



## District Sustainability Award Nominee Presentation Form

### CERTIFICATIONS

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#### District's Certifications

The signatures of the district superintendent on the next page certify that each of the statements below concerning the district's eligibility and compliance with the following requirements is true and correct to the best of the superintendent's knowledge.

1. The district has been evaluated and selected from among districts within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
2. The district is providing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district wide compliance review.
3. OCR has not issued a violation letter of findings to the school district concluding that the nominated school district has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
4. The U.S. Department of Justice does not have a pending suit alleging that the school district has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
5. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the school district in question; or if there are such findings, the state or school district has corrected, or agreed to correct, the findings.
6. The district meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

### **U.S. Department of Education Green Ribbon Schools District Sustainability Award 2019-2021**

Name of Superintendent: Dr. Mike Daria  
(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in the official records)

District Name: Tuscaloosa City Schools  
(As it should appear on an award)

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

A handwritten signature in black ink that reads "Mike Daria". The signature is written in a cursive style and is positioned above a horizontal line.

Date: February 4, 2021

(Superintendent's Signature)



## Nominating Authority's Certifications

The signature by the Nominating Authority on this page certifies that each of the statements below concerning the district's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

1. The district is one of those overseen by the Nominating Authority which is highest achieving in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental education.
2. The district meets all applicable federal civil rights and federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency: Alabama Department of Education

Name of Nominating Authority: Mr. Jonathan W. Thompson  
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.

A handwritten signature in cursive script that reads "Jonathan W. Thompson". The signature is written in black ink on a light-colored background.

Date: February 4, 2021

(Nominating Authority's Signature)

## SUBMISSION

The nomination package, including the signed certifications, narrative summary, documentation of evaluation in the three Pillars, and photos should be submitted online according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509  
Expiration Date: December 31, 2023

### Public Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email [ICDocketMgr@ed.gov](mailto:ICDocketMgr@ed.gov) and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.



## Summary Narrative

2-3 pages

Located in the heart of Tuscaloosa, Alabama, Tuscaloosa City Schools (TCS) is a school district that truly believes in our mission to create and support a culture of high expectations for each and every student to achieve personal, academic and career excellence. Providing education to 10,951 students through the ever-growing pre-kindergarten programs all the way to graduation, Tuscaloosa City Schools strives to be an innovative school system where each and every student graduates and is fully prepared for life and career success. This vision is realized in many ways and through the cooperative efforts of employees, students, parents, board members, community partners and stakeholders. Tuscaloosa City Schools is always striving to grow in our ability to provide a premier education and meet the needs of our students where they are. In 2018, the Strategic Plan was updated to focus on curriculum, human resources, and construction. The curriculum focus includes increasing reading proficiency, decreasing achievement gaps, implementing a digital transformation, and increasing student engagement and attendance. Efforts have been made to recruit and retain the most talented employees by providing competitive salaries, putting support systems in place, and providing excellent learning opportunities for faculty and staff. Construction focus is on designing and providing facilities that serve as optimal learning environments.

TCS has a long history of awareness of how important energy efficiency and conservation of resources is to a community. Beginning in 2017, buildings were renovated or rebuilt with design plans to increase the system's energy efficiency and sustainability. The TCS strategic plan allowed for five schools to be completely rebuilt using more environmentally-friendly practices and materials. In total, 11 schools have been renovated, putting more energy efficient practices into place. Occupancy Controlled Technology for HVAC units, installation of high-efficiency HVAC units, motion sensors on LED lighting, natural flooring, water bottle filler/water fountains to reduce plastic disposable water bottle usage, as well as roof repairs to increase efficiency are all part of the strategic plan that has helped TCS increase environmental friendliness. There are additional plans in place to continue to make improvements and repairs to increase the energy efficiency of the system's buildings. TCS is home to one US Department of Education Green Ribbon School as well as one school building that is LEED certified Silver. TCS has worked tirelessly with local architects to ensure that its schools are the best facilities for promoting student learning.

Tuscaloosa City Schools has worked to utilize outdoor learning whenever possible, many times taking advantage of naturally occurring elements such as forests, embankments for amphitheater-type seating, shade trees, gardens, ponds, animal habitats, and bringing in picnic tables and other seating to encourage using the great outdoors.

Recycling is largely supported not only in Tuscaloosa City Schools, but the City of Tuscaloosa as a whole. Partnerships between TCS and Tuscaloosa Environmental Services are long-standing. Countless tons of trash have been spared from the local landfills through recycling efforts. Each school has receptacles to collect community cardboard, and almost all of our schools and classrooms, as well as the Central Office, have some kind of recycling program in place. Water bottle fillers have replaced at least one traditional water fountain in every



school, and since their installation this year, reduction in the accumulation of disposable water bottles, both for students and employees, can be seen.

Tuscaloosa City Schools is leading the way in Alabama in transportation innovation. Many of our buses have been exchanged for propane-fueled transport, and our transportation department leads learning opportunities for systems across the state and neighboring states.

Many partnerships exist between TCS and community entities. One notable example is the partnership with Schoolyard Roots. This program encompasses many greener practices; teaching students about organic gardening and composting, as well as teaching them about farm-to-table practices and exposing them to many new fruits and vegetables. One hundred percent of classroom teachers say that the garden program improved their students' willingness to taste new fruits and vegetables, many of which they might not have ever tried otherwise. Environmentally friendly pest control methods as well as alternative watering methods, such as using rain barrels, are taught. Schoolyard Roots works closely with faculty sponsors to ensure curriculum support.

Environmental and sustainability education is provided throughout the district at every school. Instruction is provided in individual classrooms as well as in STEM Labs, Discovery Labs, greenhouses, outdoor classrooms and other learning spaces. Specific learning environments may vary from school to school, but the learning remains the same. The goal is to help students develop an understanding of our role in protecting our environment that will become a way of life, not just information needed for a test. Environmental and sustainability lessons are embedded in the reading curriculum. Through STEM education, cross-curricular lessons pull "green" from science with technology, to reading, math, and the arts.

*Tuscaloosa CAN!* is the Tuscaloosa City School's response to the persistent concern of food insecurity in the lives of citizens in West Alabama. Through *Tuscaloosa CAN!*, TCS school teams create large sculptures made from canned food items, putting their STEM learning into action. The event meets 21<sup>st</sup> Century curriculum goals by providing student opportunities for project-based, hands-on, collaborative, service learning targeting real world problems – in this case, regional hunger. After the can-sculptures are built, the creations serve to raise public awareness as a giant art exhibition. At the end of the exhibit, all food is donated to the West Alabama Food Bank. To date, *Tuscaloosa CAN!* has contributed over 80,000 pounds of food to Tuscaloosa and surrounding communities!

Tuscaloosa City Schools provides a unique opportunity with The Tuscaloosa Career & Technology Academy (TCTA). TCTA is a specialized facility that provides college and career readiness with a focus on the development of workplace skills for local high school students. Students are able to earn community college credit in some classes while completing high school credit requirements as well. TCTA has many community partners that provide support and workplace simulation to students. TCTA provides high-school students with opportunities to engage in environmental classes. Agricultural Science and Health Sciences classes provide instruction and hand-on experience for students in greener career pathways. Students have the opportunity to learn about and maintain an in-door hydroponics garden that houses approximately 900 plants as well as an eight-thousand-gallon aquaculture system that currently holds 400 koi fish with plans to experiment with fish such as tilapia and catfish that can be used as food. Potential jobs are posted for students to access on the Academy's website, enhancing their possibilities for careers beyond high school.

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Tuscaloosa City Schools has always put effort into health and wellness, through partnerships with the local Health Department for wellness clinics as well as flu shot clinics for faculty and students. Grade-level hearing and vision screenings are provided for certain grade levels and there is a full-time LPN or RN on site at each school. Physical fitness is emphasized and encouraged through daily outdoor PE classes and recess whenever weather permits. This is important both for physical health but also social-emotional health and wellness. Special activities such as the Kickoff Classic (a fun run celebrating the beginning of the school year), training for participation in the Mercedes Kids Marathon, the Shamrock Shimmer n’ Shake (a blacklight event consisting of Zumba and Pound), Field Day for middle and elementary schools, the American Heart Association Kids Heart Challenge, Jump Rope for Heart, and organized sport events are held. “Bookin’ It for TCS Libraries 5K” is hosted by TCS to raise money for our libraries, and partnership with the city to support the Mayor’s Cup 5K Run in support of his pre-kindergarten initiative are also part of the physical fitness and health efforts of TCS.

With the introduction of COVID-19, TCS has increased our health and wellness efforts. In addition to routine cleaning practices, the existing three-cart system that is used was improved to reduce cross-contamination of potentially affected areas. Air purifiers were placed in every classroom, office, and shared space, and enhanced cleaning procedures were put into place for both custodial staff as well as faculty and students. Special emphasis has been placed on hand-washing and virus-containment, and efforts have been made to encourage and enforce mask-wearing in all of our facilities. TCS has worked extremely hard to make sure virtual learning options are in place for students when and if they need them or opt to use them for personal health. Virtual meetings with an American Behavioral Counselor have been held for employees in response to the increased mental and emotional strain due to COVID-19.

Tuscaloosa City Schools is a district that strives to be innovative and provide the absolute best for its students, faculty, and staff. While we believe that we have made incredible strides in reaching this goal, we are always looking to improve and do even more. Our efforts toward increasing sustainability and energy efficiency have brought us to a place where we believe we are making a difference, though we strive to do everything we can to continue to improve. We already have plans in place to repair and replace roofing on several of our schools and build additions and storm shelters in the near future. We have plans to expand the libraries at each of our schools to include more books related to environmental education and sustainability. The vision of the Tuscaloosa City Schools is to be a premier, innovative school system where each and every student graduates and is fully prepared for life and career success. This includes ensuring we are graduating the citizens that Tuscaloosa and the world needs to carry on healthy, environmentally friendly practices that will sustain our world for generations to come.

## Evidence of Sustainability Achievement

<b>Pillar I: Reduce Environmental Impact and Costs</b>	<b>1-3 pages</b>
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### Energy Savings

Tuscaloosa City Schools has enhanced efforts to reduce greenhouse gas emissions and energy use in recent years. In the past three years, five school buildings have been completely rebuilt utilizing more energy efficient



practices, and the remaining twelve schools underwent renovations and additions using these practices. One school in our district is certified LEED silver, and some of those principles were incorporated into the other buildings that were rebuilt or renovated. No other schools have applied for LEED certification, but all have components that are required for this certification. Heating and cooling system upgrades have been made throughout the district, and the higher Seasonal Energy Efficiency Ratio (SEER) rating in these units helps keep costs and energy use down. Seventeen of the nineteen schools in the district received a renovation or rebuild. Sixteen buildings have HVAC occupancy controlled technology and eleven of those have high-efficiency HVAC units. TCS has increased insulation values, reflective roofing materials are in use in many buildings and there are plans to repair or replace the roofing on seven buildings in the next two years. Materials with low Volatile Organic Content (VOC) content are used whenever possible. In the new constructions and some renovations low-emittance glass is in place, reducing energy costs and UV rays inside. Fixtures that reduce water consumption have replaced older fixtures and all schools have been outfitted with water fountains that include water bottle fillers, reducing the need for disposable water bottles. In addition, LED lighting is present in all of our schools and motion control lighting and receptacles are present in sixteen of our nineteen schools.

#### **Improved Water Quality, Efficiency, and Conservation**

Tuscaloosa City Schools has taken water conservation into account during this period of rebuilding and renovation. Water reduction fixtures have replaced older fixtures and 3-4 water fountains with built-in water bottle filling stations have been installed in each of our schools. Tuscaloosa City Schools is the proud home of five schools with an Alabama Certified Outdoor Classroom. These outdoor classrooms include man-made sensory gardens, ponds with recirculating water-flow waterfalls, butterfly gardens, bird sanctuaries, nature trails, amphitheaters, etc. There are many schools with teaching gardens in cooperation with the non-profit Schoolyard Roots program, which produces seasonal vegetables and makes use of rain barrels to collect water to recycle into the garden. Some schools have a nature trail or other outdoor wildlife habitat. Some of our schools are designed with landscaping to reduce run-off.

#### **Reduced Waste Production**

In addition to structural enhancements and renovations, individual schools are working to put programs and practices in place that will reduce our energy usage and greenhouse effect. Our Central Office and 94% of our schools routinely participated in recycling programs prior to the COVID-19 pandemic. The City of Tuscaloosa has temporarily halted their curb-side recycling program due to COVID-19, but as soon as that program is back up and running those schools as well as the Central Office will be ready to recycle again. Many of the school-based programs are largely student-led, incorporating education about greener practices through faculty support.

Tuscaloosa City Schools takes part in a city-run cardboard recycling program that is available to the community as well as the schools for over-sized boxes. All of our schools as well as the Central Office are home of a recycling receptacle for this purpose. Another project that TCS participates in is fundraising through the upcycling of old shoes by donating gently-used shoes to an organization that re-soles them and redistributes them to entrepreneurs in third world countries. This helps reduce the waste of old shoes and raising funds locally as well as meeting a need for the less fortunate.

Schoolyard Roots teaching gardens are maintained using all organic and regenerative practices such as composting, rotating crops, integrated pest management, companion planting, mulching, vermicomposting, and more. With the use of these practices, the gardens become demonstration sites for school communities to learn



about organic and regenerative strategies. Additionally, students grow, harvest, eat, and sell produce grown right in their neighborhood, reducing the carbon footprint of growing and shipping produce from far away. In the garden, students learn that small things make a big difference. On-site composting is in place in the schools with teaching gardens.

Another way TCS has worked to reduce waste is by instituting “share tables” in the cafeterias. Students can place unwanted whole fruits and pre-packaged food items on a community table in the cafeteria and interested students can get those items for themselves. This reduces food waste as well as provides extra nutrition for students in need. This practice was halted due to health concerns with COVID-19, but plans are in place to reinstate it as soon as it is safe to do so.

Tuscaloosa City Schools has instituted a three-cart-system for cleaning. This reduces water consumption, reduces cross contamination, and increases cleaning efficiency. There are separate carts and protocols in place for classrooms, bathrooms, and hazardous materials. Washable microfiber cloths and mop heads are color-coded for different areas of the school for daily use, while the Haz-Cart has disposable flat mop heads for safety. Cleaning chemicals are safe and non-toxic. Four main cleaning products are provided by Signet Cleaning Chemical Service through Cintas. These products are environmentally friendly and employee-safe as cleaning chemicals meet Green Seal certification requirements and are packaged in an environmentally-friendly way. They utilize an easy-to-use dispensing system which helps to reduce solid waste. Products are pre-mixed, reducing the potential for employees to be exposed to concentrated chemicals. Paper products used in restrooms have the certified Green Seal and are made from recycled paper. The system’s hazardous waste protocol states that the central office is notified in case of hazardous waste accidents, and students are removed from the area. Central office personnel handle the situation or contract with a local certified trained professional to clean up. In cases beyond what the central office is capable of handling on their own, the City of Tuscaloosa is available to respond as needed.

### **Use of Alternative Transportation**

The Tuscaloosa City Schools is proud to be leading the way in Alabama in alternative fuel use. We were the first in the state to convert the majority of our fleet to an alternative fuel, propane. TCS adoption of propane fueling is reducing our carbon footprint. We have worked closely with the bus manufacturer and hosted districts from all over Alabama and surrounding states to come for “Listen and Learn” tours about our efforts in converting to propane buses. Tuscaloosa City Schools is currently running 98 propane buses and 27 diesel buses. We are running 108 routes daily with 98 of those being propane and 10 diesel. The remaining 17 buses are kept as back-up and are only used in emergencies or break downs. TCS maintains these diesel buses for long-range trips as the range of a propane bus is only 125 miles per tank.

Several of our schools take part in Walk/Bike to School days to encourage both wellness and energy conservation. Our schools have safe sidewalks and crosswalks to encourage walking to and from school. Buses and many carpool lines practice no-idle zones, and buses load at least 25 feet from building entrances.

<b>Pillar II: Improve the Health and Wellness of Students and Staff</b>	<b>1-3 pages</b>
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### **School Building & Environmental Elements**

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Abundant and purposeful nature areas are available around the schools in our district for teachers to take students' learning outside. Our schools have spaces to serve as outdoor classrooms, such as acreage forests, nature trails, vegetable gardens, flower gardens, sensory gardens with waterfalls, large ponds with waterfalls, and/or courtyards. The American Psychological Association says that, "increasing evidence demonstrates the many benefits of nature on children's psychological and physical well-being. Including reducing stress, greater physical health, more creativity, and improved concentration."

All TCS schools are tobacco free zones. Signs have been posted on entrance doors and information listed on our district's webpage. Toxic materials are monitored and removed at the district level authority. If suspected, professional crews are hired to test and remove the toxic contaminated materials. Radon and mold levels are tested periodically. Due to concerns regarding the toxic materials found in the wood, all TCS playgrounds have been renovated.

Our HVAC systems have fresh air vents in accordance with the national/state standards; therefore, each area has adequate fresh air according to square footage. Our district's HVAC staff and our schools' custodial staff regularly maintain the filters and units. Exposure to perfumes, dust, and smoke is avoided or limited. TCS believes asthma control begins with asthma education, as well as knowing our students who have asthma, their triggers and their interventions. TCS implements efforts to reduce asthma triggers and exposure to routinely used chemicals in our schools. This year, TCS has installed air purifiers and HEPA filters for every classroom and in common areas where students congregate such as gymnasiums, libraries and offices to further improve air quality.

TCS maintenance is contacted immediately to repair leaks, mold, and water concerns. When needed, professional carpet cleaning crews are contacted to clean or remove water damaged areas and/or molded materials. Absorption materials are placed in high humidity areas and changed out frequently. Air quality tests are performed as needed.

### **Physical Fitness**

Daily Physical Education class opportunities are provided for all PreK-8th grade students. Students in TCS elementary schools receive a minimum of 35 minutes of physical education each day, as well as 15 minutes of recess. Many school playgrounds have been renovated to eliminate potentially harmful materials. Campuses have benches and permanent shade tops to provide shade, while nature trails and gardens may offer natural shade from trees. PE and recess opportunities are provided outdoors to the greatest extent possible, with recess providing time for learning and skill-building through independent, exploratory play. Students in middle school receive a minimum of 50 minutes of PE daily. PE provides health-related lessons in the areas of flexibility, cardiovascular endurance, muscular endurance, and muscular strength. Students participate in the Alabama state fitness test which measures sit-ups, push-ups, arm reach, and the mile run. There are events and programs for students that vary from school to school, including but not limited to, the Kickoff Classic (a fun run celebrating the beginning of the school year), training for participation in the Mercedes Kids Marathon, the Shamrock Shimmer n' Shake (a blacklight event consisting of Zumba and Pound), Field Day for elementary and middle schools, the American Heart Association Kids Heart Challenge, Jump Rope for Heart, and many organized sport events.

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TCS also hosts several events open to students, parents, and the community throughout the district to encourage physical fitness. TCS holds the “Bookin’ It for TCS Libraries 5K” to raise money for our libraries, and partners with the city to support the Mayor’s Cup 5K, benefitting area preschool programs. Family Fitness Nights are hosted throughout the school year on various campuses. Faculty and staff wellness is also addressed through the Scale Back Alabama weight-loss and Blue Cross Blue Shield of Alabama incentive programs. Tuscaloosa Parks and Recreation offers a discount to employees for memberships at their facilities city wide, including access to their weight rooms, gyms, swimming pools, basketball courts, and indoor tracks.

### **District Coordinated School Health Approach**

Our district utilizes the Coordinated School Health approach to address overall district wellness issues. For faculty and staff, health fairs are held quarterly and flu shots are offered free of charge. Counseling services for employees are offered through American Behavioral. Increased support has been provided in the form of Virtual Workplace Wellness Events in response to the COVID-19 crisis. Full-time employees are offered health benefits through ALSDE’s partnership with Blue Cross Blue Shield of Alabama.

Students are provided numerous opportunities to access health services throughout the school year. Flu shots are provided free of charge through our partnership with Health Heroes. Tuscaloosa City Schools participate in the Fresh Fruits and Vegetable program, allowing students to receive fresh fruits and vegetables three times weekly to eat for a snack throughout the day. TCS also partners with Child Abuse Prevention Services (CAPS) to provide Second Step Lessons to each of our students to help prevent cases of abuse, drug use, and neglect. The American Psychological Association reports that being in nature provides psychological and physical benefits for children and adults, so outdoor learning is promoted. Local vision, dental, and hearing professionals are partners to ensure whole-child health. Referrals to parents for further evaluation are provided as needed. Indian Rivers Mental Health Services offers the *Journey Program* which provides access to school-based therapists who serve students with mental health issues. Bullying is addressed through the Harassment Awareness Learning Together (HALT) program. Social workers are assigned to each school and are available to serve families and students.

The Tuscaloosa Career and Technology Academy (TCTA) offers classes in Health Sciences for interested high school students. The Health Science program begins with the Foundations of Health Science course. This program exposes students to the basics of Healthcare, which includes careers in first aid, CPR, etc. Eligible students are then able to apply for the Health Science internship which allows students to explore deeper into the pathophysiology of the human body systems and healthcare fields. Students also have the opportunity to shadow in their areas of interest in various locations in the community. Sports Medicine courses are also offered with similar opportunities.

At least one full-time school nurse is present on each campus during the school day. They support students, employees, and families through coordinating screenings, health visits such as Health Heroes, triage for ill students, and daily care for students with health plans. They actively manage their school’s COVID-19 response team and procedures. Nurses also assist with training for trauma response teams, CPR teams, Alabama Department of Public Health reporting, and resource referrals.

In addition to classroom curriculum, our students learn about nutrition and the food they’re growing with Schoolyard Roots. Cooking and nutrition lessons help students understand why they should make a healthier

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choice and also teaches students how to prepare their own healthy meals with fruits, veggies, and herbs they grew themselves. Tastings give them the opportunity to learn which fruits and veggies they love to eat. Based on surveys conducted by Schoolyard Roots for our district's program, 100% of class room teachers say that the garden program improved their students' willingness to taste new fruits and vegetables, and 97% of classroom teachers say that the garden program improved their students' social and emotional skills such as communication and cooperation.

### **Integrated Pest Management**

TCS schools use integrated pest management practices to control pest outbreaks in the school gardens. Integrated pest management incorporates multi-disciplinary approaches to controlling pest population outbreaks. Students learn to identify pest species in their gardens through Bug-ID lessons. Students are involved in managing pests by hand-picking non-harmful species and placing them in buckets of soapy water, while adults control larger pest outbreaks with organic chemical control methods such as neem oil, BT concentrate and diatomaceous earth. The garden also encourages beneficial insect populations, which prey upon common garden pests, by incorporating flowers and herbs into the crop rotation.

TCS works to control pest outbreaks inside as well. Routine pest checks and treatments are performed by a professional pest control company using non-toxic chemicals. If infestations occur, these areas are spot treated after school hours. Records are kept by the contracted pest control company, our custodial staff, and/or Child Nutrition Program Managers. TCS makes cleanliness a priority to deter infestations. This decreases the need for pesticide use. Nontoxic measures are used throughout the schools to eliminate student exposure. About eight gallons of Suspend chemical is used each year as well as nontoxic glue boards. Eco-friendly cleaning supplies are obtained and used through our three-cart-system.

<b>Pillar III: Provide Effective Environmental and Sustainability Education, Incorporating STEM, Civic Skills and Green Career Pathways</b>	<b>1-3 pages</b>
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### **Interdisciplinary Learning about the Key Relationships between Dynamic Environmental, Energy and Human Systems**

Environmental and sustainability education is provided throughout the district at every school. Instruction is provided in individual classrooms as well as in STEM Labs, Discovery Labs, green houses, outdoor classrooms and other learning spaces. Specific learning environments may vary from school to school, but the learning remains the same. The goal is to help students develop an understanding of our role in protecting our environment that will become a way of life, not just information needed for a test.

Outdoor learning spaces are utilized in 94% of the schools in our district. Nine of our schools have an active garden and use a designated garden curriculum such as Schoolyard Roots. Four schools have designated STEM Labs and instructors. Each school has its own unique concept of what an outdoor learning space looks like and these spaces include ponds, sensory gardens, nature trails, courtyards, outdoor seating areas and amphitheaters.

Reading curriculums in 77% of schools include stories about the environment, nature, climate preservation, and/or human impact on the environment. Students read many expository texts that focus on the components



of environmental and sustainability foundations. Social Studies Weekly, Aquaculture Lab and Environmental Investigations are examples of other resources used to provide environmental instruction.

School libraries have on average, 10-15 environmental/STEM titles newer than 10 years old and several school libraries have Robotics kits for student exploration. These robotics kits will incorporate solving real life situations from environmental emergencies. Age appropriate sets of books have been bought by the school system for each of the schools' libraries to expose our students to different aspects of environmental conservation and sustainability practices.

Tuscaloosa City Schools has partnerships with many community organizations. These partnerships contribute to our long-term environmental and ecological sustainability education. Some of these partnerships are Schoolyard Roots, The City of Tuscaloosa Environmental Services, Alabama Wildlife Federation, Discovering Alabama, the University of Alabama, and Tuscaloosa Barnyard. Many of these partnerships provide both in-school and off-campus field trips and learning experiences. Extended field trips to Coosa Valley Science Center, Camp McDowell, The Dauphin Island Sea Lab and other environmental centers and programs are trips that students look forward to years in advance. These expeditions provide opportunities for students to utilize their skills in a real-world setting and extend their learning beyond the classroom.

Schoolyard Roots is a program where students learn about sustainable organic gardening practices. Fifty-four percent of elementary schools in the district participate in this program. Students participate in seasonal crop rotation to suppress pests and diseases, compost garden waste while learning the benefits of decomposition, and learn to respect the garden as a thriving ecosystem. Additionally, Schoolyard Roots provides support to TCS outdoor educators, ensuring they are fully equipped to handle garden curriculum implementation and can support curious students. This partnership provides lessons that are aligned to the state-adopted standards and provide students with real-world experiences in making observations, collecting data through measuring, and graphing data.

Tuscaloosa Career and Technology Academy (TCTA) maintains a hydroponic garden and ponds. Faculty and students work with many schools in the district, providing education as well as resources. Some of the Koi fish raised at TCTA have been relocated to local schools to help in the creation of ponds there as well. Students in the Agricultural Science program have the opportunity to pursue coursework in Aquaculture or Veterinary Science. The aquaculture program prepares students for careers in Alabama's booming aquatic industry. Students earn knowledge and gain hands-on experience with aquatic nutrition, fish reproduction, hydroponic design and management. The veterinary program prepares students for an exciting career as a veterinarian or veterinary technician. Students gain hands-on experience with animal handling, disease management and medical practices.

The City of Tuscaloosa Environmental Services (TES) helps to promote recycling in TCS. Ninety-four percent of schools in the district participate in this recycling program. TES collects recyclables from the schools each week. At the school level, students apply and/or are selected to serve on the recycling team. The recycling team collects and sorts recyclables from each classroom and places them in the recycling bins daily. These bins are put out each week for TES collection. This program teaches students about recycling and provides students opportunities to grow in leadership and job skills in green career pathways.

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Alabama Wildlife Federation (AWF) has been instrumental in the installment of ponds at two TCS elementary schools. A representative from AWF came to each school and assisted with both pond installations. A AWF representative also conducts on-site visits to observe and advise staff with the ponds and other current outdoor classroom projects at the schools. AWF has also certified five TCS schools as Alabama Outdoor Classroom schools.

Discovering Alabama has partnered with Woodland Forrest Elementary School, a National Green Ribbon School. Woodland Forrest is a model school and has served as a pilot for the implementation of Discovering Alabama's pre-kindergarten through fifth grade initiative. The study of the local natural environment through science, social studies, reading, math and arts is incorporated in this initiative and Woodland Forrest continues to be a model school.

The University of Alabama provides many valuable partnerships including UA Honors College and Center for Service and Leadership, Science in Motion, UA Engineering Department, UA America Reads, America Counts, UA College of Education, and The Delta Initiative: Capstone Women in STEM. These partnerships have provided valuable resources to TCS including in-class presentations/demonstrations and field trip opportunities. These partnerships also provide service learning opportunities for college students while providing schools with volunteers to assist with STEM lessons and activities and gardening projects.

Teachers in TCS schools have participated in many professional development opportunities including Project Wet, Project Wild, Project Learning Tree, Discovering Our Heritage, AMSTI, Alabama Outdoor Classroom, Growing up Wild, Leader in Me, and various other workshops provided by Alabama Wildlife Federation and Legacy. Due to the amount of new teachers in our district we will provide professional development in some of these programs to certify new teachers and to re-certify other teachers beginning in the summer of 2021. Eighty-three percent of schools have teachers who attend at least one environmental professional development opportunity each year. Summer training for 2021 is in the planning stages with Alabama Wildlife Federation.

#### **Use of the Environment and Sustainability to Develop STEM Content Knowledge and Thinking Skills**

The Tuscaloosa City School's focus on developing STEM content knowledge and thinking skills ensures that interdisciplinary instruction occurs at all grade levels. Sixty-four percent of TCS schools offer robotics classes and several school libraries have robotics kits for student exploration. Robotics lessons allow students to participate in solving real-world problems such as designing a robot that will go into a failing nuclear facility and test for radioactivity, clean up an oil spill, and/or take air and water samples near a volcano. STEM Labs are dedicated spaces in several of our schools that allow students to explore science, technology, and math and use those skills in many ways, including sustainability and environmental education.

Eighty percent of TCS schools partner with Alabama Math and Science Instruction (AMSTI). AMSTI science lessons focus on STEM activities, investigations, and projects to extend students' knowledge of environmental and sustainability issues and concerns. Six schools hold an annual STEM Night. STEM Night is a culmination of months of in-class work on STEM projects using the scientific method. Parents and community members are invited to come see the completed projects and listen as students explain what they have discovered.

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Earth Day celebrations are held in almost every school throughout the district. Celebrations range from all-day, school-wide events to individual classroom teachers planning lessons that incorporate Earth Day across all subjects.

Eighty-nine percent of schools participate in Career Day and/or Career Fairs where students are provided opportunities to speak with representatives from green careers such as Tuscaloosa Environmental Services, Alabama Power, Alabama Forestry, bee keepers, farmers, biologist, conservation groups, environmental engineers, and Alabama Wildlife Federation.

Tuscaloosa Career and Technology Academy (TCTA) offers courses such as Fundamentals of Agriscience and Aquaculture which provide students the opportunity to explore many green career pathways. Under the guidance of faculty, students maintain a hydroponic garden and ponds. TCTA has an indoor hydroponics garden that houses approximately 900 plants. The system is a vertical tower recirculating system that grows a variety of leafy plants like kale, spinach, and lettuce. They also have an eight-thousand-gallon aquaculture system that currently holds 400 koi fish. In the past, they experimented with the viability of shrimp production in the aquaculture system and are now researching the possibility of raising fish for food such as tilapia and catfish.

TCS participates in the Worlds of Work Expo hosted at Shelton State Community College. At this two day event, 8th grade students are able to visit with and learn from more than 150 industry leaders in the worlds of agriculture, construction, cosmetology, education, energy and utilities, engineering and environment, health care, hospitality and tourism, manufacturing, public safety, and transportation. This further allows them to see career possibilities, including green pathways such as agriculture, energy, and environmental courses.

Ninety-four percent of schools have a structured recycling program run by students and overseen by the STEM coordinator, science teacher or other faculty/staff volunteer. These programs are used to collect recyclable goods around school and they provide students the opportunity to develop leadership skills and career readiness skills. In addition, employees at our central office participate in recycling efforts.

*Tuscaloosa CAN!* is an annual project hosted by TCS and has expanded to include organizations from the community as well. This event began in 2014 and continues to grow each year. Students work with faculty sponsors to design a structure out of canned food and then work as a team to recreate their structure to display at a local community arts center. Students are encouraged to provide information about their research and design process. Awards are presented in various categories at the conclusion of the *Tuscaloosa CAN!* event. Over the years, Tuscaloosa City Schools has donated over 80,000 pounds of food to our local food bank. This project allows students to utilize STEM learning using materials that are sustainable and beneficial for members of our community, putting real-life learning to work while providing for others in our community. TCS also participates in the annual *Beat Auburn Beat Hunger* food drive each year, collecting canned food to be donated to the local food bank.

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U.S. DEPARTMENT OF EDUCATION

