

Planting for the future: ASU helps elementary students design cooler Phoenix schools

Canopy for Kids brings much-needed shade trees to campuses, making students part of the design process

By Marshall Terrill , ASU News
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On a cool Phoenix morning, dozens of young students from the [Phoenix International Academy](#) clustered around freshly dug holes, gripping shovels and saplings nearly as tall as they were.

Within a few hours, 32 desert trees stood in neat rows across the campus, their thin trunks promising future shade for the school's campus.

But this was not just a planting day. It was a lesson in science, leadership and legacy.

The project was part of the [Canopy for Kids](#) program, a partnership among Arizona State University's [Rob Walton College of Global Futures](#), the city of Phoenix and nonprofits [Watershed Management Group](#) and [EcoRise](#).

Backed by funding from the U.S. Forest Service through the 2022 Inflation Reduction Act, the program is set to deliver nearly 1,000 trees to 35 schools across the Valley, bringing a major boost to campus green spaces.

At its heart is a simple idea with profound implications in one of the hottest cities in the country.

"In Phoenix, shade is essential infrastructure," said [Kate Eaton](#), associate dean for student success and academic innovation at the College of Global Futures. "Teaching students how to design for heat and water scarcity prepares them for the realities of the region they will lead."

Eaton stood with students, teachers and ASU and Phoenix employees, and described the garden as more than soil and trees — it was an opportunity.

Students explored science, technology, engineering and math in real time, Eaton said. They also learned about water conservation and desert-adapted landscaping. Most importantly, they saw their own ideas rooted in the ground.

“One of the most meaningful aspects of this project is that students themselves helped shape the design,” Eaton told the crowd at a Feb. 13 installation event. “By inviting students into the planning process, we empower them to become problem-solvers and leaders capable of imagining and creating positive change in their own communities.”

That sense of ownership was evident long before the first shovel hit the dirt.

Phoenix International Academy teacher Tylar Rodriguez beams when he talks about the transformation he witnessed over four months. What began as rough sketches on blank paper slowly evolved into detailed blueprints for a student-designed rain garden, shaped by 24 fourth and fifth graders determined to leave their mark.

The sustainable vision behind the project energized them, but it was the responsibility tied to it that truly took root.

“Our school will be taking on the responsibility of stewards, ensuring that these trees have a safe and comfortable environment to grow,” said Rodriguez, who served as a co-lead for the Canopy for Kids initiative at the school. “We honor the legacy of the Indigenous peoples, the ancestral caretakers of this land. Our students carry that responsibility forward, not just to be caretakers, but to be stewards who create a better world for the next generation that comes after them.”

The science behind the project is straightforward and powerful. Without shade, asphalt and gravel can register temperatures up to 25 degrees hotter than the surrounding air. With tree canopy, surface temperatures can drop significantly. Trees cool not only through shade but also through evapotranspiration, releasing moisture into the air.

“It is a natural cooling effect of the Sonoran Desert,” said Joaquin Murrieta-Saldivar, cultural ecologist director with the Watershed Management Group.

The 32 trees planted at Phoenix International Academy include palo blanco, mesquite, canyon hackberry, ironwood, palo verde and desert willow — all native to the Sonoran Desert.

But planting trees without planning for water is not a solution in a desert city facing decades of drought.

That is where the Canopy for Kids rain garden model comes in — integrating native plants with rainwater-harvesting [earthworks](#), reducing irrigation demand while building long-term resilience.

For [Amy Flores](#), senior program manager with [The Rob and Melani Walton Sustainability Teachers Academy](#) at ASU, the educational component is as important as the environmental one. She has seen what happens when students are invited into the design and installation process.

“When students are involved in the design and installation process, it increases the amount of time they spend in the area and the amount of responsibility they feel,” Flores said.

T Larson, an outdoor and sustainability educator with EcoRise, works with teachers on climate literacy and environmental education. He said projects like this do more than cool campuses.

“It builds advocacy for them and shows them that they can actually take action in their community,” Larson said. “They don’t have to feel powerless. They can continue that legacy into high school and even their careers.”

City leaders see the schoolyard as a critical front line in the fight against extreme heat. [David Hondula](#), who leads the city of Phoenix [Office of Heat Response and Mitigation](#) and is an associate professor at ASU’s [School of Geographical Sciences and Urban Planning](#), told students that increasing shade at schools is one of the city’s highest priorities.

“When I was your age, one of my favorite subjects was the weather,” Hondula said, encouraging students to imagine what the trees would look like when they are grown.

He urged them to dream about the future they were helping to create.

“I want you to think about the future — when you’re older, maybe tall like me, and your parents, friends and relatives are admiring these trees,” he said. “What will they be like then? Dream about that. Think about it and imagine the future you’re helping to bring to life.”

That future belongs to students like Alan Lopez Rios, a fifth grader who served as a manager during the design process. He described helping classmates imagine how the rain garden would look and function.

“It’s not just to make the environment look nice but shading the school and catching the rainwater and letting it soak the ground and water the trees,” he said. “When students come back again next year to see the trees, they’re really going to like it.”

Fourth grader Wisdom Rose Claiborn said she hopes the rain garden will bring more shade and a cooler place to learn and play.

“There are some days when you can really feel the heat outside,” she said. “We got involved with this project because we want to make the world a better place.”

Plans are underway to track canopy growth through satellite imaging and to monitor student stewardship through citizen science platforms.

On planting day, however, metrics took a back seat to muddy hands and excited chatter.

Fifth grader Dante Leonel imagines walking past these trees as an adult. They will be taller than the building, their branches stretching wide over the school’s roof and pavement. When he does, he will remember this day and the dirt under his fingernails.

“My legacy is here.”

This story originally appeared on [ASU News](#).

Main image



Fifth grader Luis Noel works with EcoRise's T Larson to get a hackberry tree out of its plastic container during the Canopy for Kids tree-planting event on Friday, Feb. 13, at the K-8 Phoenix International Academy charter school in south Phoenix. Photo by Charlie Leight/ASU News

Text image(s)



Kate Eaton, an associate dean and clinical professor in the Rob Walton College of Global Futures, speaks at the Canopy for Kids tree-planting event. Eaton said that by inviting students into the planning process, educators empower them to become problem-solvers and leaders capable of imagining and creating positive change in their own communities. Photo by Charlie Leight/ASU News



Fifth grader Ryan Roberson helps ASU's Amy Flores plant an ironwood at the Canopy for Kids tree-planting event on Friday, Feb. 13. Photo by Charlie Leight/ASU News

Gallery



Freshly dug holes await young planters at the Canopy for Kids tree-planting event on Friday, Feb. 13, at Phoenix International Academy in south Phoenix. Students and faculty worked side by side for nearly two hours to plant 32 trees across campus.



Some of the desert plants are stored inside before the Canopy for Kids tree-planting event. The five types of trees that were planted are all native to the Sonoran Desert.



Fourth grader Anna Alcantar speaks at the Canopy for Kids tree-planting event on Friday, Feb. 13. She is flanked by fellow students Dante Leonel, Alan Lopez Rios and Wisdom Rose Claiborn, who also made brief comments.



Students from every grade level — including kindergartners — gather for the Canopy for Kids tree-planting assembly, filling the room with anticipation before heading out to plant new trees on campus.



Joaquin Murrieta-Saldivar of the Watershed Management Group shows students how to properly plant a tree, explaining how expanding tree canopy can lower surface temperatures by providing cooling shade and releasing moisture into the air through evapotranspiration.



Students Alan Lopez (left), 11, and Dante Leonel, 10, carefully check the depth of a freshly dug hole to make sure it's ready for a young tree. Prior to getting their hands dirty, the pair took the stage at the assembly to speak about the importance of the planting project.



Fifth grader Steven Salinas looks on as fourth grader Elizabeth Martinez digs deeper, widening the hole to make room for a hackberry tree during the Canopy for Kids tree-planting event.