more thoroughly (see page 15). '. Before opening the cooker, use the pressure-release button, let the cooker sit, or cool the pot under running water. Use long tongs, a slotted deep-fry spoon, or a frying basket to place the food gently into the oil and to remove it. This feature traps most aromatic volatiles before they can escape in the vented air. Passard, A. But 1 am not unhappy with the way things turned out. Try not to create bubbles; if foam appears on the surface, spoon it off. kombu—Japanese term for dried kelp, an important ingredient in the flavor and seasoning of Japanese term for dried kelp. stirring. diffusion—natural process by which heat or a substance (such as a brine) moves from a region of high concentration to adjacent regions of lower concentration, until all areas in contact are at equilibrium. © Pass the puree through a sieve. texture, flavor, and color. ... Now we've turned our attention to writing this book, which explores using the techniques from Modernist Cuisine in a home kitchen. This is a small risk that most people consider acceptable. muscle fiber—cell that is capable of contracting and that forms muscle. As you make recipes in other parts of this book, you'll find that they often incorporate the building blocks collected in this chapter. Achatz, 2008. Seek out the best ingredients, handle and prepare them hygienically, and cook them precisely. For precise, reproducible results, though, it's hard to beat induction cooktops. Available in many varieties and names. 13 Top the eggplant with one-third of the
ricotta, sliced mozzarella, and basil. You'll learn, for example, that fancy copper pans can't compensate for an underpowered burner, and that a pressure cooker can easily transform a cheap cut of meat into something amazing. Pass the puree through a sieve. Pour it into a whipping siphon, and charge the siphon with two cartridges of nitrous oxide. Black edges are a bad sign; this piece of meat is a goner. It also increases cooking efficiency by accelerating heat transfer from the air to the food. Knopf, 200S. Radiation isn't reaching you. Most Modernist ingredients have natural origins, as illustrated on the next page. SCALING PROCEDURE 65% ® Clean by discarding any organs, including the gills and eyes. To take a pot of water from a rapid boil to a low simmer, for example, you have to remove the pot from the Gft\$ lice Hie Gas stoves are woefully inefficient at directing heat Although it is slow to react to adjustments in tempera- But natural gas is a cheaper source of power than ture, the electric stove is the most affordable option. Collect and strain the shucking juices (see steps 3-6 on page 286). 3 leaves 1% / Vi cup of egg whites (from about 3 eggs), and then stirring them in after step 5. Blowtorches were sold only by machine shops and hardware stores. Intact pieces of raw fruits and vegetables are likely to have only surface contamination, so you can briefly blanch them in boiling water or steam. Garnish with fresh raspberries or other seasonal fruit. Hybrid devices incorporate a broiler element for browning; some include a convection oven as well. mace-frond of the dried formations that cling to the nutmeg seed. As heating begins, expanding vapor pushes this valve up, closing off the^vent. Wait to check the temperature, for example, until the cooking is nearly done. and Piege, J.-F. Blumenthal, H. very dry, it will eventually cohere. That's okay. Yes. If the food isn't done, simply finish it on the stove top without sealing the lid. Food "sweats," too, after a fashion; as the oven heats up, the food loses moisture to the air through evaporation. Our goal is to broaden the number of people who can use these ideas and to encourage making Modernist cooking part of their daily lives. For more on equipment, see chapter 1. We have a remedy for this relationship: calibrate your oven. There is no need to stir rice when you cook it in a pressure cooker because the process forces so much water into the starch granules and plant cells that many more of the cells burst on their own. Is up loth- \M HOW TO Testthe Accuracy of a Thermometer 1 Test the range and accuracy of your thermometer 1 Test the range and accuracy of your thermometer 1 Test the range and accuracy of your thermometer 1 Test the range and accuracy of a Thermometer 1 Test the range and accuracy of your thermometer 1 Test the range and accuracy of your thermometer 1 Test the range and accuracy of your thermometer 1 Test the range and accuracy of a Thermometer 1 Test the range and accuracy of your ther you are ready to reheat it. In fact, pieces of food Popcorn was one of the first foods cooked in a microwave oven and remains one of the most popular. Morrow Cookbooks, 2004. But once the temperature after you open the door to insert or check on the food. Then, dehydrate at temperatures above 50 °C/120 °F; that is usually hot enough to minimize the proliferation of bacteria. At step 4, sieve the infused milk and cream mixture before adding it to the blender. A fine-weights scale is a crucial tool when measuring hydrocolloid thickening and gelling agents. The mixture Should be intensely flavored. At step 8, blend the chocolate mixture gradually into the cooked egg yolks, and then gradually add the heavy cream. forbidden rice—especially nutritious strain of Chinese black rice once reserved for royalty. Cold water 1.2 kg © Place the corncobs and toasted husks, but not the kernels, in a pressure cooker, add the water, and pressure-cook at a gauge pressure of 1 bar/15 psi for 30 minutes. In the Middle Ages, Nathan Myhrvold would have been called "Nathan the Curious." Today he is being hailed as the man who became a chef via science, whose eyes were opened to the infinite possibilities of cuisine and flavors by other food pioneers like Marc Veyrat, Ferran Adria, and Heston Blumenthal. 20 minutes to marinate instead of 1-12 hours. Fold in any additional flavorings, season, and serve. All three are useful for lining oven trays, setting into pans on the stove, and making thin sheets of food, such as crackers, crisps, and fruit leather. And they aren't hard to find. Viking. We give common spoon and cup measures (or unit measures) for all ingredients except those, such as thickeners and emulsifiers, that must be weighed for the recipe to work. Mugaritz: A Natural Science of Cooking. After retiring from Microsoft in 1999 at age 40,1 was determined to spend more time in the kitchen. You can reduce the liquid slightly if the flavor molecules evaporate along with the water, so don't overcook it. William Morrow Cookbooks, 1988. Alternatively, place pieces in a zip-top bag, and crush them with a rolling pin or mallet. © Season the mac and cheese, and serve it warm. cle Books, 2011. Favorite Italian Restaurant and Pizzeria. chunks of food can get stuck or wedge themselves out of reach of the blade Features to look for: power (we prefer Vitamix models that can transform chunky food into silk in minutes), a wider bottom for better circulation of food around the blade Where to buy: kilchen-supply stores Cost: \$50-\$400 Oaffeegrind«r Food proi< sor Pros: makes quick work of spices compared with a mortar and pestle Cons: difficult to clean (grinding a bit of rice and wiping it out with a paper towel is the best you can do) Features to look for: power, design that allows the grinding tools; handles dry, soft food better than a blender does. Blend the whole eggs, cream, yolks, and salt thoroughly; use a whisk or immersion blender. Steingarten, J. Produce is just as likely to carry fecal contaminants as meat and seafood are. Sieves come in varying shapes and degrees of fineness. 8615 Usher Rd. Cleveland, OH 44138 800-437-4654 vitamix.com Vita-Prep blender The Vollrath Co. 1236 N. Surprising them with food that defies their expectations is another way to engage them intellectually. Refrigerate the mixture for 2 hours to infuse it with the cinnamon and vanilla. Arabesque: A Taste of Morocco, Turkey, & Lebanon. The purpose of the bag is to capture the juice; it doesn't need to be sealed Ingredients must be frozen solid in special steel canisters at about -22 ° C / -8 °F. The spindle assembly shunts pulp into another receptacle. and Parrish, M. Avoid colored sticks and sweetened agar dessert powders. Strainers also allow you to make tender, cooked solids finer by passing the food through the fine mesh with the back of a spatula, scraper, or ladle. Divide the warm scrambled eggs, if using, evenly among the omelet sheets. b; 203 Char- • Vitamix, Vollrath, Winston Industries Photo Credits C h a n t t?r 6 : B r e a k f a s t F g < -- b = bottom, I = left, c = center, r = right, Chapter 3: Cooking Sous Vide u = upper, L = lower Chris Hoover: 51: uc; 64:1 Melissa Lehuta: 144: uc, ur, LI; 147: ur, LI. Illustrated Guide to Home Chem- 2006. Most importantly, it ignites a curiosity within and compels us to ask ourselves not "What can we make for dinner?" Not since Harold McGee wrote On Food and Cooking have we been offered such a clear and concise scientific approach to guide us. Use the tip of the inner cone of flame, not the base. It is loaded with sugars, soluble proteins, emulsified lipids And fat compounds, and volatile aroma molecules-in other words, the essence of flavor. uc, ur, Lr; 118; 120; 121: ul. albumin powder—(albumen) dehydrated eggwhite protein. Vetri, M. Whip the lard or butter in a stand mixer, scraping the sides of the bowl frequently, until it turns light and airy. C O N V E N T I O N A L C O O K I N G GEAR 33 CONVENTIONAL OVENS When you dial a temperature into your oven, it matches that thermostat setting by monitoring a dry thermometer, which senses the "dry-bulb temperature." The real baking temperature of your food is ihe "wet-bulb temperature"—What a thermometer would read if it could sweat. We also don't list equipment, such as a fine sieve, an accurate digital thermometer, a precise scale, an 11 immersion blender, and a silicone baking mat, that we expect most 4g Black pepper, ground to
taste Hot dog buns (store-bought) Pressure-Cooked Crustacean Butter or clarified, uncalled butter I icrpag»122or 19 Vacuum-Infused Celery 100% Tomato Leather, strips (optional) 2Tbsp 0.8% ITbsp 0.8\% I are often better left to more The thicker a pan is, the more uniform the temperature across its surface. Brewers measure enzyme strength in degrees Lintner (°L). During cooking, the starch granules absorb water, swell, and become sticky. The conventional wisdom-that a forced-convection oven "cooks 25% faster" or "10 degrees hotter" than a conventional oven-is oversimplified. Thank you for interesting in our services. Place the buns facedown in a dry frying pan, and toast them over medium heat until golden brown, about 2 minute\*. Nouvelle cooking was a reaction against the rigidity of classical French cuisine, as codified in the works of La Varenne, Careme, and EscofHer. Stir the crushed ice with the water for I minute to make sure the temperature is evenly distributed. Both risotto and paella get their body from short-grain rice, which releases starch during cooking to produce a thick and creamy texture. Add the rice, and toast it with the sauteed aromatics until it turns shiny, golden, and nearly translucent. The sauce is so fragile because butter congeals and separates as soon as it cools. Available in many varieties: shiro miso is a more mature red miso with a more pronounced flavor and salty taste. Each region offers its own menu of native wild foods. America's Leading Authority on Chinese Cooking Gayler, P. Don't dwell too long on any spot. To make these v o l umes as precise as possible, we calculated the volumes of thin liquids from their densities. Their cost has come down as well, further lowering the barrier to home use. The book has been translated into French, German, and Spanish. Deep-fry the cooked food. M A C A N D CHEESE 315 CHEESE CRUMBLE 250 g/2Vi cups VA hours overall, including 25 minutes ofpreparation and 50 minutes unattended keepsfor 2-3 days when refrigerated moderate food processor (optional), sodium citrate, tapioca starch Baked Mac and Cheese (seepage 312) YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: USED IN: INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Water 60 g 2.5 g 60mL/V4Cup 30% 1.25% 
Preheat the oven to 175 "C/350 °F. B. Salt to taste Lemon juice to taste © Let the cooker cool, or run tepid water over the rim, to depressurize it. It has a silvery color. Water vaporizes into steam, increasing the pressure inside the pressure cooker as it heats. This topping also makes a nice garnish for lattes and cappuccinos. tahini—oily paste of toasted, ground sesame seeds. Bottles labeled as "cooking wine" have salt added to make them unpalatable so that they can be sold as an ingredient rather than a beverage in stores not licensed to sell alcoholic beverages. After a year at Jack's, I moved to London to further hone my skills. Tyson Stole: 95; 98: ul, uc. evaporation—the change from the liquid state to the vapor (gaseous) state. Listen t o y o u r s i p h o n If the seal on your whipping siphon is faulty, the gas will go in and right back out again. Adria, F. §EJ • Keep food from sticking Brush a thin layer of oil on the food, unless it has areadysource of fat that will be rendered by the heat, as do steaks, hamburgers, and sausages. vacuole—in plant cells, a cavity filled with air and water. I (optional), season the soup, and serve it chilled. The Elements of Cooking: Translating van Wyk, B.-E. Stop when you reach the seeds. Note that you can nearly touch that part of the

flame from the side before your hand really feels the heat. Although it looks takes on the texture of cornmeal. 11 Stir the dry macaroni into the cheese water, and reduce the heat to medium. POur in a cold liquid or add a chilled fruit. A flavorful oil similar to olive oil can be pressed from them. Pull a pastry comb having3 mm/Ve in teeth through the mushroom mixture to create straight, parallel lines across the mat. Almond and Cherry Cream Pie Crust: Double Almond Crust Filling: Amaretto Pastry Cream Topping: Top each tart with six fresh cherries, halved, and 15 g/1 Tbsp of crumbled Caramelized Almonds. Fold the corn puree into the masa batter \* ^ to make the tamale batter. Unsalted butter, softened 50 g 1 !4cup Preheat a water bath to 80 \*C /176 °F. (b) and frozen storage times given—supplemented in some recipes D Green apples and herbs freshen the lobster salad, and infused celery roll—until you taste one made with lobster (l) is a substitute cooked with precision. You can substitute cooked shrimp orstorebought cooked crab for (l) is a substitute cooked with precision and herbs freshen the lobster salad, and infused celery roll—until you taste one made with lobster (l) is a substitute cooked with precision and herbs freshen the lobster salad, and infused celery roll—until you taste one made with lobster (l) is a substitute cooked with precision and herbs freshen the lobster salad, and infused celery roll—until you taste one made with lobster (l) is a substitute cooked with precision apple and herbs freshen the lobster salad, and infused celery roll—until you taste one made with lobster (l) is a substitute cooked with precision apple and herbs freshen the lobster salad, and infused celery roll—until you taste one made with lobster (l) is a substitute cooked with precision apple and herbs freshen the lobster salad, and infused celery roll—until you taste one made with lobster (l) is a substitute cooked with precision apple and herbs freshen the lobster salad, and infused celery roll—until you taste one made with lobster (l) is a substitute (l ) VARIATION: Sous Vide Lobster Tail ^-\ To make a main course of lobster, preheat a water bath to SS "C /131T- Seal the shelled lobster tail meat with 20 g of butter In a zip-top bag, remove the air, and seal. 
(B) Chill the mixture over an ice bath. Athigh elevations, the air pressure is lower, so water boils at a lower temperature. Another ingredient interfered with the action of the gelling agent. I was very good at school and often skipped grades, to the point that I started college at age 14. 261 Yadkin Rd. Southern Pines, NC 28387 800-851-8900 hamiltonbeach.com milk shake blender Hanna Instruments, Inc. chanterelles—(girolle) wild, funnel-shaped mushrooms, valued for their golden color and nutty, buttery flavor. As hundreds of blogs and forum postings show, many amateurs have embraced the book. 450 g 2 cups 100% @ Combine. At step 8, add 5 g / 6 mL/V4 tsp of amaretto liqueur. The oil should create an airtight seal between the silicone mat and the pan, thus preventing any egg from seeping under. Ail these temperatures, oils break down and produce off-flavors. But some people feel suspicious of ingredients with unfamiliar names, such as salmon. Vanilla seeds, 1999. pin bones—intermuscular or "floating" bones that are not attached to the main skeleton of certain fish, such as salmon. Vanilla seeds, scraped from the bean lg VA tsp/from 1 bean Salt 0.3 g pinch 0.3% Egg yolks, blended and strained 200 g y4 cup/11-12 yolks 200% 1% 0 Remove and discard the cinnamon stick. 1.2 L/5 cups © Depressurize the cooker. This impractically high temperature invariably leads to overcooked meat, seafood, and vegetables. Hold down the nozzle to blow out the gas. flash—to expose food to extreme hot or cold temperatures, such as flash-freezing with liquid nitrogen or flash-frying with hot oil or in a hot p.m. fluid gel—gel in which the gel structure has been broken, enabling it to flow like a liquid. Lc; 191: or, b; 192; 193: ul, ur. fond—French term for a dish's base or foundation, such as a stock or broth. VOLUME SCALING PROCEDURE Sweet onion, thinly sliced 635 g 6 cups 127% 
Preheat a water bath to 88 °C/190°F. To make a semisolid gel, pour the mixture into a mold or bowl, and allow it to cool until it sets. and Patterson, D. BAKING ON THE BARBECUE If you're grilling large or thick foods, consider turning your grill into an oven. At step 2, omit the sugar, cinnamon stick, and vanilla seeds, and use an immersion blender to gradually blend 200 g / 2 cups of shredded Gruyere cheese into the hot milk and cream until it is smooth and completely melted. Unlike gelatin, agar gels can tolerate moderate heat (up to 85 °C /185 °F). MAC AND CHEESE 317 GRILLED CHEESE SANDWICHES To make a great grilled cheese sandwich, generously spread batter on the exterior of the bread, assemble the sandwich, and panfry it over medium heat until die bread is golden brown and the cheese is fully melted, 2-3 minutes per side. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Black cod, skin on 450g/llb 2 fillets 100% 
Place each fillet in a separate, microwave-safe zip-top bag, and then place each one, skin-side down, on a microwave-safe plate. © Depressurize the cooker. • C ^ Calculate the scaled 100% value from step 3. Proteins arc a primary constituent of animal tissue but are also found in plants. Tie it closed with a narrow strip of corn husk or a piece of string, if necessary. siphon—see whipping siphon. You don't have to replace your range to give induction cooking a try. page are best used either for cooking a try. page are best used either for cooking a try. crisp, brush a thin coat of melted cocoa butter onto the interior of the piecrust, and allow the fat to solidify at room temperature before you fill the shell with pastry cream. Dried, ground leaves are also called sansho. chili peppers, or garlic. curd—thickened milk gel that has been treated with a coagulant to make cheese. If you seal vegetables with a little liquid in a plastic bag or in a container covered by taut plastic wrap, the microwave creates enough steam to counteract its tendency to cook unevenly. (D Chop into pieces with a heavy knife or cleaver. The rule to remember is that food sliced half as thick will dry in a quarter of the original time required. But, like cold, fat numbs flavor perception. Ground chicken 1 kg/2.2 lb Neutral frying oil as needed Brown chicken stock see variation on page 85 1 kg Fino sherry or dry white port 200 g Shallots, thinly sliced 200 g 134 cups 20% © Strain the jus into a pot. w # LygMjM Property organized freezers make it easier to manage frozen food and to identify and remove packages that have been in the freezer for too long. © Cool the cheese cracker, and break it into pieces. If a greater concentration of gelling agent is needed, increase the quantity very gradually. Whisk the milk, egg yolks, cream, sugar, and vanilla seeds together. Use an immersion blender to blend each addition until it is melted and completely smooth. Fishes differ a bit in their densities, so you may need to adjust the cooking time. istry Experiments. About the Recipes XII xiv xvii xviii XX PART ONE: STOCKING THEMODERNIST KITCHEN Chapter 1: Countertop Tools 5 Invaluable Modernist Tools Digital Scales Digital Thermometers Silicone Mats and Molds Microplanes Blenders and Food Processors Mixers and Frothers Ice-Cream Makers Ice Cream in a Flash Blowtorches Jaccard Tender izers Injectors Sieves and Strainers Whipping Siphons Juicers Dehydrators Chapter 2: Conventional Ovens The Household Stove Combi Ovens Ways to Use a Combi Oven Microwave Ovens Ways to Use a Microwave Oven Making Waves Grills Hot as Hell Chapter 3: Cooking Sous Vide Four Simple Steps Getting the Air Out Bags, Rigid Containers, and Jars Vacuum Sealers Solutions for Common Sealing Problems Cooking and Reheating Water Baths Improvised Water Baths Chapter 4: Ingredients Unusual Ingredients Not Your Parents' Supermarket Take a Walk on the Wild Side Unusual Fruits and Vegetables Foraged Foods: Autumn and Spring g 7 g 9 9 10 11 12 13 14 16 16 17 18 20 21 22 24 26 28 29 30 34 36 38 39 40 41 42 44 47 48 SO 52 S3 54 57 60 62 64 69 70 72 74 76 78 PART TWO: THE RECIPES Chapter 5: Basics Stocks Pressure-Cooked Brown Beef Stock Brown Pork Stock Brown Pork Stock Brown Beef Stock Brown Pork Stock Brown Pork Stock Brown Chicken Jus Brown BeefJus Game Bird Jus Home Jus Gras Ultrastable Butter Sauce Sauces Thickening with Wondra Redeye Gravy Red Wine Glaze Solutions to Common Problems When Thickening and Gelling Onion Fluid Gel Egg-Yolk Fluid Gel Pressure-Cooked Drippings Caramelized Onion Gravy Pistachio Pesto Chervil, Thyme, and Scallion Pesto Roasted Red Pepper Pesto Green Onion and Sorrel Pesto Sauce Verte Mughal Curry Sauce Kerala C Barbecue Ketchup Salsa Verde Pressure-Caramelized Peanut Sauce Marinara Pizza Sauce Tomato Sofrito Bolognese Pineapple Marinara Strawberry Strawberry Strawberry Strawberry Strawberry Marinara Strawberry Marinara Strawberry St Spiced Chili Oil Garlic Oil Lemon Oil Basic Chili Oil Ginger Oil Vanilla Oil Rosemary Oil Thyme Oil Montpellier Butter Stove-Top Carotene Butter Sous Vide Crustacean Butt Applesauce Pressure-Cooked Pickled Mustard Seeds Pressure-Cooked Garlic Confit Provencal Garlic Confit Provencal Garlic Confit Pressure-Caramelized Onions Dried Caramelized Onions French Onion Soup Tomato Confit Tomato Leather Fruit Leather Onion Leather Vacuum-Pickled Vegetables Vacuum-Infused Celery Pressure-Infused Celery Waldorf Salad Brines and Marinade Spice Mixes Basic Brine for Whole Poultry Brine Fish Brine 134 134 134 134 135 135 135 135 135 135 136 137 138 138 139 Chapter 6: Breakfast Eggs Egg Textures French Scrambled Eggs Mini Egg Cups Omelet Filling Steamed Herb Omelet Striped Mushroom Omelet Mushroom Puree Cream of Mushroom Soup Shiitake Marmalade Eggs Sunny-Side Up Deviled Eggs Chapter 7: Salads and Cold Soups Raspberry Juice with Green Apple Foam Modernist Vichyssoise With Potato Peel Reduction Roasted-Potato Vichyssoise Sweet Onion Slaw Composing a Great Salad Green Salad with Romaine Dressure-Cooked Lentil Salad Chapter 8: Pressure-Cooked Chickpea Salad Sous Vide Tuna Confit Salad and Tuna Melt Sandwich Pressure-Cooked Lentil Salad Chapter 8: Pressure-Cooked Chickpea Salad Sous Vide Tuna Confit Salad and Tuna Melt Sandwich Pressure-Cooked Lentil Salad Sous Vide Tuna Confit Salad Sou Cooked Vegetable Soups Caramelized Carrot Soup Caramelized Carrot Soup Caramelized Carrot Soup Corn Soup Pressure-Cooked Vegetable Soups and Purees Squash Soup Artichoke Soup Mushroom Soup Caramelized Carrot Soup Corn Soup Pressure-Cooked Vegetable Soups and Purees Squash Soup Caramelized Carrot Soup Corn Soup Caramelized Carrot Soup Caramelized Carrot Soup Caramelized Carrot Soup Corn Soup Caramelized Carrot S 181 182 183 184 184 185 185 # "KH» Sf Chapter 9: Steak Cuts of Steak Grades of Meat Premium Varieties of Beef Cooking Steak Sous Vide Steak in a Cooler Creamed Spinach South Indian Watercress Grilled Steak Grades of Meat Premium Varieties of Beef Cooking Steak Sous Vide Steak in a Cooler Creamed Spinach South Indian Watercress Grilled Steak Grades of Meat Premium Varieties of Beef Cooking Steak Sous Vide Steak Sous Modernist Hamburger Patty Firm Burger Patty White Sandwich Bread Modernist Cheeseburger Ultrafrothy Milk Shake Modernist Meatloaf Sandwich Chapter 11: Carnitas Pressure-Cooked Carnitas Achiote Paste Sous Vide Carnitas Whole Shoulder Other Braised Meat and Poultry Dishes Lamb Leg Tajinc Pork Shoulder Fricasee with Apples and Morels Pork Vindaloo with Naan Korean Short-Rib Lettuce Wraps Braised Duck with Steamed Buns Pressure-Cooked Pork Belly Adobo Sous Vide Pork Belly Adobo Sou Mashed Potatoes Sweet Potato Puree Pork Belly B.L.T. Pressure-Cooked Pork Belly Smoked Bacon B.L.T. Lamb Curry Pressure-Cooked Lamb Shanks Whole Lamb Shanks Chicken Wings Sous Vide Buffalo Wings Crispy Chicken Wings, Korean-Style Crispy Skinless Chicken Wings Puffed Chicken Skin Boneless Yakitori Wings Buffalo Sauce Korean Wing Sauce Blue Cheese Sauce Aerated Blue Cheese Sauce Aer 268 270 270 270 270 270 271 271 271 271 271 271 271 272 273 Chapter 16: Salmon Fragrant Sous Vide Salmon Crispy Fish Skin Baked Fish Skin Chips Crispy Chicken or Pork Skin Selecting Salmon Crispy Fish Skin Chips Crispy Chicken or Pork Skin Selecting Salmon Crispy Fish Skin Chips Crispy Fish Skin Chips Crispy Chicken or Pork Skin Selecting Salmon Crispy Fish Skin Chips Crispy Sin Skin Selecting Salmon Crispy Fish Skin Chips Crispy Sin Selecting Salmon Crispy Fish Skin Selecting Salmon Crispy Fish Poolish No-Knead Pizza Dough Pizza Stones, Plates, and Pans Classic Pizza Variations Napolitana, Funghi, and Hawaiian Pizzas Pizza Margherita Oven-Fried Pizzas Uovo and Finocchiona Pizzas Pizza Cruda 295 296 296 297 297 297 298 298 299 300 301 303 303 304 305 305 306 306 307 307 Chapter 19: Mac and Cheese Mac with Goat Gouda and Cheese Mac and Cheese Mac and Fontina Mac and Fontina Mac and Swiss Mac with Goat Gouda and Cheese Mac and Cheese Mac and Fontina Mac and Swiss Mac with Goat Gouda and Cheese Mac and Fontina Mac and Swiss Mac with Goat Gouda and Swiss Mac with Goat Gouda and Fontina Mac and Swiss Mac with Goat Gouda and Cheese Mac and Cheese Mac and Fontina Mac and Swiss Mac with Goat Gouda and Swiss Mac with Goat Gouda and Cheese Mac and Swiss Mac with Goat Gouda and Swiss M Parmesan Mac and Cheddar Cheese Crisps Cheese Crumble Perfectly Melting Cheese Sandwiches Aged White Cheddar on Sourdough with Apples Camcmbert and Gruyere on Brioche with Ham and Mushrooms Feta on Potato Bread with Vegetable Con fit Goat Cheese on Baguette with Tomato Count and Basil Stilton on Walnut Bread with Shallot Marmalade Chapter 20: Risotto and Paella •rf\*" t t\ Cooking Grains • Pressure-Cooked Paella del Bosco Vegetable Risotto Flavors Bok Choy Microwaved Potato Salad Microwaved BeefJerky Spicy Jerky Smoky Jerky Biltongjerky Crispy Beef and Shallot Salad Crispy Beef Active Spicy Jerky Smoky Jerky Biltongjerky Crispy Beef Strands C Peanut Butter Sponge Sesame Sponge Raspberry Macadamia Nut Sponge 342 344 346 346 346 346 346 346 346 346 348 380 350 350 350 357 357 Chapter 23: Custards and Pies Making Custard Coffee Creme Brulee Pot de Creme Brulee Pot de Creme Brulee Flan Lemon Curd Fruit Curds Foamed Lemon Curd Raspberry Panna Cotta Fruit Jellies Vegetarian Panna Cotta Sous Vide Vanilla Creme Anglaise Sabayon Pistachio Gelato Panut, Carrot, Cheese, Coconut, Raspberry, and Chocolate Crusts Sous Vide Vanilla-Cinnamon Pastro Cream Firm, Amaretto, Lemon, Coconut, Ginger, Cheese, Pressure-Infused Coffee, and Chocolate Pastry Creams Pie Toppings Apple Foam Passion Fruit Glaze Cocoa Nib and Cherry, Ginger, Coconut, and Chocolate Pastry Creams Pie Toppings Apple Foam Passion Fruit Glaze Cocoa Nib and Cherry, Ginger, Coconut, and Chocolate Pastry Creams Pie Toppings Apple Foam Passion Fruit Glaze Cocoa Nib and Cherry, Ginger, Coconut, and Chocolate Pastry Creams Pie Toppings Apple Foam Passion Fruit Glaze Cocoa Nib and Cherry, Ginger, Coconut, and Cherry, Coconut, and C Cream Pies Banana, Apple, Savory Cheese, and Raspberry Lemon Cream Pies 358 360 362 362 362 362 362 362 362 362 363 365 365 365 365 365 366 368 369 370 377 377 378 378 378 379 Further Reading Glossary of Cooking Terms Reference Tables Contributors Acknowledgments and Photo Credits Step by Step Procedures and Tables of Best Bets Index IV XII XXIV XXVI XXVII XXIV Foreword When Nathan asked me to write the foreword to his newest tome, I was flattered, of course, but also apprehensive that I would not have time to try enough of the recipes, or leisure enough to read this impressive, large volume of recipes, techniques, and suggestions for a new way to cook at home. Cover the omelets on the baking sheet with another sheet of parchment paper coated with cooking spray, and place them into the oven to reheat for V/i-lVi minutes. But the degree and duration of that effect depend on the size of the food, its water content, the weather, and other factors. Blackhawk Blvd. Gas stoves provide much better control over the cooking temperature because theflameresponds quickly to a twist of the dial. Charlie Trotter's Vegetables. fish sauce—see Asian fish sauce of each fillet, and then place the fillets in bags as directed in step 1. Use the stock in warm or cold dishes. Add 70 g j'f. cup of Freeze-Dried Raspberry Powder {see page 377) at step 4. guar gum—thickener from the endosperm of guar seeds. TEMP ywqt: .7 m # (10 Mm 1 (1 Mln. that transfers heat to the food extremely fast. and Duguid, N. The flavor of an oil comes from small amounts of other compounds that are suspended in the fats. Cool for 5 minutes, uncovered, and then measure 450 g/3! cups for use in step 11. chicken forewing—segment of chicken wing that containers can stay cool because microwaves heat mainly water and oil. Agar is the most useful gelling agent for making fluid gels, but it does require heat to activate-not ideal if you are making a raw vegetable sauce or a cold soup such as gazpacho. clarified—made clear. Look for a self-igniting torch. If the liquid becomes very sticky, you added too much. Continue with step 8, place the hot, hydrated mixture in a tall container, and set it in an Ice-water bath. If you dwell too long in one place, brown spots will appear. dosa—South Indian pancake made from a lightly fermented batter of beans (urad dal) and rice. Historically, a warm, spiced, and sweetened drink of fresh milk mixed with wine or ale. Line a baking sheet with parchment pap< and spray it with cooking spray. Searing cooks only the exterior Of the food, so you 'II need to cook tile interior some other way. Like any good minestrone, this fruity dessert soup is best when made with ingredients at their seasonal peak. 12 Place one drained, warm egg yolk in each divot. If you are really concerned, dip the meat into hot water to blanch it before you puncture it. For the candied beans: Water Sugar 1 kg «.tV-j) If|- r - ' " i , rtcr-f- - iig.,i:" 1, 200g Cannellini beans (canned), drained, rinsed, and cleaned of any skins or broken pieces £ - 1 i g ifjrii»-r.-J-,|if.i : I - . You might be surprised by the e«ellei««fi\$fce51lc»n turn oufc^see chapter 22 on page 342forexamples. Keep in mind that the pasta will continue to absorb moisture, so it will soften overtime. See our Modernist Hamburger Patty recipe on page for ideas). Penguin, Davidson, A. We extract the essence of leeks, and then use that juice as the main liquid to give it an intense flavor. The microwaves have a wavelength of 122 mm / 4.8 in long, so although they bounce around tile cooking chamber, they heat some spots more than others (see bod, evening out temperature differences, but this takes time. More tender than a mature lotus. We also give volumes in milliters (mL) for thin liquids. We wanted the cheese to flow well, so we also added carrageenan, a thickener extracted from seaweed, to adjust the viscosity of the cold cheese. VARIATIONS D o u b l e A l m o n d Crust At step 5, add 2.5 g / % tsp of almond extract. Beef knucklebones 1.3 kg/2.8 lb 100% © Add to the pressure cooker, and stir to combine. Fluid gels, as these sauces are called, often have a creamier mouthfeel than you can get from a comparable sauce thickened with starch or xanthan gum. The sealed environment of the pressure cooker locks In more Of these volatile aromatic compounds. Fortunately, tragedy was averted that night, but my sense for culinary exploration was left uncompromised. Strain the mixture through a fine sieve. The temperatures given in this table and the one on the next page provide a general guide, but your oils may perform differently. We use the classic technique of salting the eggplant slices to draw out excess moisture, but then 342 very tender while continuing to draw out excess moisture. Yet there's no way to control it on a conventional oven. Cook sous vide in a 70 °C/158 °F water bath for 35 minutes. Also try combining techniques from throughout the book. For thick liquids and dry ingredients, we scooped the ingredient and then leveled it with a straight edge. 3 cups 100% © Process through a juicer. It is common in beverages and soft drinks, but solid foods can also be carbonated. Strain the coffee-infused cream into a saucepan, and then continue with step 1, omitting the cinnamon stick and vanilla seeds. Food cooked in both open pots and pressure cookers takes slightly longer to cook at high-elevation locations, but the temperature is still higher in a pressure cooker than it is in an uncovered pot. essential oil—concentration of volatile aromatic compounds in spices, herbs, flowers, and other botanicals. (£) Top the omelet sheets with a second piece of sprayed parchment. Use 0.25 g of agar for every 100 g of liquid when making a thin broth; 0.4-0.5 g per 100 g for a moderately thick sauce; or 0.9-1.1 g per 100 g for a thickness like that of a puree. We use some of the ingredients listed below m the recipes in this book; the others are simply among our favorites. A crisp, amber layer will appear on a custard as you lightly sweep a flame over its surface. This causes the pressure in the vessel to build as the temperature rises. Having just graduated from Skidmore College, I spent a few months at The Institute of Culinary Education, which led to a two-month externship with Allison Vines-Rushing it Jack's Luxury Oyster Bar, where they were serving very refined Southern food. INGREDIENT WEIGHT VOLUME SCALING PROCEDURI Heavy cream 100 g HOmL/Vacup 100% ® Preheat a water bath to 80 °C/176 °F. schmaltz—Yiddish term for chicken fat. If making smallertart crusts, divide edges of the pan. The venting step i t important because it replaces the air sitting above the liquid with carbon dioxide. Slide the cooked omelet from the pan onto the baking sheet. More important, the set of reference books that he produced has allowed our profession to evolve in a more uniform way. Stirring to evenly distribute the liquid or fat is important to keep bits from burning on the bottom of the cooker. Calcium lactate and calcium lactate and calcium lactate torch, set your food on a thick roasting tray placed on the stove top. Cook sous vide to a core temperature of S4"C/129\*E, about 12 minutes. Use folded pieces of aluminum foil as shims, if needed, so that the white is even in thickness. If you are making nine servings, the scaling factor is 9 + 4 • 2.25. Also make sure the cooker indicates when It has reached a gauge pressure of 1 bar /141 pel, as commonly used in recipes. Put a single kernel of popcorn in a microwave oven set on high, for example, and it may take minutes to pop. solution—mixture of at least two components that are distributed in a uniform fashion to form a homogeneous whole. weather-stripping tape—sticky-backed ribbons of foam often used to insulate doors and windows, available at most hardware stores, wet-bulb temperature of a wet object in equilibrium with the surrounding air. Combi ovens can supply moisture directly, by injecting water in its vapor form—steam—into the oven chamber. MODERNIST CUISINE AT HOME DIGITAL SCALES If you have stove-top method for making it is laborious; cook it sous vide instead, and you can do other things while it cooks. You can optionally sieve the custard after blending it. I did manage to take short leaves from Microsoft to cook as an apprentice at Rovers, a great French restaurant in Seattle run by chef Thierry Rautureau, and then attend La Varenne, a professional culinary school in France. The fob was demanding, and I had less time for cooking than ever. 12-15 --- rpressure rooking: seepage 33 M HOW TO Parcook and Finish Risotto and Paella tMM& Jfr\* 1 While sauteing the aromatic ingredients as described in step 1 on the previous page, freeze a metal baking sheet (or several, if you are making a large batch) for use in step 5. Deep-fry food in enough oil that the food floats and does not touch the pan. A power level of 50% (or level five on a 10-level oven), for example, generates microwaves during only half of the cooking time. How to Roast a Lamb: New Greek Stampfer, V. Wait several minutes for the gelatin to soften, and then warm the mixture over low heat until the gelatin melts. See our safety guidelines for working with blowtorches (page 26), and pressure cookers (page 26), and pressure cookers (page 26), and pressure cookers (page 26). kitcheru &e's still plenty for cooksjp w from the realm ofthej e store, so we challenge yad new culinary uses for tools n't yet familiar to most cd So we encourage you to pick up some of the tools shown here. Used as a thickener, poule au pot-French term for "chicken in a pot\* a traditional Sunday family meal of a stuffed whole chicken poached with vegetables in a flavorful chicken broth. Heat-tolerant enough to be used as a frying oil. to taste To make the onion milk on the stove top rather than sous vide, simmer the cooked onions and shallots with the milk over low heat for 10 minutes. leaving the oven. Shake them dry. The kitchen manual is again printed on washable, waterproof paper. CUSTARDS A N D PIES L Puree the mixture until smooth by using an immersion blender. The best way we've found to do that is to cook it in a skillet topped with a hot, metal lid on an oven rack that is perfectly level. Stir well between additions to keep the mixture smooth and moist throughout. The pressure valve will sink down fully when the cooker is depressurized and is safe to open. or some other strong, fruity red wine that has a lowtannincontent. Add the remaining apple juice (see photo), and safe to open. or some other strong, fruity red wine that has a lowtannincontent. in Eastern Europe. I aboy. Diners and chefs should be sensitive to the conditions under which food is harvested and grown. A nozzle directs the flow. 373 SOUS VIDE VANILLA-CINNAMON PASTRY CREAM STORAGE NOTES: 500 g/2 cups; fillsone 23 cm/9 inpiecrustorfour 11 cm/4V2 in tart shells; half-fills one 30 cm/12 in piecrust 23A hours overall. including IS minutes of preparation and 2Vi hours unattended keeps for up to 2 days when refrigerated LEVEL OF DIFFICULTY: easy SPECIAL REQUIREMENTS: sous vide setup YIELD: TIME ESTIMATE: Pastry cream, or crime pdtissiere, is the workhorse of custards. Cut four foil lids just slightly larger in diameter than the rims of four 10-12 cm/4-5 in nonstick frying pans. Columbia University Press, 2007. Adds color and complex chili flavor without much heat. Skim off any foam that forms on the siphon upside down to help the gas propel the liquid from the siphon. If you're in the market for a new stove top, you'll find several options to choose to choose top. from: electric, gas, and induction. whipping siphon-device used to create foam in which particles of pressurized gas inserted into a liquid-filled metal tube expand into bubbles in the liquid as they leave the tube. Few cookbooks tackle this subject. INGREDIENTS F\*^ 73 TAKE A WALK ON THE WILD SIDE Globalization has caused an explosion of culinary diversity in cities and towns of all sizes. Danube. In some cases, you can brown food in a microwave by first rubbing oil on its surface. © Puree the mixture until smooth by using an immersion blender. It is more convenient and easier to control, but the stove still suffers from some intrinsic limitations. Scientifically speaking, you need the right combination of both time and temperature to kill pathogens. Although the surface of the pasta will be cooked, the interior will still be raw and crunchy. Steam is often confused with the visible fog of condensed moisture is that the gelato can be melted and safely rechurned if it freezes too hard. Whisk the sodium citrate into the water or milk in a pot until it has dissolved, and then bring the liquid to a simmer over medium heat. Rustic Italian Food. Parmigiano-Reggiano, grated 50 g 3 15% © Toss together, spread evenly on a baking sheet, and toast until the cheese and bread crumbs turn golden, about 10 minutes. I •'• Li, — 150 g To assemble: Cucumber rolls, from above Candied cannettini beans, from above Kumquats, sliced Raspberries, halved 24 g Blueberries, halved 24 g Blueberries, halved 16 g Mint leaves 4g Strawberry broth, from above - I 250 g 1 large 30% ® Slice lengthwise, as thinly as possible, on a mandoline, to form evenly sized, rectangular sheets of cucumber. Typical home ranges have much weaker burners that draw 5,0007,000 BTU an hour. To reheat the egg whites, remove the plastic and warm them in a 135 "C/275 °F oven for5-6 minutes. We have, wherever possible, suggested methods that are fast, such as pressure cooking, or that can be left mostly unattended, such as cooking sous vide. carotene-fat-soluble pigments found in plants like carrots and squash that can transform into vitamin A. The pressure increase in turn raises the boiling point of water, which normally limits the cooking temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point of water, which normally limits the cooking temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point of water, which normally limits the cooking temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point of water, which normally limits the cooking temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point of water, which normally limits the cooking temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point of water, which normally limits the cooking temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point of water, which normally limits the cooking temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point of water, which normally limits the cooking temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point of water, which normally limits the cooking temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point of water, which normally limits the cooking temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point of water, which normally limits the cooking temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point of water, which normally limits temperature at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point at\*wetfoodsto 100 8C / 212 °F (at sea level; tiff boiling point is slightly lower at higher elevations). In its incipient form, the commercially available oven weighed in at over 700 pounds and stood as tall as a full-grown man. Sweet Quartetsfrom a Four-Star Pastry Chef. Garnish with grated cheddar or Gruyere. Thomas Keller The French Laundry May 2012 XI 1 I Our Culinary Journeys I have always loved food, and when I was nine years old, I discovered cookbooks on a visit to the library. Drain the pasta. Because the effective cooking temperature is higher in the pressure cooker—as high as 120 X / 250 TP—the cooking time can drop substantially. 
Serve the custard warm or cold. Will the bechamel, thickened with flour, yield the most delicious macaroni. or should I pick up that cmulsifier called sodium citrate, and use that instead? Migoya, F. It's up to you. The powdered lecithin is deoiied and often used by Modernist chefs to make delicate foams. Sauces: Classical and Contemporary Sauce Making, Third Edition. Add more syrup to thin the puree or to sweeten a tart soup. Shallow frying is done using a pan, but it cooks the food more like deep-frying does than like panfrying. © Add to the pot, and panfry until the onions soften and start to brown, 3-4 minutes. They tend to heat more evenly. Use what you have on hand. CUSTARDS A N D PIES L Firm Pastry Cream You can make a firmer custard by adding gelatin. (D Fold into the paella, and serve it immediately. Kurlansky) M. Infusing porous fruit with liquid is a fun twist-think strawberries and lemonade, apple slices bursting with apple juice, or watermelon with hints of green tea. He and his team had set a new standard. Take pesto, for example. The mussels should not be cooked through; this step simply makes them easier to shuck. It is through the stocks and sauces, the infused oils and emulsions, the gravies and glazes that you express your creativity and make a dish your own. spatchcock-to remove the backbone of poultry so that the tray is hot after torching, so don't touch it with bare hands. Olive oil 50 g 55mL/!4cup 15% © Brush the eggplant slices with olive oil on both sides, place them on a clean plate, and seal them with microwave-safe plasticwrap. To get the same results that we did in our test kitchens, ® PROCEDURE 1> Preheat a water bath to SO "C/122 \*f. The function of the xanthan gum, which is optional, is to thicken natural juices that otherwise tend to separate from the greens. The Man Who Ate Everything. HYGIENE Good hygiene is critical wherever food is prepared or eaten, and the most important thing you need to keep clean is your hands. M O D E R N I S T CUISINE AT HOME 1 Whisk the sodium citrate into the water or milk in a potential second s until fully dissolved, and then bring to a simmer. II Bouley, D., Lohninger, M., and Clark, M. 6920 Seaway Blvd. What Einstein Told His Cook 2: The Sequel: Further Adventures in Kitchen Science. When you don't have time, you can always use water instead of stock, or store-bought ketchup in place of homemade. 24 ur(DUKT burner, wait for the coil to reach the right temperature, and then put the pot back on. Steel and cast-iron pans on a gas stove. toutelabio.com sodium citrate (Citras: Texturas brand) specialty flours and starches widely available at gourmet supermarkets, international markets, and natural foods stores tapioca maltodextrin (N-Zorbit: National Starch brand) vital wheat gluten available at supermarkets and health-food stores; ask at bakeries and vegetarian restaurants bobsredmill.com kingarthurflour.com whey protein isolate available at supermarkets xanthan gum (Xantana: Texturas brand; Bob's Red Mill brand) widely available at natural foods markets and health-food stores Europe Notes Avoid capsules and tablets, as they often include additional, unnecessary ingredients. Because of the physics of microwaves (see page 42), they heat small objects less quickly than larger ones—just the opposite of what happens in a conventional oven. Remove the bag from the water until the mixture has cooled completely. © Strain through a sieve lined with cheesecloth, and use warm or cold. By that point I was 23 years old. Often used in Thai cooking, gauge pressure—the amount of pressure inside a pressure vessel that exceeds the ambient air pressure. Allow any foam to dissipate, or use a spoon to skim it from the surface. Recipes. calcium lactate—salt created by the interaction of lactic acid and calcium carbonate, used in baking powder. Clarkson 2011. l o o many people shy away from pressure cookers because they are skittish about safety. poolish—fairly wet preferment of water, flour, and active yeast cultures used as a "mother dough" in French bread making. The kernels are good when cooked sous vide, and you can use them to make Corn Soup (see variation on page 181). Never point Hie end of does, blowtorches blast die food directly with a blowtorch at your food before the flame is lit a flame at about 1,900 ° C / 3 , 4 0 0 °F. The sodium citrate, on the other hand, is indispensable for preventing the cheese from separating when it melts. LI; 57: ul, ml. Black cod turns out beautifully, for example, as does steamed bok choy. Books, 2007. Water at 76 °C / 170 °F pasteurizes the surface in one second. Induction is so efficient that magnetic field has no effect on nonmetal objects, which is why the bacon touching we use \$10 pansfromIkea and get results as good as the priciest copper cook ware the cooktop is still raw even as the bacon in the pan cooks. Baking the mac and cheese from the refrigerator will require an additional 10-12 minutes. Of course, any errors that remain in the final product are the responsibility of the authors alone. Never put hot food in a refrigerator because it will warm everything else inside: a hot casserole can warm the interior by as much as 15 °C / 60 °F. These oils are useful in making emulsions and doughs, as well as to flavor foods. cup 560 mL/23/« cups lg=1.25mL Soy sauce, fish sauce 4mL/ 3 /4tsp 20mL/4V4tsp 85mL/V3Cup 380 mL/ls/8 cups lg=0.84mL 5 mL/l tsp 30 mL/2 tsp 110 mL/ V\* tsp 01LS AND FATS Refined oils, such canola, soy, vegetable, and corn oil lmL/ V\* tsp 5 mL/2 tsp 110 mL/2 cups lg = 1.08mL Cold-pressed oils, such as olive, grapeseed, nut, and sesame oil l mL / vi tsp 6 mL/TV\* tsp 30 mL/2 Tbsp HOmL/Vicup 500 mL/2Vfe cups lg-1.11 mL Solid fats and butters VA tsp r/2tsp 2V2Tbsp Vicup 2 cups lTbsp=15g XV DAIRY PRODUCTS lg 5g 25 g 100 g Whole milk 1 mL/!4tsp 5 m L / 1 tsp 25mL/2Tbsp 100 mL/ Heavy cream 1 m L / % tsp 6 m L / 1 V i tsp 30 m L / 2 Tbsp 110 m L / '/a cup 495 m L / 2 cups 7 cups 8 cup 495 m L / 2 cups Creme fraiche, sour cream 1.4tsp 2Tbsp % cup IMtcups Dry cheeses, such as Parmesan and Romano, finely grated and packed 5 tsp 6 m L / 1 V i tsp 30 m L / 2 cups 7 cu G o u d a, shredded ITbsp Vi cup IVicup 6J/2 cups l c u p = 67j Soft cheeses, such as cream cheese, mascarpone, and chevre Itsp 5 tsp Vi cup IV\* cups 1 cup=230] Dry cheeses, such as b l u e cheese and feta, finely c r u m b l e d \A2 2ViTbsp Tbsp 450 g 7V CUO 460 m L / 2 UM Equivalents CUDS lg=1.03ml 1g=1.1ml 1 cup=115 g - EGGS (chicken, U.S. size large) W h o l e eggs, b l e n d e d VAtsp VATbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 30 g each Egg yolks, b l e n d e d V/A tsp IViTbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 30 g each Egg yolks, b l e n d e d VAtsp VATbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 45geach Egg whites, b l e n d e d VAtsp VATbsp 6V4Tbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 45geach Egg whites, b l e n d e d VAtsp VATbsp 6V4Tbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 7 Tbsp 45geach Egg whites, b l e n d e d V/A tsp IViTbsp 6V4Tbsp 3 5 tsp lisp = 5.5 g. As a result, the temperature at which an oil starts to smoke (the smoke point) or catchesfire(theflashpoint) can vary considerably for a particular oil from one supplier (or even one bottle) to another. The goal at this point is a potent, balanced flavor; you can thicken it later, if needed. French Lessons: Recipes and Techniques Oliver, J. Bloomshury USA, 2008. Chocolate Pastry Cream Omit the cinnamon stick, vanilla seeds, and butter. Modernist Cuisine at Home is destined to change the way we use recipes. Those who have read his books have witnessed a major step in the world of cooking—something that rarely occurs in a single generation. If you prefer a brighter or more complex flavor to the gravy, add some good vinegar or citrus juice, ground spices, and techniques have resulted in the most extensive coverage on progressive cuisine today, using tools and equipment that we would not have ever thought to marry with cooking in the past. Ashkenazl—one of the major groups of Jews. 2 Tbsp 3% — © Sprinkle with the chives, and all manner of plant foods. Our goal here is to steam the omelet at a precise temperature. ascorbic acid—a form of vitamin C. Fortunately, we have access to enough information these days to be able to make well-informed choices. Phaidon, 2012. 8 Add the mixture of infused milk and cream to the blender gradually as it continues to run at low speed. The entire surface of the coals should be burning, and once the corners are hot, the added airflow of a blower will cause the rest of the coals to burn much more quickly. Walker & Company, 2009. die siphon until you serve the fruit. Also try substituting cauliflower, steamed fingerling potatoes, green beans, shelled edamame, sauteed button mushrooms, baby bok choy, or Brussels sprouts. flesh, umami—the savory taste of the amino acid glutamic acid, or its salt monosodium glutamate. mushroom gills—dark, papery ribs that hold the spores on the underside of mushroom caps; used to color sauces. © Cut into rounds orsquares7.5cm/3 in across. The alcohol concentration was too high. ur, ml. A digital thermometer is the best choice. Cook This Now: 120 Easy and Delectable Clarkson Potter, 2008. Xanthan gum (Bob's Red Mill brand) © Weigh the reserved drippings, and measure the xanthan gum equal to 0.15% of the weight. Everett, WA 98203 425-347-6100 us.fluke.com thermometers H a m i l t o n Beach Brands, Inc. Seal the bag. It has slightly coneshaped florets and a delicate flavor, rouille—French term for rust, usually referring to a reddish mayonnaise-like sauce flavored boldly with garlic and red peppers. |& The stove is a marriage of Convenience of two distinct appliances: a range of burners above that push heat into food mainly by direct contact (conduction), and a vented oven below that heals food indirectly and red peppers. by a combination of hot, relatively dry air (convection) and infrared energy (radiation). ' ^ Vital Wheat Gluten Xanthan Gum What it is: powdered wheat protein Derived from: wheat Used to: add structure to yeast bread Where to buy: online or in grocery stores Cost: \$7 for 624 g Try it in: Neapolitan Pizza Dough (see page 296), Fresh Egg Noodles (see page 26B) What it is: a naturally occurring carbohydrate Derived from: ferment at ion of sugars Used to: thicken liquids and stabilize emulsions Where to buy: grocery stores Cost:\$15for45()g Try it in: Pistachio Pesto (see page 102), Pistachio Pesto (see page 102), Pistachio Pesto (see page 129) Wondra What It is: a precooked flour De rived from: ferment at ion of sugars Used to: thicken liquids and stabilize emulsions Where to buy: grocery stores Cost:\$15for45()g Try it in: Pistachio Pesto (see page 102), Pistachio Pesto (see page m: Wheat Used to: thicken without adding flavor Where to buy: grocery stores Cost: \$2 for 397 g Try it in: Creamed Spinach (see page 263) MODERNIST CUISINE AT HOME Monosodium Gfutamate Insta Cure #1 Diastatic Malt Powder (not shown) What I t is: a silt of an amino acid W h a t it is: a blend of salt and sodium What it is: malted grain containing active Derived from: grains Used to: add umami flavoring sources of nitrogen Used to: convert starches to sugars; rising W h e r e t o buy: grocery stores Used to: cure meats, add pink color agent for doughs Cost: \$2 for 4 5 0 g (see page 266) Cost: \$6 for 4 5 0 g Try it in: Aromatic Chicken Broth making supply stores Cost: \$2 for 4 5 0 g (see page 266) Cost: \$6 for 4 5 0 g Try it in: Aromatic Chicken Broth making supply stores Cost: \$2 for 4 5 0 g (see page 266) Cost: \$6 for 4 5 0 g Try it in: Aromatic Chicken Broth making supply stores Cost: \$2 for 4 5 0 g (see page 266) Cost: \$2 for 4 5 0 g Try it in: Aromatic Chicken Broth making supply stores Cost: \$2 for 4 5 0 g (see page 266) Cost: \$ Modernist Vichyssoise Try it in: Pork Belly B.L.T. (see page 232) (see page 162) | Some people strongly believe that the.y react badiy to MSG, but so far no scientific study has ever linked MSG consumption to health problems. disperse—to distribute evenly, an important step when working with hydrocolioid thickeners and gelling agents, such as again and xanthan gum. Ground and used as a tangy, slightly astringent spice, popular in the Middle East and Native American cuisine. ® Fold the edges of the omelets with clarified butter. I have derived enormous enjoyment from cooking and eating over the years. Vegetables generally keep best at 1-4 cv 37-39 \*F, whereas fish and meats do best at 0-1 ° c / 32-34 % If you can consistently keep your refrigerator at 1 \*C/34 \*F or lower, you can store most food cooked sous vide for 30 days, according to FDA standards. Xanthan gum 0.8 g Pressure-Rendered Chicken Fat 80 g 0.4% 95mL/ 3 /scup 40% see page 123 Liquid soy lecithin (NOW brand) 1.6 g Salt to taste Lemon juice to taste 1 Place the brown chicken jus in a small pot, and use an immersion blenderto blend in the xanthan gum until it is fully incorporated. But these markets also provide wonderful opportunities for locals to experience new foods and taste other cultures. © Preheat the oven to 260 ' C / 5 0 0 °F. It is often the case that scientific advances made for industrial operations make their way slowly but surely to the home kitchen: one need look no further for an example than the ubiquitous microwave oven. adobo-stewed meat with a vinegar-rich glaze. The Complete Robuchon. We love to play with its possibilities. ur; 63: m. Cook the cheeses sous vide for 30 minutes. FURTHER READING IN MODERNIST CUISINE • The origin and history of Modernist ingredients: seepages 1-2S0-2S8 How to handle food safely like a pro: seepages 2 312,314,317,324-326 ||| The properties and uses of thickening and getting agents see pages 4-28-30,42-47 UNUSUAL INGREDIENTS Modernist chefs have added a growing number of foods to their pantries, and these new ingredients are enabling amazing creativity in the kitchen. The pans should be level on the oven rack. Each recipe in this chapter may, along the way, also teach you something about cooking. Advocates of briquettes cite their ease of use and consistent, steady heat. HOW TO Calibrate Your Oven Each oven has its own personality. You'll find that there is still flour left in the cup measure when you are done. You can substitute any of the cheese mixture here. These are just a few examples of the dozens of foundational recipes in this chapter that are not only approachable and versatile but very tasty, too. Rizzoli, W W Norton & Company, 2002. 11 • Mil. Bones: Recipes, History, & Lore. A baking rack placed In a baking tray allows hot air to circulate below thefoodso that you C M torch both sides at once. blanch—to whiten or draw out, to briefly cook the exterior. Preheat the pan, then add the oil, and finally add the food to be seared. We also cover many of the innovative new cooking tools available today, such as induction cooktops and home combi ovens. Reinhart, P. Ducasse, A. Shallots, thinly sliced 155 g WB cups 31% Neutral-tasting oil 100 g 110mL/!/2Cup 20% © Sweat the onions and shallots in oil in a large skillet over low heat until translucent and dry, but not brown, 20-30 minutes. Cover, and refrigerate the rice until you are ready to serve it. hydrate—to treat a powder so that it absorbs water fully; an important step when using hydrocolloids that renders them functional. Thanks to its unrivaled versatility, it is now relatively common in restaurants and hotel kitchens worldwide. Some stores sell an organic solution made for that purpose. fermented black bean and chili paste— commercially available. We cut the broccoli into bite-size pieces so that i he florets are enveloped by the cheese sauce, just as pasta would be. Instant-read Accuracy: ±2.0°C/±3.6°F Pros: excellent range and speed, with needle-thin tip; useful for almost any application Cons: can't remain in oven during cooking; cheaper models not appropriate for deep-frying temperatures Where to buy: kitchen-supply stores, upscale supermarkets Cost: \$10-\$20 Oven probe Accuracy: ±1.5°C/±2.7°F Pros: ideal for cooking sous vide and for low temperature baking; heat-resistant wire allows probe to be placed in an oven or water bath Cons: probe is bulky, leaving a visible indentation in the food; sometimes too heavy to stay in place Whereto buy: kitchen-supply stores Cost: \$20 - \$50 Infrared Accuracy: ±2.0 °C/±3.6°F Pros: useful for measuring temperatures of cooking surfaces (grills griddles, pans, pizza stones), oven interiors, and sauces Cons: won't read the interior temperature of food Where to buy: online, electronics stores Cost: \$30-\$75 Thermocouple Accuracy: ±0.5 °C / ±0.9 "f Pros: extremely accurate; extendable wire allows probe to be placed in the food during cooking in a water bath or oven Cons: more expensive Where to buy: online, professional culinary stores Cost: \$60-5150 If you plan to deep-fry, you will need a High-temperature ihri momt'iei i any of the lour we list IH.-M. The remaining recipes are indeed challenging— even for professionals. It is, admittedly, more time-consuming to make a recipe when some of the ingredients involve recipes of their own. M O D E R N I S T C U I S I N E AT H O M E A BUYER'S GUIDE TO PRESSURE COOKERS \* The indicator shows two red lines when 1 bar/15 psi of gauge pressure has been reached. ml, mr; 136: r XXVI . Pass the creme through a fine sieve, and serve it warm or cold. That wet-bulb temperature starts out low, and it rises dramatically as relative humidity increases. Cookingfor Geeks: Real Science, Great Hacks, and Good Food. core temperature at the very center of the food. Boil the macaroni until it is al dente, as instructed by the package directions, or for 5-6 minutes. ® Slice the peeled rhubarb into 6 mm//i in pieces. Gruyere cheese, finely grated 40 g y«cup 20% ® Combine with the ground or crushed cheese crumbs. Stoves are a vast improvement over our ancestors' openfires, but they still leave a lot to be desired in both efficiency and accuracy. Reserve the kernels for another use. Some commercially available cooking sprays also contain lecithin. The amount that you removed from the scale will show up on the display as a negative weight. Please help us to share our service with your friends. Used to make achiote powder and paste. The result is both beautiful and delicious; we promise it is worth the effort. ... Pacqjet is a very expensive (\$2,000-\$4,000) but remarkably effective tool designed to make instant, silky-smooth ice cream or sorbet. dough starts to bind. Food cooked indirectly on a banked grill can lack that mouth-watering grilled flavor because drippings don't fall on the hot coals. 1995. hensive Guide with Recipes. We also serve the jus as a broth and use it to dress risotto (see page 328), poached eggs (see page 328), poached eggs (see page 328). Ici La Press, 2002. It has proved to be one of the most popular recipes from Modernist Cuisine. food is on the verge of baking rather than dehydrating. Roden, C. 1 Sprinkle the gelatin over the cold milk. Evenly heated air can transfer heat more rapidly, but it doesn't address inconsistencies in radiant heat that lead to inconsistencies in radiant heat that lead to inconsistence are can be used. and salt in a pot, and whisk over medium-low heat until the sugar and salt dissolve completely. What you do with it is a personal decision. A. Usually the picture appears above reference below the ingredient orrecipename. Continue at step 3. Often used with grilled meats. Salt H 50 g V2 cup 25 g lOg pinch 2V2Tbsp 2V2 tsp Preheat the oven to 175 °C/350 °F. © Combine in a small pot, stir to dissolve, and bring to a boil over mediumhigh heal to make a syrup. For a recipe for an all-allium (onion-family) vegetable jus, see page 182. We chose these technologies because they offer not only new ways to prepare food but also huge benefits in convenience, speed, or reproducibility in cooking. Tighten the lids fully, and then unscrew them one-quarter turn. (a) Combine together in a large (4 L/1 gal) zip-top bag, remove as much air as possible from the bag (see page 58), and seal it. In between are semiautomatic methods such as the fat, sugar, and other solids evenly with the water into an paddles and vessels for stand mixers that can be prechilled emulsion that freezes at a colder temperature than pure water enough to produce small quantities of frozen treats. A quality digital pocket scale does the job well and at a fraction of the price of a lab scale. Criminis, morels, chanterelles, and porcinis make flavorful substitutes for the shiitakes. species—structurally similar organisms that form an pulation. 1 Combine the hoisin sauce, black bean and Remove the sauce from the heat, and allow Place the cleaned bok choy halves and the chili paste, wine, soy sauce, and sesame oil it to cool slightly. 40 M O D E R N I S T CUISINE AT HOME that are much smaller than the 12 cm / 5 in wavelength of microwave radiation may sit on interpreeding the turntable for quite a while, all but unaffected by the rays bouncing everywhere around them. This technique efficiently cools the macaroni, but doesn't rinse any of the starch from its surface. Combine the fresh raspberries, cucumber, peppers, onion, olive oil, vinegars, garlic, and xanthan gum (optional) in a blender, and puree until smooth. The downsides are that you have to make room for another single-use appliance, and you can't use it to finish up a dish on the stove top. Use a deep pot. 24 snails TO MAKE A H E A D Freeze a baking sheet for at least 30 minutes. An electric pressure cooker is even simpler—you set the time, and It docs the rest. Bronte Sicilian pistachio—very green pistachio with an intense, sharpflavorgrown in and around Bronte, Sicily, in the shadow of Mount Etna, brulee—French term for burn or brown, often used in reference to caramelized sugar in dishes such as creme brulee. The technique for extracting raspberry juice sous vide, however, works well with all berries. • 11 • i ii . The spoon helps prevent the flow from smearing the lines. To compensate, leave a few meat trimmings above the coals to drizzle juices onto the embers. All trademarks used are property of their respective owners. Note that this is not the same as accuracy. Place your dehydrator in the least humid part of the kitchen, usually a well-ventilated area. At step 2, whisk in the cheese rather than using a blender so that the fondue is appropriately stringy. Let's start with the basics. The additions can be as simple as a bit of grated cheese and butter or as complex as vegetable purees and braised meats. in MOOKRN1ST CUISINfc AT H O M E Flavorful Oils Smoke p o in t Fat (°C) (°F) Notes almond oil 216 420 very mild. light, and slightly sweet avocado oil, unrefined 271 520 the only oil here that should be used for sauteing above low heat butter, whole 135 275 sweet and creamy coconut oil, virgin 177 350 hazelnut oil 221 430 toasted variety especially reminiscent of hazelnuts macadamia nut oil 210 410 very light flavor olive oil, extra-virgin 210 410 flavors vary widely with olive variety, provenance, and processing peanut oil, unrefined 160 320 dense and heavy, with distinct flavor pistachio oil 177 350 bright green, with grassy notes pumpkin seed oil 105 220 very low smoke point; do not heat toasted-sesame oil 210 410 high-grant oil, unrefined 160 320 dense and heavy, with distinct flavor pistachio oil 177 350 bright green, with grassy notes pumpkin seed oil 105 220 very low smoke point; do not heat toasted-sesame oil 210 410 high-grant oil, unrefined 160 320 dense and heavy, with distinct flavor pistachio oil 177 350 bright green, with grassy notes pumpkin seed oil 105 220 very low smoke point; do not heat toasted-sesame oil 210 410 high-grant oil, unrefined 160 320 dense and heavy. slightly tart and grassy Sources: Journal of American OH Chemists' Society, vol.19, no. bisque-thick, rich soup often made with cream. STOCKS Season the jus generously with salt and lemon juice, and serve it warm. broccoli raab-(rabe, rapini) Italian\* leafy green vegetable with tenderflowerbuds, bromelain—naturally forming enzyme found in pineapple that breaks down protein and is used as a meat tenderizer. see page 346 FURTHER READING IN MODERNIST CUISINE The physics of cooking with microwaves: see pages 2-192-184 Myths about microwave cooking, and how not to do Responsible things with a microwave: seepage 2-190 How to use a microwave oven to make puffed snacks: seepage 4-302 MICROWAVED EGGPLANT PARMESAN four servings (850 g) 45 minutes overall keeps for up to 3 days when refrigerated or up to 6 months whenfrozen moderate YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: VOLUME SCALING PROCEDURE 50 g jfccup 15% © Preheat the oven to 175 °C/350°F. Two cartridges are typically sufficient to charge a one-liter Siphon. C Vap, made by Winston Industries, is the best-known brand, wavelength—the distance between two points in a wave along the line of the direction in which the wave is advancing. We use the same high-quality paper, printing, and binding that we did for Modernist Cuisine. ml. and the proper tools to insert and retrieve the food from a safe distance: long tongs, a slotted deep-fry spoon, or a frying basket. Modernist cooking uses precision instruments and techniques to remove the mystery—and greatly increase the success rate. tools on hand in our kitchens. In Defense of Food: An Eater's Manifesto. Top the pie with the topping indicated (instructions are on pages 376-377) or with whipped cream or fresh fruit. Ad Hoc at Home: Family-Style Recipes. Safety tips for pressure-cooking: see page 33 STOCKS BROWN CHICKEN JUS YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: USED IN: 500 g/2 cups 2Vi hours overall, including 30 minutes of preparation and 2 hours unattended keeps for 5 days when refrigerated or up to 6 months when frozen easy pressure cooker, chicken feet (optional) Home Jus Gras (seepage 93), Shiitake Marmalade (seepage 151) This jus furtherfortifiesan already intense stock with roasted chicken wings and feet, which add gelatin to produce a rich mouthfeel. Serve with melted butter and fresh herbs, or with Caramelized Carrot Puree (see page 136). and Herbst, R. For decades, combi ovens were available only as extremely expensive commercial appliances. We use them for ingredients that would otherwise need an intensive amount of stirring, such as polenta, and for makingsmall batches of rendered fat, garlic confit, or extracted juices. Multiplying this by the scaled 100% value from step 3, you find that 300% n 1,125 g - 3,375 g (3.4 kg/7.4 lb). Pot of boiling water Insert the probe Into the water. The trade-offrs that the leather is no longerfat-free. Set the cooker in the kitchen sink, and unlock the lid. The Deluxe Food Bras, M. Brown Pork Stock see variation on page 86 500 g 500 mL/2 cups 100% (D Deglaze the pan with the stock, add the syrup, and simmer until the liquid thickens and reduces by two-thirds, about 10 minutes. chamber sealer—device used for vacuum sealing food in plastic bags. Th ickens without clumping or adding the "raw" taste of uncooked wheat flour. When you turn on a burner, the control sends electric current to make a spark, and at the same time it adjusts a screw valve to regulate the flow of gas and thus the power of the burner. Drain the food on paper towels. But you can substitute many other kinds of flavorings for the vanilla- Try foaming creme anglaise in a whipping siphon to make an ethereal garnish to fresh fruit or apple pie. It was the kitchen of a scientist, the laboratory of an insatiably curious man who is on a mission to reinvent the way we cook food and think about food. electricity, and it's delivered without substantial losses en route, so cooking with gas Is still a bargain. cure—to preserve food with salt. pressure-infuse—to use pressure to hasten the infusion process. With this book and the essential gear and ingredients now widely available, home cooks can achieve equally stunning results with confidence. Microwave the slices at 1,100 W until they are tender all the way through, about 4 minute\*. © Sieve, pressing the onions firmly to extract as much milk as possible. Hot coals cool slowly, so you must adjust the draft well before you want the 44 MODERNIST CUISINE AT HOME temperature to drop. How it works: A food press forces juice outmechanically by squeezing food between two hard, unyielding suffices, one of which is perforated. The sauce won't separate, even when reheating it after several days in the refrigerator. An Edible History of Humanity. Before cooking, check that the ring of rubber lining around the lid isn't dried out or cracked. © Remove the beans and parchment. We use sodium citrate instead. as needed ® Blend the xanthan gum into the warm drippings until thickened. But modern gelling agents have opened up a fantastic range of new culinary applications. McGee, H. suited for preparing ingredients, such as sweat- What matters more are the thickness of the metal, ing vegetables, and for finishing food cooked the size of the pan, and the size of the burner heat- sous vide by panfrying it The ing the pan. 50% Increase the blender speed to high, add the softened butter, and blend until smooth and creamy. 11,193-198; Vegetable Oils in Food Technology, Blackwell, 2002; Ullmann's Encyclopedia of Industrial Chemistry Wiley, 2 0 0 0; Modernist Cuisine: The Art and Science of Cooking, The Cooking Lab, 2011 A B O U T THE RECIPES Argan oil is popular among chefs and foodies because of its unique provenance and its occasionally intense feral flavor. Atria book: Four-Star Simplicity. Amazingly, she let me do the cooking, including nearly setting the dining table on fire. But they aren't equally efficienteach excels at different tasks. tsukune—Japanese term for a kneaded, round ball of ground meat, often chicken. Add starch, gelatin, eggs, or agar to thin liquids to give them enough body for foaming. Used by induction cooktops to heat pots and pans having bases made of certain kinds of metals, such as steel and iron. Cook the eggs until they set, about 6 minutes. Carrots, thinly sliced 20 g Vicup 2% Button mushrooms, thinly sliced 20 g 44 cup 2% Tomato paste (optional) 50 g 37bsp 5% @ Stir in, and continue frying until a rich, cooked tomato aroma develops, about 3 minutes. Combine all of the ingredients in a pressure cooker, and pressure has been reached. This model sends 15;000 BTU per hour/4.4 IcW to each burner, throwing off nearly as much power as the burners on restaurant ranges do (20,000-40,000 BTU per hour). immersion blender—(stick blender) a handheld electric device that chops, blends, and purees food in the container in which it is being prepared. Oven walls always radiate heat unevenly. The food both cooks faster and retains more of its succulence. every ingredient should be weighed wherever a weight is given. Websites for professional chefs, such as chefrubber.com and le-sanciuaire.com, are good sources of modern gelling agents and thickeners, as well as exotic baking ingredients. P. ii 12 Fold the measured macaroni into the warm cheese mixture, and season it with salt to taste. Pacojets are handy tools for grinding tough ingredients such as fatty tissues and nuts into fine pastes. Plenty of tools can be adapted for use in the kitchen. Plainfield, NJ 07080 908-222-1015 liss-america.com nitrous and carbon dioxide chargers Mettler Toledo, Inc. To get the most out of the recipes, weigh all of your ingredients on a high-quality digital scale (see page 7), use an accurate digital thermometer (see page 8), and invest in a sous vide setup of some kind (see pages 62-64). Cooking with or without a lid, or on different stoves, or even on different stoves, or even on different stoves at the refrigerate the pie until fully set, at least 3 hours. Plants contain differing ratios of each, which is why short-grain rice works for these dishes, but longgrain rice works for these dishes, but longgrain rice works for these dishes, but long grain rice works for these dishes, but long gelatin Knox's instant gelatin is available at chefrubber.com supermarkets. bobsredmill.com chefrubber.com infusions4chefs.co.uk msk-ingredients.com Always measure carefully to avoid gumminess. Reheat in a 175 "0/350 °f oven for 1 '.> 2".- minutes. Compare a hot steam room to a dry sauna at the same air temperature, and you'll immediately see why humidity matters. Preheat the oil to the cooking temperature. Now the scale will weigh only the ingredient, not the container. OF In a handful of our recipes, the cooking temperatures we recommend fall below those listed in guidelines published by the U.S. Food and Drug Administration or the U.S. Department of Agriculture (USDA). Alternatively, pour the cheese into a mold coated with cooking spray. Heat loss aside, these various forms of inefficiency make cooking more variable. ! • • • • • 15-18 • n u m . But now these gadgets, and all of the other countertop tools we suggest in this chapter, are readily available in most kitchen-supply stores or home improvement centers. You can also use it as a broth for glazed spring vegetables or braised winter greens. The wide blade of a food proces- or even fine purees. Putting together a balanced salad that avoids soggy homogeneity takes thought and practice. Can be used to give a preparation a dairy-like tartness. lovage-green, leafy plant similar to celery; long used in southern Europe as an herb or a green, often in savory pies. coconut cream—thick creamy liquid made by grinding fresh coconut meat in water and then skimming the fatty "cream" from the top. Where to buy: hardware stores Cost: \$30 Certain foods carbonize before they achieve a Jbcture you recognize as crispy, golden, or caramelized. So listen closely as you charge it. Combine the fresh corn kernels, melted butter, sour cream, sugar, and salt in a food processor, and blend until evenly combined into a corn puree, coddle—to cook gently in warm water; often referring to eggs, to Spain, was based on grapes, almonds, garlic, and bread, Safetytips/orpressure-cooking; seepage 33 VARIATIONS Brown Beef Jus Substitute ground beef for the ground chicken, oxtail for the wings and feet, red wine for the fino sherry, and beef stock (see page 86) for the chicken stock. But soups can be incredibly satisfying without being warm. Instead, he's making the fire hotter by increasing the amount of oxygen. We don't list ingredients usually found in city supermarkets. t p U - r ": S.ii.-«.|s Tyson Stole: 161; 165: b; 167: Lr; 168:1; Nathan Myhrvold: 68-69 Melissa Lehuta: 207-210:211: ul, uc. REFERENCE TABLES Celsius t o Fahrenheit t o Celsius (°c) (°F) (°F) Converting Temperature 28 82.4 28 - 2.2 To convert temperatures from Celsius to Fahrenheit, multiply by 1.8, and then add 32 to the product. Season the mac and cheese with salt to taste. Hypodermic syringes had to be ordered from medical supply houses. Measure 450 g / 2 cups of the cheese mixture for use in the next step. Transfer the drained rice to the frozen baking sheet, and spread it into a thin layer to cool. Make sure it fits snugly along the top of the lid and is intact. Used in Indian foods. But nearly all of these chemicals are derived froth natural ingredients or processes, and many have been used for decades. •• - , • ,, ,, Coat the pan with a thin layer of oil. - »i - - drains well 1 L i 230 445 335 duck fat 190 375 255 490 melting point: 54 -c/129 'f grapeieed oil 200 390 250 480 rich infatlyacids; oxidlies; oxidl ea: 30 445 330 625 good for deep-frying; maY \*» allergenic 200 390 240 465 peanut oil, refined pork lard •' - '''>' Mi safHoweroll • soybean oil - • II corn oil • i - Soffit \* - i m also called "ghee"; flavordepends on production 385 - ii sunflower oil - I 240 465 235 235 Hi .\_ , molting point: 3 3 C / 9 1 • «\* 'inn i J>I>I>INUMII'II. Store in an airtight container. An envelope of hot, moist air and steam then forms around the food and cooks it evenly as well as quickly. Nobody wants to eat feces; it happens accidentally through lapses in hygiene. As cooking progresses, diffusion of heat within the food helps to even eat Mich temperature differences. The taste is bitter when raw but becomes sweeter when cooked. Ratio: The Simple Codes Behind the Craft of Everyday Cooking. planch as (built-in griddles) cook more evenly, but The bottom line: with a properly sized they are heavier—and still not perfect. Use a hand whisk rather than a blender. So volume matters more than surface area, at least up to a point. 200 100 Matsonford Rd, PO Box 6660 Radnor, PA 19087 610-386-1700 vwrsp.com water bath W a r i n g Commercial 314 Ella T. Naturally found in many foods, but also sold in retail markets in a form resembling table salt. CUSTARDS A N D PIES L. Take, for example, our Mac and Cheese recipe on page 310. Cooking in New York City. Refrigerate it for at least 1 hour t o pie pan. Water 50 g 50mL/Vicup 17% © Microwave it at 1,100 W for 2 minutes in the bag. Refined oils have had the majority of their FLAVORFUL OILS "impurities" removed, including nearly all of The flavorful oils listed in the table on the next the compounds that impart aroma and flavor. It is slower to react when do they really perform better than much cheaper the burner is turned up high or down low. The granules of powder did not swell in size or dissolve, and the liquid did not set. Happy in the Kitchen: World of Le Bernardin. COMMON LIQUIDS 1g 5g 25 g 100 g 450 g Equivalents Water, stock, broth, and jus 1 mL/V\* tsp 5 mL/1 tsp 25mL/5tsp 100 ml/3 /a cup 450 mL/2 cups lg=1.0mL Wine, vermouth, sake, and beer 1 mL/ 'A tsp 5 mL/2 tsp 100mL/3/e cups lg=1.0mL Thin fruit and vegetable juices, such as apple, lemon, and carrot 1 mL/V4 tsp 5 mL/2 tsp 100mL/2 cups lg=1.0mL Thin fruit and vegetable juices are such as apple, lemon, and carrot 1 mL/V4 tsp 5 mL/2 tsp 100mL/2 cups lg=1.0mL Thin fruit and vegetable juices are such as apple. lg=1.16mL Liquor, such as bourbon or vodka i m L / ' A tsp 6 mL/1 Vi tsp 30mL/2Tbsp 125 mL/1/? The trick is to heat the omelet evenly while avoiding evaporation and browning. Bloom—measurement of the strength of a gelatin gel with a device created by Oscar Bloom, bomba rice—Spanish, short-grain white rice traditionally used for paella. A like

fish in a net. Microwaves penetrate only • \* a couple of centimeters into food. The 100% ingredient is usually the one that has the biggest effect on the yield of the recipe. Always leave at least 1.3 cm/1/2 in of headspace when filling the jars. Joachim, D., Schloss, A., and Handel, A. Lover's Companion. Granulated fructose is commercially available Combine the flours, diced butter, p o w dered sugar, salt, and baking powder in a Drizzle in the egg yolks while pulsing the Continue processor. Each of the 406 recipes and variations in this book was developed and tested at The Cooking Lab by our team of seven chefs and a separate recipe tester. © Pour into a whipping siphon, charge with two cartridges of nitrous oxide, and dispense. Food on the cutting knife. steam—invisible vapor or gas phase of water. Chocolate Crust Increase the amount of blended egg yolks to 6 8 g / ^ \$ T b s p (4-5 yolks). and Turshen, J. (2 /6s; 909 9 UltoM I..M Mil " " 1 " ^ / . © Let the cooker cool, or run tepid water over the rim, to depressurize it. ,, — Safety tipsfor pressure-cooking: seepage 33 (i •. We hope that in following the vision we set out to accomplish with our first book, we have created a great experience for home chefs who want an introduction to Modernist cuisine. They condense onto the lid and drip back Into the pot, so more of the nuances of the food are there when you putforkto mouth. At step 8, add 4 g of citric acid. Blends vary by region and producer. Stop blending when the fluid gel is cold. chorizo—highly spiced pork sausage. Ln 18: b; 19; 20: Lr 182-183:184:1, c. MODERNIST CUISINE AT HOME tii ^rig-loaded valve normally is open so that air can escape. EGGS SUNNY-SIDE UP YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: four servings (400 g/4 eggs) VA hours overall, including IS minutes of preparation and SO minutes unattended egg whites keep for 1 day when refrigerated moderate sous vide setup, four small nonstickfrying pans (10-12 cm/4-S in), foil coverscut to fitfrying pans (20-12 cm/4-S in), foil coverscut to fitfrying pans (20-12 cm/4-S in) for a cover set a bit of practice to build an intuition for how these ingredients work. We strongly urge you to weigh ingredients instead. Nathan Myhrvold When I was two years old, I put my family in peril in the name of chocolat chattel. Use an immersion blender to blend in each spoonful of cheese until the cheese has melted and becomes completely smooth. sasKSSC\*\*- ag. ^ ~ ft 72 3Ns M m n r %. The handle locks as well, to prevent the I id from opening while the contents are underpressure. The liquid did not gel or thicken, even though the granules of powder swelled up. © Place a metal baking sheet in the freezerfor at least 30 minutes. Melissa Lehuta: 70-71; 72: ul. After a quick sear over the coals, shift the food to one side, push the coals to the other side, and cover the grill with a lid. With those basics handled, you can devote more thought and energy to the creative aspects of cooking. It will spread into a thin layer. Heat the liquid in the pan while you use a spatula or a clean scrubber brush to loosen the fond and dissolve the scrapings. An intense chicken stock takes 90 minutes instead of two or three hours (see page 84). hoisin sauce—(Peking sauce) sweet, spicy reddish-brown Chinese sauce made from soybeans, garlic, chili peppers, and spices. Artisan, 2004. Follow all of the steps are in the same block as the step. current in a coil of wire sets up an oscillating magnetic field, which in turn induces corresponding electric currents in nearby conductive material. Standard atmospheric pressure at sea level is 1.013 bar (1,013 millibar). The recipes in Modernist Cuisine at Home draw inspiration from many of the world's greatest chefs, both living and long past, to whom we are grateful. Fold the edges of each omelet carefully over the filling. If the lines are not straight, simply scrape off the mushroom mixture, remake the layer, and try again. Alternatively, add a flavored liquid such as chicken, meat, or vegetable stock—or even a fruit or vegetable juice—to produce a richer flavor. spider—a term used by many professional chefs for a long-handled flat-bowled strainer, often made with a "web" of interconnected wire. fricassee – (fricassee) a white meat preparation, traditionally chicken, that is stewed in a white gravy. ENTREE-SIZE OMELET We serve these omelets as an appetizer, which is how we get away with using so few eggs to feed four people. Kombu powder is ground dried kelp. i±f Cook the tail meat sous vide to a core temperature of 49 \*C/120 'f, about 15 minutes, and then plunge the bag in ice water. EGGS FRENCH SCRAMBLED EGGS YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: GOES WELL W I T H : four to six servings (380 g) 45 minutes overall, including 10 minutes ofpreparation and 35 minutes unattended serve immediately after dispensingfrom the siphon easy sous vide Steamed Herb Omelet (seepage 146), Sous diced 165 g Powdered sugar 80 g % cup 40% © Continue processing in pulses until the dough begins to cohere. Then clean these patts anckherijbber gaskets thoroughly, arid check to make sure irialfchey are undamaged and In place. b; 65: LI; Omnimedia, Inc.: xii 67: ul, ur, m, Lr Deborah Jones: xiii Melissa Lehuta: xiv-xxi; xxii Ryan Smith: xxiv-xxv Chris Hoover: 140-141; 145; 151: b 08-10; 11: ul, uc, ur, Lr: 12; 14: Lr; 15: Lc: Tyson Stole: 69: r; 72: LI; 75: Lr; 78 16-17; 18: l.lc. My career in science was off to a roaring start. That includes fresh produce from your local farmers' market, unfamiliar ingredients from international markets, specialty items available for order online, and Modernist ingredients that allow you to prepare dishes you couldn't make any other way. Often used in Thai cookery. Warehouse Stores Sustainable Aquaculture Farms Surprisingly, shopping clubs such as Costco, Sam's Club, and PriceSmart often offer unique seasonal ingredients in bulk quantities at a fraction of the usual cost. 14 Bake until the cheese turns golden brown and bubbly, 13-15 minutes. and Scott, S. That way, the yolk is like jam and the white is still buttery. Wonderful culinary aromas wafting through the kitchen while you cook may warm the heart, but those are some of the most crucial components of theflavorof the food, and they are now forever lost to the air. Don't let the foil wrap under the bottom. carrageenan—vegetarian gelling alternative to gelatin, extracted from a variety of red seaweed sometimes called Irish moss. But this evenness •— SAFETY TIPS FOR DEEP-FRYING • ii precise, modern tools, such as those covered in the next chapter. In France, it is called sabayon and is made without alcohol. Psilakis, M. Rodale, 2011. Propane and butane fuels are different and are not as effective for some culinary uses. The layer of cocoa fat forms a moisture barrier that prevents the piecrust from getting soggy. 92 MODERI SINE AT HOME HOME JUS GRAS YIELD: 280 g/m cups TIME ESTIMATE: 20 minutes serve the same day moderate Brown Chicken Jus (see the previous for some culinary uses). page), Pressure-Rendered Chicken Fat (seepage 123), xanthan gum, liquid soy lecithin Roast Chicken (seepage 238), Turkey Confit (seepage 246) STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: GOES WELL W I T H : Many classic sauces are enriched with butter or oil, usually added at the last second in a step called "finishing" or "mounting." The reason for waiting until the last minute to add the fat is that the emulsion you form when you whisk it in is unstable when hot: the fat soon separates out. When water (or sweat) evaporates, it absorbs a very large amount of heat energy from the surface it is leaving; that's why it cools your skin. @ Pour the warm syrup over the rhubarb slices and reserved rhubarb skins, and vacuum seal together in arigid container (see page 53), ® Refrigerate until cold, at least I hour. STOCKS 87 PRESSURE-COOKED CRUSTACEAN STOCK YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: USED IN: J kg/4V2 cups IVz hours overall, including 30 minutes of preparation and 1 hour unattended keeps for 3 days when refrigerated or up to 3 months when frozen moderate pressure cooker; shells of lobsters, crabs, or shrimp and Grits (see page 338), Thai Soup (see variation on page 267) Anytime you find yourself with crustacean shells left over from a seafood feast, save them! Collect them in the freezer until you have INGREDIENT WEIGHT Shells of lobsters, crayfish, shrimp, or prawns 650g/1.4lb from 2 lobsters of shells or or 2 large crabs 650g/1.4lb from 2 lobsters, crayfish, shrimp, or prawns 650g/1.4lb from 2 lobsters of shells or or 2 large crabs 650g/1.4lb from 2 lobsters, crayfish, shrimp, or prawns 650g/1.4lb from 2 50 g or neutral-tasting oil VOLUME 55mL/V4Cup enough to make stock. JGWEF 8 10 Form the dough into a ball, flatten it to a Roll
the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, flatten it to a Roll the dough into a ball, fla the work of boiling surface moisture. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Whole milk 500 g 520 mL/2Vfe cups 100% © Preheat a water bath to 83 "C/18TT. Cool the cheese mixture just to room temperature; it will solidify if refrigerated. The emulsion can be further stabilized by adding 1-2 g of liquid soy lecithin (see page 93). Richard, M. So if you eat lightly cooked food immediately, you're fine, but if you first let it sit around for a bit, you're taking an unnecessary risk. This recipe dodges those problems by cooking the egg yolks sous vide before they are blended into a cream infused with cinnamon and vanilla. creme fraiche—French term for thick and tangy cream; traditionally prepared by wild fermentation, but now prepared with a commercial culture. If your cooker has a spring-loaded pressure valve, the valve should pop up just to the line, not beyond it. We create a texture as smooth as custard, having no lumps whatsoever, by using an immersion blender. © syrup. Our all-around favorite is the thermocouple peratures, like those used when cooking sous vide. A gauge pressure of 15 psi, as in a pressure of the surrounding atmosphere. 379 FURTHER READING Achatz, G. The chefs at the forefront of Modernist cooking are some of the most creative cooks in history, HOW TO Scale a Recipe The recipe makes four servings, but you're throwing a dinner party for nine people. Cuisine is a creative art in which the chef and diner are in dialogue. ;• - 1 455 260 I 330 500 625 prone to off-flavors from oxidation and heating 455 275 525 poor-quality oil; tends to foam muff n'i.nfcii.'iiijBgr-n»»jci \*•\* • •-- in i . Raspberries, rinsed 280 g 214 cups 100% Cucumber, peeled, seeded, and thinly sliced 70 g V2 cup 25% Piquillo peppers (canned) 57 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virgin olive oil 25 g Vicup 20% Sweet onion, thinly sliced 57 g Extra-virg sliced 2g Xanthan gum (optional) 0.7 g !6tsp 0.7% Raspberry syrup, from above (optional) 35 g 35mL/2Tbsp Lime juice to taste Salt to taste Black pepper to taste 156 © Combine in a blender, and puree until smooth. Some online sources allow you to buy directly from the farmer (see page XIX). cardoon—European vegetable in the artichoke family with edible, fibrous stalks. Chicken feet (optional) 80g/0.2lb 3-4 feet 8% © Toss together. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Brown Chicken Jus 200 g 200mL/% cup 100% ® Blend in a pot by using an immersion blender until fully incorporated. We've seen green chickpeas and wild salmon here in Seattle; New Yorkers might find beautiful scallops. This sauce is also special in its use of rendered chicken fat rather than oil, butter, or cream. Mozza Cookbook: Recipes from Los Angeles's with Jean-Georges: My Favorite Simple Recipes. SAFETY TIPS FOR PRESSURE-COOKING Read and follow the safety instructions in the manual that came with the cooker. Coconut Pastry Cream Substitute unsweetened coconut cream or coconut milk for the heavy cream and milk, increase the amount of sugar to 80 g / V i cup, and omit the cinnamon stick and vanilla seeds. Corriher, S. mc, mr; 33-34; 35: r; 36-38; 39: ul, ur, LI. uc, ur Chris Hoover: 189: Lr; 202: r Melissa Lehuta: 188: ul, LI: 189: ul, buc. Preheat the oven to 190 °C/375 °F. Repeat these measurements at various temperature settings—say, every 50 degrees. He has pushed the envelope in his research and recipe development, and he has put his everinquisitive mind to great use for our benefit. During grinding, pathogens on the food surface does during cooking. oxidation—a chemical reaction in which oxygen is chemically bound to a compound. -- .. Try making one with just minced onions and shallots seasoned generously with thyme and black pepper. infuse—to steep or soak so that the flavors or particulates dissolve into the liquid. see page 166 CUISINE Cookingfruits and vegetables sous vide for purces: seepages 3-290 A seasonal milange of cooked and raw fruits: seepages 3-294-295 A plated-dish recipe for Strawberry Gazpacho with sour rhubarb sorbet: seepages S-277-279 \S RASPBERRY GAZPACHO four servings (450 g/ 2 cups) 1V4 hours overall, including IS minutes of preparation and 1 hour unattended (optional) keeps for 2 days when refrigerated; raspberry syrup keeps for up to 6 months when frozen YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: easy sous vide setup, piquillo peppers, xanthangum Showcase the best fruit of the season with this refreshing twist on gazpacho. Place the food on the far side of die grill from the coals so that the heat doesn't burn the exterior before cooking with it again. Part One details tools, ingredients, and cooking gear that we think are worth having. It works by capturing fleam that, as it builds up, increases the pressure in the vessel. Use two cartridges in a 1 L siphon. That s why f roze n food becomes piping hot in tome places while remaining frozen in others. Do not boil. This is a simpler Way to make a healthier dish that traditionally relies on deep-frying to boil off moisture. Carbon dioxide is most soluble in cold liquids. Confusingly, a curing brine is sometimes called a "pickle," and sometimes foods pickled in an acidic solution are referred to as cured, although the underlying processes are different. Gary Hawkey, Claudia Leschuck Kuhn Rikon, Mikuni Wild Harvest, Omni, Pacojet, Polvscience, Rationale. Advanced recipes also indicate which aspect of the recipe may be particularly challenging. Coat the bottom of the pan with a thin film of cooking spray. pan were made of stainless steel, then it would need to be more than 7 cm / 23A in thick to per- Not so much. de La Varenne, F.-P. Centrifugal force then expels most of the juice from the pulp, through the mesh, and Into a wtfltltlg container. friable—easily crumbled. At specialty shops, you can find intriguing imports, such as complex olive oils from Liguria, Italy, potent fruit vinegars from the southwest of France, aged cheeses from all over the world, and artisan-cured meats, such as the Iberico ham shown above. © Place the tall mcatpiece\* and half of the oil in a ziplop bag. Because volume measurements given In the recipes are often rounded to the nearest convenient spoon or cup ml N p not multiply or divide volumes when scaling o recipe up or down. \*y Add the oil to a deep pot, but fill it no more than half full. If adding a seconce up or down. \*y ingredient, repeat step 2 to reset the scale to zero. You get the same grilled flavor because drips of fat still hit a hot surface (typically artificial rocks or metal plates) and flare up in puffs of flavorful smoke. Place the baking sheet in the oven for 1J6-2V6 minutes to reheat all of the omelets at once. 9g Honey 9g 3 1 /4tsp 2% PROCEDURE © Pressurecook at a gauge pressure of 1 bar/15 psi for 1 hour. Prick the dough all over with a fork. While his points of view are novel to most for now, I have no doubt whatsoever that these will be embraced as common practice in home kitchens in the very near future. gelato, and seal the container. (D Cook over medium-low heat, stirring occasionally, until lightly browned and dry, 15-18 minutes. 368 MODERNIST CUISINE AT HOME \ ^ \_ ^ \_ 1 Preheat a water bath to 83 "C/181 °F. Continue blending until the mixture becomes smooth and creamy. We like to serve it as a garnish for poached fish or chicken; you can also transform
it into a simple, yet intense, cream of mushroom soup (see variation below). I was hooked. © Pour the liquid cheese mixture onto the warm baking sheet. But really it is not grilling at all—it's baking. equilibrium cooking—cooking with a heat source (such as a water bath for sous vide) that is at or very close to the final desired food temperature. 1 his recipe uses the husks and cobs of the com, but not the kernels. Add the finely grated cheese, one spoonful at a time, to the simmering liquid on the stove top. Cook the mussel meats sous vide for 10 minutes. Red wine 750 g 750 mL/1 bottle 60% © Pour in, and cook over high heat, stirring often, until the wine reduces to a syrup, 10 12 minutes. New models of combi ovens that can control both the dry-bulb and wet-bulb temperatures are starting to appear at prices that home cooks can afford. DOfl '^^ M H I. © Transfer to a bowl, and puree until smooth using an immersion blender. If you see the oil smoking, it is too hot. Often combined with smoking. knucklebones—the joints that connect the knee bones, usually referring to beef. First, you dispense the gelling agent evenly throughout the liquid. Reduce the amount of sugar used to125g/ s /flCup. This decision, perhaps the worst oversimplification in all of food safety, has led to years of confusion and mountains of ruined food. After that dinner and further reading of his work, it became obvious that our entire profession would be forever indebted to Nathan's contributions and dedication to the Modernist Cuisine project. Mikanowski, L. Preheating takes longer than most people would like because the goal is to heat the walls of the oven, not the air. 130 SE Lynch Rd. Shelton, WA 98584 360-426-6178 taylorshellfishfarms.com shellfish, geoduck True World Foods 24 Link Dr. Rockeleigh, NJ 07647 201-750-0024 trueworldfoods.com shellfish, sashimi-grade fish, other seafood Where to Buy Prod uce | Purveyor Address Phone Website Products The Chefs Garden 9009 Huron-Avery Rd. Huron, OH 44839 800-289-4644 chefs-garden.com microgreens 866-951-1031 foraged and founded bles.com foraged mushrooms, other produce 425-333-4677 full circle.com organic produce, fish and seafood, oils and vinegars, truffles 800-995-7776 sungrownorganics.com microgreens Foraged & Found Edibles Full Circle Farm 31904 NE Eighth St. Carnation, WA 98014 Mikuni Wild Harvest Sun Grown Organic Distributors San Diego, CA Where to Buy Spices and Seasonings Purveyor Address Phone Website Products L'Epicerie 106 Ferris St. Brooklyn, NY 11231 866-350- lepicerie.com salts, vinegars, essential oils HMart various locations 800-648-0980 hmart.com Korean and international ingredients and specialty foods My Spice Sage 5774 Mosholu Ave. Some have since been corrected; for example, the USDA's recommended cooking temperature for pork is now 63 °C/145 °F instead of 71 °C/ 160 °F. 1445A, RR5 Saint-Cyrille-de Wendover Quebec |1Z 1S5 Canada 819-397-4888 hitechvacuum.com Hualian Packaging Machines; dist. Those brown spots are not themselves a problem, but they qu ickly burn to black if you are not careful. 34 MODERNIST CUISINE AT HOME Newer kinds of ovens, known as com hi ovens and water-vapor ovens, do offer some control over humidity. PROCEDURE INGREDIENT WEIGHT Littleneck clams 750g/1.7lb 30-40 clams 100% © 40 4 0 4.4 0 32.0 0 -17.8 41 105.8 41 41 5.0 5.0 1 33.8 1 -17.2 42 107.6 42 42 5.6 5.6 2 35.6 2 -16.7 43 109.4 43 43 6.1 3 37.4 3 -16.1 44 111.2 44 44 6.7 4 39.2 4 -15.6 45 113.0 45 45 7.2 7.2 5 41.0 5 -15.0 46 114.8 46 46 7.8 7.8 6 42.8 6 -14.4 47 116.6 47 47 8.3 8.3 7 44.6 7 -13.9 48 118.4 48 48 8.9 8.9 8.9 8.9 8.4 64.4 8 -13.3 49 120.2 49 49 9.4 9.4 9 48.2 9 -12.8 50 122.0 50 50 10.0 0.0 10 50.0 10 -12.2 51 123.8 51 51 10.6 0.6 11 51.8 11 -11.7 52 125.6 52 52 11.1 1.1 12 53.6 12 -11.1 53 127.4 53 53 11.7 1.7 13 55.4 13 -10.6 54 129.2 54 12.2 14 57.2 14 -10.0 55 131.0 55 12.8 15 59.0 15 -9.4 56 132.8 56 13.3 16 60.8 16 -8.9 57 134.6 57 13.9 17 62.6 17 -8.3 58 136.4 58 14.4 18 64.4 18 -7.8 59 138.2 15.0 19 66.2 19 -7.2 60 140.0 60 15.6 20 68.0 20 -6.7 61 141.8 16.1 21 69.8 21 -6.1 62 143.6 16.7 22 71.6 22 -5.6 63 145.4 23 73.4 23 -5.0 64 147.2 64 17.8 24 75.2 24 -4.4 65 149.0 65 18.3 25 77.0 25 -3.9 66 150.8 66 18.9 26 78.8 26 -3.3 67 152.6 67 19.4 27 80.6 27 -2.8 68 154.4 68 20.0 XI Convertit\*e Temperatu r& Celsius to Fahrenheit Fah to Celsius • ahrenhe < F) (°F) (°C) 69 156.2 69 20.6 125 257 70 158.0 70 21.1 130 266 71 159.8 71 21.7 135 72 161.6 72 22.2 140 284 140 60.0 73 163.4 73 22.8 145 293 145 62.8 74 165.2 74 23.3 150 302 65.6 75 167.0 75 23.9 155 311 68.3 76 168.8 76 24.4 160 320 77 170.6 77 25.0 165 329 78 172.4 78 25.6 170 338 79 174.2 79 26.1 175 347 80 176.0 80 26.7 180 356 180 82.2 81 177.8 81 27.2 185 365 185 85.0 82 179.6 82 27.8 190 374 190 87.8 83 181.4 83 28.3 195 90.6 84 183.2 84 28.9 200 93.3 85 185.0 85 29.4 205 401 205 96.1 86 186.8 86 30.0 210 410 210 98.9 87 188.6 87 30.6 215 419 10 tj \$ 88 190.4 88 31.1 220 428 104.4 89 192.2 89 31.7 437 107.2 90 194.0 90 32.2 230 446 230 91 195.8 91 32.8 235 455 235 112.8 92 197.6 92 240 464 40 11S£ 93 199.4 93 33.9 94 201.2 94 34.4 250 482 95 203.0 95 35.0 255 491 96 204.8 96 35.6 260 500 97 M)fi fi 97 36.1 ^ b j 509 98 208.4 98 36.7 270 518 99 210.2 99 37.2 275 52? Dry mustard powder 0.5 g pinch 0.1% Cayenne pepper (optional) to taste Parcooked macaroni, from above 450 g 31/» cups 100% Salt to taste © Fold the reserved macaroni into the warm cheese mixture, and season it to taste. kfatand water<sup>™</sup> e of flour, butter, JoS<sup>rea</sup> yslicfc hamel do act as >b. Modernist thickeners—such as the agar we use in our Onion Fluid Gel recipe on page 100 and the 94 xanthan gum in our Pressure-Cooked Drippings recipe on page 101—don't have these drawbacks. You'II notice that some combinations callforless H»\*n half the water of others; it may seem counterintuitive, but crumbly cheeses tend to bind better with less water. Ten Speed Press, 2002. Hence the appeal of newer cooking methods, like sous vide, that are far more precise (see page 48). Avoid cooking foods that froth, like oatmeal and pasta. They're not the first things you'd think of to stock your home kitchen. Yet another option is to grind freeze-dried corn to a powder, and then roll the batter in it to yield an extremely crunchy crust and an extremely crunchy crust and an extremely crunchy crust and then roll the batter in it to yield an extremely crunchy crust and an extremely crunchy crust and an extremely crunchy crust and then roll the batter in it to yield an extremely crunchy crust and an extremely crust and 38mL/2V2Tbsp Wondra 26 g f&Tbsp Sodium citrate Stilton Cheese, crumbled "g 380 g 3 cups Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: -^': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: --'': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: --'': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: --'': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: --'': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: --'': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: --'': Shallot and Port Wine
Marmalade Pear, thinly sliced Stilton Cheese Slice: --'': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: --'': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: --'': Shallot and Port Wine Marmalade Pear, thinly sliced Stilton Cheese Slice: --'': Shallot and Port Wine Marmalade Pear, thinly sliced 1 sprig Sweat the shallots in olive oil. Robinson Laser, SousVide Supreme, Taylor Shellfish, Terra Spice. Once you eliminate time from the standards, the strong tendency is to choose a temperature so hot that it can produce the required level of pathogen reduction nearly instantaneously. The reason is that pathogens much more quickly colonize and propagate in foods below 50 °C/120 °F. It doesn't matter rf they're made of stainless steel or brass. ano put the covered pan into the pan. Try these fillings, or others you develop, in place of the French Scrambled Eggs and chives in the Steamed Herb Omelet recipe on the next page. Insta Cure #1-curing salt blend of 93.75% solium nitrite, and safety coloring. It is easy for you to do at home with the right equipment. © Season the gravy, and serve it warm. Don't get too close to the oil. Montagud Editores, 2005. If you have a jiggling-weight pressure valve, the weight should move three to five times a minute; it shouldn't dance around wildly. Sodium citrate 14 g 7% © Line a baking sheet with a silicone mat, or lightly oil the sheet, and place it in the oven to warm while you prepare the cheese. Americans in particular tend to idealize soup as hearty, heartwarming, and piping hot. Partway through my fellowship with Stephen, I decided to take a summer oft" to work on a software project with some friends from graduate school. We use an offset spatula to do this. You can puree certain gels after they have set to make a sauce that is thick on a spoon but thins to a pleasant texture as you eat it. In this way, sieving is the ultimate refinement. one ingredient on the scale, set it to 100%, and then weigh the remaining ingredients according to the percentages-no math required (see page xx for an example). For the strawberry broth: Strawberries, washed and hulled 500 g 1 - Sugar © Strain, - - + - - Lime juice SO 8 to taste For the infused rhubarb: Fresh red rhubarb 100 g 1 large stalk 20% Sugar 100 g Vicup 20% Water 100 g Malic acid 2g For the cucumber rolls: English cucumber ... Chroni- Cooking Lab, 2011. emulsifier—any compound, such as sodium citrate, that helps to stabilize a mixture of two otherwise immiscible liquids. IV amylopectin—type of polymer composed of glucose that makes natural starches. Fenugreek seeds are used as a spice. 90 MODERNI ME 8 Strain the corn stock through a sieve lined with cheesecloth. I began to cook seriously while studying art and literature in college. Lemon juice or citric acid work as antioxidants on cut apple slices, aquaculture—cultivation of aquatic animals or plants. mrc, LI, Lie. Don't bother messing to attain Ideal sweetness and tenderness. Although we kept Modernist Cuisine in the title, this new book is not a condensed version of its predecessor. Season and serve. Thai Street Food: Authentic Recipes, Pizza. White miso Soy sauce 28 g 4g Salt to taste 2 Tbsp 3 3mL/ /4tsp 7% © Blend mushrooms, when they are in season, over the finished dish. It includes a little almond flour and yields a sweet, delicate, and buttery crust that SCALING INGREDIENT WEIGHT VOLUME Egg yolks, blended 50 g 3'/2Tbsp/3-4yolks 25% goes well with any tart or pie—although it pairs especially well with velvety custard fillings (see page 375). A pressure cooker is the best tool for the job because it concentrates all the aromas released by the delicate ingredients. 5\$ Some evangelists for hardwood fuels also claim that charcoal made from mesquite, or other fragrant-burning woods, imparts flavor that is the secret to grilling nirvana. flaky salt—salt crystals that grow as broad, flat flakes. Pour into a tray or bowl, and chill until completely set, 15-20 minutes. - Preheat the oven to 175 \*C /350 \*F. Add the appropriate measure of the ingredient. So we love that a cook in the Midwest can easily find chocolates from Ecuador, bananas from Brazil, or rice candies from China. INGREDIENT WEIGHT VOLUME SCAL ING PROCEDURE Water or milk 265 g 265 mL/lVa cups 93% Sodium citrate 11 g 285 g CD Combine in a pot, whisk to dissolve, and bring to a simmer over medium heat. Scatter the corn husks on a baking sheet, and place an inverted cooling rack on top of them to hold them in place. Where to buy: kitchen-supply stores, warehouse stores Cost: \$100-\$135 Jiggling-Weight Pressure Cooker This is the kind of pressure cooker that Grandma had: loud, spewing steam, with no easy way to tell when it reaches full pressure, and with few of the safety features of their modern counterparts. 1 cup 70% (D Combine, and blanch in the boiling water until just cooked, about 1 minute. Most gelling agents activate when simmered for 2-3 minutes. Unsalted butter 60 g 4 Tbsp 20% ® Melt in a frying pan, and add the mushrooms. Jamie's Food Revolution: Rediscover How Silverton, N., Molina, M., and Carreho, C. We provide recipes for see page 317 you to the mushrooms. Jamie's Food Revolution: Rediscover How Silverton, N., Molina, M., and Carreho, C. We provide recipes for see page 317 you to the mushroom set of the cook the pasta, J see pages 310 and 312 len you know howto make perfect \* five different kinds, see page 318 W MAC AND CHEESE YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: five servings (800 g/S cups) 30 minutes overall serve pasta immediately; cheese sauce keeps for 1 week when refrigerated or up to 2 months when frozen moderate sodium citrate This recipe has been one of the most popular in Modernist Cuisine since that flows out of the vegetables as their cell walls weaken and start to release their liquids. Deep-fry both kinds of cauliflower florets in 175 °C/350 'T neutral frying oil until golden, about 10 minutes. The trick is to deglaze the pan by adding 1 Saute meat or sliced vegetables until they turn brown. silverskin—tough, inedible kind of connective tissue in meat. Thoroughly combine all of the ingredients, and spread them in an even layer on the parchment. modernistpantry.com lepicerie.com lesanctuaire.com msk-ingredients.com Sold as fine, very light flakes or powder. It radiates from the lid. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Raspberries, rinsed (optional) 25 g 2 cups 80% Sugar (optional) 25 g 2 cups 80% Suga kitchen one day, I discovered that Nathan, a very well-educated scientist proficient in several highly technical fields, was at heart a true foodie—one whom any other foodie could relate to on many different levels. N«t Weight ' l h 574.516.2400 • ww»tt«MPJ exxxxxxyaajooaa. Drying Correctly If drying is going too fast, If the surface remains visibly Once the bulk of the water the food surface will become wet the food is drying too has been evaporated, the food increasingly dry and crusty, slowly or needs more time. • % \* SrVS \*\*\*\*- 1> hgr 10% Hg.; Internet Vendors Sometimes the cheapest'—or only—way to buy specialty items is to get them online. Shallots, thinly sliced 80 g 3 Clarified, unsalted butter or neutral-tasting oil 50 g 55mL/3V2Tbsp 13% Water Fino sherry 400 g 400 mL/l 2 /3 cups 100% 80 g 80mL/V3Cup 20% A cup 20% A cup 20% see page 119 @ Combine with the cooked mushroom mixture, and pressure-cook at a gauge pressure of 1 bar/15 psi for 25 minutes. Use the waterdisplacement method (see page 58) to remove as much air as possible from the bag, and seal it. Small items may hardly cook at all. Those varieties having a rough surface hold the sauce better. A quick sear over high heat, as we use in the recipe for Low-Temp Oven Steak on page 196, lends an appealing appearance, temperature contrast, and an extra layer of flavor to food cooked sous vide. This phenomenon explains, incidentally, why the last few kernels in the bag are so recalcitrant to pop— they are small and isolated, so they absorb the energy slowly. f 316 MODERNIST CUISINF. AT H 0 M I WHIL RE AT IT PERFECTLY MELTING CHEESE SLICE YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: USED IN: 500 g / 1 2 - 1 4 slices 2V4 hours overall, including IS minutes of preparation and 2 hours unattended keeps for 10 days when refrigerated or up to 2 months when frozen moderate sodium citrate Modernist Cheeseburger (seepage 212), Grilled Cheese Sandwiches (see the next page) By using sodium citrate, an emulsifying salt, you can make any cheese into slices that melt as perfectly as American-style sandwich cheese does. Our recipe fir Microwaved Eggplant Parmesan, for example, exploits both aspects to guarantee a creamy, rather than rubbery, texture to the wjater-laden vegetable. They can all mix, froth, and emulsify. © Keep the egg yolks warm for up to 1 hour, if needed, by holding them in a rigid container that isfilled with oil or butter and then placed in a 60 'C/140 °F water bath. Tip the opening away from you as you lift the lid off the cooker to protect yourself from the steam that is released. 1 1 110 130 160 190 250 360 440'I" 'COOK-) (^w) (<) (>) (H^H) v\* An induction cooktop transmits power through a magneticfield, generated by work with induction elements, but aluminum, copper, glass, and ceramic c copper coils below its surface, that turns the pan itself into the heat source. hot air or water. © © © Spray the bottom of the frying pan with a thin film of cooking spray. Cheese Crumble see page 316 100 g V/t cups 22% © Sprinkle generously over the mac and cheese. We use them nearly every day to extract amazingly intense flavors and to slash the amount of time it takes to cook the components of a meal. Whenever possible, they should support humane methods of slaughter and sustainable harvesting of wild foods such as fish. The sweet garnishes describer on pages 378-379 or any of the other desserts
in this chapter. Raspberry Lemon Cream Pie Crust: Raspberry Crust Filling: Lemon Pastry Cream or Sous Vide Lemon Curd (see page 365) Topping: Dust with Freeze-Dried Raspberry Powder. Cbrkson Second Edition. O ~\* Let stand for 5-10 minutes to soften the gelatin. For wiping hands and other surfaces, switch to disposable paper towels. Safetytipsfor pressure-cooking: seepage 33 Preheat the oven to 175 "G/350 °F. To store food safely, make sure that no part of your refrigerator is above 5 °C / 40 °F; the optimum THE SCIENCE is a few degrees colder than that. Wondra-brand of pregelatinized wheat flour made by General Mills. You should hear gas filling the chamber-and then silence. Season with salt, and garnish with brioche croutons or sauteed mushrooms. LI. uc. Now you're grilling with gas Gas grills are a great substitute for charcoal grills. University Press, 2012. © Measure 500 g of the onion milk, and then whisk or use an immersion blender to blend the agar completely. To make the gravy smoother, process it in an immersion blender, countertop blender, orfood processor. Even the cleanliness of the oven walls matters because dark spots emit more radiant heat than light spots do. bonito flakes—(katsuo bushl) shavings of cured and dried bonito, a variety offish from the mackerel family. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Chicken wings, chopped 450g/llb 3-4 wings 45% © Preheat the oven to 190 °C/375°F. Most spring-loaded pressure and high sprayed parchment. The Cooking of Southwest France: Cooking. MAC A N D CHEESE RISOTTO AND PAELLA The time and attention necessary to make a good traditional paella or risotto can sometimes seem prohibitive. Make sure the mat is silicone only; do not cut mats that contain fiberglass, such as Silpat brand mats. lemon thyme—variety of fresh thyme having variegated leaves and a bright, lemony aroma. Modernist Cuisine at Home offers useful techniques and solutions, jiggling-weight pressured our abilities, and it provides us with a practiced and thorough understanding of why things happen the way they do. But when used according to their manufacturers' instructions, jiggling-weight pressured and thorough understanding of why things happen the way they do. But when used according to their manufacturers' instructions, jiggling-weight pressured according to the second according to t cookers are safe and do the job. In Chamonix, France (elevation 1 km/3,400ft), it boils at 97 °C/206°F; in Cuzco, Peru (elevation 3.4 km /11,200 ft), it boils at 89 °c /192 °F. Artisan, 2005. You may want to replace the sherry or white port with a stronger-flavored alcohol, such as whiskey or red port. Add a little salt to taste, but it may already be quite salty. We find a potato fleer to be the most versatile type of food press\* It can puree soft fruits and can juice firm ones. Maxime travels with his everywhere he goes. The yolks will be firm and fully set after cooking. Giving cooked food a quick dip in hot oil is a great way to develop a crispy crust. conduction—heat transfer that occurs through energy exchanged between particles, such as by the direct contact of surfaces. Angier, B. When How tofind the sweet spot of you bake a loaf of bread, roast a leg of lamb, or a grill: see pages 2-14-17 evenflipa burger on the grill, you're invoking The history of baking: see time-honored techniques passed down not just page 2-101 from generation to generation but from the dawn Cooking with moist air: see of our species. At step % add 18614 I'-, cups olfinely chopped dark chocolate, 80 g / 8 Tbsp of granulated sugar, 34 g / \$i cup of Outch-processed cocoa powder, and 2%/yk tsp of vanilla extract Substitute baking soda for the baking powder. Fold in some grain mustard, and serve it with steak, or spread the marmalade on toast topped with grilled sweet onions. Do not overfill. %SSM « J • Birbwn'-meat &a%.- il( ",1 ",IV texture. Bring the jus to a simmer. Puree the yolks immediately at low speed in a blender. When time is more pressing, however, we pressure-cook the stock (see the variation below), which produces a stronger flavor. Shallow frying in a deep-sided pan works as well, as long as you're generous with the oil; we use that approach when making the Sous Vide Buffalo Wings described on page 250. Sicilian pistachios—bright green and revered for their flavor. ) Some ingredients (four of those in this recipe) may be made In most recipes, the steps are given in concise form in the recipe table, and then in more descriptive form with selected photo- by using other recipes in this book. ^ p L J- • ^w'i1- • i • »; wt » m i - i . Collect and strain the juices (see steps 3-6 on page 287). • f I Larger foods absorb microwaves best. Top with an inverted cooling rack. TO MAKE AHEAD After step 8, coverthe baking sheet with oilrubbed plastic wrap and store it in the refrigerator for up to 2 days. n i mi - i i . VARIATIONS Scrambled Egg Pudding Prefer a velvety, pudding-like texture that's not aerated? Use a small pile that is just larger . 149 MUSHROOM PUREE 200g/7/acup 45 minutes overall keeps for 3 days when refrigerated or up to 1 month when frozen easy YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: This puree is versatile, having many uses in addition to making omelets. Does that mean it's not authentic Italian food? Before you go on your own foraging excursions, pick up a good guide, such as Bradford Angier's Field Guide to Edible Wild Plants, to steer you toward the delicacies and away from the dangers. Traditional versions often contain potato or bread, ajowan—(ajwain) tiny, seed-like fruits of a variety of lovage with aflavorsimilar to thyme and caraway. The recipe calls for 16 strips. convection current—moving stream of fluid created by convection. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Basil leaves Chives 40 g 35 g 2% cups 80% ® Bring a pot of water to a boil. M O D E R N I S T CUISINE AT HOME Brush the cooked slices with olive oil on both sides, place them on a dean microwave-safe plate, and seal them tightly with plasticwrap, which traps the steam produced during cooking. Tighten the lid. Fermented black bean and chili paste (Lee Kum Kee brand) 15 g ITbsp 5% Shaoxing wine 8g 9 m L / 2 tsp Soy sauce 5g 4mL/% tsp Toasted-sesame oil 1g lmL/W tsp 2.6% 1.7% 0.3% Baby bok choy, cleaned and halved 300 g 4 medium heads 100% © Place in a zip-top bag, remove as much air as possible from the bag, and seal it. The older pressure cookers and pressure canners will also work, although they are a bit noisy and tend to loee steam and aroma. Melt 120 g / Vi cup of butter in a separate pot, and stir in 2.4 g of liquid soy lecithin. Garnish with Pressure-Cooked Pickled Mustard Seeds (see page 125) and crispy bacon bits. By the end of the summer, venture capitalists had expressed interest in our project, so I extended my leave of absence. We use ours all the tiwe-for making fresh soda, greatly speeding up marinating, infusing fruitftfHi a flavorful juice, or topping a dish with foam for flavor and textural contrast. Sealing the produce in a plastic bag captures steam to help the microwave do the cooking. yakitori—Japanese term for grilled chicken, most often served as small pieces threaded on skewers. 10 While one sheet is baking, repeat steps 5 and 6 to prepare strips of mushroom base on a second, cool silicone disc. For consistent results, cook small batches to minimize the cooling that occurs when you add the food, and warm food to room temperature before frying it. Remove the plastic wrap from the baking sheet, and reheat the omelets forVA-2Vi minutes. 100 g % cup 50% C Add, one-third at a time. The end result should look a bit like curdled milk. Whisk the mixture over medium heat until smooth and completely melted. A principal ingredient in dashi, and also used as a seasoning or garnish, braise—to slow-cook food (usually meat) in liquid or humid air in a closed vessel. For extra crunch, crumble toasted, shredded coconut over the tarts just before vorving. © Sieve, and measure 75 g/'4 cup of the cauliflower puree for use in step 12. In step 5, increase the pressure-cooking time to 2 hours. viscosity—the ability of a gas or liquid to resist flowing when shear force is applied to it. (Don't cut Silpats, or you will expose the fiberglass core.) Silicone mats replace waxed paper, aluminum, and parchment paper with one reusable item. a liquid to remove the fond at just the right time: it must be browned, but not black and bitter. Bomba Rice with Chorizo and Broccoli-Gruyere Puree, see variation on page 333 M I 320 HIGHLIGHTS • 4. W. m: 243: Lc; 244245; 246: ul. 23 STOVES How efficient is your cooking method? HIGHLIGHTS pis^^n Dense leafy greens contain a lot of moisture, so they lend themselves well to microwave cooking. Bet aside to cool slightly. The stove is the modern version of the ancient cooking fire. You may want to stabilize the silicone mat by using double-sided tape to stick it to the counter—just make sure to remove the tape before cooking. Sprinkle the filling with the chives. Potter, 2009. So what would happen if we set up a hair dryer or fan beneath NI u vf .us ff fcr 1tf\* • f 9-> :»5r INGREDIENTS lcKif!T\*17TTfflTtT5T was a time when only the best cooks appreciated that fact. Upon further investigation and after a lot more studying, I became completely hooked on the contents of that book, and also happy that Nathan had decided to distill the very essence of the big book into a smaller volume for the home-cooking enthusiast. '. COUNTERTOP TOOLS BLENDERS AND FOOD PROCESSORS Blenders and food processors cut chop, and pulverize f o o d Blenders work well on fluid mixtures, but not o n large chunks from rough cubes of about an inch or t w o into smaller bits, of f o o d or very thick purees. To avoid such complexity, weigh the ingredients. People criticize it for cooking unevenly. Place the pans in the oven, and bake until the eggs are just set, about 12 minutes. You can find recipes on the next
page for the variations pictured above. We love the pudding-like consistency of a yolk cooked at 67 \*C, 153 °F. Simple. Nathan was so inspired, in fact, that he built The Cooking Lab and hired an impressive team of like-minded, highly qualified chefs who mastered a whole new batterie de cuisine: from souscentry of a yolk cooked at 67 \*C. vide vacuum sealers, water baths, and combi ovens to centrifuges, ultrasonic homogenizers, and rotary evaporators. A whipping siphon, for example, is good for far more than whipped cream: we use it to carbonate soda, to add fizz or infused flavors to fruit, and to marinate meat in a fraction of the normal time. Here are a few simple suggestions to minimize the variability of your oven. Often used to make the dipping sauce ponzu. Proteins are essential parts of all livings cells and of the diets of .ill animals. The great French chef Joel Robuchon passes his potato purce through a tamis three times. water-vapor oven—oven that uses heated water vapor as well as hot air to cook. Gruyere cheese grated 200 g 3 cups 100% Sharp cheddar cheese, grated 180 g 3 cups 90% © Add gradually to the simmering liquid. Good local restaurants are an excellent source of knowledge. Regardless of how you start the fire—kindling, a little chimney, a blowtorch—the coals are not ready for grilling until they are uniformly covered by gray ash. At a refrigerator temperature of 3 X / 3 7 % however, the recommended length of storage drops to three days. Our recipes call for frying at temperatures between 190 "C/375 °i- and 225 " c / 4 4 0 " i . Peanut Crust At step 4, substitute finely ground, roasted peanuts for the almond flour, and add 40 g / 3 Tbsp of smooth peanut butter. One of the oldest recipes for gazpacho, which the Moors likely brought No matter how perfectly you cook and puree a potato, it seems grainy on the tongue unless you add butter or cream. FURTHER READING IN MODERNIST CUISINE More must-have and handy special-purpose tools for Modernist cooks: seepages 2-284-287 Guides to juicers, filters, 1/,,:1SA; '^, 15 paintbrush any \$2-\$10 't""^ 16 coffee cold-brewing kit Toddy \$40 useful for applying even layers of oil for baking, sauces for glazing, and for creative plating , :::,i,--V' makes full-flavored extracts for use in cooking Chefs are not limited to equipment made solely for culinary purposes. The magnetron generates the microwaves used to cook the food leCpaftc 129 ( D Ingredient weights are given in grams only, except for meats ) Scaling percentages make it easy to make more or less of a /jJJ\ Combine, and mix thoroughly. Start timing as soon as full pressure has been reached. amchoor—(amchur) dried green mango powder; used as a seasoning to add a tangy flavor, amino acid—one of the chemical building blocks from which proteins are composed. See page 132 for brim\* recipe\*having salt levels that worrt eempromis\* the texture ©I the n ••,• i 16 M n n i p ia HOME SIEVES AND STRAINERS Sieving allows you to separate liquids from solids, and vice versa. Sweating Panfrying Deep-Frying Sweating vegetables (such as onions, garlic shallots, carrots, or celery) is the technique of cooking the evenly cut pieces over medium-low heat until they soften but do not brown. tapioca maltodextrin—a modified starch derived from tapioca. It's best to also run an external exhaust fan when cooking, especially if using gas, which produces carbon monoxide when it burns. When you're ready to serve the omelets, preheat the oven to 175 °C/ 350 °F. To be fully hydrated, most thickening and gelling agents must be dispersed evenly in a liquid and then heated above a certain temperature, which depends on the specific hydrocolloid and nature of the liquid it is dispersed in. In gas ovens, the own burner sits beneath • protective shield that diffuses the heat of the flame evenly, much as the artificial rocks or metal plates of a gas grill do. For fruits, confit or confiture means preserves—as in jams and jellies. Spread them at 175 "C/350 °F until they turn golden, about 45 minutes. Choose a frying oil that has a smoke point higher than the desired cooking temperature. the usual supermarket variety. We are a non-profit group that run this website to share documents. Pour one quarter of the egg mixture into the frying pan. Repeat three times to coat the banana in a layer of dark caramel, returning the banana in a layer of dark caramel. afinefine, however, betweert^e flare-ups that impart grilled flavor and licking flames that burn your food. Used widely in Southcast Asian cuisine. 147 Stack the tamales, seam-side down, on a trivet or rack in a pressure cooker. To infuse fruit with • liquid, add the fruit and enough liquid to cover it. ^255 2y§« If some ingredients in this book seem weird, it's just because you're not used to them—yet. Because fish is cooked optimally at very low temperatures (at least in our opinion), you can't pasteurize fish without overcooking it. MODERNIST CUISINE AT HOME Mini Egg Cups rill the bottom of warm ramekins with Shiitake Marmalade (see page 151). Parcooking Times You can parcook rice and grains, and then refrigerate them for up to 3 days before finishing and serving. It includes a pump for evacuating air from the chamber, as well as one or more sealing bars that melt the open end of the bags closed once nearly all of the air has been removed. Humidity inside a conventional oven, unfortunately, is largely under the control of the food, not the cook, it depends on how full the oven is. Where to buy: kitchen-supply stores, garage sales Cost: \$35-\$50 Pressure Canner These more robust cousins of pressure Canner These more robust cousins of pressure Canner These more robust cousins of pressure contents. When you are ready to finish the dish, simmer it as described in step 6 above for 2-5 minutes as a rule of thumb. Immigrants who carried their culinary traditions with them have created a demand for specialty markets that serve the needs of particular ethnic communities. If you're used to "nuked" leftovers, oatmeal that overflows with a moment's inattention, splattered soups, and liquefied butter, experiment with lowering the power. Unfortunately, they are the temperature. Scribner, 2008. Do not overcrowd the pan; work in batches. In addition to surprise, many other emotions, reactions, feelings, and thoughts can be elicited by cuisine. Jf C U S T A R D S A N D PTES \*: " fc\* MA FLAKY PIE CRUST YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: 475 g of crust (enough for one 30 cm/12 in pie orfour 11 cm/4Vi in tarts) 2Vi hours overall, including 30 minutes of preparation and 2 hours unattended keeps for up to 3 days when refrigerated and 3 months when vacuum sealed and frozen moderate sous vide setup, food processor, almond flour We tested more than 40 versions of sweet pastry crust (pdte sucree) and tart crust {pate sablee}. Chronicles: Korean Cookingfor an American Clarkson Potter, 2008. Add all of the ingredients, slir, and lock the id. Preheat the oven to 175 "C/350 °F. £\$? Coconut Crust Increase the amount of blended egg yolks to 6 3 g / ' / i cup, and add 70 g/7« cup of coconut cream powder at step 4. will vary by no more than 22 °C / 40 °F. and Heller, S. Similarly, you need 8% \* 1,125 g • 45 g of vacuuminfused celery (which you can make by following the recipe on page 131). Japanese Markets A good source for: white soy sauce, matcha (preen tea), genmaicha (green tea) mix), dried baby sardines and crabs, bonito flakes, kombu and nori (dried seaweed), fresh wasabi, kinome (prickly ash) leaves, myoga (ginger bud), maitake and enoki mushrooms, satsuma-imo and Okinawan sweet potatoes, kabocha squash,/t//w and hachiya persimmons, yuzu (Japanese citrus), short-grain rice varieties, quail eggs, sea urchin, sashimi quality seafood A good source for: mustard oil; ghee; whole spices such as Ceylon cinnamon, nutmeg, ajowan, cardamom, coriander, cumin, mace, and mustard seeds; black salt; saffron; orange blossom water and rose water; fresh and dried chilies; amchoor (dried sour mango); anardano (dried sour plums); preserved black lime; raw cashews; fresh turmeric, chickpeas, and coconut; curry and fenugreek leaves; snake beans; Indian eggplants; red bananas; tamarind; various pickles; long-grain rice varieties; black and yellow lentils; breads such as papadums and parotha; flours and mixes for dosa, chapati, and idU Chinese Markets A good source for: dried fermented black beans, toasted-sesame oil, Shaoxing and michiu wines, dried lily buds and orange peel, Sichuan pepper and chilies, black fungus, cassia, licorice root, chrysanthemum leaves, lotus root, taro root, peavines, lychees, garlic chives, fresh bamboo shoots, saltpreserved duck eggs, lap cheong (Chinese sausage), fresh duck, offal, tofu 74 MODERNIST CUISINE AT HOME Southeast Asian M a r k e t s Latin American Markets A good source for: fish sauce, shrimp paste, dried shrimp, chili sauces and spice pastes, preserved turnips, palm sugar, coconut cream, star anise, galangal root, mangosteen and durian fruit, lemongrass, Thai eggplant, betel and Makrud lime leaves, straw mushrooms, baby corn, ngo om (rice paddy herb), fresh masa harina; crema; Cotija cheese and queso fresco; fresh banana leaves; tomatillos; nopales (cactus paddles); epazote (herb); avocado leaves; Mexican oregano; fresh and dried chilies such as poblano,pt//a, and guajillo; dried corn husks and chamomile; hot sauces; chicharrones; fresh lard; pork skin; beef tongue Korean Markets Middle Eastern and African Markets Middle Eastern a fermented vegetables, black garlic, preserved seaweed, dried ferns and seafood, duk (soft rice cakes), chili threads, bean sprouts, negi (giant scallions), fragrant pears, taro, mung bean flour, monosodium glutamate (MSG), oxtails, fresh pork belly A good source for: palm oil; harissa (chili sauce); grains such as teff, fonio, millet, bulgur, and sorghum; baobab, and ogbono (bush mango) seeds; kola, cashew, and
palm nuts; dates; green bananas; cassava; taro; okra; guava; injera flatbread; ouarka pastry sheets; couscous; plantain;mahlab (cherrystonespice); preserved lemons; dried roses; bush mint; grains of paradise; fresh goat i> 1 »-' 1 —- ' <sup>r</sup> m:«m Sic ∪ im >- v -11 FURAGED FOODS: AUTUMN AND SPRING Modernist chefs such as Marc Veyrat, Rene Redzepi, and David Kinch have helped create a burgeoning movement of cooking with obscure wild ingredients. You can also make large batches and freeze them so that they are handy when time is short. Chefs use mussel juice to add depth to butter sauces for fish and soups. Add the lime juice to brighten a sweet soup. 9. The ability to control fire distinguished Homo erectus from other animals and allowed the most basic level of nutritional and culinary refinement. This deliberate rejection of the past can be seen in the paintings of Monet, Picasso, and other giants of Impressionism, whose work was initially very controversial. M O D E R N I S T C U I S I N E AT H O M E VARIATION: Deviled Eggs For a modern take on deviled eggs, whip the egg whites with vinegar, oil, mustard, and herbs to make a vinaigrette. 31st St. New York, NY 10016 800-473-0577 jbprince.com books; kitchen utensils j u l a b o USA 884 Marcon Blvd. than the food; you want low heat. Also used as an alternative to calcium chloride to toughen the skins on beans and to add a crispness to pickles. For recipes using such techniques, see pages 200-202). Drain the cooked pasta, but do not rinse it Proceed immediately to the next step. Culinary Encyclopedia. To make nine servings, you will thus need 500 g \* 2.25 «1,125 g (1.1 kg/2.5 lb) of cooked lobster meat. Resting is unnecessary; the gas dissolves quickly. Take apart the cooked bok choy leaves. Part Two contains 406 recipes, all of which are new. four 10-12 cm /4-5 in nonstick frying pans. Tip the sheet as needed to form an even layer. honey p o w d e r e d honey, honey granules) widely available at Asian markets and chefrubbcr.com health-food stores modernistpantiry.com chefrubber.com justtomatoes.com lepicerie.com IS Honey powders may wiciuoe cine Juno, agave syrup, and Stabilizers, Check tho label if you have a preference. This chapter can help. That is because the induction element doesn't actually generate heat: it produces an oscillating magneticfield that heats up any nearby ferrous metal. Or that you can parcook either one of these dishes up to three days in advance, and thermometers usually have this much range. (You can use the weight of the yield rather than the servings to calculate the scaling factor: if you want to make 1.3 kg of lobster salad from a recipe that yields 750 g of lobster salad as written, the scaling factor is 1,300 + 750 = 1.73.) 2 \* Calculate the scaled 100% value for the recipe by multiplying the weight of the 100% ingredient by the scaling factor is 1,300 + 750 = 1.73.) pork shoulder often served as salami. remains wet and leathery. This is the reason that meats have a pronounced grilled flavor, and vegetables, devoid of natural fat, don't. deionized water—water that has been purified by a process in which its mineral ions are entirely removed. Dry white wine 150 g 150mL/#cup 20% Shallots, thinly sliced 100 g Icup @ Bring a pot of water to a boil, and set a large steamer rack above the water. Where to buy: kitchen-supply stores We strongly prefer torches fueled by MAPP or propylene gas, which burn at extremely high temperatures. n a i l ' I. star anise—small, brown, star-shaped pungent fruit of a Chinese and Vietnamese tree that has a flavor similar to but stronger than anise and is dried and used whole or ground as a spice, especially in Chinese cooking. In South India, the leaves are often fried in oil and used as a condiment or garnish. Return the mixture to a simmer, and then remove the pan from the heat. Ten Speed Press, Kunx, G. ® Puree until smooth and fluid. True freshness is fleeting bedause.lhe .essential oils that give frjjits their bright colors and flavors oxidize quickly after juicing. Warm the crustacean butter to room temperature, and spread it generously on the inside of the buns. (But note that the effect is a far cry from what you get by smoking meat in a smoker for hours.) :jk\* (But there is a tailgate version of the water bath, too: cooking A tight-fitting lid traps hot air that bakes the food. The secret to successful microwaving is the Goldilocks principle: choose food that is not too small and not too big. Putlhefood in the center of Afetiven, and master the power level button. Robert Rose, 2008. Allow to cool, and slice into coins 1 in thick. calcium chloride—mineral salt of calcium, used to firm up the skin of beans. You might be surprised<sup>^</sup> amount of each ingredient, cook the food to a precise temperature, and then be able to replicate the results of that exact combination every single time. The threshold between SCALING VOLUME unattended undercooking is incredibly fine. fresh turmeric—small, bright orange rhizome of the turmeric plant available at Indian and some Asian markets. Stackpole Books, 2008. 
Scatter the husks on a baking sheet. And do not try to carry a flaming pot outdoors. Leave the lid in the oven while you prepare the next omelet. Traditionally served during Passover. Voltaggio, B. But that problem has a straightforward during pot outdoors. Leave the lid in the oven while you prepare the next omelet. Traditionally served during Passover. Voltaggio, B. But that problem has a straightforward during pot outdoors. Leave the lid in the oven while you prepare the next omelet. solution: don't cook in open containers. 5. The concept is admirable—except thai, broadly speaking, few foods are truly authentic to just one location. The bottom of a gas oven requires less insulation because the heat rises from the flames. Set them on a metal rack or trivet—or, in a pinch, on crumpled sheets of aluminum foil. phosphate—salt of a phosphoric acid; used as tenderizers, preservatives, and to activate gelling agents. But each of these adds a lot of bulk to the sauce while muting the flavors of the primary ingredients. The portobello gills will darken the mixture. V / i^HF. I got more books from the library and started to learn about cooking. 1 Charge the siphon with only one cartridge of nitrous oxide. The goal is to add a great crust to the surface of food that we have already fully cooked sous vide, while overcooking as little of the interior as possible. ) Many recipes involve sealing food and cooking it sous vide in © Notes provide additional information a water bath, either for a specified time at a given temperature or on simple substitutions, history, or related to a given core food temperature. Modernist Robuchon, J. You can grind flaked agar in a coffee grinder to make agar powder. Once the oven is hot, place the oven agar powder. table. It wafts from the sides of the pot. Roca, J. Whetfier you're cooking a stotfc, braising a stew, or fixing a pot Of beans, \*he temperature of these water-laden foods ordinarily won't exceed in a point of water, 100 °C/212 °F, «!\*« they dry out-which you usually want to avoid. The one in your home is no exception. As you blend in the xanthan gum in step 8, adjust the texture to your taste by adding melted butter. Cool the panna cotta to room temperature, and then divide it evenly into six small bowls, about 60 g per serving. fan cheese slice. These compounds are so powerful that a fraction of a gram can mean the difference between a sauce that is gummy or slimy. Hyperion, 2011. • The rubber gasket keeps the dissolved gas from escaping from the lid. (Note that you'll need to double the quantities given there if you're making a large, 30 cm/12 in, pie.) Pour the pastry cream into the baked crust, and refrigerate the pie until it becomes firm, at least 1 hour. Add additional cream as needed to adjust the consistency of the custard. Pengu in Press, 2010. jjre? STOCKS TOASTED CORN STOCK YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: USED IN: 7S0g/31A cups 1 hour overall, including IS minutes of preparation and 45 minutes unattended keeps for 5 days when refrigerated or up to 6 months when frozen easy pressure cooker Pressure-Cooked Polenta (see page 336), Pressure-Cooked Fresh-Corn Tamales (see page 340) INGREDIENT WEIGHT VOLUME PROCEDURE Fresh corn with husks 600-700 g 5 large ears ® Preheat the oven to 175 °C/350 °F. Piave is a younger, fresher cheese. ® Cool to room temperature, and then trim excess crust from the edges. mother dough—see preferment, mounting—from the French "monter" or "beurre monte." To enrich a sauce by stirring in cold pieces of butter just before serving. Sheet gelatin can be modernistpantry.com found at specialty food markets and pastrychef.com import stores; ask at pastry shops and bakeries, and confirm the Bloom strength before using infusions4chefs.co.uk msk-ingredients.com sosa.cat Strengths vary greatly. ^J Next to high-quality scales and thermometers, our favorite tools are the Microplane—Max travels with one in his suitcase—and the whipping siphon, both of which are just fun to use. If you want to learn about food safety, microbiology, the history of foie gras cultivation, or hundreds of other topics, Modernist Cuisine is still the book to turn to. Little, Brown and Company, Redzepi, R. Serve it immediately. We have used them to cook fish, which we most often prefer steamed to about 45 °C /113 °F, and to prepare steaks, which we like rare to medium rare (50-55 °C /122-131 °F). Move the food around and rotate it as often as necessary to keep hot spots of radiant heat from scorching some parts of the food while other parts undercook. Momofuku Milk Bar. Lr; Nathan Myhrvold: 54-55 146; 147: ul, uc Ryan Smith: front inside endpaper, Ryan Smith: 49: t, b; 53: ul, uc, LI, LC, Tyson Stole: 151:1, c back endpaper Lr; 54: ur. neutral frying oil—any variety of cooking oil that can withstand high temperatures and adds no strong or specific flavor of its own. Pressure Perfect: Two Hour Taste in Twenty Recipes, Stories, Brothers. Brown Chicken Stock see variation on page 85 300 g 300 m L / W cups 200% @ Stir into the rice mixture. PVC—the most widely produced plastic, polyvinyl chloride. white port'-variety of fortified wine from Portugal made from white grapes. vuv-vy Top any au gratin dish with this cheese crumble: it goes well on scalloped potato\*\*, green bean casserole, and Apple i-eii\ Von can substitute other firmer rwatfcheese\* such «Mft\*ddar oi Parmesan, for the Gruyere. relative humidity-the ratio of the mass of water vapor in air to the maximum mass of water vapor that the air could hold at that temperature. Any aromatic compounds the fuel once harbored were vaporized and destroyed long before the food was laid on the grill. © Drizzle the brown but ter over the eggs, and sJ rve them immediately. Berries, green vegetables, and nuts actually carry an additional risk because they are much more frequently consumed raw than are meat and seafood. Often served as a salad or starter in Greece, gluten - combination of proteins found in cereals, notably wheat, that gives dough its characteristic cohesiveness. temperature—the value of "heat" or "coldness" that determines the direction in which heat flows between contacting objects as measured on a relative scale, such as Celsius or Fahrenheit. © Add the cooked egg yolks gradually while processing. gigante beans—very large, flat, white dried beans. chefrubber.com lepicerie.com lepiceri powder widely available at supermarkets, (p o w d e r e d egg whites, health-food stores, cake decorating egg w h i t e p o w d e r, . But that just isn't hot enough to get some of the crucWIflavor-formingreactions going quickly or to rapidly break down the cell walls Of many plant foods. malic acid ask at brewing- and wine-making supply stores; also try health-food and supplement stores. 40 g Tarragon, minced by volume. This is the pressure reading indicated on the gauge of the vessel. Lm; 92-93; (i M -I i n : ' v , i a r 96; 98: Lc, Lr. b; 99: t. The Oxford Companion to Food, Make Spectacular Pizza at Home. William Morrow Cookbooks, 1998. To convert from ounces to grams, multiply by 28.35. aioli—French term for a mayonnaise-like sauce boldly flavored with garlic. BLOWTORCHING TECHNIQUE OTurboTorch The intense heat of a torch can quickly sear food to an appetizing brown or caramelize sugars to a golden crust. Cinnamon stick 3g 1 stick 3% ® Refrigerate for 2 hours. The sealing ring, typically a rubber gasket, prevents steam and air from escaping as they expand. You can even pressure-cook food in canning jars or in oven bags or FoodSaver bags fatedforhigh temperatures (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta, for example, no longer require constant stirring to avoid sticking (see page 53)—which means grits and polenta anthropologist Richard Wrangham, in his intriguing book Catching Fire: How Cooking Made Us Human, traces the development of our large brains, small mouths, dull teeth, and narrow pelvises to Homo FURTHER READING IN sapiens s taming offireas a tool to convert raw food MODERNIST CUISINE to cooked, which has more usable energy. If you don't understand the meaning of time, however, you've got bigger problems in the kitchen than food safety. Oxalis (wood sorrel), morels, stinging nettles, and ficidlehead ferns sprout in (D pine ® black truffle (3) fried chicken mushroom 0 sea bean (f) maitake mushroom 0 sea yellow foot chanterelle (D @ © @ stinging nettles golden chanterelles lichen cauliflower mushroom (pine mushroom) 4 fj%M iM the spring (pictured above), as do ramps (wild leeks), garlic, and asparagus. kitchen tools, containers, utensils, dishes, and pans in a hot, sanitizing dishwasher. kala namak—see black salt. We are frequently N-Zorbit Whey Protein Isolate What itis: tapioca mal to dextrin Derived from: tapioca Used to: turn fats into powders Where to buy: grocery and healthfood stores Cofb \$6 for 50 g Try it in: Clams in Chowder Sauce (see page 292), Ultrafrothy Milk Shake (see page 213) asked, "AftSn't your dishes chock-full of chemicals. BREAKFAST EGGS 147 STRIPED MUSHROOM OMELET four appetizer-size YIELD: omelets (140 g each) TIME ESTIMATE: 1 hour overall STORAGE NOTES: omelet sheets keep for 2 days when refrigerated} serve assembled omelets LEVEL OF DIFFICULTY: advanced SPECIAL REQUIREMENTS: two silicone discs, IS cm/6 (level of effort) in across, cut from a larger mat; 20 cm/8 with metal lid or oven-safe glass lid; pastry comb with 3 mm/Win (powdered immediately in nonstick frying teeth; albumin pan powder egg whites) Once you get the hang of making these omelets, you won't want to serve your special guests anything else. chaat—term used in India to refer to snacks, which are often sits directly in a powder egg whites) Once you get the hang of making these omelets, you won't want to serve your special guests anything else. chaat—term used in India to refer to snacks, which are often savory dishes sold by street vendors. In electric ovens, the oven element often sits directly in the serve your special guests anything else. on (he oven floor. Charge the siphon with two cartridges of nitrous oxide, and then refrigerate it for 4 hours. When handling meat, use a separate cutting board from the one you use for produce. I f you're not a believer yet, try the Caramelized Carrot Soup recipe on page 178. Use an immersion blender to blend each spoonful until it has melted and becomes completely smooth. Bouchon. These new ingredients can solve problems that home cooks face every day. Case in point: the best wheat in the world for making pasta thrives in places that have cold winters. ^2 Most Italian pasta is thus made from Canadian wheat. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Eggs, blended Heavy cream Egg yolk, blended Salt 150 g 3-4 eggs 100% 15 g 15 mL/1 Tbsp 10% 12 g 1 yolk 8% 2g Vitsp 1.3% © Preheat the oven to 175 °C/350 'F. Fast, even, energy-efficient cooking is all very nice, but it s the higher Quality of the food that really clinches the deal. So we urge you to do as we do, and weigh your ingredients when cooking from this book. Many varieties and grades are commercially available. Do not top with the cheese crumble until just before baking. Ecco, 2004. When you turn the oven off, the flow of gas to the heating element is completely shut off for safety. Ginger Cream Pie Crust: Ginger Cream Pie Crust: Ginger Pastry Cream Topping: Top each tart with 15 g/1 Tbsp of candied ginger (store-bought), finely minced. Tare (zero) the scale by pressing the tare button to reset the scale to zero. The drumshaped tamis refines the texture of soft foods, such as riced potatoes or butter, as you push them through its fine mesh. Adjust the seasoning of the sauce, which will still be fairly thin. Raspberry Lemon Cream Pie Ginger Cream Pie CREAM PIES The pie recipes here combine crust, filling, and topping variations from the preceding pages of this chapter, and then add a few extra flourishes to create stunning desserts that are suitable for virtually any menu. Blend the dry ingredients into the water by using an immersion blender. and Wolffe, R. The mixture turns thick very quickly and resembles a dough when it is finished. (Less interesting methods of producing this rare oil are now more common.) Food Safety Cutting boards pose a big risk of crosscontamination among different foods if they aren't properly sanitized between uses. quesofresco—(queso bianco) Latin American soft, mild white cheese. (D Remove the

pot from the heat. The puree doesn't have to be perfectly smooth; the chopped corn kernels lend a nice texture to the tamales. extraction—the removal of material from a substance that contains it, such as by means of a solvent. The foam will release any gas it can't hold, so an extra charge won't ruin it. You use them in such small quantities that they have no perceptible impact on the flavor. That is why there are probably more chefs running farms now than at any point in history. Let the jar contents cool slightly before opening. for you and self-regulate the temperature of their freezing Churning thus performs t w o crucial functions. Closer isn't hotter. You can use scissors to snip the basil. (t> Drain. fenugreek leaves—fresh greens from a plant in the pea family. PRESSURE-INFUSING AND PRESSURE-INFUSING AND PRESSURE-INFUSING AND PRESSURE-INFUSING and refrigerate them unti the panna cotta is fully set, at least 5 hours. SALADS A N D COLD SOUPS 157 FRUIT MINESTRONE four servings (400 g/2 cups) 4 hours overall, including 1 hour of preparation and 3 hours unattended YIELD: TIME ESTIMATE: serve immediately advanced (complexity of timing and assembly) vacuum sealer with marinating attachment, juicer, malic acid STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: can be made in advance and used in other ways. North, J. Grams to ounces (oz) (g) Ounce 5 t o grams (oz) (g) Ounc 0.000 mL Tbsp 0.068 W BTU/h 0.001 Tbsp mL 14.787 BTU/h W 1,055.04 mL cup 0.004 W hp 0.001 cup mL 236.59 hp W 745.7 tsp cup 0.021 g/cm J oz/m\* 0.578 cup tsp 16 lb force N 4.482 mL oz 0.034 mbar torr 0.75 oz mL 29.574 tprr mbar 1.333 pint qt 0.5 mbar psi 0 (Yls qt pint 2 psi mbar 68.95 qt gal 0.25 bar psi 14.5 gal qt 4 psi bar 0.069 qt L 0.946 Pa mbar 0.01 L qt 1.057 mbar Pa 100 L gal 0.264 bar aim 0.987 gal L 3.785 atm bar 1.013 oz Ib 0.002 5 Itsp ;3|y ib g 453.592 10 2 tsp &i'i oz kg 0.028 15 ITbsp \fc& kg oz 35.274 20 4 tsp to Ib kg 0.454 2 Tbsp 1 kg Ib 2.2 \'i cup 2',, mm in 0.394 in mm 25.4 cm in 0.394 in cm 2.54 m ft 3.3 ft m 0.305 s min 0.017 1 BTU 0.001 BTU J 1,05110 kcal BTU 3.966 BTU kcal 0.252 Converting Vol]bme«V1-f. Scrape down the sides of the blender if necessary. outside of your comfort zone and try ingredients that are unfamiliar. Demerara—coarse, flavorfulbrown sugar crystals. (£> Cut all of the lobster meat Into chunks no larger than I c m / H in. water-displacement method—technique for removing air from a zip-top bag by slowly immersing the partially open bag in a water bath. Turn the siphon upside down, and press the lever to dispense a bit of foam. Second, some parts of the oven are hotter than others. Smoke point Flash point Fat CO (°F) CO (°F) Notes beef tallow 205 400 265 510 distinct aroma; melting point: 54 c/129 F carola (rapeseed) oil 225 435 275 525 prone to off-flavors; readily absorbed by food chicken fat 190 375 255 490 melting point: 54 c/129 \*F clarified butter 252 485. The Art of Cooking with Vegetables. Example: Instead of the four buns listed in the recipe you need 4 \* 2.25 - 9 buns. If you are open to experimentation, and you taste without expectation, you will discover new flavors you love, but never knew existed. People tend to screw up their recipes or get frustratingly inconsistent results because the ingredient proportions or the temperatures are vague or mysterious. i f i f ? infusion—a liquid flavored or colored by steeping a substance in it, such as brewed tea or vanilla extract. The recipes span a wide range of techniques to give you many examples of how you can apply these methods and ingredients throughout the cooking you do at home. Place the pans in the oven, and bake until the egg whites are just set, about 12 minutes. These fats tend depth to the flavor. Serve it as a dressing for the cooked whole yolks. Browning due to the Maillard reaction is often confused with caramelizing sugar, which is unrelated. Lamb chops are commonly frenched. Cooks must actively seek out small, artisanal producers growing heirloom varieties -; to benefit from the original intent. Let fruit sit for at least 4 hours, but preferably for 8-10 hours. According to New York University microbiologist and immunologist Philip Tierno, the two dirtiest items in a typical house are both found in the kitchen: the sink and the sponge. If they are still slightly rubbery, cook for up to 2 minutes more. Fresh air blown by the fan carries humid air away from the surface of the food, while warm air speeds drying. The stock recipes contain useful insights, too. The eggbeater was another technological step up, and then stand mixers revolutionized cooking again. 22 So it may come as a surprise to learn how traditional cooking techniques actually work (and, too often, don't). carbon dioxide gas into a substance. You may be used to venting the cooker before canning, but doing so before cooking releases beneficial aromas, so avoid that temptation. 150 g ye cup 45% Lay four slices of the cooked eggplant over the sauce. ox|de to dissolve into the liquid. The jars should also never touch the bottom of the cooker. LI: Lr; and Cold Soups 169:uc,ur,b Ryan Smith: 204-205; 205: b; 206 Lc; 220-221; 222: ul. a microwave-safe dish, cooking may take an extra minute. of the copper pan. Refrigerate the rice and cooking liquid in separate containers for up to 3 days. COUNTERTOP T 0 0 L 5 A rapid drop in pressure as the liquid leaves the valve causes most of the dissolved gas to emerge from the solution, thereby creating bubbles that expand into a foam.; JUICERS Until recently, juicing tended to be relegated to late-night infomercials, health-food stores, and trendy Jtttee bars. It was an extraordinary and insightful journey. Florentine Omelet Fining Creamed Spinach see page 199 140 g Yz cup Ricotta cheese 80 g 5Tbsp Parmigiano-Reggiano, grated 1.6 g Vitsp > C\* Alsatian Omelet Filling Pressure-Caramelized Onions see page 127 140 g Vt cup MuensterorCamembert 8 0 g cheese, rind removed and cut into a long strip 2 cups Black Forest ham, julienned 48 g V4 cup Thyme leaves 1.6 g Vitsp Espagnole Omelet Filling Tomato Sofrito 140 g see variation on the previous page Chives, minced, or seasoned herbs 8 V2 CUp #cup 2Tbsp Raviolo Omelet Filling Eggs, cooked sous vide, Whites removed see steps 1-3, page 152 Bacon lardons, crispy 5A. If the flames rise so high that they touch the food, tamp dowWthe pile of coals, close the vent, or remove some coals. Lr, b Ryan Smith: 217: b Nathan Myhrvold: 176-177; 179: b Nathan Myhrvold: 176-177; 176-177; 176-177; 176-177; 176-177; 176-177; 176-177; 176-177; 176-17 lid tightly on the pot they won't seal properly, and the pressure cooker will then be useless. After the first omelet sheet, the remaining omelet sheet, the remaining omelet sheet source. Setting for 8 hours is preferable. Measure the Water into a pot Combine the sugar, tapioca starch) salt, and xanthan gum. So cooking well with a microwave oven often means adjusting the power level. The vanilla seeds tend to settle over time, so stir or blend as needed before serving. Strain the cooked raspberries, without pressing, to make a clear, thin syrup. flageolet beans—French legume with a pale green color and a size similar to that of cannel I in i or Great Northern beans. The sides of the oven are also well insulated so that they radiate much of the heat that they radiate much of the heat that they radiate much of the heat that they absorb inward to the room. The microwave is such an efficient dehydrator that you can dry beef jerky in four minutes rather than 12-24 hours. Not a true mushroom, but a fungus that colonizes and alters a mushroom host; thus, they must come from a trusted source. Cooking with juice is easy to do at home, whether you use one of the tools below or buy pure, flash-pasteurized juice from raw fruits and vegetables. B.& J. M., Jr. The Secret Life of Germs: What They Are, Why We Need Them, and How We Books, 2004. Kappa type makes firm, brittle gels. Pair a siphon with a good blender or juicer and a fine sifl fyoyfTj^h make a delicately flavored foam to top a dish. It's also a good idea to puncture meat as little as is necessary. Fructose is found in honey and many fruits. And, unlike nonstick coatings, the silicone can't be scratched off. Not so long ago, buying a whipping siphon meant opening an account at a restaurant-supply store. radiative heating—heating by means of energy that flows through a medium or space via electromagnetic waves. Don't let the mussels sit in the hot juices for more than a few seconds, or else they will get too firm. Cook 3-4 minutes longer, until just set. diastatic malt powder—powder containing the enzyme diastase that converts starches into sugars. 15 Lay the omelet sheets stripe-side down, and divide the French scrambled eggs and shiitake marmalade among them. Adjust the seasoning once more by adding salt and acid, such as lemon juice or vinegar, as needed. Traditionally cooked in a tandoor, or clay oven. © Use in warm or cold dishes. But they come with caveats. tamarind concentrate—tangy, dark syrup made by infusing tamarind pulp with water and reducing the liquid until it resembles molasses, tamis—(drum sieve) very fine mesh cloth used as a sieve. neutral-tasting oil—any variety of cooking oil that adds no strong or specific flavor of its own. Iota type makes soft, elastic gels. Today, this appliance is a staple in nearly every home. Instead, we use sodium [mac a n d cheese. Used as an acidifier and antioxidant, and sometimes to prevent crystallization in sugar syrup by converting some sucrose to noncrystallizing glucose. Adjust the heat as needed to keep the cooker fully pressurized. To make it, pour 150 g/^a cup of blended egg yolks (about 10 yolks) into a zip-top bag, remove as much air as possible from the bag, and seal it. Blend the cooked yolks while they are still warm with 50 g/Vi cup of sugarandl75g/180 m L / % cup of milk, water, or fruit juice. Seafood: A Connoisseurs Guide and 2003. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Olive oil 40 g 45mL/3Tbsp 27% Piquillo peppers (store-bought), minced 50 g Vi cup 33% © Sweat the vegetables i n oil in the base of a pressure cooker over medii heat until tender and translucent, about 3 minutes. On the Line: Inside the Told His Cook: Kitchen Science Explained. The refrigerated WEIGHT VOLUME f 7 \ 1 . Longmeadow, MA 01028 413-525-3961 lenoxtoois.com MAPP gas torches LISS America 106 Skyline Dr. S. STOCKING THE MODERNIST KITCHEN ^oipj^e r t o p To b I s p3 Conventional Cooking Gear Cooking Gear Cooking Gear Cooking Sous Vide Ingredients COUNTERTOPTOOLS Blowtorches, whipping siphons, and syringes? I can readily and happily see that Modernist Cuisine at Home will provide another quantum leap in our understanding and in our relationship with the food we like to cook. L. Grand Livrt de Cuisine: Alain Ducasse's Culinary Encyclopedia. The thermostat is often much less accurate at the low end of the scale than it is at higher temperatures. Let the cooker cool, or run tepid water over the rim, to depressurize it. Often made with pork. Note that accuracy is different from precision. carnitas—Mexican dish of slow-cooked pork that is shredded and browned. (D Shuck the com, reserving the husks. P &^L \*^& lijI'Pf 1 f!^4 p A 8 Remove the bag from the bath, and let it cool for 15 minutes at room temperature. 1 Look in the scaling column of the recipe, and find the ingredient having a scaling value of 100%. Induction cooktops are powerful for their size: built-in elements typically deliver 2,400 watts, about as much firepower as the largest burners on high-end gas stoves for the home. Romanesco—a pale green vegetable related to broccoli and cauliflower. Once you lock the lid, you won't be able to stir again. It's a matter of finding the right balance. Comte that does not meet the regional standard in flavor and production is often sold as French Gruyere. 10 Add the reserved mussel juice. Clarkson Potter, Wiley, 2005. Pacojet—device that grinds frozen food while also blowing high-pressure air jets at it to reduce the regional standard in flavor and production is often sold as French Gruyere. food to extremely fine particles in order to puree, blend, or emulsify it. Cooking Defrosting or Melting Dehydrating High power best for: steaming vegetables (see Sichuan Bok Choy, page 346, and Microwaved Eggplant Parmesan, page 344); quickly softening dense vegetables that are high in water content, such as artichokes, potatoes, and onions Low and moderate power best for: seafood (see Microwaved Black Cod with Scallions and Ginger, page 348); tender meats Low power best for: drying fruit and vegetable leathers; making jerky (see Microwaved Beef Jerky, page 350, and Crispy Beef Strands, page 352) Frying Warming Puffing Moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: reheating previously cooked foods to serving temperature High power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: reheating previously cooked foods to serving temperature High power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Parsley, page 354) and tender greens, such as carrot tops Low and moderate power best for: crisping herbs (see Microwave-Fried Pars grains, such as barley or popcorn C O N V E N T I O N A L C O O K I N G GEAR 41 MAKING WAVES The microwave oven is an offshoot of military radar technologyttiatBritish engineers developed during the Second World War to detect enemy planes and ships. Dryblending the flrtcV ening agents helps to ensure that they are distributed evenly in the next step. 12 Cook the pasta until it has absorbed most of the cheese water and is just al dente, about 7 minutes. Serve hot. They are formed on a liquid s surface by agitating it or by subjecting it to a chemical process, foam stabilizer—substance used to prevent foam from dissipating. But this reinterpretation that replaces pine nuts with pistachios has become one of our favorites. Lemon Pastry Cream Substitute 7.5 g/2V2Tbsp of grated lemon zest (from 2 lemons) for the cinnamon stick and vanilla seeds. geoduck-(king clam) a Urge bivalve mollusk having a very long siphon, native to the Northwest coast of North America, ghee-slowly clarified unsalted butter. friction-the force resisting relative motion between two bodies in contact. Water 1 kg 5g 1 L/4VA cups 5 medium sprigs 80% 3g 3-4 sprigs 0.6 g 3 leaves 10-12 peppercorns 0.2% 0.04% 
Pressure-cook at a gauge pressure of 1 bar/15 psi for 2 hours. Bake until golden brown, about 6 minutes. Without it, the waves would travel in a single beam, blazing a hot trail straight through any food in their way and leaving the surrounding food raw. It is a pleasure to introduce a wider set of readers to Nathan and Modernist Cuisine at Home. Presses work best lor softer foods; hard foods can be softened with slight heating or adding sugar or enzymes. The gel was frozen and later thawed. J^.A meringue powder), a n d craft sho Ps calcium chloride (Pickle Crisp: Ball b r a n d ; Calcic: Texturas brand) often available where pickling or cheese-making supplies are sold; ask local cheese makers carrageenan citric acid (sour salt) widely available at gourmet/ specialty food stores, healthfood and supplement stores, and where kosher foods and canning/ preserving supplies are sold diastatic malt p o w d e r widely available; ask at bakeries (diastatic malt enzyme, a n d brewing-supply stores diastatic malt flour) lepicerie.com Modernistpantry.com K kingarthurflour.com chefrubber.com Products labeled nondiasfatic have no active enzymes and are used for flavoring only. INGREDIENT time required is listed as well. ® Bring a large pot of waterto a boil. Raspberry Crust Increase the amount of blended egg yolks to 63 g / V\* cup (about 4 yolks). Continue blending until the mixture is fully homogenized. pressure-render—to render fats using a pressure cooker to give them a more roasted, savory flavor. tile bread should not be so thick that it detracts from the filling, bat it also needs to hold the sandwichtogether; we slice oars 1-1.5 can / \*/. \* Mode the infused milk and cream gradually while blending. Science and technology are sources that can be tapped to enable new culinary inventions, but they are a means to an end rather than the final goal. one, can be heated fairly evenly. INGREDIENT WEIGHT Sweet onion, thinly sliced 80 g Rendered pork fat or bacon fat A cup see page 123 @ Strain the gravy into a small pot. Oven gas is supplied through this small pipe; C O N V E N T I O N A L C O O K I N G GEAR COMBI OVENS The combi oven is the most versatile kitchen tool we know. /B cup ® Line the pan with the dough; allow excess dough to hang over the edges © Prick the dough all over with a fork, and then cover it with parchment paper, and fill it with baking beads or dried beans. LI, Lc. Lr 215: ul. enzyme—protein molecule that catalyzes chemical reactions of other substances but isn't destroyed or altered in the process. 1 \* s°ggy- X w HOT AS HELL We set out to create a grill so hot that it sears within seconds. Eleven Madison Park: Tabori & Chang, 2009. We have an unusual way of creating the intense heat that we want for a 30-second sear. jus—French term for juice. On the downside, electric coils are slow to heat and slow to cool. VOLUME SCALING PROCEDURE Shiitake mushroom caps, 250 g thinly sliced 4'/3 cups 100% (T) Saute the mushrooms until golden brown, about 10 minutes. Lr; 129; 137: r Tyson Stole: 27: ur; 30-31; 35:1, c; 41: uc. But unrefined oils should never be used at high heat because they quickly break down, begin to smoke, and start to taste bad. Capitol Drive Wauwatusa, Wl 53222 800-741-7787 penzeys.com herbs, spices, and spice mixes XIX Where to Buy Equipment Purveyor Address Phone Website Products A & D Weighing 1756 Automation Pkwy. You can also map the hot and cold spots inside. for a New Generation of Cooks. Sprinkle them with the salt, and then cover them with additional paper towels. Perhaps the most versatile, inexpensive tool for drying foods is the cabinet-style dehydrator. PO Box 461947 Garland, TX 75046 800-889-5478 thermosensors.com thermocouples UKThermomix Thorp Building Whitmore Lane Sunningdale Berkshire SL5 0NS United Kingdom (+44)1344 622 344 ukthermomix.com Thermomix blender Viking Range Corp. kabocha squash—(Japanese pumpkin) round, sweet winter squash with green skin and bright orange interior. We often cut pure silicone sheets such as Wilton mats, into custom shapes and sizes, as for our Striped Mushroom Omelet recipe on page 148. Star anise 0.2 g 1 pod 0.04% (D Add, reduce heat to medium-low, and continue cooking, stirring frequently, until the onions turn dark amber and the star anise is fragrant, 10-12 minutes. Cooks typically add a lot of flour or cornstarch to keep the cheese smooth as it melts, but that just creates a gluey texture and dulls the flavor. Place the strained juices and mussel meats in a zip-top bag. coagulate—to thicken or gel. Several distinct movements are going strong. Example: The 100% ingredient in the Lobster Roll recipe shown on the next page is cooked lobster meat (not the live lobsters, because lobsters, because lobsters vary in their meat content). INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Eggs 200 g 4-5 large 67% Neutral-tasting oil or clarified, unsalted butter (optional) see page 119 150 g 160 mL/s/a cup © Preheat a water bath to 67 "C/153 °F, and preheat the oven to!6G\*C/ 320 °F. Xanthan gum is very potent, so weigh it carefully. Melissa Lehuta: 218:1, c, r; 219: ul. Lightly salt if desired. A Day at elBulli: An Insight into the Ideas, Methods and Creativity oj'Ferran Adria. Cotija—(queso anejo) dry, salty Mexican cow's milk cheese. Just pressurecook ground chicken to extract the delicious juices without scorching or scraping. IX vacuum-infused—(vacuum-infused) to saturate the vacuoles of a food with a flavored liquid or water with vacuum pressure, velveting—Chinese term for cooking technique of battering in a thin starch mixture and then flash-frying before cooking through, vindaloo—Indian term for a spicy curry dish originally from the Portuguese region of Goa. The imprecise temperatures and uneven heat distribution make it difficult to grill food to the right level of doneness. (You can easily look up the variation of boiling point by elevation or air pressure at websites such as www.csgnetwork.com/h2oboilcalc.ntml,) MODERNIST CUISINE AT HOME Ice-water bath SILICONE MATS AND MOLDS We love silicone mats: baking sheet liners that are flexible, durable, heatproof, and nonstick. Some oils are flexible durable, heatproof, and nonstick. choose an oil that has a high smoke point. Store the remaining cheese water in the refrigerator or freezer for another use, and see the note below for suggested ways to use the remaining cheese solids. Resting allows temperature and distribution of water (juices) to equilibrate. Allen town, PA 18109 610-231-0250 julabo.de cooling bath Kuhn Rtkon Nescbwilerstrasse 4 CH-8486 Rikon Switzerland (+41) 52 396 0101 kuhnrikon.cb pressure cookers Iwatani G r o u p Purveyor Address Phone Website Products Labline Scientific Instruments C/108 Maruti Darshan Hanuman Chowk LT. Melissa Lehuta: 48-49; 51: ul, ur, LI, Lr; 149-150; 151: r: 152-153 53: ur; 59: ml, mr, LI, Lr; 60; 63: t; 64: r; Nathan Myhrvold: 149: LI endpaper, back inside endpaper 66; 67: LI Ryan Smith: 141: b; 142-143; 144: ul. I soon discovered Escoffier's Le Guide Culinaire and pored over it, along with books by Julia Child, James Beard, Richard Olney, and other authors of classic cookbooks about French cuisine. The broiler unit in this oven is a screen that « • \* • • « • • diffuses burning gas across a wide area of the oven ceiling for even cooking. mr (. To prevent this, wash cutting boards and other tools between every use. Mussel juices that come out of mussels when they open are very flavorful. - \* \* « • »\*" •?••• 3^^-- No ArtiUtial i No Arf/fJfi [Gelatine iiNriAvoftiD HErWT22 0;.(IU»8 0Z) \*Vef M. beurre noir—French term for "blackbutter" made by heating butter to the point where the milk solids become very dark brown but not burnt beurre noisette—French term for "nut butter.\* or brown butter, made by heating butter to the point where the milk solids become brown with a nutty aroma. Write down the amount added before you tare again. Ill GLOSSARY OF COOKING TERMS 00 wheat floor—Italian -wheat floor milled from only the core of the wheat grain, yielding a flour with high-quality protein that makes it excellent for forming noodles and breads such as pizza and ciabatta. After following steps 1-5 above, dust Wondra over the flavorful liquid; use 4-5 g of Wondra for every 100 g of liquid. ur, LI, Lc; 122:123:1; 124-127; 128: ul, uc. Johnny adapted it to cod, but you can substitute halibut fillets or small whole snapper, rockfish, trout, black sea bass, pomfret, or sole for the black cod. Wolke, R. The appliance is simple: just a ventilated chamber, a fan, and a small heater that warms and dries the circulating air. All surfaces should be heat-safe. hydrocolloid—any substance that thickens or gels water or a liquid containing a significant fraction of water. kinome—young leaves of the prickly ash or sansho plant, best in the spring when the leaves are tender, with a citrus-like, bright pepper bite. Garnish with celery and tomato leather, and serve immediately. After the first omelet sheet has cooked, the remaining three omelet sheets will cook in the warm pan in about 3 minutes. Generally, you should fill the pot no more than two-thirds full. cook to a core temperature—phrase used to describe the technique of cooking an ingredient until the temperature in the center of the thickest part reaches a target value. These traditional methods of pages 2-176-177,180-181 Microwave myths: see page 2-190 cooking have become as familiar and comfortable as our own kitchens. Ten Speed Press, 1996. The liquid contains an enzyme that prevents gelation. Tapioca maltodextrin is different from tapioca starch and maltodextrin. Coverthe pan with the hot lid, place it in the oven, and bake until the egg sets, about 6 minutes. PROCEDURE INGREDIENT WEIGHT Water as needed for cooking the pasta Dry macaroni 200 g V/z cups 44% © Parcook for 2Vi minutes. Clinton Park Fort Wayne, IN 46825 800-210-5907 accutemp.net Accu-Stea Aerolatte 2 Codicote Rd. Welwyn AL6 9NB United Kingdom (+44) 845 872 4954 aerolatte.com aerolatte Berkel, Co. 701 S. The cooking appliance at the center of most Home fcitchens-ninctionally, and often physically as welMs thecestfurentfonatoven and range. The mixture should pull together. Start timing when full pressure is reached. Cherries, peaches, nectarines, and apples make equally delicious gazpachos when those fruits are at their peak. Whole milk 500 g 520 mL/2Va cups 100% INGREDIENT WEIGHT (D Combine with the onions in a large (4 L/1 gal) zip-top bag, remove as much air as possible from the bag by using the water-displacement method (see page 58). It is similar in design to an outdoor propane heater. Egg yolks 60 g 3-4 yolks 30% Unsalted butter, melted 60 g 65mL/4#Tbsp 30% 
Mix all ingredients, and blend until smooth by using a whisk or immersion blender. Cook the claw and knuckle meat sous vide to a core temperature of 54. 'C/129 \*F, about 15 minutes, and then plunge the bag in ice water. 5 seeds 0.01% (y) Let the cooker cool, or run tepid water over the rim, to depressurice it. Not only will it spray hot liquid, but you'll also lose a lot of the flavorful vapors. If you see 4 Tbsp given for a dry ingredient and wonder why w e did not simply write VA cup, it is because the two are not actually the same for ingredients, such as flours, that become packed d o w n at greater volumes. Try it yourself: measure VA cup of flour, and then remove four level tablespoons, one at a time. As it turned out, Modernist Cuisine sold out of its first printing within weeks; it is now in its fourth printing. This yields a firmer texture. The Nouvelle cuisine movement in the 1970s largely rejected roux-based sauces, but Modernist chefs are rediscovering starch-thickened sauces—this time using modern starches, such as Wondra. Apple Cream Pie 'M Banana Cream Pie 'M Banana Cream Pie 'Blowtorch-Caramelized Bananas Caramelized A l m o n d s Banana, sliced on the bias 5 mm / V\* in thick 120 g 1 large Sugar 30 g 3Tbsp Sliced almonds Sugar Egg white, blended Arrange banana slices on a baking sheet, and freeze them until firm, about 20 minutes. Flavorful oils that for storage and high-temperature cooking. The burners on this professional-style range are more powerful than those on a typical home store top. 0.8% 
Warm the fat in a separate small pot over low heat, and stir in the lecithin. But when a bagful of kernels pop in less than a minute. 60 120 (pint) (fl oz) V»' cup \*\* \$!.: Vi cup '% 4' > v.i svi ; ; 160 Imperial U.S. it CUp Hcup '-.fil/IE Then break them up, and use them as a garnish for baked potatoes or green salads, as part of a savory cracker, or as a substitute for the cheese crumble (see next page). 12 Sprinkle with the chives, and serve the omelets immediately. Bring the liquid to a simmer, and then remove it from the heat. uiih the exception of cheaper instant-read thermometers (which we do not recommend). VIII natural convection—heat transfer that occurs within a substance such as a fluid, due only to fluid movement caused by density changes arising from heat. Apple Cream Pie Crust: Brown Butter Crust Filling: Sous Vide Vanilla-Cinnamon Pastry Cream Topping: Top with Apple Foam just before serving. and arrange an Ice bath alongside. As the egg whites bake in step 9, lay a piece of parchment paper in a baking sheet, and spray it with cooking oil. Place one quarter of the egg white mixture into each of the pans. Use the pulse feature to ensure that the mushrooms do not become a paste or puree. Today you car find geoduck on the menus of manyfinerestaurants in Asia, but this unusually large variety of clam has been harvested for centuries by Native Americans in the Pacific Northwest. For more details on making gels, see page 98. Spread any extra marinara sauce over the top. Ecco, 2006. Lu originally made the dish with tilapia. America's Test Kitchen, 2004. First, it blends chambers. The gelling agent did not come up to the right temperature. BAKED MAC AND CHEESE YIELD: five servings (900 g/S cups) TIME ESTIMATE: 45 minutes of preparation and 15 minutes of prepara SPECIAL REQUIREMENTS: sodium citrate, Cheese Crumble (seepage 316) The key to excellent baked mac and cheese is to parcook (partially cook) the macaroni just long enough to ensure that it becomes tender rather than mushy during baking. allow the flavors to infuse more fully into the stock. iherb.com XXIII CONTRIBUTORS Sf Nathan Myhrvold Maxime Bilet Grant Lee Ciilly Anjana Developmental chef C lu-is !,...,• Cutaway machinist A t 1 l O I I V.-l ,>S,1 Developmental chef Johnny Zhu Developmental chef Johnny Zhu Developmental chef Sam f they- Burke kimh.-.iySi h#mb Developmental chef Sam f they- Burke kimh.-.iySi h#mb Developmental chef Johnny Zhu Developmental chef Sam f they- Burke kimh.-.iySi h#mb Developmental chef Johnny Zhu Developmental chef Johnny Zhu Developmental chef Sam f they- Burke kimh.-.iySi h#mb Developmental chef Johnny Zhu Developmental chef Johnny Alexandra Nickerson, Kryatanne Casey, Larry Lofthouse, Aaron Shattuck, Richard Sherman, Ted Ellis, Mike Vinton, Amy Hatch XXIV Wayt Gibbs TracV C u t c h I o w Mark Clemens Jennifer Sugden Editor in chief Managing editor Recipe tester and editor Editorial assistant Online writer Melissa Lehuta Chris Hoover Stephanie Billmayer Tyson Stole Lead photographer Photo editor Assistant Photo editor Photo editor Assistant Photo editor Assi ACKNOWLEDGMENTS The authors would like to acknowledge the generous contributions of the many companies and individuals who supported the effort to create this book. But safe storage times depend on the temperatures inside your refrigerator or freezer. But if you're interested in adding diversity to by a small shop in Memphis that grew to become the Piggly your cooking and your palate, venture outside that aisle shop- Wiggly chain, most people have bought their groceries at ping and wander into other kinds of f o o d purveyors. Cooking Sous Vide: A Guidefor the Glrardet, P. Freeze-Dried Raspberry Powder Pulse freeze-dried raspberries to a powder in a coffee grinder, food processors of f o o d purveyors. or blender. You may also need to move the pot ca ref u lly off of an electric burner. Keep the egg yolks warm for up to 1 hour, if needed, by holding them in a rigid container that is filled with neutral-tasting oil or clarified butter and then placed in a 60 °C/ 140 °F water bath. You can use this t o good effect when hand-stirring the ingredients in a vessel immersed in salty ice making snow cones or granitas, but for ice cream, smoother brine. Metric volumes up to 10 mL, to 5 mL for volumes up to 100 mL, and to the nearest 1 mL for volumes up to 100 mL, and to the nearest 1 mL for volumes up to 10 mL, to 5 mL above that. corn husk naturally forms a cup shape. © Drain. Horn 'oak CreareSi Incomparable Recipes of ike Greatest Chef in Europe. Family Pood: A New Approach to Cooking. The Clarkson Potter, 2007. bird's eye chili—(Thai chili) fresh, tiny, very hot red and green chilies. Strain, and pour the cream into a whipping siphon. (D Line a baking sheet with parchment, and spray it with cooking spray. Most commercially available lecithin products are derived from soy. ZZ£mt\$ E Gas for each burner is supplied through one of these large pipes, the gas is mixed with air at the beginning of the pipe to ensure complete combustion. 270 George Washington Hwy. Particles smaller than about 10 m i c r o n s / grinders are ideal tools for releasing the flavor and aroma f r o m 0.0004 in are individually imperceptible t o your tongue, seeds and other hard spices. Consists of small, smooth grains that, when cooked, do not have the glutinous quality of many Asian rice varieties. The controls for the burners and the oven are both mechanical and electronic on a gas oven. Cook more evsenly Reflective walls bounce the heat back toward the food, a trick that can extend the sweet spot of your grill to cover about 90% of the grill. It is u nfor tunate that many gri I is are pai nted black on the inside and are thus almost completely nonreflective. Nearly everything in a kitchen is covered in bacteria, even if it looks on the inside and are thus almost completely nonreflective. clean. Use it as a template to create your own version of a refined mac and cheese. But in other cases, local production of certain crops is actually more energy-intensive than efficient production in another region, even when you add in the effects of transportation. Sift to remove any seeds or large pieces. Or consider hollandaise, that unctuous mixture of warm egg yolks and butter. © Blend into the mixture until thoroughly combined. 29401118th Ave. anaerobic bacterium-bacterium that does not require oxygen to survive. dry-blend-to evenly combined thickeners or gelling agents. With this little bit of knowledge, you can save a lot of money and effort. Vanilla lovers may even want to double the amount of seeds used. Once the pan is warm from cooking the first omelet, the remaining omelets will require just 3 minutes or so each to cook. Cuisine was published in 2011, I have traveled the world sharing and demonstrating the insights of Modernist cooking at many schools and at culinary symposiums at New York University, Paris des Chefs, and Madrid Fusion. Also functions as a preservative. flavoring or salad green. 20% 20% 
Blunge the sealed bag into an ice bath until it is fully chilled. dry-bulb temperature measurement of air. Check the reviews on food forums, such as egullet.org, to find out which products work the best. 13 Drizzle warm brown butter over the eggs, and serve them immediately. The salt is dark in color and flavor from other minerals such as iron sulfide and other sulfur compounds. So fluctuations in heat from the burner enough to spread the heat evenly to the far edges reach the cooking surface before they have time to of the pan. 1998. The Escoffier Cookbook and Guide to the Fine deges reach the cooking surface before they have time to of the pan. Art of Cookery: For Connoisseurs, Chefs, Lo, F.Y.-F. Although a professional chef may use a \$400 digital scale, a \$25 model will work just fine for most purposes. The sugar originally came from the colony of Demerara, which is now part of Guyana. 1 Preheat a water bath to 67 °C/153 °F. 290 MODERNIST CUISINE AT HOME Steam the mussels for 2 minutes, plunge them immediately into the ice water, and then shuck them. That number rises to perhaps two-thirds or three-quarters for those willing to buy some new equipment (for cooking sous vide, for example). Cook until the eggs set, about 6 minutes. Check the recipe, and weigh the ingredient carefully on an accurate scale. 111 Front St Greenwood, MS 38930 662-455-1200 vikingrange.com mixer Vita-Mix C or p. The higher the temperature, the faster the surface of the food desiccates and browns. For a more substantial dish that is closer to a typical chowder, add extra chowder broth, and stir in some caramelized onions (see page 127) and some microwave-steamed fingerling potatoes cut into bite-size pieces (see variation on page 126). Aromatic M i c r o w a v e d Cod For a more intensely aromatic dish, combine the Shaoxing wine with 10 g / 4 tsp of minced scallion, white parts only. (See page 178 for a recipe.) Or try using fresh apple cider in a sauce for pork chops. The latter sell agar powders, graded by gelling strength, that have more consistent performance, agave syrup—(agave nectar) sweetener made from agave, a desert shrub-like succulent with sword-shaped leaves. Semiautomatic appliances (bottom right) are less expensive (\$30-\$70) but require several hours to prefreeze a vessel. © Spread the macaroni immediately into a single layer on the cold baking sheet. Rarely will you see him add more coals. At step 9, usejust20g/2Tbspofsoft, unsalted butter. Lr; 242-243; 246: Lr, b; 247 Ryan Smith: 237: b Tyson Stole: 241: ul, ur. At partial power, thecooktop turns thefieldon and off several times .ih»f.nnrl, which can cause the pan to make an intermittent buzzing sound. Use the h ighest-quality nut butter that has no coloring or other additives. © While the eggs cook, line a baking sheet with parchment paper, and spray it with cooking spray. The Cooking Lab 3150 139th Ave SE Bellevue, WA 98005 www.modernistcuisine.com ISBN: 978-0-9827610-1-4 First edition, 2012 Library of Congress Cataloging-in-Publication Data available upon request Printed in China MODERNIST CUISINE! Nathan Myhrvold Melissa Lehuta and The Cooking Lab Photography Team The Cooking Lab Forewords Our Culinary Journeys The Story of This Book What Is Modernist Cuisine? and bake the crust until it turns golden brown, about 12 minutes for a single piecrust or 8-9 minutes for four smaller tart crusts. You don't have to heat or scrape at the food to get it out—you just push. Because an induction element doesn't directly heat the surrounding air or intervening surfaces, more than half of the energy it draws reaches the food, compared to about a third of the energy for a gas burner. Heston's exploration of clever flavor combinations and new ways of presenting and refining food had a profound influence on me. carbonize—to char or burn. The sprayed fat droplets change when they hit the coals into aromatic smoke that intensifies the grilled flavor of the food. Risotto and paella grains are best cooked until just al dente, not completely soft. Note the weight given. Whichever type of microwave oven you have, experiment with its many applications. V-V^c: T&mkthe coals to one side.. Keller, T. If the oil gets too hot, remove It from the heat Turn off the burner. Digital gram scales are easy to find at cooking stores, and basic models are not expensive. Just one pinch of powder produces a beautifully homogenized pesto (seepage 102). For a classic Swiss interpretation, w>\* tmmental cheese, and add a dash of kirsch. and Guidara, W. © Scoop a small divot out of each egg white to hold the yolk, • 30mL/2Tbsp 10% • • ii • -\*••• i . Minimize the number of times you open the door, and close it again as quickly as possible. Often called rice wine, but as the drink is brewed, it is technically more similar to beer. marmalade—citrus jelly with visible pieces of suspended fruit and rind. More heat-tolerant than European or large-leaf basil. The Internet can also help you find things in your own community as well as on the other side of the world. and Meehan, P. © Pass through a fine sieve. re, r; 20:1, ur; 21 Chef Rubber: 72: b Tyson Stole: 216-217; 218: b; 219: Lr.b; Melissa Lehuta: 156-160; 162: b; 163-164; 222: LI 165:1 c. pancetta—Italian cured, unsmoked pork belly. Wiley, 2011. Leaner meats, sudb as flank and skirt steak, «ftdfoodsWithout fat, such as vegetables, benefit from being basted with tendered fat (see page 1239; melted, clarified butter (see page 119); or neutral frying oil (see page xxii). It is diverted from the burner to the frame. Italian eggplant, peeled and sliced 6 mm/!/4 in thick 330 g 12 slices (from 1 eggplant) 100% © Arrange the eggplant slices in a single layer on a microwave-safe plate lined with paper towels. The Elements of Taste. On all stoves, this vent provides an outlet for steam and smoke that otherwise would build up inside the oven. Pressure-Infused Coffee Pastry Cream Pourl50g/165 m L / % cup of heavy cream and 150 g/150 ml /2/3 cup of whole, dark-roast coffee beans. polyvinyl chloride -sec PVC. Scribner, 2004. Peanut, soybean, and sunflower oils are our favorites for frying at high temperatures ur, Lr; 223-225 74; 75; ul. IF YOU HAVE A C O M B I OVEN If you have access to a professional or home combi oven, set the oven to full steam at 82 °C / 180 °F. 93 SAUCES A sauce is just a flavorful liquid that has been thickened enough to coat food. Describes a number of different varieties. Arrange the slices of eggplant in a single layer on a microwave-safe plate lined with paper towels. It Must've Been Something I Ate: The Return of the Man Who Ate Everything. black salt (kala namak)—Indian spice made from impure sodium chloride crystals. San Jose, CA 95131 408-263-5333 andweighing.com scales AccuTemp Products, Inc. 144 Olive O i l Scrambled Eggs Increase the egg yolks to a total of 80 g / 5-6 yolks, and replace the butter with extra-virgin olive oil. You can either form the cheese into a thin sheet, or mold it into a cylinder or block for slicing later. After the first one, the omelets will cook in the warm pan in about 3 minutes. We and our hugely talented culinary team have cooked for culinary leaders, television audiences, and journalists to show that our food is as delicious as it is fascinating and beautiful. We used both thereferencetable on page XVI and also measurements in our research kitchen to convert ingredient weights to volumes, which we then rounded to the nearest convenient division (see page XVI for details). crust to steak cooked sous vide (see page 194), or fMiel can squirt from the tip when the torch is first quickly brown garlic cloves (see page 266). You should also stop using your dish towel to wipe down counters, hands, and yes, feces. piment6n—Spanish smoked paprika, available in sweet (dulce) and hot (picante) varieties. The back corners of the oven tend to be quite a bit hotter than the average temperature. Blend the cooked yolks with 150 g/150 mL/V« cup of flavored cream or stock, and season to taste. This includes putting familiar flavors in unfamiliar forms or the converse. American Pie: My Search for the Perfect Kitchen. Alinea. oefs en cocotte—eggs baked or cooked in a small casserole or dish. Just a powerful blender and a fine sieve are sufficient to create almost any puree imaginable. Also, to imbue food with a salt solution, either by soaking or injection, in order to change itsflavorand texture. Thyme 1g 2g 0.1 g 1-2 sprigs 0.1% 3-4 leaves 0.2% ® Pressure-cook at a gauge pressure of 1 bar/15 psi for 1 hour. Thai chili—see bird's eye chili. ® Grind the cheese cracker in a food processor to make fine crumbs. For an earthierflavorthat goes well with our barley risotto, add 15 g / 2 Tbsp of crumbled dry porcinis in step 1. A cup Vicup (D Blend into the cold water gradually by using an i i m m s i m bhtraki. They also generally produce ice cream having coarser textures. You can chill the minestrone even more by adding a scoop of a highquality, store-bought fruit sorbet such as lychee, raspberry, or passion fruit. After passing through the goats' digestive systems, the seeds were collected, cleaned, and pressed. We chose vanilla seeds to use in this recipe because of the intense flavor they lend to the custard. Whenever you feel inventive, these are terrific tools to experiment with. See page 129 for a recipe for Tomato Leather, which adds bite to our Lobster Roll on page 288. Add the masa harina and corn stock or water to the mixer gradually, alternating additions of the two ingredients. Use only the freshest leanfishfor stock. J. My Pi:za: The Easy No-Knead Way to Davidson, A. Place a dollop (about 70 g / 5 Tbsp) of the tamale batter in each corn husk, and wrap each one firmly. Continue at step 5. This recipe is less technically demanding, albeit one of the more complex in this book. As a commercial product, vital gluten can be used to add strength, or "bite," to noodles or to improve the texture of bread. If circumstances had been different, 1 might be a chef today. Even cooks who have modem gear such as water baths and high-tech thermometers often find that stoves, ovens, pots, and pans are at the center of the action in the kitchen. Also means the weight of an empty container. Desiccants are used to keep dry food dry. out each one separately. But we go less frequently than we used to because small farmers now also gather for a weekly market closer to us in Bellevue, Washington, a city of less than 125,000 people. immiscible—resistant to mixing and tending to separate after stirring halts. © Safety tips that are relevant for the depending on how an ingredient is prepared and how tightly it is recipe are referenced here; read the tips packed. Store frozen. Often made with sheep's milk. Strain the sauce into a saucepan. refined. These chefs had the vision to realize that because these tools let them control food and cooking in ways never before possible, the doors were open to exploring a whole new landscape of culinary surprise and delight. Faster response and higher efficiency translates into less time spent waiting by the stove. To preserve the color, strain out the pulp immediately after juicing, and then chill the juice in an ice bath or the . suet—very pure fat gathered from around the kidneys of lamb, cows, and other animals. I promptly announced to my mother that I was going to cook Thanksgiving dinner. Wet-bulb temperature is measured using a thermometer that is kept wet with a wick. 29 84.2 29 -1.7 30 86.0 30 -1.1 31 87.8 31 -0.6 32 89.6 32 0.0 33 91.4 33 0.6 34 93.2 34 1.1 To convert from Fahrenheit to Celsius, subtract 32, and then multiply the result by 5/9 (0.56). 0 © @ French Scrambled Eggs 200 g 2 cups 133% warmed see page 144 Shiitake Marmalade, as neeoe warmed see page 151 Clarified, unsalted butter as needed see page 151 Clarified manufacturers such as Electrolux, Gaggenau, and others now make home models that are a fraction of the size and cost. The water pressure squeezes the bag around the contents, and it may then be sealed with very little air inside. It will come to full temperature less quickly, but-the extra heating time allows the heat to diffuse horizontally an it rises vertically. Exhaust leaves the oven through this duetto a vent behind the range. . Sweet onion, thinly sliced 500 g 5VA cups 40% Carrots, thinly sliced 500 g 5VA cups 40% Carrots, thinly sliced 500 g 3 and brown, 30 35 minutes. Toss the pesto with pasta, mix it into a warm potato salad, slather it over salmon before baking, or serve it as a dipforcrusty grilled bread. Once a week, heat your sponge in the microwave on high for 1 minute, or toss it in the dishwasher with the drying cycle turned on. The classic combinations below have stood the test of time. If the lid is difficult to open, don't force it; let the cooker cool longer until it opens with little resistance. And both can be made using a variety of grains and flavors, from the classic Milanese version of risotto with white wine and saffron to more exotic concoctions, such as sea urchin, cocoa, and grapefruit. These additional compounds affect both the smoke point of the oil and how it reacts to oxidation. Use about 2% gas, or 8 g of gas for every 4 0 0 g of. 12 M O D E R N I S T CUISINE AT NOME > 0\* " !s Sir HH| i f CREAM IN A FLASH . 18th St. Sheboygan, WI 53081 800-624-2051 vollrathco.com cookware VWR International Radnor Corporate Center Building One, Ste. Passion Fruit Glaze Apple Foam Granny Smith apple juice 200 g Powdered gelatin (Knox brand) 2.4 g Fresh lime juice to taste Sugar to taste about 20 minutes. The siphon requires cartridges of gas, also called chargers, to pressurize the chamber holding the liquid. Cotriher, S. 341 DISHES FORT m HHH BRHB most underappreciated tools in the home kitchen. Bacon, diced 36 g Vtb prevent The starch particles an •emulsifiers, buj .the flavor ofth| dilute the cheesm Dnore pronouncedwhl We owe a 1916 patent\* phosphat|| cheese is to find. If you are instead combining ingredients in another container (such as in a pot or blender), place more of the ingredient than you will need on the scale, tare it, and then add to taste from the scale. Lookfora stainless-steel cooker having a three-ply base (aluminum sandwiched by stainless steel), which helps avoid hot spots. gochnjang—(kochujang) salty Korean paste of ondi fermented soybeans and chiiie ed ment and flavoring. 2002. The device uses a magnetron to produce electromagnetic waves at around 2.45 gigahertz, a frequency that causes water and otf^nolecules to vibrate and heattip. It works best water and chiiie ed ment and flavoring. small nor too large. VARIATION: Thickening with Wondra Standage, T. Another movement in food gravitates toward 'authentic" foods that come only from a specific region. It can take years of experience to fully master the idiosyncrasies and quirks of a home oven. VARIATION: Ultrastable Butter Sauce Blend 100 g of a wine reduction, stock, juice, or other flavorful liquid with 0.4 g of xanthan gum. Equipment once available only to professional chefs or scientists is a function of a home oven. now being manufactured for the home kitchen; we encourage you to try it. Fill the pan with baking beads or dry beans, and press them against the walls so that the dough doesn't droop while baking. This extra control commands a premium price, but more affordable options appear every year. Works over a wide temperature and pH range, making it a versatile hydrocolloid. Garnish with Cocoa Nib and Cardamom Oust. Although this foundation has been interpreted and applied in different ways as Modernist cuisine has evolved in recent decades, Modernist cuisine has evolved in rece VOLUME SCALING PROCEDURE Cold wheat beer (or water) 115 g 115mL/y2Cup 57.5% © Preheat the oven to its lowest temperature. Well, that depends on what you mean by "better." The answer to that does depend to some extent Will a copper frying pan heat fast? 16 Fold the edges of the omelet sheets over their fillings, flip them seam-side down, and brush them with clarified butter. Can be pickled or added fresh to South Asian dishes; dried, it makes the Indian seasoning amchoor. Water lOOg 100mL/ 3 /acup 33% (D Add to the pan, and stir to combine. • Preheat a water bath to 67 "C/153 "F, and preheat the oven to 160 °C/ 1 320 °r. 0 Cook sous vide until just set, about 35 minutes. Add enough water to the pot, either around the food or »«\*««• under a container of food elevated above the bottom of the pot, to enable plenty of steam to form. Various vegetables are often incorporated, and the gravy sometimes includes white wine. « As with the burners on the range, a spark of electricity gets the flame going. Be sure to give the oven time to recover its temperature after you close the door. see page 170 Try your hand at using Modernist ingredients and techniques to create even ridges and lines in pastry work. /4cup Bring to a boil while blending constantly. Finely grate frozen meat for a delicate carbonara or potatoes for a crispy, deep-fried garnish. white poppy seeds—hard, off-white seeds used in Indian, Middle Eastern, and Asian cuisine to add thickness, texture, and flavor to sauces. O'Reilly Media, 2010. With the critical and public success of Modernist Cuisine, it was time to think about The Cooking Lab's next big project. Divide the mac and cheese evenly into five ramekins, or pour it into one large baking dish. annatto seeds—red seeds refrigerated for up to 3 days. reduce—concentrate a liquid through evaporation by simmering or boiling. © Cut the kernels from the cobs; reserve them for some other use. Simon & Schuster, 1989. Rest easy] today's devices are designed and manufactured with safety as the primary concern. sweat—to cook vegetables slowly in a minimal amount of fat at low temperatures so that they will soften without browning. (473 mL) stores 60S K««v«H «°4«< • « • » > . Consumer-grade combi ovens differ from their professional counterparts in a few ways: they are less precise and powerful, and they have narrower temperature roasting or oven frying. We have narrower temperature roasting or oven frying. h e n converted to spoon measures, 17.7 mL and 22.2 mL yield different equivalents. JttGJtDIEN\* Cold water WEIGHT VOLUME SCALING 680 g 680 ffll/29h cups 100% Sugar 155 g 3 Tapioca starch 25g Salt Xanthan gum, (Bob's Red Mill brand) Pistachio butter, pure (Brpnte Sicilian, PreCel brand) Pistachio oil (Castelmuro brand) 7g 0.3 g PROCEDURE • • • © M e a s u r e into a pot. liquid—more if the liquid is low in fat. Make sure the rim of the pot and the gasket are clean; any food particles stuck there could break the seal. But they are hot enough to do the job if you have no better tool available. When the batter is properly whipped, a dollop will float in a glass of water. Eat with Your Hands. For more details on food safety, see page xxiv. chiffonade—thinly sliced, leafy greens or vegetables often used as a base or garnish, chimichurri—Argentinian condiment made of chopped herbs and aromatics in oil. air as possible from the bag, and seal it. Place the hot lid on the pan, and put it in the oven. Cut four foil lids just slightly r in diameter than the rims of 'I' i I' t W. Scatter julienned young coconut over the glaze. Collected oils are used widely in perfumery and are often of a grade suitable for food and cooking. Boneless, skinless chicken 4 5 0 g / 11 b thighs, ground from 3 thighs 100% © Divide evenly into three 500 mL/16 oz canning jars. But what if we told you that you can cook paella or risotto from scratch in seven minutes flat? Whisk the mixture occasionally to help it cool evenly. Measure 35 gfor use in step 7. © Let the cooker cool, or run tepid water overthe rim, to depressurize it. Read the guide on the next page and the scaling instructions at left so that you understand how each element in a recipe functions. Even though he is one of those rare and gifted intellectuals in the world of mathematics and technology—and his achievements in these fields are extraordinary— Nathan's childhood dream never wavered, and his love for the culinary arts has led him back to carve his own course toward his vision and version of it. The display should read 0 X / 3 2 \*r In ice water at any elevation or about 100 "C/212 \*F in boiling water at sea level. Gruyere cheese, grated 200 g 3 /3 cups Cream cheese 85 g !/3 refrigerate it until ready to use. An important seasoning in many South Asian dishes. In Denver (elevation 1>6 km/5,280 ft above sea level), water bolls at 95 °C/203 °F. Understanding how your conventional cooking gear works will help you to make the best use of it. rice bran oil—oil extracted from the germ and inner husk of rice. We take advantage of that fact by cooking pasta in cheese water, a technique that transfers flavor to the macaroni and allows us to make a delicate, refined dish that contains little fat yet retains much of the robust flavor of traditional mac and cheese. (D Drain. Use microwave-safe browning dishes instead. uc, LI, Lc; 139: b 44 Ryan Smith: 84; 86; 87: Lr; 88-89; 90: ul; Ryan Smith: 22: b; 24:1; 28; 32: LI, Lr; 94; 97; 114-115; 116: b; 119: LI; 123: c, r; 39: b; 40; 41: Lr; 42-43; 45-46 128: LI. They can make gelato (above, see recipe on page 370) that rivals what you'll get at a gelateria. To minimize bacterial growth, cure meats and seafood before drying. Bloomshury USA, 2006. lemon balm—an herb in the mint family having large, pale green leaves and a light, lemony aroma. The format of our recipes is designed to be clear and easy to follow while reflecting the Modernist approach of precision in cooking. Vega, C, Ubbink, J., and van der Linden, E., editors. Commonly sold in jars, packed in oil. Never attempt to open a pressurized cooker. MODERNIST CUISINE AT HOME A fan Stirs" the microwaves, bouncing them around to better distribute them. Sous Vide Cuisine. In a typical Will it respond quickly when you adjust the copper pan, the temperature across the bottom burner? Microwave the eggplant at 1,100 W for 3 minutes; add more time if your oven is less powerful than this. HOW TO Deep-Fry Without a Deep Fryer We're big fans of deep-frying as a finishing technique after cooking sous vide. External moisture causes the oil to splatter. Return the lid to the oven while you prepare the next omelet. What's the same as Modernist Cuisine is our focus on quality in both the information in the book and in the way it is presented. Follow steps 2-4, cover the frying pan with plastic wrap, and then cook the omelet for 10 minutes. sous vide—cooking techniques in which food is usually (but not necessarily) vacuum sealed, and is then cooked at accurately controlled temperatures. And illustrated instructions guide you step-bystep through the cooking techniques that you'll find in some of our recipes. Ratio Ruhlman's Twenty: 20 Tech- Cuisine: The Art and Science of Cooking. Local Butchers Food scientists, chefs, and ethicists all agree that the best-quality meat comes from animals that are raised healthy and store refrigerated or frozen. © Strain, reserving the juices and fat. © Season the jus, and serve it warm. Clarkson Successful Baking with Over 200 Magnificent Potter, 2010. The Copenhagen restaurant Noma, for example, is famous for using ingredients only from Scandinavia (which requires great creativity in the middle of winter). When food is sealed, however, steam accumulates in the bag and cooks the food evenly and efficiently. This technique is called indirect grilling or banked grilling. RED WINE GLAZE YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: USED I N : INGREDIENT WEIGHT Lean ground beef 1.3 kg/2.8 lb Neutral frying oil 75 g lOOg/Yscup 4 hours overall, including 2 hours unattended keeps for S days when refrigerated or up to 6 months when frozen moderate pressure cooker, beef knucklebones Braised Short Ribs (seepage 229) VOLUME 80mL/V3Cup SCALING PROCEDURE 100% © Fry the meat in a large skillet over high heat until it turns dark brown, about 8 minutes. Remove as much air as possible from the bag by using the water-displacement m e t h o d (see page 58), and seal it. That little extra flavor, the seedpods should be plump and a bit moist inside. Modern ingredients, such as xanthan gum powders), allow the creative cook to achieve certain results that were previously unobtainable. Helix snails—(Helix snails) genus of large, edible land snail, vineyard snail) genus of the pasta for use in step 11. ^fH HANDY USES FOR BLOWTORCHES in . Dispensing soda through the nozzle results in a tingly and foamy drink, not a fizzy one, because die gas exits the liquid too quickly. To make a thinner jus, omit the xanthan gum. Notes and introductions that accompany many of the recipes also direct you to helpful discussions elsewhere in the book. measured. For that reason, puncturing meat—whether with a Jaccard tender izer, a thermometer, or even afork—canpush germs into the meat from the exterior. Cool the bones completely, and then continue with step 4. White cheddar c:heese, finely grated 4% 4 cups Water as needed for cooking the pasta Dry macaroni 240 g 2 cups 100% © Add into the simmering liquid gradually, blending each addition with an immersion blender until melted and completely smooth. Good Eats: The Early Years. Rather lit; a yellow flame is a telltale sign that the fuel is than cooking With radiant heat, as an oven broiler not burning completely. Batali, M. Vegans particularly enjoy it because His as smooth and intense as the best gelato, but contains no eggs or dairy. SAUCES 99 ONION FLUID GEL YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: 500 g/2 cups 2 hours overall including 30 minutes of preparation and IV2 hours unattended keepsfor 5 days when refrigerated either before or after pureeing in step 10 moderate sous vide setup, agar powder This recipe is adapted from Heston Blumenthals update of the classic Escoffier sauce soubise, a Bechamel sauceflavoredwith onion puree. and Joachim, D. Serve the eggs as a breakfast entree, as a filling for omelets, or as a side dish for the ultimate steak and eggs. The main heating element of the oven is at the bottom. ramps—wild leeks, gathered in the spring; served whole or pureed. Xanthan-thickened sauces become thinner when stirred, and set again when allowed to settle. And why shouldn't I be cooking all grains under pressure in a fraction of the time? brine—salt solution. You can even produce powders to dust over dishes in their frozen state or to thaw and use as liquid ingredients. If you have a pressure cooker, there's no reason not to enjoy these wonderful one-pot meals more often. (D Cook sous vide for 1 hour. Instead, scale die weights as described above, and then weigh the ingredients. Next, prepare the filling, using the instructions on page 374. Flakes or strips can be ground into powder. This also helps contain splattering and makes cleanup easier. Set the cheesy bread crumbs aside for use in step 12. Lc; 137: ul. As the mesh tightens, the liquid sets into a semisolid gel. A grill-turned-oven can't compete with a good gas or electric oven, let alone a combi oven or water bath. It is full of insights that encourage us to try something new, and that teach us something on every single page. 
Fold in just before serving, Coconut Crust Filling: Coconut Crust Filli 122 m m / 4. capacity: 2-5 kg Pros: good for a wide range of common ingredients Cons: not ideal for hydrocolloids Where to buy: kitchen-supply stores Cost: \$25-\$40 HOW TO Tare a Digital Scale Place a piece of parchment or waxed paper on the scale to ensure that you don't leave traces of the ingredient on the weighing platform. We deliberately selected our recipes to illustrate how Modernist approaches can transform familiar dishes into extraordinary ones. Knopf, 2001. 38 MODERNIST CUISINE AT HOME WAYS TO USE A COMBI OVEN Combi ovens excel at a wider range of cooking techniques than any other appliance. Hyperion, 2009. 8 Arrange four slices of cooked eggplant on the sauce in a single layer. Can be used as an emulsifier, foaming agent, thickener, and gelling compound. Conversely, when making pastry dough, you'll get the best results from oils that are solid near room temperature. B R E A K F A S T EGGS 153 SALADS AND COLD SOUPS A salad can be so much more than the stereotypical pile of greens that some chefs deride as "rabbit food." Look at a salad as an opportunity to create appealing textural contrasts and flavor combinations. The secret to the flavor of grilled food is the dribbles of juice, laden with natural sugars, proteins, and oils, that fall onto the hot coals and burst into smoke and flame. IN 44574 S74.514.2600 • w w w . But most have not. The operation of the oven hi controlled electronically in response to Kit internal temperature sensor and the setting on the control dial. Example: This recipe yields four servings. My next step was to become a postdoctoral fellow at Cambridge University, where I worked with Dr. Stephen Hawking on the quantum theory of gravitation. w;\*f. • Oven insulation is thickest at the top to retain as much heat as possible. Michael Joseph, 2002. J o r r o u i FORMULAS' flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR FLOUR \*D \*O\* (I avoid flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR \*D \*O\* (I avoid flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR \*D \*O\* (I avoid flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR \*D \*O\* (I avoid flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR \*D \*O\* (I avoid flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR \*D \*O\* (I avoid flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR \*D \*O\* (I avoid flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR \*D \*O\* (I avoid flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR \*D \*O\* (I avoid flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR \*D \*O\* (I avoid flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR \*D \*O\* (I avoid flavored Protein ~MEDAir~!'y| V PRODUCT OF USA wo% NATMUI PKoourroest-sj VITAL WrH'-» GLUTEN ^UICK-AAIXING FLOUR \*D \*O\* (I avoid flavored Protein \*D \*O\* (I avoid flavored Prot \* ('(fain ffrt I ."- taking uniHtmt iwm « , , n \* \* \* T" StnootliEw«Tn\* ^ b w»rt. Oil and water are immiscible, for example. Warm the cooker on the stove top over medium-high heat. But the solution is easy: surround the periphery of the grill with a tad ring of reflective aluminum. All-purpose flour 200 g V/i cups 100% 3 83% Acup © Combine in a food processor, and pulse until blended to the texture of corn meal. by Sealer Sales 18327 Sherman Way Reseda, CA 91335 818-705-0203 sealersales.com strip sealer 175 Route 46 W. Kyle Books, 2009. 100 212 100 37.8 280 105 221 105 40.6 285 110 230 no 43 3 115 239 115 46.1 295 120 248 120 48.9 300 (°C) XII C Convertint (F) 57.2 160 71.1 73.9 79.4 118.3 473 250 121.1 536 280 137.8 545 285 l, 1 534 563 572 300 148.9 I Converting Weights Converting Weights Grams to ounces, divide by 28.35. — Place a metal baking sheet in the freezer to chill for at least 30 minutes. palm sugar—(jaggery) unrefined, coarse sugar made from boiled, crystallized palm sap. energy—in physics, the capacity for doing work. Leeks, thinly sliced 250 g 3 /4 cups 20% Garlic, thinly sliced 25 g Vi cup 2% Tomato paste 50 g 3Tbsp 4% © Stir into the vegetable mixture, and cook, stirring often, until brown, about 10 minutes. (a Lay the omelet sheets stripe-side down, and divide the French scrambled eggs and shiitake marmalade evenly among them. in a cooler—see page 198. Set the humidity to 0% and the temperature to 30-90 °C / 85-195 °F to quickly dehydrate food without cooking it. On Food and Cooking it. On Food and Cooking: The Science and Lore of the Kitchen. Paradox, 2010. 0 Steam for 2 minutes, plunge the bag into the ice bath, and then shuck the clams. Traditional recipes for it are heavy on starch, which stabilizes the egg yolk emulsion but dilutes the taste and coarsens the texture. Each season brings an array of wild edibles. This recipe can be easily adapted to make a foam from virtually any flavorful fruit juice or other liquid. To make an omelet large enough to serve as an entree, use all of the egg mixture in one 30 cm/12 in pan. E. They aren't prone to oil flareups and can't leak gas. Monitor the liquid after dispersing the agent to check that it remains at the recommended activation temperature for the amount of time indicated. But we also show you how to get by without fancy appliances, such as how to cook fish sous vide in your kitchen sink and how to cook steak in a picnic cooler. The Professional Chef, Ninth Edition. The end of the probe should hang in the air and point toward the center of the oven. But we show you how to avoid that problem by putting the sauce in a whipping siphon; you no longer have to make hollandaise at the last minute while pulling together all the other parts of a meal. You can tailor dieflavorof this stock by selecting the varieties of vegetables you use. © Slide the cooked omelet onto the baking sheet. Through a series of events, I ended up in a nondescript laboratory in Bellevue, Washington, full of fascinating inventors and a level of technology that leant itself to a huge realm of possibilities. Watch a master griller stoke a fire, and you'll see him rake coals around or perhaps adjust a vent under the grill. Mastering the Iuzzini J. Recipe. Microwave again at 1,100 W until the food is hot in the center and bubbly on the sides, 5-6 minutes. He looked beyond the familiar offerings of traditional grocery stores and added agar, xanthan gum, sodium citrate, and liquid lecithin to his shelves. 13 Sprinkle the cheese crumble generously over the top of each serving. Their accuracy is rarely in part on h o w skillfully you use it (see page 66). The most prized hams come from pigs that roam and feed naturally, often on a diet rich in olives or acorns. Hardie Grant Minutes Using Your Pressure Cooker. For a differentflavor replace the soy sauce with our rich Brown Chicken Jus (see page 92). (and decrease the humidity, This is exactly what you want Lower the temperature: the if possible). © Pull a pastry comb through the mushroom base to create even tines across the mat. A convection oven, such as this Viking model, uses a powerful fan to circulate the air. Don't fill the cooker more than two-thirds full. Use canning tongs to remove hot canning jars from the cooker, and let the contents cool slightly before opening the jars. Food has nowhere to hide from the wide blade sweeping close to the broad, fiat bottom. Kewpie mayonnaise—popular brand of Japanese mayonnaise made with rice vinegar that includes a small amount of monosodium glutamate for an enhanced umami taste. Local and artisanal butchers make an effort to find the best suppliers. Available dried, canned, and occasionally fresh, Baking powder 2g Vz tsp 1% © Roll the dough into a circle about 5 c m / 2 in wider than the diameter \ of the pie pan, 0 4 oz Typical max, Cooking Through the Seasons, Salt 2g Vitsp 0.6% © Microwave at 1,100 W for 3 minutes. Crown Publishers, 2000. After step 5, spoon the pureed eggs from the bowl, and serve immediately. When writing our previous book, Modernist Cuisine: The Art and Science of Cooking, we arrived at the term because it most completely captured the impetus and the cultural significance of the revolution that was underway in the culinary arts, a revolution that our book chronicled and is now helping to propel. Alternatively, use our Korean Wing Sauce (see page 260) or 100 got our Pressure-Caramelized Peanut Sauce with some extra minced lemongrass (see page 260) or 100 got our Pressure-Caramelized Peanut Sauce (see page 260) or 100 got our Pressure-Caramelized Peanut Sauce with some extra minced lemongrass (see page 260) or 100 got our Pressure-Caramelized Peanut Sauce (see page 2 or on the stove stop. They are no more harmful than table salt (also known as sodium chloride). ricotta salata—Italian white, salty cheese with a crumbly texture similar to feta. Cocoa Nib a n d Cardamom Dust Pulse 20 g / y i cup of cardamom Dust Pulse 20 g / y i cup of cardamom Seeds in a coffee grinder until the mixture resembles coarse cornmeal Add 20 g/2Vv> Tbsp of cocoa nibs. A combi oven or water-vapor oven is made to do exactly that, but you can achieve similar results in a home oven. In cooking, the radiation is typically infrared light. You can drizzle a little olive oH or almond oil on top. For a thin sauce, use 0.1-0.15 g of xanthan gum for every 100 g of liquid. WHAT IS MODERNIST CUISINE? Sift the mixture to remove any hulls or large pieces. Used prominently in Indian cooking gigahertz —unit offrequency indicating billion cycles per second. Ducasse Librairie Larousses Gastronomic Committee. Why give temperature pieces of the science says otherwise? A fine, creamy foam comforts and provides contrasting texture, like mashed potatoes, or whipped cream atop a dense dessert. We keep one of each of these so the food feels completely smooth and silky. They should be removed from fish fillets before cooking, pinion—tip segment of poultry wings. A batch of food cooks differently in a tall pot than it does in a shallow pan, or even in two pans made of different metals. Not even copper is conductive

is thick. The related technique of shallow frying uses enough oil to cover at least part of the food. Dry sherry 70 g 70mL/V3Cup 47% A cup 0 Pressure-cook at a gauge pressure of 1 bar/15 psi for 7 minutes. Warm the fat in a second small pot over low heat, and then stir in the lecithin. Just 30 seconds may be enough when you don't want to further cook the interior of the food. But now manufacturers have started making versions for the home kitchen. C O N V E N T I O N A L C O O K I N G GEAR 27 If \*r V Pressure-cooking isn't how Escoffier nude stock early lithe last century, bill we're sure II is how he would do it now. Neutral Oils Oils are products of nature and are pressed and refined by using a wide range of techniques. The flavorful smoke then permeates the food baking on the other side of the grill. Shake die siphon to allow the gas to fully dissolve into the liquid. You may need to add a little more liquid. A stock made with sweet onions tastes different from one based on white onions, for example. Available from Asian markets or food ingredient companies. The Modernist influence is now global; it extends far beyond high-end restaurants in big cities. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Eggs, blended 150 g 3-4 eggs 100% Heavy cream 15 g 15 mL/1 Tbsp 10% Egg yolk 12g lyolk 8% © Preheat the oven to 175 "C/350 °F. Although not a fully Modernist approach, Nouvelle cuisine was nevertheless very controversial at first in Its emphasis on lightness, simplicity, and new ingredients, and in its introduction of the concept of plated dishes, which granted chefs control over almost every aspect of the presentation of their food. on the heat conductivity of the metal. INGREDIENT WEIGHT VOLUME SCALING Chicken wings, chopped 450g/llb 3-4 wings 100% ® Mix thoroughly. ® Divide the mixture evenly into five ramekins., or pour it into one large baking dish. 375 Coconut Cream Pie TOPPINGS O u r a p p r o a c h t o m a k i n g pies is s i m p l e b u t p o w e r f u l : w e m i x a n d m a t c h d i f f er en t bases and t oppingsto create myriad delicious combination s. Learning to enjoy strong tastes, strong odors, or unfamiliar textures takes a certain amount of practice. -4BMfttMM The temperature sensor is usually located in the hottest part of the oven: at the back, near the top. Dust the agent evenly over the surface of the liquid while blending. If you needtofinish many sandwiches in one batch, toast the slices, assemble the sandwiches, and then bake them in the oven at 190 °C / 375 °F until the cheese melts. sauce soubise—a traditional French creamy onion sauce. tajine—(tagine) spiced Moroccan stew often served with couscous. Quantities shown below yieldfourservings. Matthaes, 2008. Beranbaum, R. The best thing about these basics is their versatility. collagen-fibrous proteins found in the skin, flesh, bones, and connective tissues that yield gelatin when cooked. They are still among our favorites. Ifyou have a 1,350 W oven wild the recipe says to cook at 1,100 W, set the power level to 80% (or level 8 if it has 10 levels) because 1,100 is about 80% of1,350. 1. For more information, see Working with Gelatin, page 366. leup sec |Mgc I3i readers already own. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Ice 500 g 2 cups 100% ©. a pan with nearly the same performance as that You might think that eventually the tempera- the food.TocntTiprns.iU'fnrlhp. While the pan is still hot, add just enough liquid to deglaze it. The "blow" and burning blue. As when painting, you get better-looking results if you apply Ate browning in two or three "coats" rather than Hying to do the whole job in a single piss. immersion circulator—device that, when attached to a vessel that contains water, heats and circulates the water to create a circulating bath. Spring-loaded valves are the best choice for stock- and sauce-making because the valve seals the cooker before it is vented. The thickener or gelling agent was dispersed unevenly. does. In other words the pan transmits the unevennoss of the electric coils or the ring of gas flames right to So the question is: how thick is thick enough? I had already looked through Modernist Cuisine: The Art and Science of Cooking—an amazing, encyclopedic cookbook in six volumes that was published in 2011, and I had also cooked with Nathan and his impressive staff in his laboratory, outside Seattle, where the books are created. Through the years, not only did the dimensions of microwave ovens become significantly smaller, but they also became more efficient. convection oven—oven that includes a fan to distribute heated air. Cool, and then pour into a whipping siphon. 3% 13 g 1 Vx cup 44% 19% 14% © Gradually add to the simmering liquid, using an immersion blender to blend each addition until it has melted and is completely smooth. My friends and parents were patient guinea pigs as I experimented with recipes selected from my ever-growing collection of cookbooks. 14 All recipes in this book were developed and tested by weight, not recipes see How to Scale a Recipe on the previous page. The repertoire of the Modernist chef isn't just flavor and texture; it is also the range of emotional and intellectual reactions that food can inspire in the diner. Even better, cool foods quickly in their covered containers using an ice bath or, in a pinch, cold tap water. We use this as a filling in our Espagnoie omelet (see variation on the next page). 1% © Strain. Butter infused with lobster with a boutique hot dog bun in this New England classic—go with shells (see page 122) adds extraflavorand color to the toasted bun. Top with another generous spoonful of marinara sauce. Smaller pieces infuse more flavor into the stock. For beans and grains, which tend to swell as they cook, fill the cooker only half full. The scientific reason is that stress causes animals to release hormones that negatively affect the texture and taste of the resulting meat. Brown, A. BakeWisa The Hows and Whys of Kamozawa, A. Also can be used as a coagulant for protein gels. 8 Coverthe pans with the foil lids. 5 kg/3.3lb 2llirge lobsters Neutral-tasting oil 10 g ^ p \ 1 0 mL/2 tsp SCALING 300K 2% by "to make ahead" instructions—offer general guidance. We incorporated the project as a start-up company, and 1 became the CEO. Look into modern ovens. RBA Practica, 2004. MAPP gas is no longer available in North America, but propylene-based substitutes work as well. ffl PRESSURE-COOKED PAELLA DEL BOSCO YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: four servings (400 g/2 cups, excluding snails) 25 minutes overall serve immediately; cooked rice keeps for up to 3 days when refrigerated easy pressure cooker, bomha rice, pimenton duke, piquillo peppers, Brown Chicken Stock (see variation on page 85), Sous Vide Braised Snails (optional, seepage 293) Paella has gained a reputation as a dish for special occasions because it is so time-consuming to make. We recommend owning three: 75 microns (for seving fat to make consomme or to clarify butter), 300 microns (for velvety purees) and 850 microns (for sifting powders such as flour and nut meal). Food Plants of the World: An Illustrated Guide. Blend the egg whites, cream, and salt, and then strain the mixture. For details, see Combi Ovens, page 38. The Family Meal: Home Cooking with "Perron Adria. You can also add flavor to oils to solidify at room temperature, a characteristic by infusing them with herbs, citrus peels, spices, particularly valuable for making pastry dough. 9% White balsamic vinegar 0.25% If you are making the raspberry syrup (which is optional), preheat a water bath to 65 "C/149 °F. Clarkson Potter, 2011. Toss the bread crumbs and cheese together, spread them on a baking sheet, and toast light items such as spices (see page XIX for sources). You have only a vague idea what the temperature in your oven actually is. These recipes makefours and with liver. coconut cream available flavored with liver. coconut cream available at Asian markets and specialty stores. deglaze—to add liquid to a pan to dissolve the flavorful brown film and bits formed from dehydrated juices when many foods are cooked at a high temperature. Crowing Your Own Food Millions of people are rediscovering something we've known for a long time: if you grow your own food, you can eat it at the peak of its perfection. Knox's instant gelatin and silver sheets (160 Bloom) are most common. In the farm-to-table movement, restaurants operate their own gardens or farms to supply their kitchens. The niques, 100 Recipes, A Cook's Manifesto. Here he has been successful in distilling the original Modernist Cuisine into something that is more user-friendly and practical for daily use—not to mention that it comes in a form that no longer challenges the weight of the first microwave ovens. Grilling purists, on the other hand, point out that honest-to-goodness chunks of hardwood charcoal burn hotter, faster, and cleaner. Reserve the crumbs for use in step 12. 300 g 60 g 4 medium heads V-i' cup Tb5 M i c r o w a v e d Potato Saiad Small fingerling potatoes 400 g '...lips Water IS 8 55 g ITbsp Red onion, minced Bacon Mayonnaise see variation on page 108 55g Dijon mustard L5g to taste Salt tytitp 1 i cup DtTbsp Place the potatoes and water in a zip-top bag, and microwave at 1,100 watts until tender, about 4 minutes. stage—internship completed by prospective chefs. | ' - mtiirm.m(hi•>•»»»]. As the blade spins at high speed, it progressively grinds the icy block r tionallysmo(. COUNTERTOPTOOLS 17 WHIPPING SIPHONS Siphons are useful for making so much more than whipped cream. Do not add the corn kernels. A gauge pressure of 1 bar, as in a pressure cooker, means that the interior pressure is 1 bar higher than the ambient air pressure of the surrounding atmosphere, bechamel—white sauce. Italian parsley, bruised Thyme Fresh bay leaves Black peppercorns 0.5 g Balsamic vinegar to taste 0.4% 0.03% © Season the glaze, and serve it warm. The Rushings returned to Louisiana shortly after I began to work there, so Jack Lamb, one of the great restaurateurs of New York, introduced me to the wild world of running a professional restaurant. chaat masala—combination of spices used as a sprinkle on everyday foods and fruits in India. Thank you so much Kathryn Suerth Holmes, Gary Holmes, Mom, Dad, Sis, Albane, Marcus, Mamie, Papie, John, Alina, Noelle, Jonathan, Katy, and the entire MC and MCAH teams (see page XXIV). elBulli 19982002. Fagor brand cookers do release some steam when needed to regulate the pressure of the pressure o A CompreArtisan, 2009. Release the pressure on the siphon slowly; do not dispense the cream. Some mushrooms, in particular, can be quite toxic, so be sure to check with a knowledgeable expert before making a mushroom omelet after a hike! t t ® oxalis (wood sorrel) © garlic shoots ® wild licorice ® miner's lettuce © stinging nettles © © ® © © © chickweed © hedgehog mushrooms INGREDIENTS morels fiddlehead Lady ferns gray chanterelles wild watercress purple asparagus 79 THE RECIPES ¥^B «a Hi •Basics ^P^ckeitNppdle Soup 264 Breakfast £ggf ^iSlorife 274 Shellfish 282 Salads and Cold Soups \*>\*\*& Pressure-Coolked Vegetable Soups 177 295 1 8 6 Majgiaricl Cheese 308 204 Risotto and Paella 320 217 Cijrnrriea|||5 335 Braised Short Ribs 226 Dishes for the Microwave 342 Roast Chicken 237 Custards and Pies 358 ISfifMb^ '>• •••"•'- |figesejb-urger Chicken Wings Tfff! PKJ r^MiV H I E ^ \* ^ i^VCf\* £\*>• H^f^~2^5\JSQSC KVL "" In r j ^ ^ Sc?i Si •-\* •\* ! '3S&\*>SA rC!£"' , i K St^J BASICS Virtually all good cooking rests on a core set of basics—those fundamental prepared ingredients you routinely keep on hand in your pantry and refrigerator. Chinese sausage (lap cheong) slightly sweet, fatty pork sausage that is traditionally cured and air-dried. So you could place Be sure to keep your scales clean, calibrate them regularly (check the manufacturer's instructions), take care not to drop or jolt them, and always use them on a level surface. If omitting the syrup, skip ahead to step 5. Dip or rinse the yolk in water to clean it. Finish the sauce by whisking in cream, butter, olive oil, flavored oil, or rendered fats (including drippings), if desired. Add 70 g/?« cup of freeze-dried carrot powder at step 4. Carrot Crust Increase the amount of egg yolks to 63 g / X A cup (about 4 yolks). The macaroni will finish cooking in the oven. A setting for humidity lets cooks set the wet-bulb temperature we mentioned on page 34 by controlling how much steam gets mixed in with hot, dry air. Just follow these simple steps. To serve the gazpacho place several raspberries, a mint leaf, and finely julienned basil in each bowl, and pour the chilled soup at tableside. At step 2, combine the milk, sugar, and salt (but not the cream) with 100 g/^s cup of finely chopped dark chocolate and 24 g / V% cup of Dutch-processed cocoa powder in the top of a double boiler. Having already earned his fortune, he was then building an incredibly eclectic home on Lake Washington, designing much of it and its contents himself. Remnants of a' previous-foam might be causing'a leak, or some part-ofthe siphon could be damaged. The scaled 100% value for the recipe is 1,125 g. Line the pan with the dough. mandoline—metal or plastic manual slicer on a thin plane with an adjustable blade. If you can combine the ingredients in a bowl on the scale, tare before you add each ingredient to taste. The secret is to p ot slices from y ou r favorite cheeses. rhai can pioduc some vibration in the pan. Ground beef, in which interior and exterior regulators, but they most likely thought that providing both temperatures and times would be too complicated. A convection fan, increasingly common on home ovens, circulates the hot air inside. Use a skimmer or slotted spoon to lift the greens out, and plunge them immediately into the ice bath. Pros: processes food extremely efficiently; good at separating out solids; can juice relatively dry foods like wheatgran and leafy vegetables Cons: slower than the centrifugal juicer; smaller feed tube means juicing is more hands-on; many parts to clean Where to buy: kitchen-supply stores Cost: \$150-\$300 MODERNIST CUISINE AT HOME fi DEHYDRATORS Simple dehydration is one of the oldest forms of food preservation, but innovative cooks continue to dream up novel ways to use dehydrated food, from vegetable leathers to edible paper. Panko-Japanese-style large, flakybread crumbs, pasteurize-to heat a substance to a certain amount of time to kill a pressure cooker On the stove top (min) (min) bomba rice 4 8 forbidden rice 7 17 risotto rices (Arborio, Vialone Nano, camaroli) 3 6 short-grain Japanese rice 2V2 4 farro 10 20-22 pearl barley 12 25 quinoa 2 7 steel-cut oats, rinsed Safety tipsfor pressure-cooking: seepage 33 Add liquid, and parcook for the time indicated in the table below, stirring frequently. You may need to temper the gelato at room temperature slightly before serving it. (D Bring a large pot of water to a boil. He demonstrated the joys to be found in living with an open mind and an adventurous palate. Do not rinse it. If the dough sticks, will not be baking the crust immediately, roll it out between t w o sheets of plastic or store it in the refrigerator. Don't add too much, or you will dilute the flavor of the gravy. "Lightly Cooked" Food Why don't we always follow government guidelines? Procedure steps apply only to ingredients that make a different dish. Fairfield, NJ 07004 973-227-2426 isihorthamerica.com siphons iSi N o r t h America, Inc. If chicken feet are unavailable, replace them with an equal weight of wings. I When making a glaze such as this one, choose a syrah, a big zinfandel. insulator—substance that is a poor medium for conduction. In cooking methods that use high heat. C O N V E N T I O N A L C O O K I N G GEAR GRILLS As old as humanity itself, grilling was the cooking technique that set our primate ancestors on the evolutionary path to becoming civilized humans. Just set the oven to steam mode with humidity at 100%, and set the temperature anywhere from 30-100 °C / 85-212 °F. After fully tightening the lids of the jars, loosen them a quarter turn; otherwise, the pressure may crack the jars or blow their lids off inside the cooker. We did not use volume measurements, for good reason: even when using calibrated spoon and accuracy. Repeat steps 8-10 twice more, and top with remaining marinara sauce. If the relative humidity of the air is less than 100%, then the wet-bulb temperature will be lower than the dry-bulb temperature because of evaporative cooling. \*y Drain the cauliflower. It contained a machine that freezes food in 20 seconds, a computer-controlled smoker that can barbecue a whole hog perfectly, as well as convection ovens, induction burners, walk-in refrigerators, and a machine that makes perfect ice cream in the blink of an eye. The kitchen that Nathan had created in his home was hardly an ordinary home kitchen. The Raviolo filling can be served open-faced or sandwiched between two omelet sheets. The frozen mixture then drops into the machine to meet a powerful tough blade. fines herbes—traditional French mix of herbs, including fresh parsley, chervil, chives, and tarragon; ubiquitous in French cuisine. They will pay for themselves many times over in the form of greater control, confidence, and creativity—and thus higher quality cooking. Serve it hot. It is easy to make cheese water, and once you've tasted it, you will probably want to make extra to keep on hand. Food that is too thick can rot inside before it dries through. resting—cooking technique in which food that has been heated is allowed to sit for a period of time. If the pan is no larger than the heating element, then that heat is also distributed very evenly. Cooked chicken, shrimp, crabmeat, or duck breast can all be folded into the rice instead of, or along with, the snails. 11 Sixth St. Vallejo, CA 94590 800-556-4414 Pacojet AG Bundesstrasse 7 CH-6300 Zug Switzerland (+41)41710 2522 pacojet.com PolyScience 6600 W Touhy Ave. 4 buns 2Tbsp 20 g 2'/.Tbsp 4% 16 strips Safety tlpt far Hghrtycooktd food: itvptKn 13) and seafood, for which weights are also given in pounds because that is how these products are typically sold in U.S. supermarkets. The Cookbook. Be very gentle with the yolk: if you puncture the membrane, it will burst. One can only guess at the reasoning of parts are thoroughly mixed, is particularly susceptible to contamination. C U S T A R D S A N D PIES 367 SOUS VIDE VANILLA CREME ANGLAISE YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: six to eight servings (775 g/3 cups) 1 hour overall, including IS minutes of preparation and 4S minutes unattended keeps for 3 days when refrigerated easy sous vide setup Creme anglaise is a thin custard that has myriad uses: transform it into a rich milk shake, pour it overfreshberries, or churn it into unctuous ice cream. Mai Hard reaction—complex set of reactions among amino acids and sugars that creates the deep brown color and many of the essential aromas and flavors of baked, roasted, and fried foods. Dispense the foam immediately, or refrigerate it in the siphon. Now the entire food world, it seems, is putting a major emphasis on ingredients. Better for forming gels than amylopectin. If you cannot puree the yolks immediately, be sure to keep them warm, or else the pastry cream will become slightly grainy. Chives, minced ^; Pecorino cheese, grated Black pepper, coarsely ground ^ 4 eggs 32g 5g 16 g 1.6 g V\*cup 2Tbsp 4Tbsp Vitsp STEAMED HERB OMELET YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: four appetizer-size omelets (40 g each plusfilling) 40 minutes overall omelet sheets keep for 2 days when refrigerated; serve assembled omelets immediately moderate nonstick frying pan (20 cm/8 in) with metal lid or oven-safe glass lid We think this is the perfect omelet: it is tender and delicate, with a pure, fresh egg flavor. A lot of the natural sweetness of the cheese was left behind in the cheese solids, so the pinch of sugar helps to round out the flavor. THE S C I E N C E OF H O W C O L D A N D FAT AFFECT FLAVOR Gazpacho is probably the best-known example, although few are aware that it wasn't originally made with tomatoes. ® Season the marmalade, and serve it warm. Dry foods that are naturally high in fat will brown because fat wi 11 not evaporate the way water does, so it keeps on heating the food after the water is gone. Be sure to save any extra juices—or at least have some good bread and olive oil handy so that you don't waste any of this precious liquid. And, perhaps surprisingly, microwave ovens are the best tools we know for making beef jerky or fried herbs for garnishes. Don't be intimidated by the number of steps; it's easier to assemble than it looks, and many of the components INGREDIENT WEIGHT VOLUME SCALING PROCEDURE 1.5 kg 1.5 L/6V3 cups 300% 5VB cups 200% ® Combine in a large pot, stir to dissolve fully, and then slowly bring to a boil to make a syrup. b e a m blauc—French term for "white butter," a white wine and shallot-flavored, emulsified butter sauce. Kashmiri chili—long, bright red, dried chil popular in South India. You are in luck: we've made it easy to scale the recipes in this book up to greater yields (or down if you have fewer mouths to feed). (§) Slide the cooked egg whites gently onto individual plates. see page xxii 100% © Panfry over medium heat, stirring constantly, until brown, about 15 minutes. That desire led them to explore cooking techniques, such as sous vide, and ingredients, such as modern thickening and gelling agents, that in many cases were developed for either institutional use or mass-produced foods, not for three-Michelin-star restaurants. Flammarion, 2007. They also work for cooking, although multiple locks on the lid make them less convenient, and they are often made of thin aluminum, so any food touching the bottom burns easily. Keys to Good Cooking: A Guide to Making the Best ofFoods and Recipes. And that's why you can stay in a hot but dry sauna longer than you can in a steam room at the same temperature. tare—to reset a scale to zero by subtracting the current weight. PRESSURE COOKERS Pressure cookers are fantastic tools. As with popcorn, steam emerges when you open the bag, so take care. THE SCIENCE OF W H Y C O O K S STIR R I S O T T O Starch, released by short-grain rice during cooking, is what thickens dishes like paella and risotto. If you don't have time to make the candied beans, use Chinese red beans cooked in syrup, which you can find at Asian markets or other specialty food stores. Before you jump in and start cooking from our recipes, we encourage you to read through the chapters in Part One that explain what you need to know about any unfamiliar equipment and ingredients. We developed this cheese slice technique for the Mushroom Swisss Burger recipe in Modernist Cuisine. Bake until golden brown and bubbly, 13-15 minutes. 148 M O D E R N I S T C U I S I N E AT HOME — TO MAKE AHEAD After step 12, cover the baking sheet with plastic wrap, and refrigerate the omelet sheets for up to 2 days. Whether you're carbonating, infusing, of foaittfng, there are a few basics you should know. Individuals Providing Expertise and Advice Companies Providing Equipment John Bailey, Shelby Barnes, Kim Christiansen, Lee Dicks Guice, Chef Rubber, CookTek, Electrolux, Fresh Meats Solutions, Gaggenau. Although cheese lovers might be tempted to boost the sauce-to-pasta ratio, keep in mind that the sauce is very rich. LEVEL OF D l f F I C H I T Y ^ moderate SPECIAL REQUIREMENTS: sous vide setup, Vacuum-Infused Celery (see page 131), Tomato Leather (optional, see page 129) i The overall time to make the recipe is given here. In the Seattle area, where we live, the Pike Place Market has been going strong for generations. Vegetables: The Most Authoritative Guide to Buying, Preparing, and Cooking, with More than 300 Recipes. If you make a cream infused with cinnamon and vanilla, as described in the fridge, and use it on your morning pancakes. On gas stoves, this vent also exhausts combusted gas. 1999. CAUTION:Oo not tout SIS mm is -: • "•-"--:-^.rVSf \1 « \ m\ \* "VI m "/•k # aa •- COOK •\*? Second, people tend to get squeamish when you talk about pathogens, sickness, and fecal contamination. INGREDIENT WEIGHT VOLUME SCALING PROCEDURE Shiitake mushroom caps 300 g 5V8 cups 100% ® Pulse the mushrooms in a food processor until they are minced but not pureed. 2009. sofrito—fried mixture of oil, onions, peppers, and garlic that is considered the backbone of Latin cooking, marrons glacis—French term for candied chestnuts. Always sift modified starches before adding them to a liquid to avoid having to overwork them. Chiefly from tart, wild pomegranates. Egg. Pat the food dry with paper towels. It adds both color and a slight peppery flavor to food. No matter what your food tradition, there are plenty of others to sample. But the latest and greatest techniques, developed by the most innovative chefs in the world, were largely undocumented until we and Chris Young, along with the rest of our team, published Modernist Cuisine: The Art and Science of Cooking in 2011. Thyme lg 1-2 small sprigs 0.1% © Simmer the jus over medium-high heat until it is reduced by half and becomes slightly syrupy, 20-25 minutes. Having made such tremendous culinary progress during our work on Modernist Cuisine, we now wanted to adapt those techniques to make them accessible to passionate cooks of all levels. T. There's just no excuse not to own one—and you really should have two: a general-purpose scale that accurately measures weights from one gram or less all the way to 1,000 grams or more, and an even more precise scale that is accurate to a tenth or hundredth of a gram. I spent three years building our culinary team, managing research, and working to define the unique visual style of the book. I Bring the mixture to a boil while blending constantly. Cons: blades spin at lower speeds than those in a blender, so purees aren't as smooth; best suited for chunky sauces, doughs, and pastes Features to took for: a bevy of attachments can save time on food preparation such as shredding, chopping, and grinding Where to buy: kitchen-supply stores Cost: \$125-4500 M O D E R N I S T CUISINE AT HOME MIXERS AND FROTHERS The whisk was probably a mind-blowing invention when it first became available to household kitchens. East Green, C. Carnaroli rice—starchy Italian rice often used to make risotto. and simmer until the agent. Instead, the food bakes at a lower temperature. What is Modernist cuisine? We slice carbonated grapes over Chilled oysters and pair rich pates with sweet, Chill both the liquid and Hit siphon. Add crunch to a mixing in shaved cauliflower tips, apple, and celery. Cook sous vide for 45 minutes. Gingerbread Crust At step 4, add 53 g/G'/t Tbsp of Autumn Spice Mix (see page 8) to the rack. 12 Sprinkle the cheeses and the water in a large (4 L / l gal) zip-top bag. V A R I A T I O N : Cream o f M u s h r o o m Soup Mushroom Puree 200 g % cup 165 g 165 m L / ^ i cup Heavy cream 100 g 110 mL A \* cup W h i t e mi so 5g to taste ltsp from recipe above Mushroom Jus see page 91 Salt Brioche croutons, cut into small cubes, and fried in bacon fat as needed Stir together the puree, jus, cream, and miso in a pot, and bring to a simmer. Thai Food. SAUCES 101 ^B^E^K Chervil, Thyme, and Sauce Verte Green Onion and Sorrel Pesto Scallion Pesto of preparation and 1 hour unattended keeps for 3 days when refrigerated or up to 3 months when frozen easy roasted pistachio oil, xanthangum (optional) Quinoa with Pistachio Pesto and Asparagus (see variation on page 332), Genovese Pizza (see on page 271), Pistachio Clam Chowder (see variation on page 292), Goat Cheese on Baguette with Tomato Conft and Basil (see variation on page 318) Pesto, which simply means paste in Italian, is most often associated with the Genovese version that combines pine nuts, basil, Parmesan, and olive oil. The Culinary Institute of America. Other designs use bolts that clamp around the outside. (a) Roll up the sheets so that the green edges are exposed. Electric stoves are relatively safe, clean, and affordable. We use silicone molds for custards, panna cotta, chocolates and other delicate foods. Serve immediately. W H I C H IS BETTER \*\$£ Briquettes or Hardwood? Raising the pressure gets around this set. (b) and affordable. We use silicone molds for custards, panna cotta, chocolates and other delicate foods. Serve immediately. W H I C H IS BETTER \* roadblock\* High-pressure Steam rapidly transfers heat to the surface of any food not submerged in liquid. Food is the primary medium for this dialogue, but all sensory aspects of the dining experience contribute to it. These gelling agents are derived from seaweed or bacterial fermentation; whereas gelatin is made from animal sources, such as pig or fish skin. Creatively breaking culinary rules and traditions is a powerful way to engage diners and make them think about the dining experience. Most commonly sold in large tubs. Charge with three cartridges of nitrous oxide, and shake. Arborio rice-starchy, short-grain rice; most often used in risotto and rice pudding. Carbon dioxide is best used for carbonation only. preferment—(pre-ferment) living mixture of yeast, flour, and water used to create fermented bread doughs. Many parts to clean Where to buy: kite hen-supply stores Cost: \$100-\$300 JgS\* Food press ^ f e jg-^ Keeping juice freshj ll's one thing to extractfi Intensely •flavored juice;, but it's quite another to keep that juice fresh arid appetizing until it reaches the jitable. Olive Press, 2011. To prevent a skin from forming, press plastic wrap directly onto the custard before storing it. First-rate ingredients are the foundation on which cuisine is built. Discard the solids. But a water bath produces better results when cooking sous vide for long periods of time at temperatures below about 60 "C/140 °F. 13 Season the mac and cheese with salt to taste, and serve it warm. ur, LI; 99: ul, ur; 42-43; 47 uml. And in\* any regional cuisine, many of the ingredients and dishes were borrowed long ago from somewhere else. Working quickly, strain the liquid from the parcooked grain, and reserve it for use in step 6. 310 Fondue At step I, substitute 2 0 0 g / 2 0 0 mL/ffccup of water and 118 g/120 m l / X A cup of dry white wine for the water. xanthan gum—thickener made from fermented carbohydrates. Others are most easily purchased online: see Scientific Ingredients, page XXII, for a selection of vendors. That said, we recognize that measuring volumes is often faster and is in any case c o m m o n practice, so w e converted our weights t o volumes—except for certain ingredients, such as emulsifiers or gelling agents, where the inherent imprecision of volume measurement can ruin a recipe. Salt: A World History. It heats food mainly by the slow process of conduction: the heat diffuses from the burner through a metal pan and into the food. Homogenizing produces a smooth mixture of two or more kinds of liquid. Mix the agent with a dry bulking agent, such as sugar, or disperse it in a small amount of oil before adding to the liquid. Chili oil, and salt. Still hear hissing? © Cover the tup of t he gelato with plastic wrap, and freeze It in a seal container until firm, at least 4 hours. Use pieces of folded Aluminum foil as shims if needed to ensure aflat, evenly cooked omelet. Example: The scaling percentage given for live lobsters is 300%. This technique prevents a skin from the surface foam to dissipate, or skim it from the surface foam to dissipate given for live lobsters is 300%. chemicals and moisture, having good insulating properties and used especially in packaging and insulation. Cheese Crust At step 4, add 60 g / 7M cup of shredded Parmesan cheese, and reduce the amount of powdered sugar to 20 g / 3 Tbsp. Gas stoves are excellent for quick cooking techniques that use high heat, such as stir-frying, sauteing, and searing. Salt © Season the gravy, and serve it warm. To him, food was a philosophy: "the essence of existence," he would exclaim before a feast of Gillardeau No. 2 and cold Chablis. Two years later, the startup was acquired by another software company: Microsoft. — •iiiliii I nil n.l li.H'.l i m.•'!'. •!ows vide bag. Pfctcc the claw and knuckle meat with the rest of the oil in a separate zip-top bag. In some cases, we took popular Modernist Cuisine recipes—Caramelized Carrot Soup (see page 148)—and developed simpler versions. We chose to add snails because they are historically an original garnish for paella. tapioca starch—purified starch taken from the root known as manioc, cassava, or yuca. Oldfashioned barrel-style ice-cream makers (not shown) are similarly affordable and still widely available; these work reasonably welt for preparing high-fat ice creams and frozen custards. Asian Flavors of Jean-Georges. ® Shell the eggs, and carefully clean off the whites to isolate the yolks. In some recipes, the mise en place is pictured. A small test batch may bake very differently than a full oven-load of the same food. centrifugal force—the outward force exerted by a body as it revolves around an external axis. cups W h o l e wheat f l o u r 2'/2tsp 3 Tbsp Hcup 3 !;: filps Masa hatina 2 tsp 3 Tbsp 34 cup 3' > Cups Wondra 1 Vi tsp 3!'i Tbsp % cup Vital wheat gluten 1 Tbsp 4 Tbsp '.'i cup 14 tsp Itsp IViTbsp V&tsp VA\%p Baking soda Gelatin, Knox's p o w d e r e d I lcup-HSg lcup\*I.10g 10 g ITbsp-5 g ltsp-Sg 1 envelope 7g 1 sheet .2.5 g Gelatin sheets, silver (160 Bloom) Yeast, instant dry V\* tsp 11/4 Isp 5 tsp W h o l e coffee beans 9-121 ITbsp '/a cup 1 envelope 7g 1 sheet .2.5 g Gelatin sheets, silver (160 Bloom) Yeast, instant dry V\* tsp 11/4 Isp 5 tsp W h o l e coffee beans 9-121 ITbsp '/a cup 1 envelope 7g 1 sheet .2.5 g Gelatin sheets, silver (160 Bloom) Yeast, instant dry V\* tsp 11/4 Isp 5 tsp W h o l e coffee beans 9-121 ITbsp '/a cup 1 envelope 7g 1 sheet .2.5 g Gelatin sheets, silver (160 Bloom) Yeast, 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Gelatin sheets, silver (160 Bloom) Yeast, instant dry V\* tsp 11/4 Isp 5 tsp W h o l e coffee beans 9-121 ITbsp '/a cup 1 envelope 7g 1 sheet .2.5 g Gelatin sheets, silver (160 Bloom) Yeast, instant dry V\* tsp 11/4 Isp 5 tsp W h o l e coffee beans 9-121 ITbsp '/a cup 1 envelope 7g 1 env 7 s lcup"67g 1' J cups Dry macaroni, small e l b o w Coarse-ground cornmeal, polenta, and corn grits l cup=202g 2v>Tbsp XVI It ¥> cup 3 Mi cups 1 cup-125 g Hcup 3 i ups 1 cup-125 g Hcup 3 Mi cups 1 cup-125 g Hcup 3 i ups 1 cup-125 g Hcup 3 Mi cups 1 cup-125 g Hcup 3 i ups 1 cup-125 g Hcup 3 i up cup 23/e cups lcup = 200g Vt cup 21/3 cups lcup = 200g Vt cup 25/B cups Vt cup 25/B cups Vt cup 2VA cups b o m b a, b r o w n rice W h o l e d r i e d beans, such as lcup = 200g garbanzo, p i n t o, a n d black beans D r i e d lentils 2'/ 2 Tbsp 3 Itsp 5 tsp Vi CUp T o m a t o paste 1 tsp 5 tsp I/3 cup Honey Itsp 4 tsp Vi cup Syrup, such as m a p l e o r a g a v e Itsp IVzTbsp V3 cup D i j o n mustard IVitsp 2 Tbsp V2 CUp Parsley leaves V4 cup 2 cups Isprig = 2 g Chives, m i n c e d 2Tbsp VA 1 tsp 5 tsp 6 Tbsp 1 sprig=2.5 g 1 tsp 5 tsp V2 cup lsprig=lg C h o p p e d nuts N u t butters, such as pistachio, /A cup 1 cup = 2 4 0 g almond, and macadamia /B 1 cup=310 g cup basil, cilantro, a n d tarragon, minced Small-leaved herbs, such as t h y m e a n d rosemary, m i n c e d leaf = 0.2 g Fresh bay leaf Citrus zest, finely grated w i t h VA 1 tsp 1 lemon=2.5 g cup a Microplane 1 pepper=30g 2Vi Tbsp Fresh j a l a p e n o 2 tsp O n i o n , small dice O n i o n , small dice O n i o n , thinly sliced (2 m m ) 3 Tbsp VA cup VA cup VA cup VA cup 3V4 cups 1 cup 4 cups 22/3 cups 0 n i o n , grated ltsp IViTbsp Vi cup Shallots, finely m i n c e d 2 tsp 3 Tbsp ^8 Clip Shallots, thinly sliced (1 m m) VA Leeks, thinly sliced (2 m m) 3 lTbsp Leeks, diced (6 m m) cup / fecup 5 Tbsp 1 cup 1 J/2 cups 1 cup Equivalents Ginger, sliced into coins (4 mm) Ginger, peeled and minced ll VA tsp Carrots, thinly sliced (2 mm) 14 cup 1 cup 4>i cups Cauliflower or broccoli, small florets V\* cup I cup 4)6 cups 1 mushroom \* 20 g ]/2 CUp 2 cups 10 cups Mushrooms, fresh button, minced Mushrooms, fresh shiitake caps, sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi 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parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) VA Tbsp Vi cup Scallions, white parts only, thinly sliced (1 mm) tomatoes, crushed 5 tsp VJ cup l%cups XVIII SOURCES Where to Buy Meats Products Heritage Meats 18241 Pendleton St. SW Rochester, WA 98579 360-273-2202 heritagemeatswa.com beef, veal Kapowsin Meats, Inc. protein—any of a large class of complex molecules containing amino acids. E Graham, WA 98338 253-847-1777 pork M a d Hatcher Farms 1437 D St. SW Ephrata, WA 98823 509-237-1351 poularde, pigeon, rabbit Stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98823 509-237-1351 poularde, pigeon, rabbit Stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98823 509-237-1351 poularde, pigeon, rabbit Stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98823 509-237-1351 poularde, pigeon, rabbit Stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98823 509-237-1351 poularde, pigeon, rabbit Stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98823 509-237-1351 poularde, pigeon, rabbit Stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98823 509-237-1351 poularde, pigeon, rabbit Stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98823 509-237-1351 poularde, pigeon, rabbit Stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Olympia, WA 98513 360-485-2558 stokesberry Sustainable Farm 7429 85th Lane SE Purveyor Address Phone Website Products Browne Trading Company Merrill's Wharf 260 Commercial St. Portland, ME 04101 800-944-7848 brownetrading.com caviar, other seafood Taylor Shellfish Farms, Inc. Because the boiling point of water depends on pressure, it rises too—just enough to keep the water and steam temperature hovering right at, the boiling point for the higher pressure. Pass the puree through a sieve, and measure 75 g/14 cup of it for use in step 12. matzo ball soup—Jewish soup made of chicken broth and dumplings made from unleavened dough (matzo). Preheat a water bath to 80 "C/176 °F. 102 g 110mL/!/2Cup 15% ® Chum the mixture in an ice-cream machine until it freezes and t h ickens, about 30 m i n u tes. Virtually all proteins are made from a repertoire of just 22 kinds of amino acids. The pan should sit level on the surface, allow it to dissipate, or use a spoon to skim it off. If necessary, simme uncovered for a minute or two longer. • © Increase the water bath temperature IO SS C •' 131 'F. W e might flash-sear sushi, add a nice blowtorch can leave your food tasting like fuel. and continue pulsing until they are finely ground. ' The yield is the amount of food the recipe makes. Except as permitted under the U.S. Copyright Act of 1976, no part of this publication may be reproduced, distributed, or transmitted in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher. At these elevated pressures, water boils at 114 °C or 121 "C/237 °F or 250 °F, respectively. Clarified fats are melted, skimmed, and decanted to make clarified fat. MODERNIST CUISINE AT HOME V-.'vialty Markets Shop owners who specialize offer higher-quality products, hard-to-find ingredients, and more knowledgeable service. Dish towels should be used as nothing more than potholders. Be sure to read the safety tips on the next page part of the blowtorch is a powerful jet of hot gas before w in g a torch for the first time. Agar, for example, is a white powder much like gelatin, but agar has a higher melting point and is extracted from seaweed rather than from pig hides or fish bones. The rapidly falling cost of precision cooking equipment and the increasing availability of Modernist ingredients have brought this revolutionary approach to food within reach of home cooks. Home Cooking to Cook Simple, Delicious, Affordable Meals. Reserve 500 g / 5 0 0 mL/2V8 cups of the cheese water for use in the next step. myosin-muscle contraction). ?'• CD Combine in a pot, whisk until dissolved, and bring to a simmer. yuzu-aromatic, tart, Japanese citrus fruit capacity: 100-200 g Pros: ultraprecise for delicate, fussy ingredients; very portable Cons: sufficient only for hydrocolloids and spices Where to buy: online Cost: \$15-\$40 Accurate to: 1 g / 0. Approximate volume equivalents are listed for convenience U0DE9NIS7 CUISINE AT HOME only. But the tools that we've selected for this chapter we use every day because they are so versatile and produce such creative and delicious results. Cover the pans with the foil lids. But these modern ovens still vastly outperform conventional ovens in both accuracy and versatility. O Blend together the cream, raspberry puree, sugar, and salt, and then mix with the softened gelatin \*^ and milk in a pot. At step 9, add the melted gelatin mixture along with the butter. This, H. The liquid that seeps out of meat during cooking, jus gras – French for "fat juice," jus gras – French for "fat juice," jus gras refers to meat juice thickened or emulsified into a sauce by using fat rather than starch. Keep stirring to dissolve the fond as the liquid comes to a simmer. mr, Scott Duncan/Martha Stewart Living LI, Lc; 58; 59: ul. Watch or listen for the cues that the cooker has reached full pressure, and then turn the heat down to low. To reheat, remove the plastic, and warm in a Spread one quarter of the mushroom base onto a round silicone mat to form an even layer2 m m / 1 / ^ in thick. Grasso Ave. Alternatively, return the pressure, and then turn the heat down to low. continue cooking. yeast—single-cell fungus used in fermenting wine and in creating the gas bubbles that cause bread to rise. The local food movement emphasizes eating food grown.. The cheese sauce will keep for 1 week when refrigerated and for up to 2 months when frozen. mr, LI; 212: ur. Use a ring cutter or a spoon to scoop a small divot from each egg white. piquillo pepper-firm, cone-shaped red pepper from Spain. Remove and discard the cinnamon stick. This is the omelet base. Safety tips for pressure-cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels and Fluid Gels Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels are hardly new to cooking: see page 33 SAUCES 97 HOW TO Make Gels are hardly new to cooking: see page 33 SAUCE Cheese: 550 g / 8 cups of sharp cheddar, finelygrated Fold in: broccoli puree or cubes of roasted apples 1 Combine the cauliflower and water in a pot. We're strong believers in using every available tool and ingredient to make eating a richer, more diverse, and more stimulating experience. Varies in flavor from dry to sweet and often with a fruitier flavor than a similar vermouth or sherry. 
Strain the broth into a large pot through a fine sieve lined with cheesecloth. ijiii.w!\*\*! !>' - iiw.iiW-.yi meltingpoint: 25 c^ -. Once you get the hang of using them, you can make a terrific sauce from almost any flavorful liquid that complements your dish. The neutral oils listed in the table below have varied characteristics, but several may be suitable for a particular application. \* Vanilla and its extract Vanilla is the oily residue that coats the tiny seeds of a tropical orchid grown in Tahiti, Madagascar, the Seychelles, and Mexico. The beans should turn translucent and become fudge-like. Beta-carotene is the most abundant of the carotenes. If no scaling percentage is given for an ingredient, multiply the volume or number of pieces listed by the scaling factor from step 2. Adria, F., SolerJ., and Adria, A. Insert thefirstcarbon dioxide cartridge, while holding the siphon upright. combi oven a pieces listed by the scaling factor from step 2. Adria, F., SolerJ., and Adria, A. Insert thefirstcarbon dioxide cartridge, while holding the siphon upright. into the cooking chamber. TIPS FOR Better Baking Given the many factors that influence baking, it seems a small wonder that any cook ever achieves consistent results. You don't smell them while you're cooking because they stay in the food instead of vaporizing into the air. But modern, professionitetyle stoves like the gas unit shown here (generously provided by the Viking company for «\$ to cut in half) have refined the details in ways that both improve energy efficiency and make it easier to get consistent resu Its. see the previous page © Bring to a simmer. MODERNIST CUISINE HOUf HOWTO Make Full-Flavored Pan Gravy Chefs often refer to the delicious brown residue that stick to your pan when you saute or panfry food as "fond." It makes a wonderful basis for sauce, such as pan gravy. Choose a lid that is oven-safe and fits snugly on the pan. MODERNIST CUISINE AT HOME Cook the raspherries sous vide for 1 hour. Meat cut into cubes for kebabs, for example, takes them with marinade or brine. galangal—variety of ginger rhizome (root). The molecules of the agent link up to form a mesh that traps water and other molecules 1 Use an accurate gram scale (see page 7) to measure the right amount of agar. We ran tests in our laboratory to calculate the energy each device required to heat a measured amount of water. Fat, cornstarch, and flour are the thickeners most commonly used in traditional cooking. 100 g 3 /a cup 67% 40 g lOg 8.8 g 2g as needed 3 yolks 27% 10mL/2tsp 7% 5tsp 5.8% y2 tsp 1.3% Mushroom Puree see page 150 Egg yolks Heavy cream Albumin powder Salt Neutral-tasting oil or cooking spray © Whisk together thoroughly to create the mushroom base. Food exposed to air typically cooks at the wet-bulb temperature for much of its cooking time. Agar is derived from seaweed and has been used for centuries in Asian cooking. 12 ' finely diced for an experienced amateur cook. mr, LI; 117; 119: ul. .""\*'•! iim.i MODERN Pat the food dry before you place it in the oil. In that version, we added a lot of additional liquid (beer!). Artisan, Ripert, E. salinity—salt concentration. Wondra was blended rather than whisked into the liquid, it was whisked for too long, or too much was added. Tsuji, S.Japanese Cooking: A Simple Art. You can simply let the cooker sit for several minutes to cool down if the food can tolerate some additional cooking (as stocks can, for example). MUSHROOM JUS VIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: USED IN: S00g/2 cups SO minutes on and 30 minutes of preparation and 30 minutes of preparation and 30 minutes unattended keeps for 5 days when refrigerated or up to 6 months when frozen easy pressure cooker, white miso Cream of Mushroom Soup (see variation on page ISO), Barley with Wild Mushrooms and Red Wine (see variation on page 331) This recipe makes an unseasoned mushroom stock if you follow it just through step 4; continue to step 8 to make a savory yet meatless jus that you can use as you would meat jus. The cream is often added too heavily, to mask the graininess of the potato. Some higher-capacity scales now display bakers' percentages as well as grams. © 1 Preheat the oven to 175 " c / 3 5 0 \*F. f Muur.-no|) blender Pros: good for grinding soft foods, pureeing, and making emulsions such as mayonnaise and vinaigrettes Cons: narrow blade area can't produce the finest purees; soups are noticeably gritty if you don't sieve them after blending. Used carelessly, a brulee. The simplest way to speed drying is to slice food (or spread purees) thinly: less than 1 cm/ 3 /a in tRick. The Cook's Illustrated, the editors of. You'll find stunning cutaways of equipment, step-by-step photos for most recipes, and ingredients measured in grams (because every serious cook should have a scale). 1%. Most commonly available canned. (D Place the yolks in a zip-top bag, remove as much air as possible from the bag by using the water-displacement method (see page 58), and seal it. Black, white, and gray varieties are less common, chawanmushi—(chawan mushi) Japanese term for savory egg custard steamed in a bowl or cup, often made with seafood. You don't need a \$2,000 setup to experience the amazing results of cooking sous vide; you can achieve similar results with a \$10 digital thermometer, a zip-top bag, and some vigilance. Pros tend to use a fine mesh or conical sieve and a tamis (or drum sieve). Anyone who has ever overcooked (or undercooked) anything in an oven knows that baking is capricious. Then remove the siphon lid, and pour out the soda or fruit. Some of tion of the overall effort. Throughout the process of his research on Modernist Cuisine, Nathan and I were engaged in numerous dialogues to discuss my work as a chef. Refrigerate the curedfishfor45 minutes, rinse it, and then grill if Alternatively, microwave them, a few at a time, on full power for 1-2 minutes. Then unscrew the siphon lid, and pour out the contents. Like sous vide water baths, they produce much more consistent results than traditional ovens do. The steam room feels much hotter to your skin because your sweat barely evaporates when the air already contains so much water vapor (enough that the room actually fogs up). Cook the egg yolks sous vide for 35 minutes. That's what surgeons do before an operation, and it is what a cook should do before an operation, and it is what surgeons do before an operation almond—short, round, slightly sweet almond from Spain that is often sold fried in oil and salted. You need three cartridges of carbon dioxide to get really good carbonation in a one-liter whipping siphon or soda siphon. Spoon the warm broccoli puree onto the plate, and garnish with the pickled apple. Not to be confused with flavored whey powder. Pour inwatertoadepthof2.5cm/l in. © Combine, and pour half of the mixture evenly over each fish fillet. Measure 500 g/500 mL/2V& cups of the cheese water for use in the next step. refrigerator.. With the LOBSTER ROLL exception of recipes (such as those in chapter 5 on Basics) that YIELD: are intended to be used as ingredients in, or accompaniments to, ^ J ~ TIME ESTIMATE: four savings (7S0g/3 \2 j cups of lobster salad) 2 hours overall, including IVi hours of preparation and 30 minutes unattended otherrecipes, recipe yields are given both as a typical number of STORAGE NOTES: servings and as the approximate weight of the final dish. Blend the whole eggs, cream, yolks, and salt thoroughly by using a whisk or immersion blender. Often baked with garlic herb butter and served as escargot. 2050 Center Ave., Suite 425 Fort Lee, N) 07024 201-585-2442 iwatani.com induction burner JB Prince 36 E. Place the egg yolks in a zip-top bag. 
Store refrigerated. Whole chickens, roasts, and other very thick items won't heat any faster than they would in a conventional oven or on a stove top. You can ignore the weights and volumes given in the recipe—just use the scaling percentages. Which is the weirder one! Although dozens of Modernist ingredients like those shown N ZORBIT M here are now available, we selected only a handful for the recipes UMAMI SUPi in this book. You can buy sustainably farmedfishand shellfish online and at specialty retailers (see page XIX for sources). Gas for the oven and broiler travels • • • • through this small pipe. And it seems certain to expand further, because this revolution is still in its infancy. Clarkson Potter, 2008. Increase the blender speed to high, and add the softened butter. The ruptured cell walls release their contents, and the juice collects in a bowl. Counterintuitive though it may seem, it's generally safest overall to cool hot food outside of your refrigerator. You can use your microwave oven to make Sichuan bok choy that is perfect—and fast. 7T\^T^ Chocolate Cream Pie Crust: Choc infuse. Ingredients originating in food science and technology, such as hydrocolloids, enzymes, and emulsifiers, are powerful tools in helping to produce in a solution of water with 10% cider vinegar (100 g of vinegar for every one liter of water) to reduce surface pathogens. Whipping siphons can be used to pressure-infuse herbs and spices into a marinade or coffee flavors into cream. Stewart, Humm, D. Very thick liquids may not receive adequate turnover. William Morrow Cookbooks, 2005. You can use them to add body to a broth, mold a sauce into an attractive shape, or even solidify a liquid such as onion milk into a block, and then shear it back into a fluid (see page 100). The Cuisine of Fredy Girardet: The 2009. Frequent overpressurization can damage this mechanism and render the cooker useless. You canfind the power output in the oven manual or marked somewhere on the oven itself. (The very label "Impressionism" was originally mean as an insult.) Similarly, James Joyce and Ernest Hemingway broke all the rules of narrative in their novels, MOD.lftJOST CUIVINE AT HOME the Bauhaus school of architecture rejected classical principles for the conceptual creations of Walter Gropius and Le Corbusier, Igor Stravinsky explored discordance in his symphonies, and Martha Graham broke with the conventions of classical ballet to help create modern dance. They are produced in much the same way as traditional refined ingredients, such as flour, yeast, sugar, and baking soda. Commercial-style ice-cream makers (top left above) like those made by Gaggia Gelatiera, Cuisinart, DeLonghi, and Lello are now available for the home albeit at relatively high prices, ranging from \$200 to \$700. Pollan, M. Forthin liquids, multiply the number of mL in the rightmost column by the number of mL in the rightmost column by the number of milliliters (mL). Fresh kiwi, pineapple, and papaya juices, for example, contain enzymes that inhibit gelatin from setting. The pan itself becomes the heat source, so the food comes up to temperature much faster than it would on a coil or gas burner. The results: Electric coil: 42% efficient Induction burner: 56% efficient Induction burner: 56% efficient Water bath, stirred and covered: 87% efficient Water bath, unstirred and covered: 87% efficient Induction burner: 56% efficient Water bath, stirred and covered: 87% efficient Induction burner: 56% efficient Water bath, stirred and covered: 87% efficient Wate Finamore, R. A little goes a long way. adductor muscle—muscle that pulls tissue closer to the middle of the body. Store the rolls, covered, in the refrigerator. (See note on the next page on uses for cheese solids.) ® Combine with the cheese water in a medium pot, stir to dissolve, and bring to a boil over high heat. render—to separate out the fat from meat by heating it slowly. Traditionally made from meat broths; today, it's often prepared from vegetable and fruit juices as well. and Ko, G. chervil—tender, parsley-like herb with a faint licorice taste; a traditional ingredient in the French fines herbes mix. 8 Add the chili flakes, and cook for a few seconds. All that has been missing is a comprehensive from the French fines herbes mix. 8 Add the chili flakes, and cook for a few seconds. All that has been missing is a comprehensive from the French fines herbes mix. 8 Add the chili flakes, and cook for a few seconds. uidebook with recipes that span all skill levels; our hope is that Modernist Cuisine at Home will help to fill that need. naan—teardrop-shaped, leavened flat bread from Northern India. They often leave slight traces of odor or the off-flavors of butane because the low-power flame can't burn off the gas fast enough. For a reci pe, see Coffee Creme Brulee on page 362. s h r i m p paste—(belacan, gapi, kapi) fermented ground shrimp sold in blocks. The local movement suggests that food grown nearby, not shipped across the country, is better for the planet. LI; 100-101; 103:1, Chris Hoover: 45; 46 Melissa Lehuta: 22-23:24: r; 25; 27: ul, uc, LI. Mix until fully blended to make the masa batter Long discussion threads about the book on the eGullet Internet forum have been viewed more than 300,000 times. " DISHES FOR THE MICROWAVE « \* 3 45 SICHUAN BOKCHOY LEVEL OF DIFFICULTY: four servings (350 g/four 10 minutes overall serve immediately easy SPECIAL REQUIREMENTS: black bean and chili paste, Shaoxing wine, Sous Vide Spiced Chili Oil (seepage 118) YIELD: TIME ESTIMATE: STORAGE NOTES: heads ofbok choy) This is such a practical and fast way to cook vegetables perfectly. 326 © Stir into the rice, and let rest for 1 minute. Time (min) Technique Ingredients Preparation Procedure cooking root vegetables beets, carrots, celery root, potatoes, turnips w hole vacuum seal, or arrange on a plate and seal with microwave-safe plastic wrap; cook medium beets for 6 minutes, and rub off the skin 3-7 cooking leafy greens bok choy, broccoli, cabbage whole place in a zip-top bag with 50 m L / V\* cup of water; alternatively, arrange in a microwave-safe dish with 2 m m / Vw in of water, and cover w i t h microwavesafe plastic wrap 2-5 cooking bulbs and fibrous vegetables artichokes, cardoon, celery, fennel, leeks, onions w hole vacuum seal 2-5 D I S H E S FOR T H E M I C R O W A V E 347 MICROWAVED BLACK COD WITH SCALLIONS AND GINGER two servings (450 g) IS minutes overall serve immediately easy YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: This recipe was adapted from Margaret Lu, the mother of Johnny Zhu, one of the development chefs at The Cooking Lab. Place the liquid works, including stock, pan juices, or dissolved fond—and sprinkle the agar into the liquid while blending with an immersion blender. Ecco, 2012. t flplC4. It is a powerful emulsifier and is very useful for making vinaigrettes and warm butter sauces. Keep the powder away from steam, and keep the liquid to be thickened or gelled cool until the agent is fully dispersed. ur, Lm; 15: ul. Mexican chorizo is commonly sold fresh. Blanch the Brussels sprout leaves for 60 seconds In boiling water, and then immediately plunge them into an ice-water bath. We hope this book will help you to bring that expertise into your home kitchen. 378 MODERNIST CUISINE AT HOME Banana Cream Pie Crust: Peanut Crust Filling: 65 g/V& cup of Pressure-Caramelized Banana Puree (see page 181), smoothed and then covered with Pressure-Infused Coffee Pastry Cream Topping: Top with frozen Blowtorch-Caramelized Bananas just before serving. essential oils widely available at herbal and essentialoil.com natural medicine shops; ask at pastry iherb.com shops, spas, aromatherapists, and lepicerle.com soap makers solegraells.com sosa.cat Organic, 100% pure, and food-grade oils are preferred. Phaidon, 2010. Add the liquid to the siphon, and tighten the lid. Baking Roasting Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for: breads, pizza; can inject steam as desired to keep dough moist until you want a crust to form Best for to keep dough moist until you want a crust steam as desired to keep dough moist until you want a crust steam as desired to keep dough moist until you want a crust steam as desired to keep temperature Best for: jerky, fruit and vegetable leathers (for a recipe, see page 129) Cooking Sous Vide Best for: cooking larger volumes of food than a water bath allows I MICROWAVE OVENS The microwave oven was invented by Percy Spencer in 1945, when he was working as an engineer at Raytheon on a radar system. Shiitake and portobello mushrooms are generally easy to find year-round, but we substitute other varieties as they come into season. 7. whey protein isolate—concentrated whey protein isolate—concentrated whey protein that has the lactose sugar removed. The Chinese ate noodles at least 3,000 years before the Italians did. VOLT ink.: Sass, L. Adria, R, SolerJ., and Adria, A. Le Bernardin Cook- Recipes from France's Magnificent Rustic Cuisine. Bake the husks, tossing them occasionally until they all turn golden brown, 15-25 minutes. Shake the siphon each time before you dispense the foam. Pressure cookers, which are ubiquitous in India and other countries, suffer in the United States from an outdated perception of their safety. crustacean—class of aquatic invertebrate, such as lobster, crab, or shrimp, having a segmented, protective shell. But they all highlight the power of the microwave oven as a precision toolforsteaming end drying. But it doesn't have to be: with little more than 25 minutes of total labor, you can use this recipe to make incrediblyflavorfuland creamy Valencia-style paella. But this approach has its place when grilling is your only option. MODERN! ISINE AT PRESSURE-COOKED DRIPPINGS YIELD: 200g/I TIME ESTIMATE: PA hours overall, including IS minutes of preparation and 1 hour unattended keeps refrigerated for 5 days or up to 6 months when frozen moderate pressure cooker, three S00 mL/16 oz canning jars, xanthangum STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: cup Why scrape the drippings from the pan to make gravy? Quick-set fluid gel: Place the hot mixture in a bowl, set the bowl in an ice-water bath, and then use an immersion blender to blend the mixture as it cools to below 30 \*C / 86 \*f and sets into a fluid gel. The "emptyTpjil t of the siphon is filled with gas, which pushes on the liquid and forces it through the valve. VII masa harina—dried, powdered dough made from a paste of lye-cured corn kernels (masa). Aftel, M. Dry vermouth 150 g 150 m L / % cup 15% Italian parsley 2.5 g 1 sprig 0.3% © Add, along with the sauteed shells, to the vegetable mixture, and stir. 8 Pour one quarter of the omelet base over the back of a spoon to flood gently over the mushroom base. Top with the scrambled-egg foam. T • n • n • . To keep things as clean as possible and reduce the risk of cross-contamination, wash small MODERNIST CUISINE AT HOME INGREDIENTS Wash produce thoroughly, especially if you plan to serve it raw. The muscle that pulls the two sides of a bivalve closed. Higher in protein and lower in carbohydrates than many grains, radiant heat—see radiative heating. kingarthurflour.com chefrubber.com sosa.cat infusions4chefs.co.uk solegraells.com Pure albumin is chefrubber.com cheesemaking.com bullcfoods.com solegraells.com infusions4chef5.co.uk msk-ingredients.com Powder or granules are preferred. Second, it disrupts crystal formation soon after it starts, No matter how you make ice cream, the finer the crystals so the ice particles remain microscopic in size. aluminum or steel pans? Fresh mozzarella, thinly sliced 150 g 1 cup 45% © Basil leaves, torn 10 g Vicup 3% Salt to taste 
 R TO MAKE AHEAD For extended storage, keep the ground cheeses. Follow steps 3-5 above to cook the bok choy. i ff T O MAKE AHEAD For extended storage, keep the ground cheese crumbles from step 8 in an airtight container. 344 Microwave at 1,100 W until hot in the center and bubbly on the sides, 5-6 minutes. Vongerichten, J.-G. Maxime Bilet XV i THE STORY OF THIS BOOK When it comes to cooking techniques, the classics are well covered. Wiley, 2008. MODERNIST CUISINE AT HOME ...;. After cooking, remove the pressure cooker from the heat, and let it cool. Preheat a water bath to 85 °C /185 °F. Herbst, S. Unsalted butter 30 g 3Tbsp 12% Shallots, minced 50 g % c u p / 2 shallots 20% Portobello mushroom gills, spooned from the cap 20 g from 1 large 8% @ Add, and cook over low heat, stirring occasionally, until the shallots are very tender, about 20 minutes. You should always start with high-quality ingredients, and then handle them property. Season with salt to taste. This chapter explains what you need to know about these essential cooking took. Let liquids sit for2-4hours. Alstep 12, add 1-2 minutes to the baking time, Take extra care when removing the parchment paper in step 13. I Juice is a natural concentrate. r||i Sear the food first, and set it on a bed of onions, aluminum foil, or some other buffer against the intense radiant heat of the coals. Marine wildlife is dwindling at an alarming pace, and conventional fish farms have developed a reputation for causing ecological harm. He showed thatst Bplets mixed within the water \vl ft citrate has the same effect and 1 The cheese sauce is s m o o t h w i t h an m You don't have to sacrifice the taste A slight variation on the cr intense cheese flavor, but it contains n o make a low-calorie, nearly fat-free recipe allows you to m a k e sandwicl no starch. Baldwin, D. Vanilla seeds 1.8 g from 1-2 pods 0.36% © Cook sous vide for 45 minutes. William Vongerichten, J.-G. seasoning—material added to food to add a desirable taste and/or odor. to 175-225 °C / 350-440 °F. Sous Vide Spiced Chili Oil 10 g see page 118 Salt to taste 10mL/2V4tsp 3.3% © Season the bok choy with the spicy sauce, chili oil, and salt. A carrot soup made with a broth of carrot juice rather than water or stock, for example, is much more flavorful. (D Place the pieces in a large (4 L/1 gal) zip-top bag. That is especially useful for our recipes because we list scaling percentages for most of them. Measure 20 g / 2 0 m L / 4 tsp of the cold apple juice in a small dish, and sprinkle the gelatin into it. Carbon is carbon. Inside a plant cell, starch is typically stored inside granules, which have a layered structure like an onion. Binds up water and thickeners better than amylose. Assouline, 2002. Industrial strength gelatins and gelatins made specifically for fish, beet or pork \*re sold by chelruhher.com. Allow any foam that appears to dissipate, or use a spoon to skim it from the surface. When the oven to preheat for about 15 minutes. Shake vigorously for 5-10 seconds\* Refrigerate the siphon for 20 minutes to let theflavorsInfuse. The raspberry syrup made in the first four steps of this recipe is optional; you can use it to adjust the consistency and sweetness of the soup. ras el hanout—North African spice blend that can include as many as 50 different ingredients. Heavy cream 90 g lOOmL/yscup 30% Salt 3g 3 Cooking spray as needed Brown butter, warm see page 119 30 g /i tsp 1% ® © (?) Coat the four pans with a thinfilm of cooking spray. For a delicious, smoky bacon taste instead, substitute bacon fat for the chicken fat. not rinse or wipe dry the implements or the container; doing so might recontaminate them. 32 o? 4. O. Work in batches if necessary; do not stack slices on top of one another. We wanted more of the potato starch into sugars, thus removing the graininess. lotus root—immature root from the lotus plant. uc, ur. honey powder—granules of spray-dried honey, available at health-food stores and Asian markets. It has been reviewed in thousands of news articles. You can also make the puree from scratch by passing fresh passion fruit pulp through a sieve. Modernist Cuisine at Home offered us the wonderful opportunity to update classic home dishes and to experiment with improvised methods that enable anyone to produce terrific results. So we aim to undercook the rice slightly, and then we put it on the stove top for a couple of minutes to perfect the texture. Piave vecchio—aged Italian cow's milk cheese. Salt 1.2% @ Season the puree, and serve it warm. and Muhlke, C. For example, 75 g of vinegar is about 75 \* 1.16 = 87 mL. Ripert, E. This is the single most common question we are asked. Butane or propylene gas These torches are found in typical creme brulee kits. Use enough oil so that you can submerge a small batch of food completely. The door, especially if it has a glass window, emits the least radiant heat of all the oven walls. Lc. Lr; 29; 32: ul, ur. mascarpone-fresh, very mild, thick cream cheese originally from the Lombardy region of Italy. Alternatively, toss a few dry wood chips onto the coals to add a very slight smoke flavor to the food. We solve that problem by adding lecithin, a heatstable emulsifier found in egg yolks and soybeans. ur. seepage 1S8 FURTHER READING IN MODERNIST You don't need tons of cream to create a silky smooth vichyssoise. As much as people love grilling, grills are hard to control. Take care not to burn the mixture. Follow steps 1-5, but pressure-cook for just 4 minutes in step 4. La Varenne's Cookery: The French Cook, The French Pastry Chef, The French Confectioner. M A P P gas—relatively clean- and hot-burning fuel gas made from methylacetylene and propadiene and ground meat of game birds, such as pheasant, duck, or grouse, for the chicken. 2011. But by trial and error you have figured out what you have to do to achieve the result you're trying to achieve the r sauce but doesn't weigh it down. They contribute noflavoror odor to the food, and they sear it quickly. B R E A K F A S T EGGS 12 Peel the omelet sheet from the mat, and transfer it to the prepared baking sheet. C 0 U N T E R T 0 P TOOLS DIGITAL THERMOMETERS Small changes in temperature can make all the difference in better than ±2.5°C/ ±4.5°F, and they take t o o long t o display cooking, so thermometers are a must. WAYS TO USE A MICROWAVE OVEN There's more to microwaving than just making popcorn and reheating leftovers. Curious Cook, curiouscook.com Keller, T. Use an immersion blender to puree the gel as it cools. Timber Press, 200S. © Season the jus generously, and serve it warm. But if you add a small amount of xanthan gum, the liquid stays creamy and cohesive. So keep an open mind; some of our most cherished notions about cooking deserve a closer look. Vichyssoise—a simple soup of potatoes, leeks, and cream—is challenging because it's so minimal. Stewart, M. Knopf, Clarkson Potter, 2011. Close the oven door, and wait a few minutes for the temperature to recover. Salt 2g \h tsp 1.3% Cooking spray as needed 
Blend thoroughly by using a whisk or immersion blender. To keep our site running, we need your help to cover our server cost (about \$400/m), a small donation will help us a lot. We always cook at gauge pressure of 1 bar /15 psi. Columbia 2007. The single most important thing you can do to eliminate foodborne illness is to practice better hygiene. Brown Butter Crust At step 4, substitute frozen chunks of brown butter (see page 119) for half of the unsalted butter. If you use a ceramic dish containing met a I, ho we ver, it will get hotperhaps hot enough to break. In step 7, for example "combine, in the main recipe except as directed in the and mix thoroughly" means to combine and mix the cooked lobster variation instructions. Steam caused the agent to clump together before it was blended into a hot liquid. First, make the crust indicated; the recipes are on page 372. One cartridge is usually sufficient for high-fat liquids. Milk frother Pros: good for dispersing a hydrocolloid or other powder; froths milk for coffee, a creamy soup, or a shake (see page 213) Cons: works only in thin liquids; too little power to blend ingredi ents fully Where to buy: kitchen-supply stores Cost: \$5-\$20 Stand mixer Pros: much faster than a whisk or spoon; attachments and speed control make it versatile enough to whip egg whites, knead bread dough, grind meat, and extrude pasta Cons: food processors often now include a dough hook, grinding plate, and whipping attachment, making them more versatile than stand mixers Where to buy: kitchen-supply stores Cost: \$200 Immersion or handheld blender Pros: inexpensive (midrange models work just as well as the expensive professional versions); useful for many small blending tasks; can blend directly into a bowl or a pot while it is heating; very good for foaming fatty or starchy liquids and for making basic emulsions such as mayonnaise and vinaigrette (see pages 108 and 117) Cons: limited motor power and small blades make them inferior to upright blenders for heavy-duty chopping or pureeing Cuisinart Smart Stick Where to buy: kitchen-supply stores Cost: \$20-\$50 Handheld whisk Pros: inexpensive and readily available; makes the large, uneven bubbles characteristic of sabayon; good for quickly mixing liquid ingredients before cooking and for mixing a batter without overworking the gluten and starch Cons: produces large droplets, so emulsions are not very stable Where to buy: kitchen-supply stores Cost: \$5-\$10 C 0 U N T E R T 0 P TOOLS fe\* #fiD 11 ICE-CREAM MAKERS Making quality ice cream, gelato, granitas, and other frozen in it, the silkier the ice cream feels on your tongue. Insta Cure #2 is different and should not be used as a substitute. — 18-20 — • ii i — in 4 short-grain Japanese rice 22 in — • mil i mn n i niMtji.ii 13-15 — 22-25 farro r i r — i i c f • i • pearl barley quinoa steel-cut oats, rinsed - i I I. Or you can mix 1 Tbsp of Clorox bleach per gallon of water (about 4 mL of bleach per liter of water) in a bucket, and

submerge your tools in itforat least two minutes. Use only plastic wrap specifically rated for microwaving. 12 Season the dish with salt and lemon juice, and serve it immediately. Mybrvold, N., Young, C, and Bilet, M. You can share photos of your results and discuss successes and challenges with our growing community of readers at our website modernistcuisiae.com. CONVENTIONAL COOKING 6EAR 35 THE HOUSEHOLD STOVE \* A heavy iron grate over each gas burner supports pans and also helps to distribute and regulate the heat. - • - i\* in i - i n . Sokolov, R. i BU'W^JP\*-..., the\*- 7 r-nr... The liquid soy lecithin called for in these recipes is available from health-food stores. Live lobsters ) Many of the recipes can be made in advance. Melissa Lehuta: 236-217; 238-240:241; LI. Continue with step 7. green papaya—unripe papaya, a popular salad ingredient in Southeast Asian cuisine. IStirC © Season with the lime juice to make a broth, and refrigerate it. Except for a few details, gas and electric stoves are very similar in construction and operation. Basic Books, 2009. This simple bit of extra effort is how restaurant chefs create either a potato purce of dried turmeric for a more vibrant color and pepperyflavor. A 2.5 cm / 1 in piece of fresh turmeric is equivalent to 10 g / 1 tsp of dried. J., The Culinary Institute of America. The Modern Cafe. Do not trim any excess dough; let it drape over the parchment, or chill briefly in the refrigerator. Simmer for 2-3 minutes. I hope this book will be approachable, useful, and inspiring to home cooks and chefs everywhere in expanding the possibilities of healthy, flavorful, and creative cooking. Shaking the container is crucial to ensure that the gas is evenly distributed. Repeated overpressurization can ruin both the flanges and the seal around the lid. Knopf, 2002. Imagine what an improvement it offered over wooden paddles and spoons. We often get the question "Isn't this book only for professionals?" The answer is no; we wrote and designed Modernist Cuisine for anybody who is passionate and curious about cooking. 0 Bake until golden brown, about 15 minutes. Counterintuitively, more oil yields less grease because it keeps the temperature high and the crust thin and less absorbent. We've marked these recipes "lightly cooked." You should not serve these foods (or raw foods) to immune-compromised people. This book focuses on cooking equipment, techniques, and recipes. ?jE| Centrifugal juicer II «« fa\* i M\*\*& How it works: A broad, Hat blade at the bottom of a spinning basket both pulverizes the food and flings it against the mesh basket. © Cook sous vide f o r i hour. lecithin—the principal emulsifier in egg yolks, also found in soybeans. T7ie French Laundry Cookbook. Soft, wobbly pure silicone molds are best for setting and easily turning out shapes, especially those made of semisoft gels. Lr; 73: ul. Optionally, refrigerate the sealed ingredients for another 12 hours to. Highway 12 Lodi, CA 95240 866-935-8423 championjuicer.com juicer Corning Tower 2, Fourth Floor 900 Chelmsford St. Lowell, MA 01851 800-492-1110 coming.com hot plates; Pyrex be Cuisinart 150 Milford Rd. East Windsor, NJ 08520 800-726-0190 cuisinart.com food processor D r u m m o n d Scientific Co. 500 Pkwy., Box 700 Broomall, PA 19008 800-523-7480 drummondsci.com calibrated pipettes Fisher Scientific 300 Industry Dr. Pittsburgh, PA 15275 800-766-7000 fishersci.com water bath Fluke C o r p. bacteria (singular bacterium)-large group of single-celled microorganisms that lack a nucleus or chlorophyll. You can skip this step and the next, but using raw yolks will cause the crust to shrink and tighten more as it bakes. (D Pour off the syrup, replace with 500 g of fresh syrup, and simmer the beans for another 30 minutes. (a) Cool for 15 minutes at room temperature. desiccant—substance, such as silica gel, that readily absorbs moisture. Best Bets for Cooking Vegetables in the Microwave Oven All of the recipes in this chapter were tested by using a 1,100 w at t m i c r o wave oven at full power, unless indicated otherwise. Whole coffee beans (French roast) 25 g yicup 5% d) Stir in, cover the pan, and allow to infuse for 5 minutes. Strain the mussels, and measure 70 g / 70 mL/V% cup of the juices for use in step 10. The friction of centrifugal force oxidizes the juice faster, damaging flavor and colon Yield is smaller than its Cham pion-style counterpart. Often used as an emulsifier in reconstructed cheese products. Expensive ingredients such as caviar or truffles are part of the repertoire but have no greater intrinsic value than other high-quality ingredients. Never use water, flour, or sugar to put out a grease fire. Maldon brand sea salt is a well-known example. Gelato Substitute peanut butter and roasted pear oil for the pistachio oil, and substitute either fresh strawberry juice or fresh Concord grape Juke far the water. © Strain through a fine sieve lined with cheesecloth to collect the liquid. Oxford University Press, 2006. 6% see page xxii © Drain through a fine sieve lined with cheesecloth to collect the liquid. Oxford University Press, 2006. 6% see page xxii © Drain through a fine sieve lined with cheesecloth to collect the liquid. Fire: How Cooking Made Us Human. SOOg/Ulb tjioipi 200 g Unusual equipment or ingredients used in the recipes, such as the Pressure-Cooked Paella del Bosco recipe on page 326. Every topic related to math and science fascinated me, so by the time I was finished with school, I had quite a collection of degrees: a Ph.D. in mathematical physics, a master's degree in economics, another master's degree in economics, another master's degree in economics, another master's degree in geophysics and space physics and space physics, a master's degree in economics, another master's degree in mathematical physics, and a bachelor's degree in geophysics and space physics and space phys often contains marsala wine or another alcohol. Spencer got the idea for the oven when he noticed that a chocolate bar in his pocket began to melt shortly after the radar was turned on. That's hot! Frying in oil can be more dangerous than other high-heat cooking methods, so you must follow some simple rules. and carefully place the mushroomstriped silicone disc into the pan. A disposable cartridge holds 8 g • • of nitrous oxide, the gas used to pressurize the siphon. 
© Cook the broth over high heat, skimming off the fat frequently, until reduced to a syrupy glaze, 45-60 minutes. PROCEDURE © Preheat a water bath to 67 "C/153 °F. 11 Use a thin-edged spatula to fold the edges of each omelet carefully over its filling. Generally, two cartridges are enough for a one-liter siphon. NEUTRAL OILS In this book, we typically refer to refined oik as "neutral oils" because they can be used for thenproperties as oils without adding flavor. A classic French "mother sauce" of roux-thickened, mildly flavored milk. The opposite corners; at the bottom by the door, are where the oven is the coolest. The Chine\*\* Kitchen; Recipes, Techniques, Ingredients, History, and Memoriesfrom Epicures. When they are available, substitute seasonal mushrooms such as criminis, morels, chanterelles, and porcinis. Cuisine. For foods that are more time-sensitive, such as risottos, run lukewarm water over the rim of the lid to depressurize the cooker quickly. © Pass the creme through a fine sieve, and serve it warm or cold. lobster mushroom-large reddish-orange fungus having a firm, dense texture. Pepin, J. Here in the Pacific Northwest, autumn is the season of mushrooms: porcinis, black trumpets, matsutake, hedgehogs, lobster mushrooms. and many others (pictured above). To see the gelling power of starch in action, allow a risotto to cool—it gels into a solid mass. Who knows what he was thinking—I was only 22—but I embraced the challenges of being a head chef. What Einstein Vibrant Traditions. Nathan's sense of fun and wonderment in discovery are ever present, and they call for us to leave our comfort zones and try something new. Continued gentle stirring then prevents lumps from forming. Place the batter, and then fold the top of the husk down to seal the package. High and low temperatures, changing pH, high salt levels, and the addition of solvents such as alcohol can all denature proteins. Arrange an ice-water bath alongside. Jacques Ptpin's Complete Techniques. A hair dryer can help get the fire going, too. Loml; 108; 110; 113: ml, mc. Coffee process the f o o d . Our favorite tamis are lab sieves. As when using a water bath to cook sous vide (see page 60), the usual approach to combi oven cooking is to set the oven temperature 1 °C / 2 °F above the target core temperature of nonaerated eggs; see the variation below. We believe it is important for every cook (whether at home or in a restaurant) to understand the basics of food safety. Mangoes & Curry Leaves: Culinary Travels Through the Great Subcontinent. C O N V E N T I O N A L C O O K I N G GEAR TIPS FOR Grilling Get that grilled flavor. Wouldn't it be nice to add some predictability to the situation? Normally when you melt cheese, ft separates into greasy clumps. Flare-ups are stWtt bursts of flame from drips of fat burning. When one borrows techniques and ideas or gains inspiration from other chefs or other sources, it should be acknowledged. Road, Mulund (East) Mumbai 400 081 Maharashtra, India (+91)22 216 33671 labline.in water bath Lenox 301 Chestnut St. E. Salt © Season the mac and cheese, and serve it immediately. matcha—Japanese green tea powder made from very high-grade tea. These gaskets don't last forever; replace them as recommended by the manufacturer. Also describes a soy sauce marinade used in Korean barbecue. of more than reheating leftovers and popping popcorn, but as our recipes COOKING GEAR in chapter 22 on Dishes for the Microwave illustrate, this technology is actually superb for steaming vegetables, drying beef into jerky, and frying herbs. SAUCES 95 REDEYE GRAVY YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: SPECIAL REQUIREMENTS: USED IN: 200 g/1 cup 45 minutes overall keeps for 5 days when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when refrigerated or up to 6 months when frozen after step 6; continue with step when refrigerated or up to 6 months when refrigerated or up to 6 mon Saute in a skillet over medium heat until the onions become Bolder and tender, about 15 minutes. These are limited by the capacity of wall sockets to 1,300 watts, but that is about as powerful as a typical gas stove. Rub or spray a thin layer of oil onto the pan. But the seal is never perfect, so the front of the oven is always cooler than the back-not only due to heat loss but also because the oven window does not absorb and reradiate heat as efficiently as the metal walls do. 84% © Boil until al dente according to the package directions, 5-6 minutes. In their convection mode, combi ovens can dehydrate, brown, and bake food with more precision than conventional tools offer. That can happen if the conversion from the weight resulted in 17.7 mL (rounded to 20 mL) in the second. Cooking in a pot or pan is thus quite imprecise. Also used in making Modernist gels. Neutral frying oil as needed © Roast the chicken wing pieces and feel until brown, about 40 minutes. No churning is required, and the grinding process works for many applications beyond producing exquisite desserts. D ® Oivide the dressed lobster meat evenly among the toasted buns. The main drawback of induction ranges has been their cost, but that has been falling rapidly. XX MODERNIST CUISINE AT HOME but that creativity builds on a solid understanding of how cooking works and a set of new tools and techniques that allow them to cook with precision and remarkable consistency. Penguin, 2008. Although some of the recipes were adapted for home cooks from Modernist Cuisine, the great majority of them are brand-new. curry leaves—(kari leaves) fresh, shiny, aromatic leaves) fresh, shiny, aromatic leaves used frequently in Indian and Sri Lankan cooking. inventiveness and expressing their ideas through food. chickpeas—(garbanzo, cecibean, Bengal gram) high-protein legume. First, it can be quite complicated; Modernist Cuisine has two lengthy chapters devoted to this topic, and that's only a beginning. Take care to keep the probe from touching the container. In most situations, the best biowtorching technique is to sweep the tip of the flame back andforthacross the surface of the food in quick and even passes. The fat coats the natural starch granules of the potato to create that creamy mouthfeel. Shallots, minced 60 g V3 CUp 20% © Stir into the mushroom mixture, and cook until tender, 8-10 minutes. If a magnet sticks well to your pan, it will work. The third and biggest problem with ovens is that they don't take humidity into account, so they give you no control over the real baking temperature of your food. Just cover the food to avoid contamination, and don't leave it out for more than four hours. These slices are perfect for cheese burgers, grilled cheese sandwiches, vegetables, apple pie, or any other dish needing a melted cheese that doesn't separate. The topping instructions here assume that you are making four 11 cm /4Vfc in tarts, but they are easily adapted to make larger pies. HIGHLIGHTS WL ess a salad, put the dressi in the bottom of the bowl, and then toss in the greens to give them a thin, even coating. Thompson, R FOAMING Whipping siphons were designed for aerating cream that is high in fait (Nitrous oxide dissolves much better in fat than in water.) But you can foam any liquid thick enough to hold bubbles. Our family had a great passion for sharing good food, and they inspired me to communicate through creative cooking. Modernists replace the style and tradition of the preindustrial era with a new aesthetic that embraces abstraction and modern technologies or ideas in order to establish a culinary path for ourselves from a young age. Davidson, A. Scribner, 2010. active dry yeast granules available at most supermarkets. Diners have expectations—some explicit, some implicit—of what sort of food is possible. V z\*J l|N«M< i 366 'ttm Vegetarian Panna Cotta Substitute a mixture of 0.8 g agar and 0.6S g xanthan gum for the gelatin. They tend to be poorly calibrated and often vary by 14 °C / 25 °F or more from their set points as the heat element switches on and off Ef\*\*-\1AJLF L rV or from high to low. I The lid locks with a bayonet-style mechanism that cinches against the sides of the cooker. it in an oil or fat before combining it with other ingredients. gelatinize—to convert starch or collagen into gelatin or a jelly-like consistency, genus—species that are closely related, and thus considered a group. A few of these ingredients are available at supermarkets, health-food stores, or brewing-supply stores. Pros: can quickly apply high crushing forces; Hide mess to dean up; little setup needed Cons: juice contains fewer pa rtides because the juicer compresses food rather than tearing it; yield depends in part on your persona I force Where to buy: kitchen-supply stores Cost:\$10-\$20 Champion-style juicer How it works: You push food down a chute onto a serrated, spinning Made. 1 f \ ^ k Transfer the mixture to an ice-cream machine, and churn it until it thickens and freezes. Add the white wine, and continue cooking until the mixture turns syrupy, about 4 minutes. As that occurs, conduc- plate of inexpensive aluminum to the bottom of tion spreads the heat throughout the pan, from the thinnest, cheapest stainless steel pan produces hot spots to cool spots. While one sheet is baking, repeat steps 5 and 6 to prepare strips of mushroom base on a second, cool silicone disc. Consumer-grade pressure cookers range in size from 4-10 L / 4-10 qt. ture across the bottom of the pan evens out, but Now put either pan on a tiny gas burner. © Blend the warm fat slowly into the jus mixture until fully homogenized. to taste VARIATIONS In the variations below, substitute the cheeses listed for the white cheddar cheese at step 2, and fold in the additions listed at step 6. Time the cooking of the yolks accordingly. As soon as the cooking pressure, reduce the heat to avoid overpressurizing it. The recipe is easily adapted to create excitingflavorvariations; we've included some of our favorites below. VARIATIONS Amaretto Pastry Cream Omit the cinnamon stick and vanilla seeds. Often used in Thai cooking but similar varieties are used internationally. Let everything drip-dry. I escaped from my room in the middle of the night, found a pot, milk, some Nesquik and a stool to climb on, but alas could find no matches. 10 Slide the cooked egg whites carefully onto individual plates. Much of what separates an advanced cook from a novice is experience in coping with these variables. Aged White Cheddar on Sourdough bread 8 slices Aged White Sourdough bread 8 slices Aged White Sourdough bread 8 slices Aged White Sourdough with Apples Sourdough bread 8 slices Aged White Sourdough bread apple, thinly Sliced 8 slices or Grilled Applesauce without mustard see page 114 120 g Vicup Jalapenos, thinly sliced 30 g 3Tbsp "Aged White Cheddar Cheese, grated 380 g 115 mL/Vicup 6cups Camembert and Gruyere on Brioche with Ham and Mushrooms BrioctW 8 slices Camembert and Gruyere Cheese Slice 8 slices Black Forest ham 8 slices Button mushrooms, sliced and sauteed 100 g Vicup Dijon mustard Fried eggs ^ a / % » f t Water Camembert cheese, rind cut off H5gg 115 14 g 190 g Gruyere cheese, grated 190 g a Sodium citrate 115 ml./Vi cup 114 cups 3'/J cups MODERNIST CUISINE AT HOME . h . It doesn't need to be expensive, just flavorful. Maple syrup (grade B preferred) 15 g ITbsp 3% © Remove the pan from the heat. The fat keeps the leather from becoming too brittle or so chewy that it sticks to your teeth. Heat streams from below, beside, and above the food being heated. You can't put your hand nearly that close to the tip of the bright blue cone in the flame without burning yourself. E? Safety tips for pressure-cooking: see page 33 Pressure-cooking: see page 33 Pressure-cooking: see page 33 Pressure-cooking the dish. Use an alcohol-tolerant gelling agent, such as agar. Culinary rules, conventions, and traditions must be understood, but they should not be allowed to hinder the development of creative new dishes. -1. William Morrow and Comixmy, 1987, McGee, H. Primal cuts are then commonly cut into more familiar steaks and portional-integral-derivative (PID) controller—automated digital controller tor accurate control of temperature, used in water baths, modern ovens, and high-end espresso machines. Fresh basil leaves Fennel seeds Saffron 2-3 threads @ Strain the stock through a sieve lined with cheesecloth. For best results, refrigerate the mixture in the siphon for 4 hours before dispensing the foam. Turn ginger, onions, and garlic into pastes without mincing. A squirt bottle filled with rendered fat, clarified butter, or neutral frying oil lets you baste the food on the grill from a safe distance. We use ours all die H|ine-and not just for creme quickest ways to sear food. Per- it doesn't because the pan is much wider than it formance drops. i i i > HI @ Place an egg yolk in each divot. Lab sieves come in many degrees offineness. Some are so fine that you can't tell they're perforated—but wait a moment, and they even sieve out fat. Larousse Gastronomiaue: The World's Greatest Books, 2005. The Omnivore's Dilemma: A Natural History of Four Meals. Excellent goals, all of them. Malic Acid CHEF RUBBER ADDITIVES ^g What it is: a naturally occurring acid JiSlflERRA AGAR fSjnOWg S««COMP«NT Derived from: fruits Used to: add extreme tartness; often Malic Acid NETWT.500gfl.llb) used with, or in place of, citric acid Where to buy: brewing-supply \* 0 d « Phosphatide J ? decant—to pour a liquid from one vessel to another, often in order to separate liquid from sediment. dry rub-sugar or seasonings rubbed into meat to improveflavorand retain water. Meyer lemon-citrus cultivar thought to be a cross between a lemon and a mandarin orange. To make a fluid gel, allow the gel to set, and then puree it in a blender until it is smooth. gum-polysaccharide derived from plants that swells when wet and can thicken or gel depending on various factors. Confit has come to mean almost any food cooked slowly in oil or fat until tender. Cover the baking sheet with plastic wrap, and refrigerate it. \_ies cost about \$15 at any kitchen-supply store. monosodium glutamate—(MSG) salt of an amino add that adds savory umami taste. Wagyubeef—(Wagyu) several cattle breeds of Japanese origin that yield highly marbled meat. Iberico, Iberian ham) Spanish dry-cured ham made from black Iberian pigs. The secret trick to successful microwaving: use the power level button. WI Albumin Powder W h a t it is: powdered egg white Derived f r o m : eggs Used to: make flavorful gels and foams 4 - » i v n K it W h e r e to buy: grocery and kitchen-supply stores GOLDEN CONS — Cost: \$7 for 142 g Agar Agar Powder i Try it in: Striped Mushroom Omelet (see page 148), Agar Ultrafrothy Milk Shake (see page 213) What it is: a naturafly occurring polysaccharide — Th\*chRau C a u Derived from: red seaweed. desiccate—to dry out completely. 
 Stir into the boiling cheese water, and reduce the heat to medium. To submerge food in boiling liquid briefly to loosen a peel, sanitize its surface, or to remove undesirable tastes or aromas. Raise the temperature to 70 °C / 1 5 8 °F to make a perfectly spherical yolk having a fudge-like consistency. Standard atmospheric pressure at set level is 14.7 psi. u\$ Savory Cheese Pie Crust: Cheese Crust Filling: 50 g/14 cup of Pressure-Caramelized Onions (see page 127), smoothed and then covered with Cheese Pastry Cream Topping: Top each tart with 10 g / 2 # Tbsp of cheese bread crumbs (see page 316), Crispy Shallots (see variation on page 353), and chopped fresh thyme just before serving. C O N V E N T I O N A L C O O K I N G GEAR HOW TO Use a Pressure Cooker farro—(emmer) ancient grain related to wheat with a dense, chewy texture, fat-soluble—molecules that dissolve in fat. Sold whole or shredded. b Front M.itier Tyson Stole: 50; 52; 56; 57: uc, ur, mc. MODERNIST CUISINE AT HOME SHIITAKE MARMALADE 300g/lcup 40 minutes overall keeps for 3 days when refrigerated or up to 1 month when frozen easy YIELD: TIME ESTIMATE: STORAGE NOTES: LEVEL OF DIFFICULTY: This condiment transforms the intense umami flavor of caramelized shiitake mushrooms into an unctuous marmalade. tartaric acid—powdered acid most often derived from grapes. Barham, P. Mac w i t h Jack and 50 g / 3 cups of sharp cheddar and 85 g/1 cup of Swiss Fold in: chunks of roasted apple and crispy bacon bits Mac with Gorgonzola and Fontina Fold in: walnuts and sauteed mushrooms Mac and Gruyere Fold in: roasted cauliflower and roasted tomatoes Mac with Gorgonzola and Fontina Fold in: walnuts and sauteed mushrooms Mac and Gruyere Fold in: chunks of roasted tomatoes Mac with Gorgonzola and Fontina Fold in: walnuts and sauteed mushrooms Mac and Gruyere Fo th Goat Gouda and Cheddar Cheeses: 142 g / 2 cups of goat Gouda and 142 g / 2 cups of goat cheddar Fold in: Pressure-Caramelized Onions (see page 127) and black olives WHILE YOU'RE AT IT Broccoli with Cheese Sauce Make a delicious side dish by substituting steamed broccoli for the pasta. Citrus fruit presses generally pair convex and concave pressing surfaces to accommodate the shapes of orange, grapefruit, lemon, and lime halves. Sugar, granulated w h i t e % tsp ViTbsp 2 Vi Tbsp 1 cup 2 tsp 3 Tbsp -Vi cup A tsp Sugar, grated palm /4tsp Finely g r o u n d spices, such as c i n n a m o n, coriander, a n d paprika 1A itsp 2'/2lsp 3 Tbsp Chili flakes \A ITbsp 5 Tbsp WW 2x'n CUps u Vanilla seeds, scraped f r o m 1 large, moist bean All-purpose flour ITbsp 4 Tbsp 3 /i cup 3% cups 0 0 wheat f l o u r 2 tsp 3 Tbsp H cup .'?'•? C 4 1 1 1 '\*jli in Phcopluuidyl Choline Cost: \$3 for 57 g SFERIFICACION tras aaocxDCxasaociQaQaa Try it in: Fruit Minestrone (see page 158), Vacuum-Infused b\*4SoW»\*CM\*\*b\*i| Celery (see page 131), PressureCaramelized Ketchup (see page 110) Liquid Soy Lecithin Sodium Citrate What it is: a salt of citric acid Derived from: soybeans Derived Where to buy: online or in health-food stores Cost: \$15 for 567 g Cost: \$6 for 5 0 g Try it in: Mac and Cheese (see page 310-313) Try it in: Home jus Cras (see page 93), Modernist Vinaigrette (see page 117) INGREDIENTS Some health-food stores and pharmacies sell malic acid nutritional supplements; these are not the same as malic acid powder and will not work in recipes. If you're not aware of a market in your area, ask around—there probably is one. Place a fine sieve lined with cheese-water in the bowl. The microwave has a poor reputation as a secondclass appliance not appropriate for "real" cooking. We accomplish the same goal by aiming a hair dryer or fan at our coals. Combine with the onion, mayonnaise, and mustard. The resulting sauce is so stable that you can even make it in the afternoon, hold it at room temperature, and then just warm it up at dinnertime. We felt that many food enthusiasts would like to be on the front lines of culinary innovation and get a chance to understand the state of the art, even if they couldn't execute every recipe. r; 185 121: Lr; 135; 139: t Tyson Stole: 184: b Melissa Lehuta: 82-83; 85; 87: ul, ur. gainoa—ancient, tiny, round grain originally cultivated by the Incas. We have extended this idea to raspberries. Drizzle the spinach butter over the top, garnish with the lemon zest, and season with salt. © Blend thoroughly by using a whisk or immersion blender. Cook the egg yolks sous vide for 45 minutes. liquid soy lecithin available at health-food stores and some soap- and candle-making suppliers iherb.com lepicerie.com modernistpantry.com Do not confuse with powdered soy lecithin or lecithin powders used for making light foams. Dessert Used to: thicken and gel liquids W h e r e t o buy: online and in grocery stores Cost: \$15 for 450 g Try it in: Onion Fluid Gel (see page 100), Vegetarian Panna Cotta (see variation on page 366) Net Wt T^di Net 4 o: 170]) Poudrc 9t Alguti 1&S&M SPICE COMP- m in Egg Whites spray dried standard type e ^ mm 99 whites O'ty •Of TEXTURAS . But the rice doesn't thicken until the cells burst open and release the sticky granules. The plastic wrap prevents a skin from forming on the gelato. Thai basil—aromatic form of basil popular in Southeast Asian cuisine with small, purplish leaves and an intense, slightly peppery flavor. © Cover with plastic wrap, and refrigerate until fully set, at least 2 hours. A foam used to top some other flavorful food may not need to be as intense. Melt and caramelize the sugar by using a cloth against the nozzle to contain any liquid, and slowly releasing die gas. If you have graph paper or a spreadsheet program, you can make a quick chart to get a handle on how the temperature in your oven fluctuates as heat leaks out the door and the thermostat turns the burner up and down. It will thicken as it cools. 
Warm the gravy over low heat. Pour one quarter of the omelet base over the back of a spatula or large spoon and onto the lines of mushroom base. The resulting brightly colored, clear syrup can also be used to garnish a light dessert or stirred into sparkling white wine for a refreshing cocktail resembling a kirroyah. Dehydrating keeps the yeast alive but dormant. Roast chicken comes out with extremely crispy skin and a succulent interior; fried eggs come out with both the yolk and white cooked perfectly. Can Protect Ourselves Against Them. Water or milk Sodium citrate 185 g 185 mL/3/4 cup 41% © Combine in a pot, whisk until dissolved, and then bring to a simmer over medium heat. The freezing process destroys the protein matrix of gelatin. Columbus Changed the Way the World Eats. But the temperature in a combi oven varies by 2-5 °C / 4 - 9 °F at temperatures this low, whereas a water bath can hold low temperatures within 1-2 °C / 2-3 "F. You can use a bowl on larger scales. The custard turns out just as smooth. SPECIAL SCALING FOR THE S O D I U M CITRATE If you are scaling the yield of this recipe up or down, you can calculate how much sodium citrate to use by weighing the liquid and the grated cheeses together, and multiplying by 2.8% of the total weight. And so the gas began filling the apartment as I pondered my next culinary venture. saturated—condition in which a substance (such as a molecule or a liquid) has combined with or dissolved into another substance as much as possible. For a more savory version, add 75 g/ 3A cup of thinly sliced smoked bacon at step 1. Light, acidic, and airy foams can contribute an additional layer of flavor. At six volumes and 2,438 pages, it wasn't an ordinary cookbook. confit—French term meaning "preserved." Meat confit has historically meant a preparation of salt-cured meat cooked and kept in fat to provide an airtight seal that helps preserve the food. 85 Gregory Rd. Mildenhall, Suffolk IP287DF United Kingdom (+44)1638 712 522 rational-ovens.co.uk Sartorius.com scales Sunpentown 14625 Clark Ave. Creativity, novelty, and invention are intrinsic to the chef's role. phospholipid—phosphorus-bearing fat; a principal component of animal cell walls. Chill the mixture over an ice bath. We like to reinterpret the dish to include seasonal fruits such as peaches, cherries, strawberries, or (as in the recipe here) raspberries. © Cook sous vide for 35 minutes. POTS AND PANS Hanging in a restaurant kitchen like trophies, comes at a price: the extra mass of metal makes gleaming copper pans are gorgeous to look at. Cover the pan with the hot net. Searing Caramelizing Melt all of the sugar evenly before it begins to brown, otherwise you'll end up with burnt areas and spots of barely caramelized sugar. ® Cook the yolks sous vide for 45 minutes. calibrate to check the performance of a piece of equipment, such as a thermometer or oven, against a known standard so that it may be adjusted to compensate for its inaccuracies. aerolatte—brand name of a battery-powered, handheld whipping tool often used to froth milk, agar—(agar agar) clear, tasteless gelling agent derived from seaweed. The sauce most often includes plenty of pepper and the added tang of vinegar and/or dried mango skins. Celery, thinly sliced 100 g V/i cups . and Mikanowski, P. »n.'i.niii r.-i i^iiHijii I - ^iinnn»ri i III n.n ii.m i-i i n . Wagyu beef has become synonymous with prized Japanese Kobe beef. ^ IP« VARIATION: Caramelized Onions (see page 127) and 10 g / 2 Tbsp of Pressure-Cooked Garlic Confit (see page 126) before step 9. Prospect Books, 2006. crown—cut of poultry that includes the breasts, rib cage, and wings. Lr; 61-62; 64: b; Position indicators: t = top, m = middle, • o c>"s a n d E n d p a p e r s Melissa Lehuta: front cover, front 65: ur. fructose—sugar that is about 50% sweeter than sucrose (table sugar). water in a zip-top bag. Clarkson Potter, 2009. Momofuku. pathogen—disease-causing agent, typically a bacteria, protist, or virus, phd—Vietnamese beef and rice noodle soup. On the other hand, some kinds of conventional cooking gear are more useful than commonly appreciated. Any food particles stuck in the seal can cause it to leak steam, so check and clean the gasket regularly. Write down both the temperature you set and the true temperature shown on the thermometer. © Heal in a small pan to 190 \*C/374 t T. You can crisp food in a microwave oven with little fear of burning it. TROUBLESHOOTING TIP: If You See This, Stop If the fat and liquid start to separate (in other words, the emulsion breaks), bring the mixture to a full boil, and then continue processing with the immersion blender. Even food that arrives to the kitchen clean can become contaminated by pathogens that have been carried into the kitchen on other food, the bottom of a shoe, or other sources. Spray a thin coat of cooking spray over the bottom of a shoe, or other sources. Reggiano, finely grated 50 g VA cup 100%; 86^C/187°F 90 ^094"^ rigid rigid rubbery dry; greening increases solid brittle and rubbery solid very brittle and rubbery solid very brittle and rubbery powdery; a lot of greening; very firm slightly dry; greening begins B R E A K F A S T. Noma: Time and Place in Nordic Vongerichten, M. We discovered, however, that it works just as well to use a pressure cooker and to add all the water at once; the pressure cooker eliminates the need to stir. The oven door contains multiple layers of glass and over\* lapping panels of insulation ID prevent as much heat loss as possible. Makrud lime leaves—(kaffir) aromatic leaves of a thorny bush. 312 MODERNIST CUISINE AT HOME Spread the pasta into a single layer on the chilled baking sheet, and allow it to cool, uncovered, for 5 minutes. "y Calculate the scaling factor by dividing the number of servings (or grams) you want to • make by the recipe yield. The pan should sit level on the oven rack; use folded pieces of aluminum foil as shims, if needed, to ensure that the omelet is flat and cooks evenly. There's nothing alien about sodium citrate: it is simply a salt made with citric acid from the bag by using the water-displacement method (see page 58), and seal it. Brands such as Kikkoman Aji-Mirin are meant for cooking and not drinking and can contain 40%-50% sugar as well as corn syrup and salt. Ten Speed Press, 2003. granita—flavored ice similar to sorbet but with large ice crystals that form as a result of low sugar and dissolved solids content, green mango—tart, firm mango picked before it has ripened. Although induction stoves may lack the sexiness offire, they are far more efficient. Just as using a sharp knife requires careful handling, so does other equipment in this book. Spanish chorizo is often smoked or cured. Lie 194; 195: ul, uc, ur, b; 196-200; 201: ul, ml. We use ours to puree savory items (for example, to make pea soup, as shown below). heat—transfer of energy due to a difference in temperature. hard water—water containing particular dissolved ions, such as magnesium or calcium salts. sumac—dried fruit of the sumac shrub. © Stir in the warm cheese sauce, and fold in any accompaniments you wist to add (see the variations below). My grandfather was a gourmand par excellence who regaled us with stories of his experiences of great restaurants, secret wine cellars, and obscure chocolatiers. Ten Speed Press, 2011., To delay oxidation, add 0.1%-1% of ascorbic acid (vitamin O, citric acid, malic acid, or tartaric acid, or t boils in less than five minutes on an induction cook top, compared with 8-10 minutes on gas or electric stoves. The Babbo Cookbook. - Ill - , , 28-30 20 4 w r r w w u . Avoid flavored or sweetened whey protein powders or pure powdered whey. Add the gelatin to the milk or cream while the liquid is cold, and then melt it over medium heat. Use baking soda, a damp towel, or a fire extinguisher specifically designed for grease fires to suffocate a fire. 98 MODERNIST CUISINE AT HOME Bring the mixture to a boil, and stir until the agar dissolves completely. Digital thermometers that are off by more than 2 ' c / 4 r should be adjusted by a professional. There's a whole other category of ingredients that we think chefs could add to their pantry. 'rff.- Brown Vegetable Stock wk. Looking back at those early days, I cringe at some of my interpretations of gastronomy. Feta on Potato Bread with Vegetable Confit Potato bread 8 slices Feta Cheese Slice 8 slices Mediterranean Vegetable Confit 120 g Vicup see variation on page 126 Basil 8-12 leaves Cheese Sli Water 38 mL/ 2y2Tbsp Sodium citrate Feta cheese, crumbled "g 380 g > 7 cups Goat Cheese on Baguette with Tomato Confit and Basil Baguette, split in half and cut into segments 8 slices Tomato Confit and Basil Baguette, split in half and cut into segments 8 slices 8-12 leaves Goat Cheese Slice: Water 38 g Sodium citrate 11 g 380 g Bucheron goat cheese, rind cut off, crumbled 38 mL/ 2V2Tbsp 3 cups Stilton on Walnut bread 8 slices Stilton on Walnut bread 8 slices Stilton Cheese. 13% © Place the clams, wine, and shallots in a heat-safe plastic bag. The liquid became gummy after thickening it with Wondra. Mushroom Jus or water see page 91 165 g 165mL/ 3 /i cup 66% (D Stir in, increase to medium heat, and simmer for 1 minute. It seems natural, and nearly philanthropic, that Nathan's next step has been to write a version that is accessible for the home cook. Fancier rolls detract from the lobster. VARIATION: Egg-Yolk Fluid Gel Vacuum seal 150 g/10 Tbsp of egg yolks (about 10 yolks), and then cook them sous vide In a 80\*C/176'F bath for 35 minutes. There is too much liquid in this cooker. foam—the bubbles that compose a frothy mass. We need your help to maintenance this website. lactic acid—the acid found in sour milk, yogurt, cheese, and many other dairy foods. You just need a deep pot Choose an appropriate frying oil (see page xxii). Gas grills offer more control over the intensity of heat than coals do— but because we use the grill only for fast searing, our grill is always turned to high. Our conversations culminated with a more-thangracious invitation to dinner at his test kitchen just outside Seattle after the book was published. That is why we stir the rice as it cooks: to break open the cells and release the starch into the cooking liquid, thereby thickening it. Add more butter or oil as needed. How firmly it is packed, how rounding was done to get to the nearest c o m m o n fraction—these factors and others routinely t h r o w off volume measurements by up t o 15%, enough t o diminish the quality of some recipes. The Whole Beast Nose to Tail Boulud, D. Whole milk 60 g 60mL//4cup 30% Salt 4g 1 tsp 2% (D Place the mixture in a zip-top bag, remove as much air as possible from the bag by using the water-displacement method (see page 58), and seal it. Commonly skewered and grilled like yakitori. To soften the gelatin, mix it into an additional 20 g / 2 0 mL/IV^Tbsp of cold cream or milk, and then warm the mixture over low heat until the gelatin melts completely. TEN P R I N C I P L E S OF Modernist Cuisine In 1972, the Cault-Millau restaurant guide published "The Ten Commandments of Nouvelle Cuisine" to both champion and explain the new style of cooking. Pimenton dulce (smoked, 7 g sweet paprika) ITbsp Thyme leaves 1 Tbsp 2g Saffron threads (optional), cut in half and warmed see page 293 200 g Lemon zest, finely grated to taste © Season. A pan I hat is too thin allows heat to flow directly from the burner through the pan and into the food before it spreads much to the sides. Strawberry juice for the water, Wld substitute raw macada m ia batter and raw macadamia ON for the pistachio butter and pistachio oil.

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