

Johns Hopkins' FoodSpan curriculum brings lessons on food systems to schools across the country

North County High School students learn about food systems through the Foodspan curriculum developed by the Johns Hopkins Center for a Livable Future. (Kenneth K. Lam, Baltimore Sun video)



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In Mike Wierzbicki's environmental science and botany classes, the Carolina Reaper pepper captivates students with the same properties that strike fear into the spice-averse. The world's hottest peppers are grown by North County High School students in a garden nestled behind the school's track in Glen Burnie, where Wierzbicki teaches them about the Scoville scale, the unit of measure for the peppers' heat.

"It gets the kids' attention that a plant could have those types of properties," he said.

Wierzbicki is among teachers across the country using food to teach science, health, social justice and other subjects through coursework developed by the Johns Hopkins Center for a Livable Future. Known as FoodSpan, the curriculum details each piece of the food system and outlines the steps it takes for food to go from “farm to fork,” including lessons on how food is grown, processed and distributed; how it is marketed and labeled based on government policy; and the impact it has on human health and the environment.

Teachers say food system education is not a priority for most schools and the resources for teaching it are sparse. But many see a connection between students’ diets and their ability to learn, or like Wierzbicki, they see food as the “high-voltage” material that will spark their students’ interest.

“The food systems stuff is great, but the ultimate mission for me is to teach science, basic skills for biology, physics, chemistry,” Wierzbicki said.

Rodney Wilkerson Jr., 15, a freshman at North County High School, said he always wondered what it was about peppers that made them so hot. He learned in Wierzbicki’s botany class.

“We did a packet on hottest peppers and what’s in it to make it hot and stuff like that, and the SHU, which is Scoville Heat Units,” he said. “And different peppers have different limits of hotness.”

His classmate, 14-year-old freshman Marque Smith Jr., had bitten into a Thai chili pepper minutes earlier.

“75,000 SHU,” he said. “It’s still hurting in my mouth.”

FoodSpan lessons on the ways pesticides affect pollinators and the industrialization of agriculture come full circle when Wierzbicki’s students eat the food they grow in the garden.

“We are really into what we’d call food deserts and why people eat what they eat, why we make certain food choices,” he said. “It’s pretty interesting to try to get some of our students to move outside the box that they’re in. ... We’ll make a kale and beet salad and bring it in for the kids. For a lot of them, it’s the first time they’ve ever had beets in their entire lives, or kale for that matter.”

The Center for a Livable Future released FoodSpan last year, an update to a previous food-systems curriculum with fewer interactive lessons. Downloaded more than 23,000 times, the course material is broken up into 17 lessons, from which most teachers pick and choose, according to Leo Horrigan, food system correspondent for the center.

Though it’s most often accessed by teachers in California, Pennsylvania and Maryland, FoodSpan is “very much a curriculum that works anywhere in the country,” Horrigan said. “It’s very U.S.-based.”

Elliot Dickson said the material strikes a chord with students at Greenspring Montessori School, where he

leads 12- to 15-year-olds in intense studies of food systems every other year. Dickson said it can be hard to find strong course material on food systems that connects to the modern world, but the FoodSpan lessons allow his students to break down real-world challenges.

His students have been especially interested in lessons on industrial agriculture and the treatment of animals.

“They have such a strong sense of justice — anything that we can find or talk about that lets them discuss ... what’s fair, what’s right,” he said. “We also try to do a lot of taking action. Knowledge is one thing, but what are you going to do with it?”

Dickson has taken his students to the Food System Lab teaching farm, another Center for a Livable Future project at Cylburn Arboretum that teaches aquaponics, growing fish and plants in a closed system using recycled water.

In Washington, the advocacy group DC Greens has been training teachers in FoodSpan coursework as part of its mission to create a healthy food system and advance food justice. The group’s founder, Sarah Holway, said the curriculum is one of only a few resources on the subject, and that the pressure schools face to achieve high test scores in reading and math often takes precedence over food systems education, even if teachers see a connection between healthy diets and learning.

“It’s seen as separate from the core subjects; it’s not woven into the curriculum,” she said.

Since DC Greens was founded in 2009, the city’s school gardens have grown from 30 to 120, Holway said. About 350 teachers have joined the nonprofit’s listserv, some of whom have taken the FoodSpan training and adopted lessons. (The group doesn’t track the number of teachers who implement those lessons.)

“I’m hoping that this curriculum is the beginning of a deeper adoption of this kind of work in schools and a higher level of acceptance by administrators,” Holway said.

Another nonprofit, Maryland Hunger Solutions, has adopted and localized FoodSpan’s lesson on hunger for its annual “Hear the Crunch” event, during which students across the state bite into apples simultaneously to raise awareness about access to healthy breakfast. The event began in elementary schools, and the organization brought in FoodSpan lessons to provide a more meaningful experience for high schoolers.

“At the high school level, crunching into an apple doesn’t have quite the same appeal,” said Tam Lynne Kelley, senior program associate for Maryland Hunger Solutions. “We really wanted to be able to provide high schoolers with information about what food insecurity is, how it’s different than hunger, why it exists and what can be done about it.”

FoodSpan lessons have been implemented far outside the Baltimore-D.C. region, too. Arla Casselman teaches life sciences at Medomak Valley High School in Waldoboro, Maine, where she created an elective class on food systems after she discovered food and nutrition courses there had been canceled.

“There are food and nutrition [curricula] out there, but they’re like super dated and not up to speed. This one is very current,” Casselman said of FoodSpan.

She said lessons on seafood harvesting were particularly relevant. The school sits about 25 minutes from Maine’s coast, and many of the students’ families work in the fishing industry, she said.

“Students really relate to this kind of work, but it kind of brought in new perspective to that industry,” she said.

Enrollment has tripled in the three years the food systems class has been taught at Medomak Valley, she said, and students were especially excited about the “food citizen action project” outlined in the FoodSpan curriculum. One year, they held a donation-based dinner where they collected canned food and cash, which they used to create a food bank for students in need.

“We wanted to target an area where we could do something for our community,” she said.

At North County High School, students in Wierzbicki’s classes and the school’s agriculture club are doing their own work to give back to their community and grow the school’s garden and greenhouse programs. Jessica Schneck and Lilia Yousefian, both 17, were awarded a \$5,000 grant from Lowe’s to add green technology to the garden. The seniors plan to build a cistern that will capture rainwater and use solar and wind power to irrigate the garden.

“Teenagers aren’t always excited about a lot of things, so it’s kind of different for us to show them that you don’t always need a textbook to learn something, and that they can actually get out here and get some hands-on activity,” Yousefian said. “And although they might not realize that they’re learning, they really are, whether it’s how a solar panel works, or it’s how plants grow.”

Wierzbicki plans to expand the garden to include an orchard, and he hopes it becomes a model for other schools.

A number of students have taken the lessons home with them. Twins Noah and Nathan Bennett, 16, are in the school’s agriculture club. Now Nathan grows kale in his backyard.

“I actually have something like this,” he said, gesturing toward the garden. “It’s not as big, but I used the same stuff that we used here, like cow manure, calcium and all that stuff you can put in it.”

A walk down the 100-foot-long bed reveals more plants past the peppers: okra, kale, beets, lettuce. The garden is lined with native pollinator plants.

"This was just a patch of dirt when we started," Noah Bennett said, pointing to the garden.

The produce from the garden will be transferred to the school's greenhouse later this month. The school purchased a dehydrator to dry peppers, which are jarred and sold to faculty. Wierzbicki hopes the students will soon begin selling their produce at local farmers' markets and reinvesting the proceeds in the school's garden and science programs.

"When it started out, it was small," Wierzbicki said. "It grew itself because these kids kept coming to me like, all right, let's go out there, let's do it."

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