

Solar Panels Power New Schools—and New Ways of Learning

Nationwide, K-12 schools are leading an oh-so-green zero-energy building boom.

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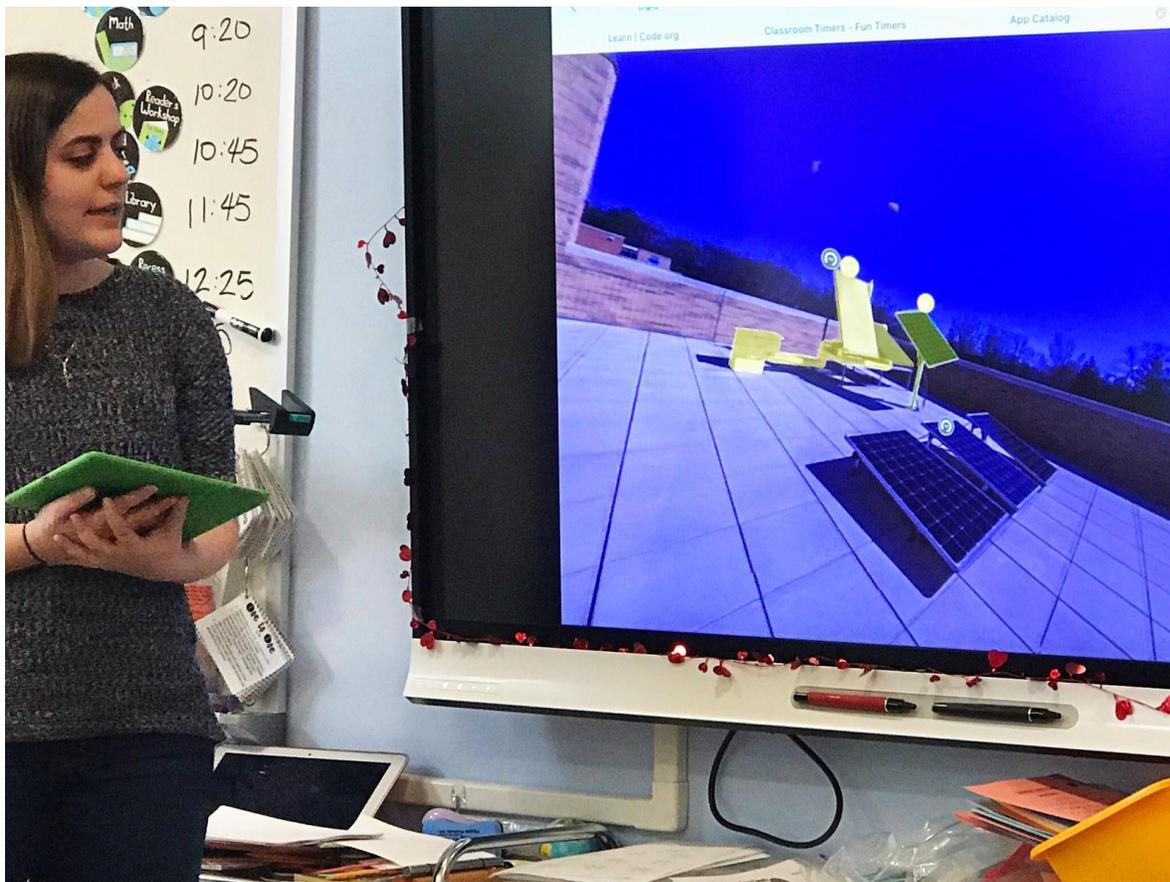


A view of the 1,700 solar panels on the roof of Discovery Elementary School in Arlington, Virginia. Over the course of the year, these panels provide more than enough energy to power the school. Chris Berdik for The Hechinger Report

At Discovery Elementary, a school near Washington D.C. in the United States, a seven-year-old can be seen on her tablet exploring her own school. She is clicking on parts of the school building that save energy like the lighting system, which includes LED lights that use less energy and last longer than regular lights. But the most interesting image on the tablet sits on the school's rooftop where 1,700 solar panels sit. The solar panels work by taking in sunlight as a source of energy to make electricity.

What did this student learn about her school today? The solar panels rotate toward the sun, so wherever the sun moves, the panels do too. A group of ten-year-olds visiting the rooftop move the panels to see how angling them changes their power. Everywhere you walk through this building, you can learn from it, and teachers weave the building's data into classroom lessons.

The tablets are used to teach the students about their school's energy use, and they show something amazing. The school makes more energy than it uses in a year. Buildings that make as much energy as they use are called "net-zero". Dozens of these green schools are starting to be built in cities and the countryside with excitement to both help the environment and save money.



Angelique Coulouris, a second-grade teacher at Discovery Elementary, guides students on a virtual tour of the school's roof-top solar lab. CHRIS BERDIK FOR THE HECHINGER REPORT

Students at Discovery also have their own energy club called “Eco-Action”. The students in this club review the school’s energy use, trash and thrown away food, and water use. The club members hunt for “vampires” - energy vampires are devices that are turned off but are still plugged into the wall and taking power. The club is happy to report that they don’t find a lot of waste in their school.

More net-zero schools are preparing to open in the same area. However, they cost more money to make than regular school buildings. The public-school system does use school buildings for many years though. This means that the buildings would most likely make back the extra money it takes to put in the solar panels and other green things. Solar panels are the most expensive part of the buildings, but the cost of solar power is also going down and become cheaper.



Discovery Elementary School in Arlington, Virginia, is among a growing group of "net zero" K-12 schools, which produce as much solar energy as they use (or more) over the course of the year. CHRIS BERDIK FOR THE HECHINGER REPORT

“Green” schools can be found with many projects around the country. For example, a school in New York City lines its playground with bikes that students can ride to generate school energy. Near Portland, a school created a greenhouse that heats and cools the plants with solar energy. The school grows fruit, tea, and hopes to eventually grow tomatoes year-round.

Back at Discovery school, the plan is for all students to do sustainability checks, not just the Eco-Action club. Each grade level will use their data to find problems they can face with shared projects. Art teacher Maria Burke has already led her students through several projects, such as creating outdoor sculptures with the right mix of shapes and colors to attract bees back to a school garden.

“We want to give students the skills to be innovators, to find solutions,” said Burke. “We want to them to be thinkers for the future and to collaborate and innovate with the world in mind.”