



White paper

# Education and sustainability

**K-12 schools and higher-education institutions are tackling the challenge of sustainability.**

**verizon**<sup>✓</sup>

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**“Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.”**

– UN World Commission on Environment and Development

Sustainability sounds like a lofty goal that might be more aspirational than achievable. While it may seem simple to make a public commitment to sustainability, operating more sustainably means taking a close look at how key entities—from families to federal governments—function and consume resources. Impressive programs and ambitious initiatives are turning sustainability from an abstract concept to a day-to-day reality at a wide range of educational institutions in the US and beyond—from K–12 schools to colleges and universities. These forward-thinking schools are improving sustainability through hard work, creative thinking and ongoing commitment. And their efforts are more than inspirational. They provide a roadmap for any school that wants to make sustainability part of its institution, curriculum—and future.

# K-12 schools



## Starting young students on the road to sustainability

Why are K-12 educational institutions so critical to sustainability? Cumulatively, schools have a broad environmental and ecological footprint. Their physical plants—from classroom buildings to bus fleets—run on electricity, burn fossil fuels and are often woefully in need of updating. Their cafeterias prepare, serve (and often waste) large quantities of food. And their students, teachers and administrators are all citizens and consumers, whose actions—conscientious or not—affect their school, its environs, and ultimately, the world at large.

**“School is where we can affect what students understand about the world.”**

—Randall Solomon  
Executive director of Sustainable Jersey

An early green-schools initiative in California summarized the environmental impact of K-12 schools—and the potential of sustainability:

The environmental impact of the 130,000 public, private and charter K-12 schools, which educate or employ 1 in 5 Americans, is enormous, in financial, ecological and health terms. The impact includes millions of tons of greenhouse gas emissions, thousands of tons of garbage and toxic waste and exposure to unhealthy conditions that affect students’ ability to learn. A growing body of evidence shows that green schools that integrate sustainable facilities, healthy operations and environmental curricula result in environmental and financial savings, improved health for students and staff and better academic achievement.<sup>1</sup>

Another reason is less tangible and more emotional. “It may sound like a cliché, but schools are where we have an opportunity to influence our youth,” says Randall Solomon, executive director of Sustainable Jersey, a non-profit organization that runs Sustainable Jersey for Schools, a groundbreaking state-wide certification program for K-12 schools in New Jersey. “It’s where we can affect how they think, what they do, the behaviors they learn—and what they understand about the world.”

# A comprehensive K–12 sustainability certification program

Sustainable Jersey for Schools serves as a shining example of what K–12 schools can address and accomplish in the diverse areas encompassed by sustainability. Founded in 2014, Sustainable Jersey for Schools has more than 1,000 schools (or approximately 64% of all New Jersey public school districts) participating in the program, which measures more than 100 actions that schools can implement to be more sustainable.

Like many certification programs, it covers two general categories:

- **Education**  
What students are learning to become more knowledgeable about sustainability.
- **Environment**  
How the school is managing its facilities, fleets, buildings and other physical and environmental elements.

**“A lot of these efforts cross over between the two categories. For example, food and nutrition is about what you feed kids and what you teach them about food. But it’s also a facilities issue, because you’re actually running a cafeteria, sourcing food, dealing with food waste and running a recycling effort.”**

– Randall Solomon  
Executive director of Sustainable Jersey

The program establishes a list of categories and specific actions that a school can take to earn points toward certification—and to be more sustainable. Examples of these categories and actions include:

- **Leadership and Planning**  
Developing a strategic plan for implementing green initiatives
- **Digital Learning Practices**  
Applying digital learning tools and content authentically
- **Diversity and Equity**  
Establishing district task forces and committees that address diversity
- **Energy Efficiency**  
Increasing the efficiency of school facilities
- **Food and Nutrition**  
Promoting locally grown foods; establishing school gardens
- **Green Purchasing**  
Purchasing recycled paper; establishing sustainable fleets of vehicles
- **Healthy School Environments**  
Ensuring access to healthy water; eliminating idling buses
- **Student Learning**  
Integrating sustainability in key courses and grades
- **Waste Management**  
Conducting a waste audit; documenting recycling rates; reusing materials

Schools submit applications describing the actions they’ve taken. To be certified Bronze or Silver, schools must score a certain number of points in specific areas. The process continues, year after year, to help ensure progress.

# Distance learning and sustainability

In early 2021, the program added a new certification tier—the Digital Schools Star—recognizing the critical role of technology in schools—and more specifically, the importance of distance learning. “It’s vital that teachers know how to use remote learning effectively, that schools are safely and securely wired and connected, and that students can master technology,” says Solomon. “Digital learning is a critical part of sustainability because if students aren’t prepared to succeed in a technology-infused world, then we’re not going to have a sustainable future.”

The importance of digital literacy—and eliminating the digital divide—goes beyond helping ensure bright job prospects and personal success, according to Solomon. “Digital literacy will affect our students’ ability to engage as members of a community, have their voices heard—and engage in government and community life.”

**“Sustainability means addressing and eliminating differential access to digital learning and mastery of technology.”**

—Randall Solomon  
Executive director of Sustainable Jersey

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## Empowering schools to learn from each other

The actions taken by specific schools are meticulously recorded and shared via the information-packed [Sustainable Jersey for Schools website](#), which makes the program remarkably transparent, so one school can learn from another. The site contains a wealth of knowledge about the nuts and bolts of K–12 sustainability. For example, if a school received credit for doing an energy audit, its audit is available for review. Or if a school developed a green purchasing policy, this policy is available for download.

## Sustainability requires partnership.

Take a closer look at the Sustainability Jersey for Schools program and it becomes clear that encouraging sustainability within K–12 schools covers a lot of ground and goes far beyond the more widely known efforts—such as encouraging recycling, reducing energy use and providing healthier school food. Sustainability is a multi-layered challenge, as reflected in the wide-ranging areas covered by the program—from energy efficiency to equity. It requires focused actions—some that seem readily achievable, while others seem more ambitious, requiring a concerted, multi-year effort.

How can K–12 schools, with all else that’s going on (e.g., educating young students) rally the resources and energy necessary to take on new initiatives? In short, it takes a village to raise sustainability.

The New Jersey program and other state-focused initiatives rely on the commitment of students, teachers, the administration, the School Board and other key stakeholders within the school. But they also benefit from the support and expertise of state agencies, corporate sponsors and more. “We’re not doing it alone,” concludes Solomon. “A program like ours needs the support of other organizations, institutions and key actors—including the State of New Jersey, the New Jersey School Boards Association, the New Jersey Education Association (the state’s main teacher’s union) and a lot of other non-profit partners.” This network of organizations provides hands-on assistance, specific expertise, grants, connections and more.

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## Sustainability initiatives are growing.

Sustainability is taking hold in a wide range of K–12 schools throughout the country as more and more schools commit to reducing their environmental impact. Here are just some of the international and national programs leading the way—and which can provide support and guidance for K–12 schools considering sustainability initiatives.

# State and city programs: Providing significant support to K–12 schools

In addition to [Sustainable Jersey for Schools](#), here are some of the state-level programs that can provide guidance and expertise for K–12 schools interested in sustainability:



## **Connecticut**

[CT Green LEAF Schools](#) provides resources and support that encourage public and private K–12 schools to achieve everyday environmental improvements. Now supporting the ongoing work of more than 145 schools, this partnership helps reduce environmental impact and cost, improve the health and wellness of students and staff, and provide effective environmental and sustainability education.



## **Minnesota**

[Minnesota GreenStep Schools program](#) is a free and voluntary statewide best practices framework, community of practice, and recognition program for public and private K–12 schools and districts to reduce environmental impact and costs, improve health and well-being of students and staff, and provide effective environmental and sustainability education. It is part of the Minnesota GreenStep suite of programs, including Minnesota GreenStep Cities and Tribal Nations.



## **South Carolina**

[South Carolina Green Step Schools](#) is a program designed to help South Carolina schools earn awards for establishing sustainability projects where students learn, take action and teach others. It connects mentors with schools to guide and evaluate projects that conserve resources, protect the environment and restore habitats.



## **Washington State**

Founded by a diverse group of environmental educators, [EarthGen](#) (Formerly Washington Green Schools) provides green school certification for the state of Washington—as well as programs (including environmental science programs) developed to meet the needs of the state’s diverse students, teachers and schools. This non-profit has helped thousands of educators, students and school communities learn and take action for a healthy environment, sustainability and justice.



## **Wisconsin**

[Green and Healthy Schools Wisconsin](#) empowers, supports and recognizes schools for nurturing healthy kids and sustainable communities. Public and private K–12 schools work to reduce environmental impacts and costs, improve health and wellness and increase environmental and sustainability literacy. Participating schools report achievements in key focus areas, including community involvement, energy and sustainability education, environmental health, health and wellness, recycling and waste management, school facilities, transportation and water conservation.



## **New York City**

Founded in 2016, [Zero Waste Schools](#) is an innovative program that aims to divert all recyclable and compostable waste from approximately 100 New York City schools in five years. These first 100 schools will serve as model for all schools citywide, including best practices for recycling and organics collection.



## **Boston**

[Boston Green Schools](#) is a program of the Boston Public Schools, the City of Boston and other collaborators. Its vision is that every Boston Public Schools student will attend a healthy and sustainable school. And its areas of focus include climate and energy, curriculum, engagement, environmental justice, a healthy school environment, outdoor education, transportation, water conservation and zero waste.

# International and national programs: Setting the stage for K–12 sustainability



Eco-Schools USA. Combining environment-based learning with hands-on experiences, the Eco-Schools program sparks action in the classroom that ripples out into the greater community. Using a seven-step program, students from pre-kindergarten through 12th grade are engaged in making their community and the world a more sustainable place to live. Eco-Schools is the largest global sustainable schools program, spanning 69 countries and more than 50,000 schools worldwide. The National Wildlife Federation was granted host status in 2008 and, as the national operators in the United States, launched Eco-Schools USA in 2009.



Founded in 2002, the Go Green Initiative is a nonprofit organization that serves as a global leader in environmental education, operating in all 50 states, 73 countries and 5 continents. It helps schools create a campus-wide culture of conservation via its free, accessible program. It's helping schools and communities by saving resources today—and by teaching kids how to be environmental stewards for a lifetime.



A program of the U.S. Department of Education, Green Ribbon Schools aims to inspire schools, districts and institutions of higher education to strive for 21st-century excellence by highlighting promising school sustainability practices and resources that all schools can implement. It recognizes schools that reduce environmental impact and costs; improve health and wellness of schools, students and staff; and provide effective environmental and sustainability education.



The U.S. Green Building Alliance's Green Schools Program provides school districts and education leaders with resources to create sustainable, healthy, resilient and equitable learning environments. It offers professional networks, educational resources and industry-recognized tools to bring sustainability to life in the classroom—and to encourage communities to work together toward a future that is healthier for people and the planet.



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## The bottom line on K–12 sustainability initiatives

From the federal, state and local programs above, it's clear that while K–12 sustainability initiatives vary from state to state and school to school, they focus on similar areas—from reducing waste and curtailing energy consumption to creating a healthier environment (air, food, water and beyond). Schools have the flexibility to tackle the initiatives that are most important to their stakeholders, and to commit the level of resources within their capabilities. But the ultimate goal is clear—to be more sustainable and to inspire a sustainable mindset among younger learners.<sup>2</sup>

# Higher Education



## Leveraging technology and brainpower to boost sustainability

Colleges and universities share the same general goals as K–12—operating more sustainably and educating students about how to live more sustainability-centric lives. However, these institutions tend to have significantly more resources and capabilities available. More and more higher-education institutions have sustainability offices (and Chief Sustainability Officers) within the administration, as well as departments, programs or majors focused on sustainability.

This on-site expertise, energy and enthusiasm—from students, faculty and the higher-ed community—is fueling a remarkable wave of sustainability at colleges and universities throughout the US. After all, K–12 students who become inspired to engage in sustainability carry this interest through college and beyond.

## Centers of knowledge, inspiration and leadership

Why are so many higher education institutions investing time and resources in sustainability? “We graduate global citizens—future engineers, teachers, artists, politicians and other leaders of our society,” says Corey Hawkey, assistant director of sustainability practices at Arizona State University (ASU).

**“Higher education needs to take a leadership role in conducting new research, trying new sustainability strategies, and then sharing that learning with the local and global community to make the world a better place.”**

— Corey Hawkey  
Assistant director of sustainability practices  
Arizona State University (ASU)

# Establishing sustainability as field of study

Arizona State University is one of the standout schools in terms of energy reduction, the broad scope of its sustainability initiatives and its ongoing commitment to sustainability research and education. Sustainability is at the core of ASU. As established in ASU's charter, the university takes responsibility for the economic, cultural and overall health (including environmental health) of the communities it serves. This commitment translates into developing solutions to real-life challenges, such as minimizing and mitigating ASU's climate impact.

On the education side, ASU offers an undergraduate degree in sustainability within its College of Global Futures, the first such degree offered in the U.S. Its Julie Ann Wrigley Global Futures Laboratory is dedicated to making a meaningful contribution to ensuring a habitable planet and a future in which well-being is attainable for all humankind. Its curriculum and research continue to expand, creating a wealth of work that contributes to this vital field of study.

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## Making sustainability a reality on the ASU campus

It's clear that the school practices what it teaches. Its University Sustainability Practices office and its partners across the university began addressing on-campus sustainability in 2006 – early times for higher-ed sustainability initiatives. ASU applies sustainability practices to all aspects of its facilities, including design, construction, operation, maintenance, purchasing, food services, parking and transit and more. ASU made a major commitment to carbon neutrality, setting a deadline of 2025 (the 50th anniversary of Earth Day) to become carbon neutral for Scope 1 (on-campus) and Scope 2 (purchased electricity) emissions. And by 2035 it plans to be carbon neutral for Scope 3 emissions (commuting and air travel).

To achieve these goals, ASU implemented diverse energy conservation measures, from lighting retrofits to equipment upgrades, energy management system upgrades and much more. The result? ASU achieved carbon neutrality of Scope 1 and 2 emissions in 2019, six years ahead of schedule. “Our purchased electricity is 100% renewable energy now,”

says Hawkey. “We've been ramping up our solar power for years and now we have close to 175,000 solar panels on roofs, parking canopies and elsewhere. In total, our solar capacity is 53 megawatts. It's a lot.”

Among the other operations-focused sustainability accomplishments at ASU:

- Committing to sustainable design and construction, resulting in dozens of LEED-certified buildings.
- Building The Garden Commons, an outdoor classroom and multi-use space that features raised beds where students can volunteer, getting hands-on food production experience – with all produce donated to those in need.
- Establishing an internal, revolving investment fund for energy efficiency projects.
- Tracking key metrics throughout the campus to ensure progress.

These efforts and many more earned ASU top ranking in the U.S. in 2020 (and fifth in the world) out of 766 higher-education institutions achieving the United Nations Sustainable Development Goals (SDGs).<sup>3</sup>

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## Sustainability after graduation

“A lot of our work is operational, as we work to reduce the footprint of the school itself,” says Hawkey. With approximately 128,000 students, ASU is creating a lot of sustainability ambassadors.

**“A lot of it is inspirational—to really inspire students to pay attention to the issues and spread the word.”**

– **Corey Hawkey**

Assistant director of sustainability practices  
Arizona State University (ASU)

# Turning commitment into action

ASU isn't alone. In the groundbreaking 2006 American College and University Presidents Climate Commitment (ACUPCC), more than 697 colleges and universities in all 50 states and the District of Columbia agreed to:

- Eliminate greenhouse gas emissions from their campus operations
- Promote the research of sustainability programs and empower the higher education sector to educate students, create solutions and provide leadership-by-example for the rest of society.

These commitments rely on higher-education institutions to become role models for their students and communities—and to use education to reverse global warming and create a sustainable society. Almost twenty years later, how are colleges and universities measuring up?

- From the Harvard Sustainability Plan to the University of Chicago's Environmental Community to Sustainable Stanford, colleges and universities are actively pursuing impressive sustainability goals via specific strategies.
- The National Association of Independent Colleges and Universities (NAICU)'s survey of green initiatives on campus shows impressive progress in all areas of sustainability.
- More than 40 colleges and universities now obtain 100 percent or more of their electricity from renewable energy sources.<sup>4</sup> And there are many more initiatives underway, driven by the urgency of climate change and fueled by the energy and creativity of millions of college students across the U.S.

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## Students are concerned about sustainability

An extensive survey by Students Organizing for Sustainability International (SOS)<sup>5</sup> found that:

**92%**

agree that sustainable development is something which all universities and colleges should actively incorporate and promote.

**40%**

report low or no coverage of sustainable development concept in their course curriculum.

**90%**

of respondents say they are willing to accept a salary sacrifice to work in a company with a good environmental and social record.

**72%**

believe that climate change will negatively impact their futures.

**75%**

say they're worried when asked to identify the word that best describes their feelings about climate change and their future.

For more on the report and its findings, go to [sos.earth/survey-2020](https://sos.earth/survey-2020).

# Learn from the experience of other schools.

What can be learned from K–12 and higher-education institutions that are addressing sustainability? Here are just some of the best practices highlighted by leaders of sustainability initiatives:

## **Build your team and enlist key stakeholders.**

One enthusiastic teacher or student can inspire a sustainability project. But it takes broad support within an institution to ensure that this project continues and becomes a more comprehensive program. In particular, many sustainability actions require involvement from administrators, custodians, curriculum planners, parents and others. Involving school leadership and engaging different sectors—including the surrounding community, local/state government and other resources—is vital, and not always easy. But it ensures the long-term survival (and yes, sustainability) of any initiative.

## **Set benchmarks.**

Schools embarking on sustainability efforts need to document the situation before making changes, so they can accurately assess progress. After all, if you can't measure it, you can't improve it.<sup>6</sup> For example, schools often start by charting energy use before installing LED lighting and implementing other energy-reduction strategies. While metrics are the most obvious way to show reductions, savings and positive change, not all sustainability initiatives are as easily measured and quantified. So don't let benchmarking be a barrier to progress.

## **Plan and strategize—but also get busy.**

In the rush to make projects happen and show progress, schools can shortchange the planning stage. "Schools need to explore what makes them unique and what they're good at, so they can take advantage of these elements and work them into their plan," said one veteran sustainability professional. "They need to plan and strategize for the future—before rushing into implementation."

That said, it's important to move ahead without getting stuck on research-heavy efforts, such as intensive planning exercises. Take advantage of the hard work, research and careful thinking that others have put into identifying

best practices and setting targets. This approach enables faster progress. "We have a strong knowledge of what strategies work and what kind of impact they have," says Sustainable Jersey's Randall Solomon. "The challenge is to get busy implementing them while there's still time." In short, reinventing the wheel isn't necessary, particularly when there's an urgent need for change.

## **Tap the power and expertise of existing programs.**

Improving sustainability isn't a niche effort anymore. There are thriving programs at the international, national, state and local level that can help provide direction, support, best practices, helpful documents (e.g., guides, toolkits, curriculum suggestions) and more. Some K–12 and high-ed programs are highlighted in this white paper and there is a wealth of other information online. For example, Eco-Schools International shares its simple 7 Steps to a Green School, and more comprehensive guidance is also available.

## **Choose your battles.**

Improving sustainability is a multi-layered challenge, one that can't be tackled all at once. It's important to choose the areas where schools can make the biggest impact with the least effort—the proverbial low-hanging fruit of environmental impact. As Jill Buck, founder of the Go Green Initiative puts it:<sup>7</sup> "The number one way to reduce your environmental impact is to look at your energy consumption," including electricity, natural gas and any other utility services used to fuel a school's physical plant. Other likely suspects? "Transportation creates a huge environmental footprint," she adds. "Then after that, there's food."

## **Invest in ongoing learning.**

Sustainability is an ever-evolving topic. Schools that have implemented successful sustainability initiatives highlight the importance of staying in touch with the latest information and trends, researching key topics and (if possible) attending training or conferences to network and learn.

# Sustainability is a marathon, not a sprint.

Tackling sustainability can be a daunting challenge. But in parallel with corporate and governmental efforts, educational institutions of all sizes, across the US, are stepping up their sustainability initiatives—and achieving impressive results. For schools considering new initiatives, there are a wide range of resources offering real-world experience, proven strategies, best practices and support. Student interest in sustainability is high, driven by a growing realization of its urgent importance. Educators pursuing diverse sustainability efforts agree on a key point—start small, but keep going (and growing) to achieve lasting impact.

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## Learn more.

Find out how Verizon is empowering K–12 and higher-education institutions with innovative technology.

[verizon.com/education](https://www.verizon.com/education)

- 1 Website of the Green Schools Initiative, no longer active.  
Source: <http://www.greenschools.net/article.php-list=type&type=4.html>
- 2 "Sustainability Programs in Business, Universities, and K–12: Educating Students and Leaders Toward to Sustainability Mindset," *Journal of Instructional Research*, Vol. 7 (2018).  
Source: <https://files.eric.ed.gov/fulltext/EJ1188323.pdf>
- 3 Annual rankings published by Times Higher Education magazine are the only global performance tables that assess universities against the UN Sustainable Development Goals.  
Source: <https://www.timeshighereducation.com/world-university-rankings>
- 4 "America's Top Colleges for Renewable Energy 2020," *Environment America*, August 19, 2020. Source: <https://environmentamerica.org/reports/ame/america%E2%80%99s-top-colleges-renewable-energy-2020>
- 5 "Students, Sustainability, and Education," 2020 survey, Students Organizing for Sustainability.  
Source: <https://sos.earth/survey-2020/>
- 6 A business truism widely credited to management guru Peter Drucker.
- 7 "Waste Not, Want Not: Easy Tips for Anyone to Go Green." *Get Cultured Kitchen: The Ethical Living Blog*.  
Source: <http://www.getculturedkitchen.com/go-green-initiative-jill-buck/>

## Verizon's commitment to sustainability

Like forward-thinking schools and businesses across the US, Verizon is integrating sustainability into our operations—and helping our customers do the same. As a global communications technology leader, Verizon recognizes that our networks and connected solutions can help millions of customers save energy and reduce carbon emissions via a wide range of strategies—from business telecommuting to smart building management. In 2020, Verizon solutions enabled the avoidance of 12 metric tons of CO<sub>2</sub>e, equivalent to taking 2.6 million cars off the road for one year—or roughly double the emissions that Verizon operations create.

### On the path to net zero

To achieve net zero emissions in our operations by 2035, Verizon is focused on improving the energy efficiency of our networks and facilities, supporting the transition to a greener grid by entering into power purchase agreements with renewable energy developers and investing in on-site green energy at our facilities.

Other areas of sustainability that Verizon is addressing:

- Conserving water
- Expanding recycling and reuse of e-waste
- Sourcing and using paper sustainably
- Integrating environment, health and safety management throughout our organization
- Sponsoring the planting of 20 million trees worldwide by 2030

Verizon also has a robust Green Team, a grassroots employee effort that builds sustainability into all aspects of Verizon. In September 2020, Verizon met its goal of having 30% employee participation on the Green Team, with a goal of 50% of Verizon employees to be Green Team members by 2026.

Read the [Verizon Environmental, Social and Governance \(ESG\) Report 2020](#) to find out more.