

Why Environmental Justice Is Educational Justice



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By Kristen Hengtgen, P-12 Lead II, College and Career Readiness, and William Rodick, P-12 Practice Lead

Climate change is amplifying existing inequities that disproportionately affect students of color, students from low-income backgrounds, and students with disabilities. Addressing these inequities and educating students about climate change should be a priority, as extreme weather events — such as flooding, extreme heat or cold, severe storms, and wildfires — that disrupt school operations and undermine student learning are becoming more common. What's more, these students — many of whom lack consistent access to clean air and water and safe housing — are at greater risk of exposure to pollution that can worsen asthma and other health issues. They're increasingly and understandably anxious about the climate crisis — as the stakes are high and they will likely bear the brunt of it — and want to know what they can do about it.

As a result of historic housing discrimination and industrial capitalism, many communities of color and those in concentrated poverty are “fenceline” communities, living on the geographic borders of industrial facilities that pose risks to their health. The people living in these communities are more likely to be exposed to man-made industrial pollutants and natural disasters. Students who reside in these communities are also more likely to attend schools with less funding and resource inequities, meaning that the policy failures that expose them to environmental harm are often compounded by systemic educational disadvantages. To make matters worse, these historic realities are being stripped from school curricula in favor of teachings that deny the reality of climate change.

We recognize how environmental injustices can impact communities and schools and outline six principles that are crucial for advancing climate justice in education. By focusing on these principles, state and district education leaders, decision-makers, and schools can meet the needs and aspirations of students of color and students from low-income backgrounds and contribute to a more just and resilient world.

Climate Change Means More Kids Are Missing School

In the 2024-25 school year, hurricanes closed schools for [weeks in 20 districts in North Carolina](#), while over 1,000 schools in four counties in Southern California were closed for [multiple days due to wildfires](#). Additionally, many districts across the country [delayed their first day of school due to extreme heat](#), and over [1,000 more schools](#) closed because of other extreme weather events. Extreme weather — characterized by longer and more intense heat waves, severe storms, and wildfires — is [made](#) more frequent and intense by human-induced climate change. This increase in extreme weather will lead to more school closures, which, in turn, will impact students' health, well-being, social interactions, and instructional time.

Principle 1: Student Agency

Students' school experiences should not only prepare them to be future leaders but also support them to act now on the issues they care about most.

Climate change is of great [interest and concern](#) for young people around the world. That should come as no surprise. Students see the consequences of climate change all around them. Since 2022, [400 million](#) students globally have experienced school closures due to extreme weather. In the United States, approximately [7 in 10 people](#) say they have experienced extreme weather events. Many young people experienced poor air quality, unusually hot weather, and events such as hurricanes, floods, or water shortages in their communities. They are keenly aware of how climate change can significantly disrupt learning but have little faith in governmental responses to the crisis they are witnessing. A [global study](#) of 10,000 children and young people across 10 countries, including the U.S., found that more than 50% of respondents feel sad, anxious, angry, powerless, helpless, and guilty. Their response is unsurprising, as youth have generally been [excluded](#) from discussions about climate solutions.

Yet it is telling that when young people learn about climate change, they [most often](#) ask: What is being done about climate change? Who is responsible? And what can they themselves do? Climate change is not an abstract topic for young people; it is a very real and present threat that demands an urgent response.

The antidote to student anxiety is empowerment. Young people have led movements to change policy, often **despite the limited exposure and leadership opportunities within their schools, through actions such as building community pressure to [improve school infrastructure](#)**, engaging in [neighborhood organizing](#) against local polluters, organizing [national marches](#), or taking [fossil fuel industries to court](#). They are the unfortunate experts in climate change and environmental disasters, acting where they can. Their expertise must be recognized inside and outside of the classroom, allowing them to push us beyond a rinse-and-repeat cycle that perpetuates [environmental racism](#) and empowering them to construct a safer and more just future.

It is vital that young people have access to information and support that increases their climate literacy. It's also vital that their voices are heard and that they feel empowered to participate in climate action. Although children cannot bear the full responsibility of solving a problem they did not create, schools play an important role in enabling youth empowerment by listening to students and providing opportunities for action.

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Actions for State and District Leaders

Empowering students requires systems-level changes in how students and community members interact with schools. States and districts should invest in the professional development of school leaders and teachers to build mentorship and leadership opportunities into the regular practices of schools and to incorporate evidence-based strategies for engaging students and their families. Districts can fund professional learning communities that support youth interests and engage them as researchers on topics relevant to their lives. States and districts should also foster relationships with universities, [climate-focused organizations](#), and community groups that specialize in developing students' research and civic engagement skills. Schools can identify the most beneficial partnerships for their student populations by engaging directly with families and local community members. Family and community engagement activities should provide opportunities to learn about the consequences of climate change and related issues within their communities and ensure that the perspectives of families and community members are considered in educational decisions.

Promising Practices

In 2024, the Tucson Unified School District (TUSD) board adopted the nation's most comprehensive [climate action plan](#) for a school district. The plan aims to cut emissions in half by 2030 and achieve net-zero emissions by 2040. It also seeks to increase holistic health services that address climate anxiety, establish an extreme heat preparedness plan, and ensure that the curriculum at all levels promotes student understanding of the causes of the climate crisis and opportunities for engagement in climate solutions. The resolution was written and researched by the youth-led [Arizona Youth Climate Coalition](#), many of whom are current or former TUSD students. TUSD is not alone in this effort; youth across the country have successfully lobbied their districts to listen to their voices and implement changes that respond to student needs.

Climate Resilience Education and Action for Dedicated Youth (READY), developed by the Florida Atlantic University Pine Jog Environmental Education Center (FAU Pine Jog) and funded by the National Oceanic and Atmospheric Administration (NOAA) Environmental Literacy Program, [builds](#) climate literacy and community resilience through a three-semester dual-enrollment program. Targeting students from Title I high schools in communities vulnerable to extreme weather in Palm Beach County, Florida, Climate READY uses a community-based approach to teach climate literacy, connect students with local decision-makers, enable students to explore inequities in their communities, and support them in generating a community resilience plan that they present to local government. An [evaluation](#) found that Climate READY participants improved environmental literacy and felt more prepared, confident, and capable of communicating within their communities about climate change.

Principle 2: Resource Equity

Schools should have the resources and infrastructure necessary to create safe and nurturing learning environments for students.

Schools and classrooms must be safe and healthy places for students to learn. Yet, in the 2023-2024 school year, many schools across the nation lacked adequate infrastructure to provide space for learning and play amidst severe heat and cold, wildfire smoke, and other extreme weather conditions. As a result, hundreds closed for a day or more. The first days of the 2024-2025 school year saw school closures due to heat all across the country. These closures are no longer abnormal and will only increase as climate change worsens. All students deserve climate-resilient infrastructure that is safe and comfortable so they can learn. Moreover, [students experiencing poverty](#) are [more likely to](#) attend schools in districts that require major upgrades to school buildings. Therefore, fixes to schools in low-income communities should be prioritized.

Schools can be part of the solution by creating healthy, sustainable, and learning-ready environments where all students can thrive. The bipartisan Inflation Reduction Act (IRA) of 2022 represented the largest investment in climate and clean energy in U.S. history, unlocking billions of dollars for schools to upgrade to cleaner, healthier infrastructure. Through tax credits, financing, and grants, IRA funds supported schools in installing solar panels, reducing annual energy costs and carbon emissions, and offsetting costs to switch from diesel buses to electric buses, which will help students breathe cleaner air ([and improve academic performance](#)). Although the current administration halted appropriated IRA funds in January 2025, energy tax credits remain available by law, though there may be changes in the near future. Nevertheless, IRA funds exemplify bipartisan federal support that has been enacted before and can be again. Clean energy technologies are often more cost-effective to operate, allowing savings to be reinvested in teacher salaries and student learning.

The Benefits of Electric School Buses

The Benefits of Electric School Buses Nearly half a million school buses are used in the U.S., and most of our school bus fleet consists of highly polluting diesel vehicles. However, there is substantial research on the benefits of upgrading buses or converting to electric buses, including health benefits linked to reduced mortality and childhood asthma, as well as improved academic performance. A [study in Georgia](#) found that when districts upgraded old diesel engines in school buses to filter harmful pollutants and reduce emissions, these retrofits led to enhancements in student academic performance. The study estimated that if a district retrofitted its entire bus fleet, **the impact on English test scores would be slightly greater than the effect of going from a rookie teacher to one with five years of experience.**

Young children are particularly [vulnerable](#) to the impacts of climate change. Like schools, child-care and early learning facilities also need upgrades to create healthy environments. For example, more than 60% of Head Start facilities, which primarily serve young children from low-income households, [need physical infrastructure improvements](#). Access to a safe and climate-resilient learning environment is foundational to learning, which begins at birth, so federal investments in early learning are essential. Yet, many existing federal funds and tax credits to improve facility climate resilience are not available for early learning programs. That must change.

Beyond providing climate-ready infrastructure, schools can serve as shelters for students and their communities. With forward thinking, schools can become community-resilience hubs that remain open and provide resources and shelter during extreme weather, particularly in high-poverty communities.

Action Steps for State and District Leaders

To jumpstart their transition to climate-resilient infrastructure, states and districts should consider which schools may be eligible for energy-efficient upgrades through federal and state funds, and/or re-evaluate current projects in development. Additionally, states and districts can work to ensure that all students have equitable access to safe, accessible outdoor learning spaces by developing green schoolyards that replace heat-trapping asphalt with outdoor spaces incorporating grass, trees, or other native plants. They can also consider adding edible gardens, rain gardens, or other elements that support learning about sustainability and the environment. Accessible green schoolyards can help close the equity gap in access to nature while also providing opportunities for hands-on learning and climate literacy. It is important to note that outdoor spaces for children are not equally safe or accessible; therefore, district leaders must consider existing barriers to high-quality nature-based learning and work to increase access and opportunities for students to engage with the outdoors in meaningful ways. Additionally, districts can hire a sustainability director or team to coordinate efforts to improve sustainability in facilities and operations and enhance the district's climate mitigation initiatives.

For more resources to help schools get started with tax credits for clean energy upgrades, UndauntedK12 and This Is Planet Ed offer multiple [targeted resources](#), including tips for [advocates](#), resources for [district leaders](#), and toolkits for [school board](#) members. In addition, the Alliance for Resource Equity has a [guidebook](#) for district- and school-level action planning on learning-ready facilities to help identify the root causes of any facilities challenges and consider potential actions to ensure that each student has access to well-equipped physical environments that facilitate learning and meet students' needs.

Promising Practices

Since 2017, **Washington, D.C.'s Department of Energy and the Environment** has worked with community members to support efforts to establish the **District's first [resilience hub](#)** in Ward 7 along the Watts Branch tributary of the Anacostia River. This location was chosen because it is at high risk for flooding and extreme heat, and the hub will provide clean backup power during grid outages, along with environmental education, workforce development and community outreach programming. This project will inform how future community resilience hubs can be established throughout D.C.

In 2023, [Seattle Public Schools](#) installed geothermal wells for heating and cooling in three schools, saving \$7.5 million through federal tax credits that reimbursed the schools for about one-third of the expenses associated with adopting this more energy-efficient technology. According to Richard Best, director of Capital Projects & Planning for Seattle Public Schools, the primary barrier to using geothermal wells had been their cost, but federal tax credits helped alleviate this issue. It's also a win for the district's future, with expected reductions in maintenance costs and energy savings.

Principle 3: Social, Emotional, and Academic Development (SEAD)

Schools should foster students' social and emotional well-being, which is essential for their academic development.

Students' mental and emotional health is directly influenced by their physical and social environments and experiences. [All learning](#) is inherently social and emotional. The conditions of the school environment, the relationships educators build with students and their families, and the safety intentionally created in school spaces all contribute to students' social and emotional well-being. When students feel safe and supported in their learning, they perform better academically. Conversely, feelings of distress and anxiety, along with schooling environments that do not support students holistically, can exacerbate harm.

[Climate change impacts](#) the social and emotional well-being of students in several ways — including through extreme and inconsistent weather events; through enduring disruptions to the social, economic, and environmental conditions that shape children's development; and through the general distress and anxiety students experience due to observable and future threats. In [a survey](#) of more than 10,000 young people, half indicated that they feel anxious about the environment every day, and three-quarters of them agreed that the "future is frightening."

As we noted elsewhere, children living in proximity to industrial pollution, children of color, and children living in concentrated poverty are more likely to feel the consequences of climate change in their physical environments. They are also [more vulnerable](#) to the mental-health effects, the distress and anxiety related to climate change, and less likely to have access to the social-emotional supports and instructional strategies that can [help students develop relevant coping strategies](#). Social and emotional learning is crucial to [help students manage climate change-related anxieties and stressors](#) through skills such as self-regulation, social awareness, communication, and collaboration.

These same students often attend schools that prioritize addressing their social and emotional well-being through behavioral interventions aimed at "[fixing](#)" them. Yet, what these students most urgently need are safe and nurturing learning environments that intentionally incorporate social and emotional learning as part of their academic development.

Actions for State and District Leaders

EdTrust's [recommendations](#) for integrating social, emotional, and academic development are directly applicable to climate change education. States and districts should ensure that school leaders and educators receive professional development and support to help them recognize students' social and emotional needs in the context of climate change and racial injustices. They should also learn how to mitigate any biases they may hold about student behaviors and needs. Although educators play a crucial role in the social and emotional learning of students, they are not often clinically trained. Professional support should include investments in [school-based health professionals](#) who can conduct climate-related distress assessments and provide appropriate interventions for students.

States and districts should also support schools in building relationships with their communities. This support should include improved family engagement and community-based partnerships that provide wraparound services for students and community members. These relationships serve as an important source of data for schools. Strengthened connections across these environments can help school personnel better understand the impact

of climate issues on students and their families. Through deep engagement, schools can ensure that educational practices and services more effectively respond to community needs.

Finally, students are less likely to exhibit symptoms of depression due to climate anxiety [if they are engaged in collective action](#). School leaders and educators should, therefore, ensure that schools provide spaces for students to recognize the direct role they can play in addressing climate issues.

Promising Practices

The [Mycelium Youth Network \(MYN\)](#) works with communities and schools to identify local climate concerns, develop solutions that can be embedded in school curriculum, and guide youth through the action of building solutions at their schools. Youth-led and localized initiatives like programs offered by MYN can alleviate climate anxiety by empowering students to take action that will result in tangible change, including changes within schools to acknowledge climate and anxiety concerns.

The **National Environmental Education Foundation (NEEF)** and the **Climate Mental Health Network (CMHN)** worked with middle school educators nationwide to understand how middle school students emotionally respond to climate change. They found that, while virtually every teacher reported encountering emotional reactions from students when teaching about climate change, most felt unequipped to help students cope. In response, NEEF and CMHN [created a toolkit](#) with teacher-tested, standards-aligned resources to help middle school educators address the emotional impacts of climate change.

Principle 4: High-Quality Curricula and Instruction

Schools should provide an action-oriented, solutions-based curriculum and instruction for students.

Climate change education could be [one of the most effective solutions](#) for preventing climate disasters. And climate change education is popular: About 75% of Americans [agree](#) that schools should teach the causes, consequences, and potential solutions of global warming. While [students recognize](#) that climate change is real and caused by human activity, they still hold misconceptions about its causes and often feel confused about the underlying factors contributing to global warming.

One reason students generally lack nuanced and in-depth knowledge about climate change is that they receive so little instruction on the topic in school. Few states [explicitly include climate change education](#) in public schools, and commonly agreed-upon science standards [leave it up to states](#) to determine how clearly lessons should connect to climate change. Many students receive only [1 or 2 hours](#) of instruction related to climate change per year. A fortunate few gain a greater understanding of the issue if they have teachers who are particularly knowledgeable and passionate and who have the space and resources to incorporate climate change into their classrooms.

Although most teachers believe climate change should be taught, and most parents would support this, their training and support are limited, [leaving teachers uncertain](#) about how to connect climate change to classroom topics. As a result, when teachers do incorporate climate change instruction, they may inadvertently perpetuate

[misinformation](#) and [leave out important connections](#) between climate change, sustainability-based job opportunities, environmental justice, and systems-based solutions to environmental disasters. Furthermore, a nationwide movement to restrict teachers from engaging in honest, critical, and evidence-based discussions of politicized topics leads them to self-censor when discussing climate change and its racialized consequences.

On the limited occasions when climate change is introduced in the books that students read, [the focus is often on an individual's role](#), obscuring corporate responsibility and emphasizing solutions like recycling instead of community empowerment for systemic change.

Students are [demanding changes in their education](#). They recognize the significant impact that substantive instruction can have. A [2020](#) study found that if climate change were studied by just 16% of secondary school students in middle- and high-income countries, CO2 emissions could be reduced by almost 19 gigatons by 2050. But the effectiveness of that education relies on linking knowledge to action.

Actions for State and District Leaders

State policymakers and advocates should recognize the public's desire for climate change education and push for the adoption of climate change standards. State boards of education should leverage their role in providing curriculum options for districts that incorporate relevant, engaging, and systems-focused discussions of climate change. States should also provide professional development support to help educators confidently connect climate change to various subject areas in response to the overwhelming interest from students.

Promising Practices

TenStrands, an environmental literacy nonprofit in California, received state funding to use a [community approach](#) to develop statewide K-12 curricular resources related to climate change and environmental justice. TenStrands connected curriculum developers with community-based organizations to ensure that the curriculum focused on collective action, utilized local experts, and remained relevant to students' lives and real-world issues. The curriculum includes teacher supports, aligns with state standards, and will be available for free.

In 2020, **New Jersey** became the first state in the country to adopt and require [climate change standards](#) across its K-12 public schools. In another first, the state established an [office of climate change education](#) and provided millions of dollars in grants to support and train educators. A [climate education hub](#) provides teachers a central location for interdisciplinary instructional materials, lesson plans, professional learning opportunities, and guidance for school leaders related to climate change.

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Principle 5: STEM Identity

Students should have access to an engaging and meaningful STEM curriculum that is connected to their identities and local contexts.

Although climate change education is inherently interdisciplinary, one of the most typical places for teachers to teach or receive training in climate change content is in elementary and secondary STEM classes. Climate change content is mentioned, albeit in a limited way, in the Next Generation Science Standards (NGSS), which have been adopted in most states. A [scan](#) of national climate change education policies found that two-thirds of climate change content is included in science and environmental subjects, with only rare mentions in social studies or language arts, and none in math. However, even this instruction is often superficial and sparse — typically occurring for only a few hours each year. Teachers say they need more preparation and training to feel confident discussing climate change with their students.

But because of the natural link between climate-change related content and STEM classes, STEM classrooms and curricula are essential for engaging students in climate change topics. They provide students with the tools to problem-solve and address climate justice issues that are most relevant to their contexts. Additionally, classrooms must involve students in evidence analysis and critical thinking, so students can identify credible sources of information and understand the science behind climate change.

Actions for State and District Leaders

To engage young people in meaningful climate change content, districts and school leaders should recognize the important role of STEM classes in fostering early STEM identities (e.g., “I am a STEM person,” or “STEM is for me”). While climate change education happens across all disciplines, a rigorous, place-based, solutions-oriented climate change curriculum may spark young people’s interest in STEM. Persistence in STEM can lead to high-leverage careers when supported by content and experiences that speak to and inspire students of color and those from low-income communities. This work is essential for preparing future scientists, engineers, inventors, and thinkers who can help address the fundamental climate crises of our time.

While the climate crisis is very real and scary, content should not be sanitized for younger learners. [Research](#) from around the world shows that most children, even those elementary age and younger, are aware of the climate crisis and are worried about it. Outdoor hands-on learning is one way for even very young children to engage in STEM education that is relevant to them and their communities. Early STEM education that connects topics to children’s daily experiences helps build curiosity and knowledge about climate change, as well as a sense of agency and hope.

STEM classrooms should also focus on key concepts such as climate action, climate justice, climate mitigation, and adaptation. This means that states and districts must provide educators with the professional development, training, and support needed to teach these concepts confidently, ensuring that classrooms empower students rather than scare them into inaction. We must engage all students in topics relevant to their lives and communities, prepare them for the jobs of the future, and empower them to become champions of change.

Promising Practices

In 2022, [Connecticut](#) passed a law requiring public schools to incorporate lessons on human-caused climate change into their science curriculum in line with the Next Generation Science Standards. While 90% of the state's schools already teach climate change, the new law ensures that climate education will not be subject to political or budget changes. Students will learn about man-made climate change, its impacts on different communities, and potential solutions. Fifth, eighth, and 11th graders will be tested on their understanding of climate change.

In 2018, **Washington** allocated millions of dollars in grant funds to implement systemic capacity building in climate science learning and scientific literacy across the state through the [ClimeTime network](#). This groundbreaking effort marked the first time a state directed explicit funding toward K-12 climate education. Since its inception, the initiative has trained [26,000 educators](#) and fostered partnerships among educational agencies, community-based organizations, and tribal schools. The professional development opportunities remain locally grounded, and with ClimeTime's success in its first five years, the program now aims to weave climate education into additional disciplines beyond science.

Principle 6: College and Career Readiness

Students need a high-quality, relevant career-connected education that challenges them and prepares them for the present and the future.

As climate change continues, students who understand its causes and how to advance climate solutions will be better equipped for the future. To effectively address the climate crisis, our society needs individuals who are well-trained and motivated to engage in climate action.

As we adapt to the current climate crisis, many [jobs will require](#) skills related to climate mitigation, sustainability, or restoration — often referred to as green jobs. Right now, jobs in clean energy industries are among the fastest growing in the country. Districts can ensure that career-connected learning and career and technical education (CTE) programs help prepare students for today's job needs and the future workforce.

To ensure that underserved community members gain the knowledge and skills to adapt to a rapidly changing reality, they must have early access and exposure to green skills and career pathways in schools. Many emerging workforce opportunities will be in STEM and technical fields, where women and students of color are underrepresented. To avoid repeating past mistakes, schools, employers, and communities should consider how to proactively target these student groups and be intentional about designing pathways for underserved individuals to lead, shape, and benefit from the transition to clean energy.

Support for green jobs may also appeal to people across the political spectrum. While the messaging may vary — a focus on resilience, economic efficiency, and bringing good jobs to your community may appeal to some students and regions, while others may be attracted to jobs with meaningful environmental impact — ultimately, green jobs are about preparing young people for the jobs of the future.

Actions for State and District Leaders

States and districts can support career and technical education programs that prepare students for jobs in a clean economy. To ensure a just transition to a green economy, they should prioritize intentionally connecting Black and Latino students, students from low-income backgrounds, English learners, and students with disabilities to quality career exploration and pathways. P-12 classrooms should offer high-quality, career-connected learning to provide career exposure and demonstrate that climate-related jobs extend beyond traditional roles like environmental scientists or foresters. These careers also can include eco-designers, building-emissions auditors, land-use attorneys, battery technicians, and many more.

Promising Practices

Promising practice: Building on the state's Climate Action Plan, the [Delaware Department of Education](#), in partnership with AdvanceCTE, is working to integrate environmental literacy into statewide CTE pathways, so that middle and high school students will gain a deeper understanding of the environment and sustainability in relation to careers and be prepared for the millions of green jobs that will be created in the future.

Promising practice: In May 2024, [Colorado](#) passed a legislative initiative that recognizes students who have achieved climate literacy. To earn this endorsement, students must complete two courses in climate literacy, along with hands-on experiential learning, equipping them for success in college, the military, or the workforce. This seal addresses the needs of rural communities disproportionately impacted by climate change, bringing them together to tackle challenges and strengthen pathways to green jobs in sectors such as energy, agriculture, and outdoor tourism.



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EdTrust is committed to advancing policies and practices to dismantle the racial and economic barriers embedded in the American education system. Through our research and advocacy, EdTrust improves equity in education from preschool through college, engages diverse communities dedicated to education equity and justice and increases political and public will to build an education system where students will thrive.

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