THE **CHARLIE CART** PROJECT

A KITCHEN IN A CLASSROOM?

Three hands-on food education programs show how it's done.

THREE MORE SUCCESS STORIES

"WHEN I ASKED MY SON WHAT SPECIAL DISH HE WANTED FOR HIS BIRTHDAY HE REQUESTED THE SALAD WITH ROASTED BRUSSELS SPROUTS HE'D MADE IN COOKING CLASS. WHO CAN ARGUE WITH THAT?"

—Parent, who also happens to be a classroom teacher

Charlie Carts in Schools: A Perfect Pairing

The Charlie Cart Project is a Berkeley, California-based non-profit offering an all-in-one program for food and nutrition education, centered on a modern, compact mobile kitchen. Committed to both children's health and food system reform, Charlie Cart supports its network with: system-wide training; a cooking curriculum that connects the dots between food, health, and the environment; and, peer-to-peer support for Charlie Cart educators around the country.

The Charlie Cart Project was originally envisioned for schools as a means for children to cook and taste fresh food and experience the joy of eating what they prepare. The program has since been adopted in a wide variety of community organizations, such as food banks and libraries, many of which partner with schools to bring food education to the children in their community. Schools are a key setting to reach large numbers of children consistently, making them a prime place for sustained food education programs. Many of these programs lack affordable, accessible, and sustainable strategies to address barriers to hands-on cooking instruction in schools. The Charlie Cart Project is designed to remedy all that.

The three programs featured here are supported by school communities. They are championed by educators motivated to meet students' hunger for knowledge, to share their enthusiasm for food, and to feed children well. These stories shed light on how different schools use their Charlie Cart or Carts (many districts have more than one), highlighting unique features that respond to demographics, geography and the interests, expertise, and passions of the educators leading these cooking classes. But first, some background on school food to set the stage for why these programs are so important.

School Food: A Brief History

The federal government got into the business of providing school lunch when President Truman signed the National School Lunch Act in 1946. The push for school lunch had come during the Great Depression, when children were hungry and farmers had surplus crops to sell. In the 1960s, school breakfast was added, since a morning meal was considered key to learning and some children—due to low family income, long travel times, or working before school—weren't getting one at home.

In the decades since then, school food morphed from a modest hot meal with readily recognizable ingredients to a profit center for fast-food outlets serving highly processed foods and sugary, high-calorie sodas.

Diet-related diseases in children—such as obesity and Type 2 diabetes—began to soar. School children's nutrition is tied to what's commonly called the Farm Bill—a package of legislation that oversees a wide array of food and agriculture programs, including school meals. Federal agricultural subsidies for farmers support the production of so-called commodity crops, dairy, and livestock. These are often converted into refined grains, high-fat and high-sodium processed foods, and high-calorie juices and soft drinks.

In the late 1990s the Farm to School movement launched out of concern for what kids were being fed in school cafeterias. Farm to School encourages schools to buy and feature locally produced, farm-fresh food, and to increase food and nutrition education to improve children's health, strengthen family farms, and cultivate vibrant communities.

In 2010, Congress passed the Healthy, Hunger-Free Kids Act, championed by former First Lady Michelle Obama. The act led school cafeterias to serve more fruits, vegetables, and whole grains and less salt, sugar, and unhealthy fats. The legislation was also the first to directly support Farm to School through the U.S. Department of Agriculture Farm to School Grant Program. Today, Farm to School programs incorporate nutrition-based curriculum and provide students with experiential learning opportunities, such as garden-based instruction, cooking classes, and farm visits.

In 2024 the Department of Agriculture, which is responsible for setting nutritional guidelines for the program, finalized long-anticipated changes to school food standards, including first-ever limits on added sugar and a scaled back plan to reduce salt.

Although far from perfect (cafeterias still serve plenty of processed food) and despite some subsequent administration setbacks, school lunches are arguably much healthier today than they were prior to 2010, and the food education programs that have been introduced alongside these changes support their success.

Making a case for food education

Food education is a critical component of a well-rounded education, and vital for the success of any changes to school meal programs. Hands-on cooking lessons equip students with the knowledge and skills to make informed decisions about what they eat. This leads to better health outcomes, lifelong behavior change, and a more sustainable future.

Learning about healthy eating is recognized as an effective prevention for children suffering from or at risk of diet-related diseases, including malnutrition and obesity. Despite clear evidence that children need upward of 40 hours of nutrition education per year to support healthy eating habits, most receive less than eight hours of food education a year at school.

Teaching nutrition in schools reinforces efforts to address food insecurity, by increasing openness to new foods and flavors, and equipping children with the information they need to select and prepare fresh foods. Hands-on cooking programs support the development of confidence and self-reliance and contribute to the creation of more equitable food systems.

That's not all. Cooking and eating bring all types of people together through a communal, nourishing, learning activity. At a time when the United States is deeply divided, the opportunity to participate in something all of us have in common and can enjoy together is unique, and more important than ever.

Hands-on Cooking harnesses the power of experiential learning to build confidence and collaboration, foster curiosity around new foods, and bridge cultures. In terms of academics, cooking is the real world application of math, science and literacy, rolled into one. There is no better common ground for students to gain such a depth and variety of foundational skills.

—Carolyn Federman, Executive Director, The Charlie Cart Project

Why Hands-on Cooking?

- **Hands-on cooking is powerful experiential learning.**
- **Hands-on cooking builds confidence and collaboration.**
- **Food education fosters curiosity and openness to new foods.**
- **Food Education empowers youth to make healthy decisions.**
- **Food Education is a bridge between cultures and through history.**
- **Cooking is the real world application of math, science & literacy.**
- **Cooking is a life skill.**

Words to Describe TASTE

Acidic Bitter
Bittersweet Briny
Citrusy Cooling
Earthy Fiery Fresh
Fruity Herbal
Honeyed Nutty
Rich Sharp Sour
Spicy Sweet Tangy
Tart Woody Zesty

Words to Describe TEXTURE

Airy Buttery Chewy
Creamy Crispy
Crumbly Crunchy
Crusty Delicate
Doughy Fizzy Flaky
Fluffy Gooey Hearty
Juicy Silky Sticky
Smooth Succulent
Tender Velvety

U.S. School Food by the Numbers

4.7 billion school lunches served in fiscal year 2023

$17.2 billion cost of the National School Lunch Program in fiscal year 2023

2.4 billion school breakfasts served in fiscal year 2023

$5.2 billion cost of the School Breakfast Program in fiscal year 2023

U.S. Schools by the Numbers

95,842 public schools in the U.S. (83% of all schools)

49.6 million students enrolled in U.S. public schools

About half of all public schools are Title 1 schools, which means they receive additional federal funding because they serve numerous low-income families.

Charlie Cart by the Numbers

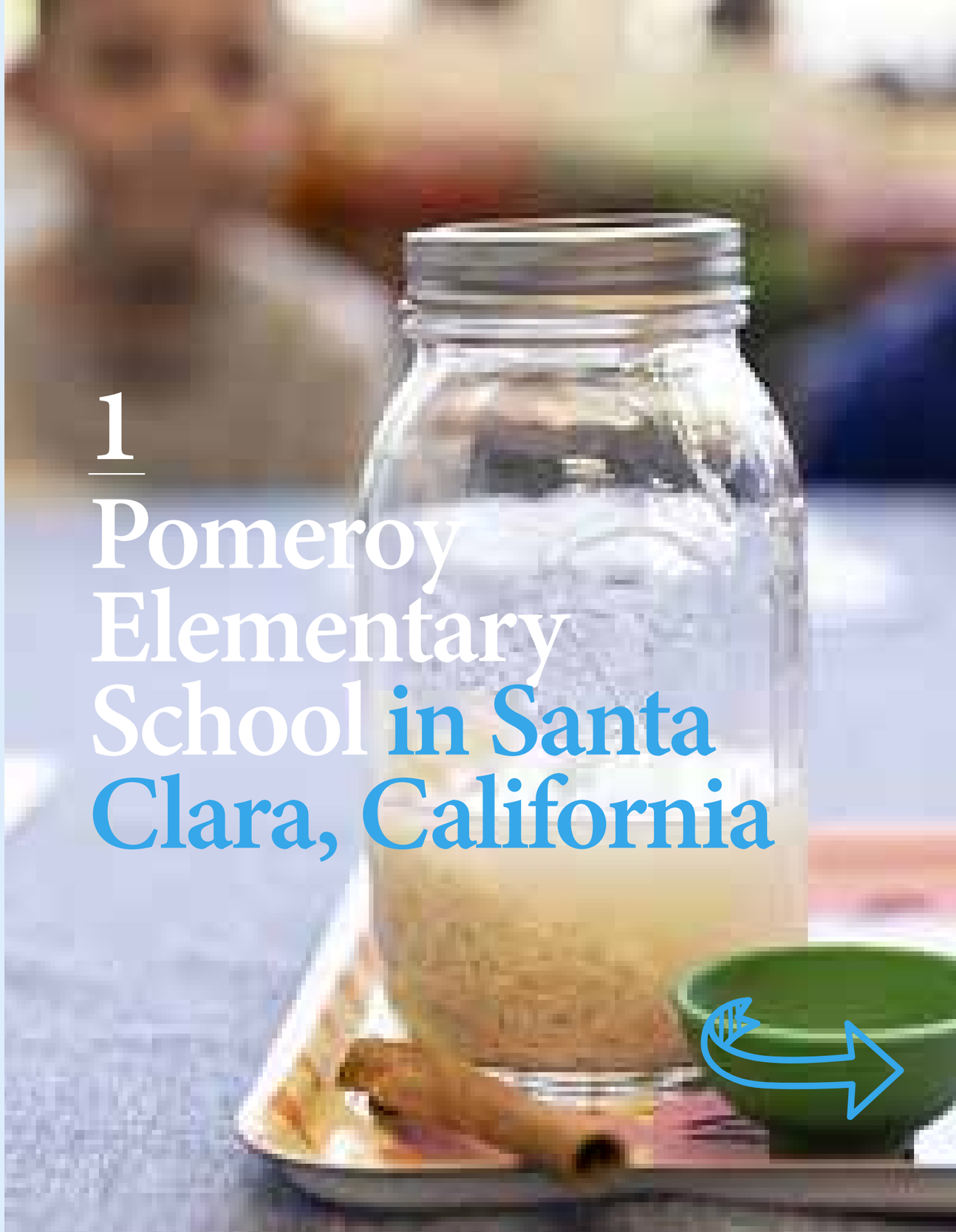
600 Charlie Carts (and counting) in **47 states**

Schools are our biggest fans

Half of all Charlie Carts around the country are in public schools

How do public schools use these kitchens on wheels? Let's count the ways:

- Classroom cooking education
- After-school clubs & activities
- Taste-testing stations
- Alongside school gardening programs
- Evening & weekend family cooking classes
- Holiday & cultural celebrations
- Seasonal activities
- Special events



1 Pomeroy Elementary School in Santa Clara, California

A cooking and gardening program in Santa Clara lifts up the whole school community

On a warm, sunny fall day in Santa Clara, California, a group of kindergarten and first-grade students are lined up outside a creative classroom, known as the Makerspace, waiting to attend their first school cooking class.

The sense of excitement and curiosity is palpable, as they playfully peek around each other, eager to see what might be in store for them inside.

Steam rises from a pot of fresh corn cooking on a Charlie Cart, a compact mobile kitchen designed to wheel into the classroom and bring hands-on cooking to kids everywhere. There's a familiar scent in the air: Is it popcorn? A cleanup station is ready for busy little hands.

When each student reaches their seat, they're greeted by trays in cheery primary colors. Each tray has ingredients for today's lesson in equally colorful little bowls and plates. And the table holds a separate small cutting board for every child. Coming soon: a yellow corn cob with juicy kernels.

They take it all in. What are they making today? What job will they get to do? And what's that red powder in the orange bowl? They cannot wait to hear what's next.

Welcome to the world of cooking in schools with a kitchen on wheels.

Over the course of an hour, students measure ingredients, expand their culinary vocabulary, and observe what chemical transformations take place when different foods interact.

This is a lesson on flavor, and their taste buds are getting a workout! One at a time, ingredient bowls are politely passed around the table. Students are encouraged to squeeze a wedge of lime juice over their corn. They then take a bite and describe what they discover—tart, sour, tangy, sweet.

A pinch of salt is added, and they taste again. Who knew how much salt can brighten food? Finally, chili powder is added in judicious dabs. They take a nibble. It's a party on their palate.

Their senses fully engaged, there's also time to learn about corn: how it grows, its importance in history and culture. Along the way, they practice basic cooking skills, such as how to use a knife safely, and also soft skills, like taking turns. Oh, and they have a ton of fun in the process.

School cooking and gardening instructor Audrey Hinton is a quadruple threat. She's a former high school teacher, an avid home cook and gardener, and she lives within walking distance of

Pomeroy Elementary in Santa Clara, California, the school that all three of her children attended. It's the same school where, two days a week, she sings the praises of fresh produce to children from transitional kindergarten through fifth grade. Ms. Hinton began as a volunteer in one of her kids' classrooms and essentially created her paid position. It started in the 2020-21 school year and expanded to include every class at the 300-student school. Each grade has cooking or gardening once a month.

Pomeroy Elementary is a Title 1 school—a federal education program that supports low-income students—in the heart of California's affluent Silicon Valley, an area once so filled with thriving fruit orchards it was called the Valley of Heart's Delight. In a nod to that agricultural history, a short distance from Pomeroy Elementary, is the Santa Clara Unified School District farm—located on a middle school campus. It produces hundreds of thousands of pounds of fruits and vegetables for school district cafeterias. The site includes a student-run community farm stand and hosts interactive field trips for K-12 classes.

Pomeroy has its own carefully tended edible garden. The school features several mature fruit trees, including a grafted stone fruit beauty that bears peaches, plums, nectarines, and apricots. The garden also has a Three Sisters corner (corn, beans, squash), along with robust greens, fragrant herbs, and edible flowers like borage. They will all find their way into cooking and gardening classes, and students' mouths.

One third of the student body at Pomeroy are English language learners; in some classes there are kids with no or very little spoken English ability. The children come from all over the globe: Colombia, India, Kazakhstan, Korea, Mexico, and Ukraine. Some 25 languages are spoken in the school: Spanish, of course, but also Indian dialects, including Hindi, Urdu, and Tamil. There's also Russian, Tagalog, and Mandarin. It's a veritable United Nations.

And one key way all these children from diverse backgrounds connect—through preparing and sharing food.

"Over time I notice that students are more curious about trying new things. Students can be resistant or adamant that they don't like a certain food at first, but they do become braver and are more likely to taste an unfamiliar food," says Ms. Hinton. "Students like seeing the 'building blocks' of a recipe, to understand all the flavors that go into it. One of the most gratifying behavioral changes I see is the increase in student confidence: They are proud of their skills and eager to help each other. Most of all, they approach a dish with an open mind and know that they can make small changes or slightly modify the end result to fit their tastes."

Cooking classes are based around a Charlie Cart and take place in the school's Makerspace. The

Pomeroy Elementary School Cooking & Gardening Program

Where
Santa Clara, California

How
Seven Charlie Carts donated to the Santa Clara Unified School District;
Program funding from the Santa Clara Valley Open Space Authority

Program Champions
Audrey Hinton, garden & cooking instructor, Pomeroy Elementary School;
Principal, classroom teachers, and PTA at Pomeroy Elementary School
Santa Clara Unified School District

Partners
RedLine Solutions

Watch
A video of the garden-to-table program at Pomeroy, what the principal, Kevin Keegan, calls "the heart of our school." https://www.youtube.com/watch?v=3RImu2OLT7Y

vibrant, inviting place is designed for tinkering among aspiring chefs, engineers, and artists. It's a student-centered room where discovery, exploration, and creativity are encouraged through multiple interactive activities.

On two site visits, Ms. Hinton's teaching chops are on continual display: She's comfortable pitching a lesson that will appeal to a small, special academic instruction class of young ones, and she's just as savvy engaging a class of 24 opinionated fourth-graders who readily don their budding chef mantle.

Ms. Hinton uses Charlie Cart recipes and curriculum, adapting and modifying as needed—such as adding notes like "stop here" for classroom flow. She gives these resources high marks on everything from explanations to timing and says that non-teachers could easily pick up, read, and follow the instructions.

Her overarching message to her students: Explore ingredients, try new foods, learn new skills, be adventurous, and talk like a chef about tastes, textures, and techniques. Her students, who clearly adore her, respond eagerly to the tasks around the dish of the day. "They also learn a lot of soft skills in this class: teamwork, cooperation, patience, respect, courtesy, and expressing everyday kindnesses, such as 'please' and 'thank you,'" she says. "This is a happy space for students and teachers. Kids blossom here."

A simple lesson elicits an enthusiastic response

September brings the newest kids to cooking. Catering to her youngest students, "Ms. Audrey," as the kids call her, chooses an early lesson designed to get kindergarten and first-graders excited about tasting unfamiliar ingredients and learning new skills. The recipe of the day is Corn on the Cob with Chile and Lime. It's a simple dish—just four ingredients (fresh corn, kosher salt, ancho chile powder, and limes) with loads of teachable moments.

Ms. Hinton covers four kinds of taste: salty, sour, spicy, sweet. She links the corn to the garden by showing a cornstalk and discussing the different parts of the plant. And she introduces the concept of fresh and dried corn kernels. She also adds popcorn as an additional (and perhaps more familiar) tasting and textural experience. Fresh corn is cooked on the induction cook top that comes with the cart. Each table has a brightly hued tray with ingredients in small bowls, and every student has a kid-sized plastic cutting board at their table.

There are all-important fine motor techniques in this special-education class: rubbing lime, squeezing lime, mixing flavors, dabbing with fingers. There's a discussion and demonstration of what a pinch, a sprinkle, and a scoop look like. Students are encouraged to try ingredients on their own and then combine them to see what their palate prefers. Amari takes a big bite of the lime and declares it delicious. Javier enjoys the trifecta of salt, chile, and lime slathered all over his corn. Comments range from "too spicy" and "a bit sour" to "Can I have some more?" and "It's just so yummy."

The vibe in the classroom is calm, engaged, respectful, helpful, and, yes, educational.

Don't yuck my yum!

Some reluctant participants seem skeptical about what's on the table. No matter. Everyone is encouraged to at least try an ingredient once. In Ms. Hinton's class it's what's called a "no-thank-you bite" (some call it a "polite bite"). Students are encouraged not to "yuck on someone else's yum." Ms. Hinton knows it can take time for kids to warm up to vegetables; she has witnessed the power of positive peer pressure: Students encourage each other to take a chance on something new. It works. "Try it, you might like it," says one classmate to another. The student does. It's a hit.

After the corn is devoured, it's time to clean up. As often as possible, washing up is integrated into the class. An orderly line forms: Students scrape their metal plates, which are then dipped in hot soapy water (heated via a small kettle) in a plastic tub, rinsed, and then dipped in a third tub that contains vinegar for additional sanitation. The small cloths pinned to a drying rack are diligently engaged to dry dishes. The cleaning station was funded through Donors Choose, a nonprofit platform for teachers seeking support from individual donors for public school classroom needs.

Always the classroom teacher, after the cooking, eating, and cleaning is over Ms. Hinton goes back to a handout to reinforce vocabulary about the parts of corn and different flavors. She asks the class for a show of hands: Could you make this at home? Show me your sour face. She takes a vote: Who liked what and why?

As they line up to leave, Sofia says "Where are our recipes?" She picks up the pile and carefully distributes

them to her classmates. Extra corn is bagged to take home. Any leftovers are put on the lunch table and get eaten fast.

Ms. Hinton takes a moment to appreciate how the class went—round one is dubbed a success—and then pivots to prepping for the next group of student chefs headed to the Makerspace within the hour.

Sustainable produce, sustainable program

Ms. Hinton doesn't have to think hard when asked to name her favorite lesson: It's cooking kale with fourth-graders—a lesson from the Charlie Cart curriculum. They sample a leaf and are so unimpressed, she says. "They layer on flavor—lemon juice, salt, and oil—and the kale changes in taste and texture," she says. "When it's cooked with garlic, placed on top of a hunk of toast, and lightly coated with Parmesan cheese, it completely wins them over. That might seem like a weird thing for 9-year-olds who are trying kale for the first time, but it's true."

She engages her students from the get-go. "We kick it up a notch in fourth grade; we're going to think and talk like chefs about taste and texture," Ms. Hinton tells her class. "We're going to take raw ingredients and completely change them through techniques, including cooking. Put on your imaginary chef's hat and think like an artist."

Ms. Hinton sets the class up science experiment-style: In a handout, students are asked to predict flavors and then write their observations after tasting. A separate sheet includes a list of more than 20 words to describe taste and, on the reverse side, another 20 to describe texture, each complete with definitions. The kids get busy. Some call kale bumpy and without any seasoning describe it as bitter, and with lemon as tart.

The class explores cooking fundamentals: acid, fat, salt, and heat. They put a drop of oil on their skin and another on their tongue and are asked to describe the feel and flavor. Smooth, silky, creamy all make an appearance. Acid molecules add tang. Salt brightens the taste. "I feel that in the back of my throat," says Emily. "It's kind of spiky." Says Yaritza, "Kale tastes earthy when it's raw and plain—like it's come right out of the garden." It's chewy and bitter, but then lemon adds a sour element and softens the texture," notes another. Once all the ingredients are added and the kale is cooked, Dominic

calls it “rich, warm, good.” Emily summarizes the transformation this way: “It just gives more of everything. I can taste it all and it’s awesome.”

These fourth-graders are seasoned cooking class attendees. They are clearly comfortable using kitchen tools and sharing their thoughts on food. “Cooking makes kids feel confident and capable and gives them a sense of responsibility: learning to correctly handle and use knives, watching food change as it cooks, cleaning up after themselves,” says Ms. Hinton. “They’re often glowing by the end. The message they get: ‘I trust you, you can do this, you did it yourself.’ We give students life skills that they can use long after they leave elementary school.”

The benefits of hands-on culinary education

Anecdotally, there’s proof the program makes a difference. Students often ask for more: Who can say no to a kid asking for more vegetables? The school’s librarian says she gets so many requests for cookbooks now she’s buying more for the library’s collection. And students clamor to re-create what they’ve made at school with their families at home—including sourdough flapjacks, part of a lesson on the Gold Rush. (Parents have been known to pop by asking Ms. Hinton if she has sourdough starter to spare.) She is also participating in a Charlie Cart Project evaluation to gather more data on the benefits of hands-on food education.

One second-grader at Pomeroy requested the Brussels Sprouts & Seed Salad for his birthday party. “The sprouts are roasted, which

releases their sweetness, and pomegranate seeds add crunch and color,” Ms. Hinton explains. “That’s a glorious lesson: The kids end up with pink freckles and stained hands and they are happy as clams.”

Parents also report that their kids are more interested in meal prep and help choose food while shopping. They also request specific recipes and offer to help make dishes. Their adventurousness grows. On occasion, the school district farm drops excess fruit to the school, including surplus persimmons. “Kids just walked right past boxes of what they thought of as weird-looking fruit until a staff member suggested we cut them up and hand them out on a tray for sampling,” says Ms. Hinton. “After that, those persimmons got snapped right up.”

Funding for the position remains a challenge, even in an area known for tech billionaires. Sustaining the program has been possible through a 2023 grant from the Santa Clara Valley Open Space Authority, a public, independent special district created by the California legislature to protect and preserve open space, nature, and local agriculture. The PTA pays for ingredients. Local companies pitch in occasionally, covering food costs or dispatching volunteers to help. One example: RedLine Solutions, a business that helps produce companies manage and track inventory across North America.

Ms. Hinton would like to see positions like hers funded full time at all 18 elementary schools in the district, which has seven Charlie Carts. She would love to offer cooking or gardening once a week, not just once a month, though she appreciates there are many competing priorities for students’ time. She’d also love to have the resources to expand the program: offering after-school classes, hosting special events, and running evening cooking classes for families.

The need is real. In almost every class there is at least one student who has not tried a specific fruit or vegetable in the recipe. “There are a lot of ‘first times’ for our kids,” she says. “It sounds extreme but it’s true.”

2 Park Elementary School in Casper, Wyoming

The Charlie Cart program in Casper, Wyoming mixes language, culture, and hands-on cooking

It takes a village to get a cooking and gardening program started in a school. And it takes a village to sustain these programs.

At Park Elementary School in Casper, Wyoming, the current cheerleaders for using the school's Charlie Cart are the Spanish-language teachers on staff, many of whom prepare traditional recipes from their home countries. "It's cool to see our Spanish teachers embrace our Charlie Cart," says the dual immersion school's principal, Emily Catellier.

"We have teachers from Colombia, Ecuador, Mexico, and Peru. Our five Spanish-language teachers are from four different countries with similar but different traditions," she says. "And they are all big food cultures."

Case in point: On a crisp fall day, a fourth-grade dual language immersion class led by Fernando Méndez (informally, but respectfully, known as *Profe* by his students) are learning how to prepare *arepas*, round patties made with ground maize and, in this instance, filled with cotija, a firm cheese that softens when heated. This grilled, gooey stuffed bread is a staple of the cuisine of Mr. Méndez's homeland, Colombia.

The high-energy teacher is excited to share this national dish with his students in this largely white small city in central Wyoming. "*Las arepas son muy buenas, deliciosas*," the teacher promises his students, who follow animated directions in Spanish to wash hands with soap and steer clear of the hot cook top and an extra griddle. *Profe* describes the ingredients, runs through the recipe, and demonstrates dough making, rolling, and filling; then it's his students' turn to make their own arepas. They're ready.

Each week, another teacher—Maria Jose Larrea, who hails from Quito in Ecuador—hosts an after-school cooking club for students, one of the most popular clubs in the school. Produce from the school's greenhouse, including zucchini, tomatoes, herbs, and greens, is put to good use.

On a Monday afternoon, a delighted gaggle of 15 second- and third-graders prepare what one student dubbed "a salad pizza," as he loaded his tortilla with as many vegetables as the flatbread could handle. Each student is eager to create—and eat—their own after-school snack. Once cooked, these "salad pizzas" receive two thumbs up at every table. That's a response understood in any language.

The school also uses the cart for special celebrations, such as Hispanic Heritage Month. Making guacamole is a favorite activity. Ditto holiday

baking. Think *pan de muertos*, a sweet Mexican bread with anise seed and orange zest for *Día de los Muertos* (Day of the Dead). The students *comen con gusto* (eat with enthusiasm).

In addition to fostering cooking skills, the classes are an excellent way to incorporate lessons around Spanish-language vocabulary from the kitchen and garden, and to explore geography, culture, and history from around the globe. "Recipes are great for math and language education. We teach math on our Spanish side, too, so all students are receiving their primary math instruction taught in that language," says Principal Catellier, herself a former Spanish-language teacher. "So they're getting the Spanish literacy piece, they're getting the math piece, and they're getting the cultural piece connected to all of it."

"So much of our lives are dictated by standardized test scores," says the seasoned educator. "But truly, the things that are going to create long-lasting learning for kids are going to be the things that they're able to touch and do with their hands."

Mi clase de espanõl, mi cocina

Profe Méndez's classroom is full of colorful maps, flags, and posters. These are all opportunities for discussion in Spanish. There's a map of Colombia, with his hometown of Villavicencio circled. There's a photo montage of his family, including an elder in striking blue traditional attire. There are illustrations of the wide variety of fruits in Colombia's diverse growing regions and a hand drawing that labels the different parts of a fruit—all written in Spanish.

In his lively classroom, 10-year-olds frequently break out into song in Spanish, Latin music is on constant rotation, and Mr. Méndez offers an impromptu lesson in *baile joropo llanero*, a traditional, celebratory Colombian dance known for its intricate footwork and spirited rhythms.

Cooking with his students is a no-brainer for Mr. Méndez, who sees it as an opportunity to share his background, expand students' vocabulary and palates, and discuss food choices. For instance, he explains to his class that there is no need to add salt to arepas, since the cheese used as a filling is naturally salty. He can be found at the after-school greenhouse garden club, explaining the importance of worms in soil and happily chomping on fresh produce. "In my country there are 365 different fruits—that's a different fruit for every day," he says, and though a quick Google search suggests there may well be more, his point is well taken. He normalizes for his students the importance of preserving the natural environment, cultivating fresh fruits and vegetables, and cooking food for yourself. His devoted pupils eat it all up.

Says one parent volunteer, "The engagement in his classes is phenomenal; the kids are in tune with his every word. What a unique experience is this for young people in Wyoming? To prepare and cook authentic food from Colombia and expand and challenge their taste buds. They learn about different dishes and ingredients and share their skills. It's just lovely to see. It's a fantastic educational opportunity that money can't buy."

Park Elementary School

Where
Casper, Wyoming

How
Three Charlie Carts in the Natrona County School District, which includes Park Elementary;
Funding via a grant from the U.S. Department of Agriculture Farm to School Program

Program Champions
Emily Catellier, Principal, Park Elementary School;
Maria Jose Larrea and Fernando Méndez and other Spanish teaching staff at Park School Parent Group, Natrona County School District;
LeAnn Miller, vice president and director of the Casper Community Greenhouse Project

Partners
Casper Community Greenhouse Project

Watch
School Greenhouses on Farm to Fork, Wyoming Public Broadcasting Service
https://www.youtube.com/watch?v=oOIXxJmURT8

From seed to salad: growing the next generation of healthy eaters

Park Elementary, whose school motto is "grow good humans," has had its Charlie Cart for four years. The cart was part of a U.S. Department of Agriculture Farm to School Program grant application to fund a greenhouse on campus. The grant was written in collaboration with the Casper Community Greenhouse Project, a nonprofit that has been instrumental in bringing greenhouses to elementary schools.

In Wyoming, with its short summer growing season, a greenhouse makes it possible to plant, grow, and harvest food throughout the school year. At Park, the after-school garden club focuses on educating students about preserving the natural environment, growing produce, and eating well.

"The greenhouse helps students understand where food comes from and how to make healthy decisions around food," says Principal Catellier. "There's nothing like sinking your hands into dirt for tactile learning." The Casper Community Greenhouse Project is led by local resident LeAnn Miller, who is a vegetable evangelist for Casper residents, the majority of whom, studies show, don't eat the recommended daily amount of vegetables. The project focuses on elementary schools because that's where it can have the greatest impact to create positive lifelong behavioral change around food choices. "We know if children plant, grow, and harvest their own vegetables, they will eat them," Ms. Miller says. "We see it all the time."

Ms. Miller explains that each of the three Natrona County School District schools with a greenhouse and Charlie Cart uses them in different ways. At Journey Elementary, the focus is on food production: Garden beds are filled with produce to feed school families. At Evansville Elementary, the greenhouse has a science-based/nature conservation approach: Students learn about grafting and propagation and grow plants from desert and tropical ecosystems—including pineapples.

Experiential education is key to all the programs. "Park has historically looked for hands-on learning opportunities before becoming a dual-language school," says Principal Catellier, who was approached by Ms. Miller about bringing both the greenhouse and a Charlie Cart to the school. "There are deep roots here in project-based learning and thinking outside of the box in classrooms. Anything to make education relevant for kids has been the hallmark of our school. The greenhouse and the Charlie Cart fit well with that philosophy."

Pairing the two made sense to Ms. Miller. "We were excited to have both the greenhouse and the Charlie Cart at each school," she says. "We don't just want to teach kids how to grow their own food; we want to teach them what to do with it. Students tell us the tomatoes they grow in the greenhouse taste better than the ones in the store." Another common refrain: "I don't love vegetables but I love to eat what I grow here."

Wyoming is home to 39 Charlie Carts and counting—not too shabby for the country's least-populated state. And the vast majority of them can be found on elementary, middle, and high school campuses and at after-school programs, such as the Boys & Girls Club in Casper.

The portable kitchen classroom likely appeals to Wyomingites' independent, self-sufficient, DIY ethos. Residents like to grow, catch, and hunt their own food, notes Principal Catellier. Cooking is a natural extension of this resilience-minded mentality, particularly because many residents live in remote and rural locations.

Still, even in an agricultural state like Wyoming, many students have no connection to growing food. "You might think in Wyoming children would have a sense of what a farm is and what it offers, but it's really foreign to a lot of our kids," she says. "For them to make the links between the seeds they plant and the lettuce, tomatoes, and peppers that they harvest to prepare and cook dishes is such a valuable lesson. It's important that children learn where food comes from and how to feed themselves."

3

Maricopa Wells Middle School in Maricopa, Arizona

A Middle School in Maricopa teaches cooking and life skills to neurodivergent students

When Maricopa, Arizona, teacher Maria Lourdes Medel transferred schools three years ago she knew there was a program—actually a portable kitchen on wheels—that she wanted at her new posting.

For seven years, the teacher—who goes by Mrs. Medel in the classroom—taught life skills to students at Maricopa High School, where she learned first-hand how a Charlie Cart could engage neurodivergent students on a variety of subjects. She knew she wanted one for her students in her new life-skills classroom at Maricopa Wells Middle School.

With funding from the Maricopa Unified School District, Mrs. Medel's request was approved for the 2022-23 school year. Maricopa Wells Middle School is a Title 1 school, a federal education program that supports low-income students. Mrs. Medel teaches a diverse group of students including Latinx, Indigenous, Black, and Asian children. "I told my principal and the district that the cart isn't just good for academic instruction, it teaches important life skills," she says, "and I feel strongly that these are the tools my kids need to be more functional after they finish school."

Mrs. Medel says that cooking from scratch—including food from her Filipino heritage—is a particular passion of hers. "Cooking is therapeutic," she says. "It's very therapeutic for me and my kids."

With her students, she focuses on cooking fresh, nutritious food and imparting hands-on cooking experience. Although her class of 15 ranges in age from 10 to 13, she gears her instruction at a second- or third-grade level for her students.

There are several preparatory steps she takes before even getting to actual cooking with her class. She shows a video about items that need to be worn in the kitchen, such as an apron, hairnet, and gloves. She shows another video that demonstrates how to wash and dry dishes. As a group, they discuss cleanliness and safety. She asks her class: "What are the positive attitudes we need to bring to cooking —being responsible and respectful, focus, concentration and hygiene. I always have a lot of lessons first before cooking, to make sure that we're safe," she explains.

Initially, Mrs. Medel wondered if the cart might feel too complex for her students. She was delighted to discover that wasn't the case: They were curious about all the compartments in the portable kitchen. In an introductory session with the cart, students are encouraged to get to know it. "They are amazed by how it works and love opening drawers to see what tools and equipment are in there," she says. "They want to explore. I appreciate that about my kids. They want to know how to use everything, from the blender to the stove."

Acquiring knife skills, gaining confidence

Her students—who have learning differences, behavioral concerns, communication difficulties, social deficits, physical disabilities, and sensory impairment—are excited to cook in class and, she says, constantly ask when they will cook again. "I can teach so many things through the cart: everything from measuring to hygiene," says Mrs. Medel, who teaches cooking about once a month. "I read the Charlie Cart curriculum and simplify things for my students."

In the mornings, Mrs. Medel teaches academics. She saves cooking for the afternoon. She looks for ways to link

the two. For example, when studying Mexican history she integrates a cooking component. The class makes *burritos* with guacamole. She says she wants to foster independence for her students, one of five special-education classes at the school in Maricopa, a commuter city in the Gila River Valley and 35 minutes from Phoenix, known for cattle ranches and a tribal casino. Mrs. Medel, who has children of her own, lives in the area.

Where others may see hurdles she sees learning opportunities. "They're kind of messy," she says with a laugh, so she focuses on organizational skills and breaking down tasks into smaller components. "Some of them are really scared to use knives," she says. "Often their parents don't let them use a knife. I get it. But I always have a positive outlook: If someone cuts themself and gets a little hurt, they're going to learn from that. It's an experience. The next time they will be more careful, more responsible."

That said, students are supervised at every station by Mrs. Medel and two paraprofessional support staff. If a student does cut themself, the cut is washed, covered with a Band-Aid, and students don gloves to continue without concern for contamination. "Learning to use a knife is a big deal for my students," she says. "They've gotten over their fear."

Learning together, sharing new foods

Like any cooking teacher, Mrs. Medel is familiar with the vegetable challenge. "I ask them to at least try the vegetables. They don't have to eat a lot, but at least try," she says. "Other students are really the motivation to eat; when they see other kids enjoying the food they're not eating, they try it. That's a win-win for me."

Her students are fans of her Filipino food, including *lumpia*, a spring roll made with a crepe-like wrapper, filled with meat, egg, and chopped vegetables; *pancit*, a noodle dish that typically includes vegetables and meat; and the fried rice dish known as *chao fan*.

There's a lot of structure in the classroom. There's autonomy, too. "I give them options: Who would like to cut? Who is going to cook? Who wants to use the blender? They choose from the different tasks. Then they all help set the table, eat together, and clean up as a group."

She stresses the importance of modeling the tasks at hand before her students have a turn. That's particularly true with demonstrating how to use a knife and how to safely navigate around a hot stovetop.

It's not just her students who are learning how to use the cart. Mrs. Medel admits it took her a hot minute to get used to the induction burner. "My students actually helped me figure out how it worked, I wasn't sure. We figured it out together. When I put the pot on the burner and turned it on and the food started to heat up, they all started clapping,"

Maricopa Wells Middle School

Where
Maricopa, Arizona

How
Funded by Maricopa Unified School District's Exceptional Student Services Department

Program Champions
Maria Lourdes Medel, special education/life skills teacher, Maricopa Wells Middle School, Maricopa Unified School District

she says. “They find simple joys in this class. We all had a good laugh.”

Mrs. Medel lets parents know what her students cook and sends photos of kids in action. “Some of them are amazed that they are actually participating. They will ask me: ‘Richard is really doing it? Because at home he won’t come into the kitchen, let alone touch a knife.’ They see their kids having fun cooking.”

The student feedback ranges from “This is so good” and “I’m full” to “When are we cooking again?” and “What are we making next?” That’s music to Mrs. Medel’s ears.

After the prepping, cooking, eating, and cleaning up, the class has a debrief. “We sit down and talk about what they learned and what they liked to do and eat. They write it down. We also talk about what we could do to improve. And we talk about what we might make next.”

“We take our time with a cooking lesson. I don’t like to pressure them, I want them to enjoy it.”

Making a meal, practicing patience

The focus is on building independence and life skills—fundamental to Mrs. Medel’s class. But that’s not all.

She finds ways to work in nutrition education, too. Her students are desperate to make french fries. So she’s decided that they can. But they will make them from scratch. And learn how to use a potato peeler. “I’ll show them a healthy way to make french fries—no bags or boxes. We will work with real, whole ingredients, so they can see what things are made from.”

She’s an advocate for cooking for all kinds of students. “Cooking is so important for my kids. It allows them to be more functional on a daily basis. They may not be able to go to college or live independently, but they can learn how to make a hot meal for themselves. Students like mine need programs like this. My hope for my students is to guide and prepare them to be more equipped and independent, with the ability to take care of themselves and meet their own needs without relying on others.”

Even her most challenging students have surprised her. “The first time, I thought that one of my students in particular might have a difficult time. But we gave him a task, and a staff member helped teach him how to slice. It was, like, boom! He was responsible, he concentrated, and after setting the table, he waited for the food.”

That was quite the turnaround, apparently, for a student known for behavioral issues, including physical outbursts. “Cooking has a calming influence too,” notes Mrs. Medel. “And students have to be patient: It takes time to cook 15 individual pizzas in that little oven. Everything is a potential teaching opportunity.”

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About the Charlie Cart Project

We bring the kitchen to kids across the country. The Charlie Cart is a fully-equipped mobile kitchen classroom that allows educators to lead hands-on cooking lessons in many settings.

The Charlie Cart equips the next generation with the skills and confidence to make smart food choices through cooking. A Berkeley, California–based nonprofit, the Charlie Cart Project partners with educators to offer everything they could want to encourage kids to cook.

The Charlie Cart Project provides schools with their own portable kitchen, along with all the tools, lessons, recipes, and support needed to build a comprehensive food education program.

This kitchen on wheels is stocked with easy-to-use, high-quality equipment that stows away neatly for easy storage and transport.

From the beginning, the Charlie Cart was conceived for classroom settings, as a pleasurable place for children to cook, taste, and learn about fresh food and experience the joy of eating and sharing at the table.

The program includes a 54-lesson, school standards-aligned curriculum that explores tastes and textures, introduces students to new foods and recipes, and builds knowledge and independence.

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