

# National Green Ribbon Award Application

Deadline: December 31 each year

Submit application and photos to [info@showmegreenschools.org](mailto:info@showmegreenschools.org)

In order to complete this application, and to have it considered, you need to have achieved Level 4 or 5 in the Missouri Green Schools program. In certain cases, we will invite schools that are not enrolled but have made progress in all three Green Schools Pillars to apply.

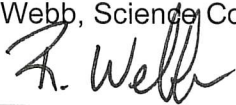
To complete this form, make a copy of it and complete the information in the tables below, and enter narrative responses where prompted.

## School Leadership Certification:

I attest that the information presented in this application is accurate and true, to the best of our knowledge, and that the photos included herein have been released for sharing to the public.

Principal Name: Ragan Webb, Science Coordinator, Columbia Public Schools

Principal Signature: \_\_\_\_\_



Superintendent Name: \_\_\_\_\_

JEFF KLEIN

Superintendent Signature: \_\_\_\_\_



## School Contact Information

<b>School Name: Boone County Nature School</b>	<b>Street Address: 8989 S Tom Bass Road</b>	
<b>City: Columbia</b>	<b>State: MO</b>	<b>Zip: 65203</b>
<b>Website: <a href="https://boonecountynatureschool.com/">https://boonecountynatureschool.com/</a></b>	<b>Facebook and Instagram:  Boone County Nature School</b>	
<b>Principal:N/A Ragan Webb, Elementary Science Coordinator</b>	<b>District: Columbia Public Schools</b>	
<b>Principal Email: rwebb@cpsk12.org</b>	<b>Principal Phone: (573) 214-3945</b>	
<b>Lead Applicant and Position (if different): Ragan Webb, Elementary Science Coordinator</b>		
<b>Lead Applicant Email: rwebb@cpsk12.org</b>	<b>Lead Applicant Phone: (573) 214-3945</b>	

## School Characteristics

<b>Level</b>  • Elementary 5 <sup>th</sup> Grade only	<b>School Type</b>  • Public	<b>How would you describe your school?</b>  • Urban • Suburban • Rural <b>We serve all populations</b>	<b>Total Enrolled:</b> 1,332  <b>Graduation Rate:</b> 91.55%  <b>Attendance Rate:</b> 89.2%
<b>Does your school serve 40% or more students from disadvantaged households? Yes</b>			
<b>% receiving FRPL:</b> 47.9%		<b>% limited English proficient:</b> 9.9%	

## **Summary Statement**

Boone County Nature School serves as an innovative outdoor education center where all 5th grade students from 21 elementary schools across the district experience immersive, place-based environmental education. We utilize all 111 acres for education across 3 seasons. Each year between 1,300 and 1,500 5th graders visit Boone County Nature School for 7 days across three seasons. They attend 3 days in the fall, 2 in the winter and 2 in the spring. Learning is led by our 4 nature school teachers with support from the classroom teacher. The property is also accessed by schools and organizations throughout the county for field trips and outdoor education opportunities. Our vision centers on developing environmental literacy and sustainability practices through hands-on learning that connects students to the natural world and their community. Our mission integrates ecological restoration, healthy learning environments, and interdisciplinary curriculum to prepare students as informed stewards capable of addressing real-world environmental challenges. We advance this mission through partnerships with Missouri Department of Conservation and Missouri One Health, emphasizing the vital connections among human, animal, and ecosystem health.

### **Pillar I: Reduced Environmental Impact and Costs**

Our environmental sustainability is demonstrated through comprehensive energy management and habitat restoration. Students have been removing invasive honeysuckle and planting over 1,000 native plants across our property. This restoration supports biodiversity while providing living laboratories for student learning. We've engineered sustainable water management through a retention basin capturing runoff and rain chains channeling roof water to gardens with minimal erosion, reducing stormwater impact while creating observable ecosystems. Transportation efficiency is maximized through coordinated bus systems where students arrive via district buses rather than individual car drop-offs. We've reduced our footprint by sharing a shuttle bus with another department for overlapping field trips, cutting bus usage from four vehicles to two.

### **Pillar II: Improved Health and Wellness**

Our facility design prioritizes wellbeing through intentional features and health-conscious practices. Every classroom features large windows providing natural daylight and outdoor views with direct door access to nature. This eliminates barriers between indoor and outdoor learning. Students engage in daily outdoor physical activity, walking through forest trails and ecosystems as part of curriculum, exceeding typical physical education requirements while addressing state PE standards through outdoor skills lessons. Winter tower gardens grow lettuces and herbs, providing opportunities to taste fresh produce and understand food systems. We ensure equity for all learners through track chairs enabling students with mobility challenges to navigate trails and participate fully. Our partnership with the Missouri Department of Conservation's One Health Initiative reinforces connections between environmental and human health.

### **Pillar III: Effective Environmental and Sustainability Education**

Our interdisciplinary curriculum integrates science, social studies, mathematics, and English language arts through authentic, place-based investigations. Students examine local climate data, conduct pond ecosystem evaluations, simulate wildlife migrations, and explore karst topography. Multiple outdoor classrooms and covered overhangs enable year-round outdoor learning no matter the weather.

The cornerstone is our sustainability project requirement: all 5th graders from across 21 elementary schools develop and present community-focused projects based on UN Sustainability Goals. These projects partner with local nonprofits and create lasting impact, transforming students into active environmental problem-solvers. Through professional development, we prepare all 5th grade teachers for the Nature School experience and provide ongoing outreach support, extending our impact throughout the district and creating a culture of environmental stewardship reaching approximately 1,500 students annually.

## Engagement, Benchmarking and Recognition

List the members of the team that helped prepare documentation and their role in the school

1. Ragan Webb, Elementary Science Coordinator
2. Dr. Andrew Kinslow, Secondary Science Coordinator

List any programs you are currently using to benchmark your progress in sustainability

1. Pre and Post test are given to every 5th grader on Missouri Learning Standards that are addressed during their time at Boone County Nature School. This is done annually.
2. Survey in cooperation with the Missouri Department of Education about attitudes around nature, sustainability and learning. This is a multi year study with this being the first year of full implementation. All 5th graders are given a pre and post survey to identify any attitude shifts. This was done last year on a smaller scale independently.

List any recognition or awards you have received in the last five years related to your efforts in any of the pillars

This is our 2<sup>nd</sup> year of operation.

List any partners who you have worked with to achieve the accomplishments outlined in this application (not already mentioned above).

1. Missouri Department of Conservation
2. Columbia Center for Urban Agriculture
3. Mid-Missouri Amateur Astronomy Club

Have you done any outreach to other schools to spread green and healthy practices? If so, list below:

1. We work with all 21 elementary schools within Columbia Public Schools to complete a sustainability project at their school or in the community.
2. We have provided outreach to our Parents as Teachers program by having learning opportunities at some of their events.

# The Pillars & Elements

## Pillar I: Reduced Environmental Impact and Costs

### Energy and Greenhouse Gases

- Lights that automatically turn off and can be dimmed based on sunlight.
- We have high-efficiency lighting.
- We have programmable thermostats for temperature control.

### Water and Grounds

- We have removed honeysuckle from 5 acres of our almost 14 acre forest area and are working to remove more.
- We have planted more than 1000 native plants on the property.
- We have a 10,000 ft<sup>2</sup> retention basin that collects run off and we are working on designing a garden. This would absorb approximately 6,230 gallons of water for every inch of rain that falls. In 2025 we had 35.09 inches of precipitation, meaning 218,611 gallons of rain were collected by the basin.
- We have rain chains that take water from our 6,565 ft<sup>2</sup> roof to garden areas, with minimum erosion.

### Waste

- We have a centrally located, built-in, recycling area in our lobby between our wet lab and the 4 classrooms. We have 3, 20 gallon bins: one for paper, one for aluminum and one for glass. Due to the destruction of Columbia's recycling center in a tornado, an MDC employee has been taking the recycling to the Jefferson City center, where she lives.
- We have a share basket for lunch items that were not eaten and hope to incorporate composting in the near future.
- We try to create activities that require limited consumables, so they can be replicated with little waste. For example: students have a 4.25 X 5.5 journal that they use throughout their time at the nature school instead of running full sized (8.5 X 11) copies for each class, we use white board tables to give presentations instead of making posters out of paper, when we have activities that require maps, graphs, data tables, etc, we make a laminated set for each classroom and use that for all 21 schools for multiple years, students create a name badge out of wood that is used for all 3 sessions.

### Transportation

- Students arrive by bus instead of being dropped off by parents.
- We share a shuttle bus with another department for a field trip that occurs directly before or after our program. This allows us to use two buses instead of four.

### Purchasing

- We buy locally when we can. We use a local feed store that allows us to have an open PO to purchase bird seed and other items needed, we have purchased bird feeders, feeding stations and other supplies from a local birding store, yard tools from a local hardware store, etc. We have purchasing cards that we are able to use at all of our local businesses making it easy to shop local.
- Equipment is shared between buildings to reduce the number of items we need to purchase. We do have equipment that we use on site that is shared by all schools that attend like boots, rakes, shovels, gardening tools, hand lenses, field guides, collection containers, etc. We loan these out to schools for use on individual projects at their school or for field trips as well.

## **Pillar II: Improved Health and Wellness of Students and Staff**

### **Environmental Health**

With Missouri Department of Conservation's connection with One Health we have been able to use the research and resources of this program to purposefully design our program and building to support the One Health initiative. This benefits our students and our community.

- All learning spaces have large windows with views of the outdoors, allowing plenty of sunlight into the space. Students have views of three distinct ecosystems through these windows: pond, prairie and forest. Every classroom can see trees, grasses, and bird feeders and 3 of the 4 can see the ponds. If there is wildlife on the property you will most likely be able to see it from one of our classrooms.
- Every classroom has a door to the outdoors, giving quick access. When there was a huge flock of black birds migrating by, a class spotted it and were quickly able to grab binoculars and head out their classroom door to get a closer look. Students are in and out these doors multiple times a day and allows all of our teachers to take advantage of those teachable moments that arise from students' curiosity in what they are observing in their natural world.
- No spraying of pesticides in gardens near the building.
- Our choice to eliminate carpeting reflects One Health principles by reducing indoor air pollutants (VOCs) that affect human respiratory health. This decision recognizes that a healthy learning environment supports both student well-being and our commitment to reducing ecological impact—honoring the interconnected health of people, ecosystems, and the broader environment.

### **Nutrition and Fitness**

- We are a public school following all state and federal guidelines for lunches.
- Students are outside, walking in nature every day. This depends on the weather, of course, but typically students spend approximately 5% of their time onsite outdoors.
- We address state Physical Education Standards through our outdoor skills lessons.
- Students have the opportunity to try native foods (honey, maple syrup, nuts, seeds, and other wild edibles) when in season. We do not have a cafeteria to prepare lunch for students, so this is done as a taste test only at this point.
- We have two tower gardens in the winter growing different lettuces and herbs. Students and teachers can sample these, and they are a favorite source of food for our classroom tortoise!

### **Coordinated School Health Programs**

- All teachers have access to counseling services through our employee assistance program.
- We are partnered with the Missouri Department of Conservation in their One Health Initiative.
- Our district is part of the Boone County Interagency Committee. This broad group is a long-standing group of representatives from state affiliated agencies that exists to assist families and guardians to learn about and access community support options to help families reach the goals they set for themselves. It includes representatives from Boone County Family Resources, Boone County Children's Division, Burrell Behavioral Health, Boone County Schools Mental Health Coalition, Division of Youth Services, Compass Health, the Juvenile Office and others.

### **Diversity, Equity, Inclusion and Belonging**

- All 5<sup>th</sup> graders in the district attend our program.
- We have track chairs for students with mobility issues to access all spaces.
- We are a public school that serves all students regardless of ability.
- Our district has a Welcoming Communities department that develops safe and welcoming spaces for all learners.

## Pillar III: Effective Environmental and Sustainability Education

### Curriculum and Assessment

- CPS Science is centered on a place-based approach across the district, and especially at the Boone County Nature School. Place-based references using the land, culture, and lived experience of our students as contexts for learning. We model our approach similar to those from [Teton Science School](#) and [Great Smoky Mountains Institute at Tremont](#). For example, rather than teaching ecology principals through the lens of vanishing coral reefs, we utilize the prairie, forest, wetlands, and karst topography found at the nature school as anchors for our instruction.
- We utilize an interdisciplinary approach to lesson design. Most lessons incorporate standards from multiple content areas: Science, Social Studies, Math, ELA, PE, etc. For example, in the penultimate session at the nature school, students explore the natural history of the monarch butterfly. This science exploration is contextualized within the cultural characteristics and land use of the nature school as well as wintering grounds in Mexico. ELA standards on interpreting textual evidence and presenting information are intertwined with Math and Science standards on data visualization. This interdisciplinary approach helps students understand the depth and breadth of monarch conservation through a variety of lenses.
- We work with our Social Studies Department as part of our place-based approach to coordinate a visit to the Boone County History and Culture Center as part of their educational experience. This provides richer context for the history of the nature school grounds, as well as the culture and industries of historical Boone County. This is an example of how the CPS science focus on place-based education ripples out into other subjects to connect student learning to their lived experiences currently as well as historical contexts.
- All 5<sup>th</sup> grade classes from all 21 elementary schools develop a sustainability project and present it to the community during their last day at Boone County Nature School. These projects are based on the [UN Sustainable Development Goals \(SDGs\)](#). Individual classes choose one of the goals as a focal area that is meaningful for them, complete tasks to help their local community work toward this goal, and then present their work at the culmination of the program. For example, we currently have students completing sustainability projects on food insecurity working with our local food bank, habitat improvement projects, and recycling projects among others.
- We look at real world local data to examine the concept of climate change and what that means for our community. Climate change is a very broad topic that may seem overwhelming to young learners. We focus on a local to global approach, in which we analyze climate data collected at the Columbia Regional Airport (2.5 miles from the nature school). Students examine changes in temperature, precipitation, length of growing season, as well as invasive species to determine climate change impacts on our local forest, prairie, wetland, and karst ecosystems. Often class sustainability projects will focus on minimizing climate change impacts through habitat improvements, for example.

### Professional Development

- All 5<sup>th</sup> grade teachers receive annual professional development to prepare them for their time at Boone County Nature School.
- The nature school teachers provide outreach to school to help with their sustainability projects. Following the first sessions, nature school teachers visit our sending elementary schools to help them pick a sustainable development goal and coordinate with teachers to complete their sustainability project. This might include further instruction, obtaining materials such as seeds, or working with students at a visit to our local food bank. A cycle of support helps maintain momentum toward completion of class sustainability projects.
- Nature school teachers partner with the Missouri Department of Conservation for public outreach. This year this has included education events on monarch butterflies, maple sugaring, webinars on ecology topics, and assisting with MDC's Conservation Heritage days.
- MDC uses the building and grounds for outdoor skills workshops on hunting, fishing, foraging, and cultural history among other topics.
- Nature school teachers have been to various outdoor education training courses including at Teton Science School, The Great Smoky Mountain Institute at Tremont, Missouri Department of Conservation outdoor skills events, first aid, among others.
- Nature school teachers work closely with the science curriculum coordinators to develop, refine and implement the program. Each session is iterative and CPS science curriculum coordinators guide the group through reflection and revision of the curriculum to maximize impacts. For example, we are currently working on adapting the book *Flute's Journey* to reflect local ecological elements instead of coastal Maryland. We are also revising our climate change lessons to include the last five years of data from our local NOAA weather office as well as the materials and graphs that students interact with based on three iterations of programming.

### Outdoor Learning Experiences

- Students are engaged in multidisciplinary learning based on standards every day in our outdoor spaces.
- Students engage in pond ecosystem evaluation, invasive species removal, migration simulations, karst topography hikes and much more.
- We have multiple outdoor classrooms on our property.
- Every classroom has direct access to the outdoors.
- All learning spaces have large windows with views of the outdoors, which allows outdoor learning experiences in all weather conditions and allows all classes to monitor bird feeders, etc. that can be difficult when there are large groups of students.
- There is a large overhang outside all classrooms that allows students to learn outdoors in heavy rains.

## Community Engagement

- The student sustainability projects work with a variety of nonprofits in our community.
- The student sustainability projects have a lasting effect on the community.
- Various community events are hosted at Boone County Nature School: School Board, Rotary Club, Columbia Audubon Society, Chamber of Commerce, Parents as Teachers, Missouri Environmental Education field trip, Mid-Missouri Amateur Astronomy Club, Local Gardening Clubs, Missouri Department of Conservation meetings and events are just some of the organizations that have utilized our space and our staff's expertise.
- A variety of schools throughout Boone County have participated in field trips to the property. This includes CPS middle and high school science class field trips. Southern Boone School District schedules regular visits, as well as a few local private schools and home-school groups.
- Teacher prep programs from the University of Missouri and Columbia College have reached out and are expanding their programming to include site visits to the nature school as well as volunteering with activities.
- We publicize our work at <https://boonecountynatureschool.com/> as well as our facebook and instagram pages.

## MEDIA

### [Sustainability Video](#)



Students building outdoor classroom



Students planting milkweed for pollinator garden



Maple Tree Tapping



Heritage Days



Monarch Outreach



Planting Trees for "Food Forest"



Checking our bee hives



Fishing in the rain



Karst Hike



Pond Ecosystem Study