



Green Scene

St. Philip's Academy teaches students about sustainability and nutrition



- **Environmental Education**
"I think our mission is to serve disadvantaged students in urban areas," says Miguel Brito, head of St. Philip's Academy. "We do it through a highly subsidized education program that is very rich and well-endowed. We have some features that separate us from most schools. Number one, I think that we operate in an environment where we say love is the basis of state. But secondly there is the emphasis really on the environment and sustainability through EcoSPACES and another huge focus on using technology as a learning tool."
- **School Story**
St. Philip's Academy was founded as an independent (private) school in 1988 by Dean Dillard Robinson and his congregation at Trinity & St. Philip's Episcopal Cathedral in Newark, New Jersey. The purpose was to give local students a strong set of academic skills that they would be able to use in secondary school.

By Stuart Thornton

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On a rooftop in the bustling downtown of Newark, New Jersey, a garden tended by students of St. Philip's Academy yields a bounty of lettuces, tomatoes, broccoli, watermelons, cantaloupes, corn, beans, lavender, and many other fruits, vegetables, flowers, and herbs.

The garden is one part of the school's innovative EcoSPACES program, which provides students the tools to lead a healthy and environmentally productive life.

Frank Montesana, director of EcoSPACES, says the co-curricular program adds another dimension to the kindergarten-through-8th-grade school's educational offerings.

“Our mission is really to have our kids leave understanding large concepts of sustainability as well as how our food cycle works,” he says. “We do that through a number of learning environments that we have created for students and teachers. These learning environments include our rooftop garden, which is about 4,600 square feet. We have a teaching kitchen. We have an urban farming lab. These are all places where teachers can actually get out of the traditional classroom setting and go and teach their curriculum in a much more hands-on way.”

The rooftop garden does more than just teach students about the environment and food production. St. Philip’s Academy uses the garden to help teach everything from history to science to math.

“One of the grades does a lesson in the kitchen,” Mentesana says. “They are . . . learning how to add fractions. The tie-in to the pizza part of the garden is that they take the crops that they harvest from the pizza garden and then they go into the kitchen and actually make pizzas. Rather than sitting there with a piece of paper at their desk trying to understand this concept of a quarter and a quarter equals a half, they’ll make pizzas and they’ll put peppers on one quarter and maybe cilantro on another quarter. It’s very clear visually that that quarter and that quarter on that pizza equals a half of that pizza, so suddenly these worksheets that they are working on have been customized to support what they are doing in the kitchen.”

Another aspect of St. Philip’s EcoSPACES program is the school’s kitchen classroom, which features two sets of wall ovens. Students learn how to prepare foods using ingredients from the rooftop garden.

“One of the things we try to do is look at food that has been processed and compare it to what it would take to make it from scratch,” Mentesana says.

Indoor Agricultural Machine

Just feet from the kitchen classroom is St. Philip’s “indoor agricultural machine,” a growing system designed specifically for urban environments by AeroFarms and brought to the school by EcoVeggies, a company hoping to spur urban agriculture in Newark.

The car-sized machine features sets of growing trays covered in unique fabric. Students use the sort of Parmesan cheese shakers found in pizzerias to shake seeds of leafy greens—including spinach, arugula, kale, and Swiss chard—onto the trays. A foam-core board then covers the fabric for 24 to 36 hours. After that, the seeds sprout and the covers are removed while the growing greens are nurtured with misted water and carbon dioxide (CO²), which is blown over the plants.

“It’s this perfect combination of the right CO² levels and the right amount of water and nutrients,” Mentesana says.

The indoor agricultural machine allows for the planting of leafy greens in a relatively small space and causes the vegetables to grow in a shorter period of time.

“We harvest within 18 days, and it would probably take 28 days to 36 days to actually do what we are doing in the ground,” Mentesana says.

Miguel Brito, Head of School at St. Philip’s Academy, says the school creates a fertile place for students, as well as flowers, to bloom.

“They go on to great heights,” he says. “They go on mostly to day and boarding schools all across the Northeast. Over 95 percent graduate from high school and go on to four-year college, where they also graduate. Compared to a city where only about 30 percent of the kids who start high school are going to graduate from high school, we’ve got a pretty sterling record.”

“Between the garden, the teaching kitchen and the dining room,” Mentesana says, “what we are hoping

they leave here with is a real understanding of where their cooked food comes from and that it dispels all the myths and vagaries behind where food actually comes from.”