U.S. DEPARTMENT OF EDUCATION
GreenRibbonSchools

North Carolina Department of Public Instruction
2015 Green Ribbon District Application

## District Contact Information

District Name: **CHEROKEE COUNTY SCHOOLS**

Street Address: **911 Andrews Road**

City: **Murphy** State: **NC** Zip: **28906**

Website: Cherokee County Schools Facebook Page:

Superintendent Name: **Jeana Hardin (Interim Superintendent)**

Superintendent Email Address: Jeana Hardin, Superintendent Phone Number: **(828) 837-2722**

Lead Applicant Name (if different): **Pam Pressley**

Lead Applicant Email: Pamela Pressley Phone Number: **(828) 837-2722**

## School Information

**Number of Schools at Each Level**:

| | | | |
|---|---|---|---|
| | Early Learning Center | ☒ | Public |
| ***4*** | Elementary (PK-5 or 6) | ☐ | Private or Independent |
| ***3*** | K - 8 | ☐ | Charter |
| ***2*** | Middle (6 -8 or 9) | ☐ | Magnet |
| **5** | High (9 or 10 – 12) | | |

How would you describe your district? ☐ Urban ☐ Suburban ☒ Rural

Does your school serve 40% or more students from disadvantaged households? ☒ Yes ☐ No

- % Receiving FRPL: ***65.3631 %***
- % Limited English Proficient: ***0.0066 %***
- Other Measures: ***All students in grades K-8 throughout the district receive free breakfast and lunch.***
- Is your school in one of the largest 50 districts in the nation? ☐ Yes ☒ No
- Total Enrollment: **3,327** Graduation Rate: **91.01 %** Attendance Rate: **94.9%**

***Summary Narrative**:* Provide an 800 word maximum narrative describing your district's efforts to reduce environmental impact and costs; improve student and staff health; and provide effective environmental and sustainability education. Focus on unique and innovative practices and partnerships.

*Cherokee County Schools is located in southwestern North Carolina mountains. Over the past 5 years, there has been a successful effort in improving the energy performance of our schools, partnering with energy companies in utilizing excess school lands for solar arrays, integrating our curricula in environmental responsible education, and improving the health and nutrition of our students and staff. There is a strong community involvement in our efforts which further expands the education in these areas to our parents and community. We have been successful in obtaining significant federal and other grants for implementation of energy reduction efforts. Since 2009, Cherokee County Schools has received nine awards and governor recognition for their energy reduction and related education programs.*

*Reduction in energy use in the schools has been by implementing changes in the management of our heating and cooling systems, installation of energy efficient lighting, significant improvements in air quality, and recycling of waste materials through cooperative efforts with our county government and community centers. All of this has resulted in significant reduction in energy costs and CO2 emissions into the atmosphere.*

*Health and wellness of our students, staff and expanded community has been a top priority of the Cherokee County Schools. Recognizing that proper health and nutrition results in increased student performance, Cherokee County Schools has implemented school environmental health programs, sound nutrition education and fitness programs. The goals are being achieved where each child can maintain a healthy life style, and promote physical, emotional and intellectual growth. Cherokee County Schools has implemented the Healthy Living Standard Course of Study and grade level expectations that are supported through NC Department of Education, State Board of Education. Further nutritious foods are provided to our students through the National School Lunch and School Breakfast Programs which includes fresh fruits and vegetables.*

*The Cherokee County Schools through their individual school programs identifies students with chronic health problems and special health care needs including asthma. Asthma triggers have been identified and eliminated or reduced to provide for healthier environments in all of our schools. Elimination of the use of aerosol sprays, control of temperature, elimination of dust and pollen through proper filter change in HVAC systems, and improvements to the air quality has helped those with asthma. Further in coordination with the students physicians, those with asthma are monitored to insure prescribed medication are taken prior to physical activity and class recess to prevent asthma complications.*

*The schools have established a school health advisory council to help address health and nutrition issues and compliance with the Cherokee County Schools health policy. In addition to students, staff health promotion is provided in collaboration with school nurses which includes health screenings such as blood pressure and body mass index screening when requested. Coordination with the local health department provides routine lab work and screening as needed for the staff.*

*Environmental and Sustainable Education is recognized by Cherokee County Schools as an important part of student education. They believe in the "classic" approach to environmental education in which the students develop skills and attitudes necessary to understand the interrelatedness between man, his culture and his biophysical surroundings. This education is implemented in all grades through curricula based programs, and in-school and after-school activities. Students are involved in recycling programs, solar array studies of our solar farm, and composting projects. Field trips that expand the STEM education send students to the Huntsville Space Center, Tybee Island Marine Institute's Ocean Outreach Center, and Young Harris College Rollins Planetarium, to name a few. In addition, the Earth and Environment course of study occurs in all schools and at all grade levels. This course emphasizes importance of the soils, water conservation and how urbanization can affect the quality of both. Being located in a nature enriched area. Cherokee County School students have a regional area conducive to environmental education. Field trips relating to environmental education include Nantahalia Outdoor Center, Ocoee Whitewater Center, Smoky Mountain National Park and the Cherokee Reservation Oconaluftee Indian Village.*

*Even though 65 percent of the students receive FRPL, there is a 91% graduation rate from high school, one of the highest in North Carolina. This is supported by the outstanding environmental and STEM based curricula, high standards for maintaining the nutrition and health of students and staff, community involvement in the schools, and an aggressive energy conservation policy which results in healthier facility environments.*

2015 Green Ribbon District Application

1. Is your district participating in a local, state or national school program, such as EPA ENERGY STAR Portfolio Manager, EcoSchools, Project Learning Tree, or others, which asks you to benchmark progress in some fashion in any or all of the Pillars? ☒ Yes ☐ No

| Year | Award Received |
|---|---|
| 2009 | Using federal stimulus grant, all T-12 CFL, incandescent bulbs, PCB ballasts, mercury witches, and all mercury halogen lights were removed. |
| 2012 | Thirteen of our schools received EnergyStar® labels. |
| 2013 | Thirteen of our schools received EnergyStar® labels. |
| 2014 | Ten of our buildings in the district are 100% LED lighted. Mountain Youth Alternative and the Hiwassee Dam Health Center were the LED pilots. |
| 2014 | Cherokee County Schools has been notified that the district has been awarded a Tennessee Valley Authority (TVA) settlement with North Carolina to provide CFL to LED conversions within the district. |

2. Has your school, staff or student body received any awards for facilities, health or environment?

☒ Yes ☐ No

| Year | Award Received |
|---|---|
| 2009 | Pacesetter Energy Award / Energy Education, Inc. |
| 2010 | Energy Stewardship Award / Energy Education, Inc. |
| 2011 | Energy Excellence Award / Energy Education, Inc. |
| 2012 | North Carolina Utility Savings Initiative Award / NC State Energy Office |
| 2013 | Lighting the Way to Sustainability / Facility Maintenance Decisions magazine article. |
| 2013 | Community Initiative Award / NC Sustainable Energy Association |
| 2013 | NC Governor Pat McCrory / Letter of Congratulations on Energy Conservation |
| 2014 | NC Governor Pat McCrory / Letter of Congratulations on Leadership in the Conversion from CFL to LED lighting in schools. |

## Pillar I: Reduced Environmental Impact and Costs

Describe how your district is reducing environmental impact and costs by reducing or eliminating greenhouse gas emissions; improving water quality, efficiency, and conservation; reducing waste production; and using alternative transportation. Identify your district's energy-efficient facilities and practices, ecologically beneficial uses of grounds, and methods of disposal for solid and hazardous wastes.

*Using the Energy Cap® software from December 2008 through October 2014 and the Environmental Protection Agency's greenhouse calculator, the following statistics were generated based upon the last 83 months of energy bills entered into the database. The district has achieved a cost avoidance of $1,821,336 dollars. Statistics that relate to this calculation are:*

- *4,756 equivalent tons of $CO_2$ not put into the atmosphere.*
- *50,337 MMBTU energy reduction impact.*
- *1,001 passenger vehicles removed from the road.*
- *11,323,810 per driven by an average passenger vehicle.*
- *1,705 tons of waste sent to the landfill.*
- *244 garbage trucks of waste recycled instead of sent to landfill.*
- *535,164 gallons of gasoline consumed.*
- *5,108,485 pounds of coal burned.*
- *63 tanker trucks worth of gasoline.*
- *654 homes energy use for one year.*
- *1.3 wind turbines installed.*
- *654 homes electricity use for one year.*
- *25.5 railcars worth of coal burned.*
- *124,405 incandescent lamps switched to CFL's.*
- *11,060 barrels of oil consumed.*
- *198,167 propane cylinders used for home barbecues.*
- *0.001 coal-fired power plants in one year.*
- *Carbon sequestered by:*
    - *121,949 tree seedlings grown for 10 years.*
    - *3,898 acres of US forests in one year.*
    - *36.7 acres of US forest preserved from conversion to cropland in one year.*

*Ten schools in Cherokee County receive their water from the local water utilities which are monitored by the North Carolina department of Environment and National Resources. Four schools within the district are supplied by wells which are monitored weekly for water quality compliance by Environmental Inc®, from Cullowhee, North Carolina. The Cherokee County School website has a section labeled "Trouble Tracker." School principals or their designee use this website and post any water related problems at their schools. These "Trouble Tracker" tickets are given high priority as leaking water affects our energy*

*score for the month. The sports fields that have watering systems have timers that run water in the early morning hours to help in the conservation of this resource.*

*Due to the geographic rural isolation of Cherokee County, there are no alternative transportation services available for use at this time.*

*Using the federal stimulus grant, all district buildings were converted from a T-12 CFL lighting format to a T-8 or T-5 lighting format. All mercury-halide gym lights were removed and replaced with T-5 CFL lighting with instant on/off which has an additional positive effect of making the buildings safer during power outages while sporting events are in progress. In addition, using local money, we have been able to convert ten of our buildings from a CFL lighting format to a 100% LED lighting format. All of the obsolete CFL tubes, bulbs, and ballasts are being stored at the maintenance facility until we complete the final conversion. The lighting hazardous waste will be picked up by one of the lighting hazardous companies (Cleanlites, Inc.) who are approved by the North Carolina Department of Environment and Natural Resources.*

*Four years ago, our school system partnered with ESA Renewables, LLC in the construction of a .999 megawatt solar array which is helping to off-set the cost of electrical service for the district.*

Martins Creek Elementary School – Solar Array
*Photo credit: ESA Renewables, LLC*

Martins Creek Elementary School – Solar Array
*Photo credit: ESA Renewables, LLC*

*Other waste is disposed in the following manner. Cardboard and plastic bottles are picked up by the local landfill in trailers provided by Cherokee County government. All scrap metal, including metal cans from the cafeterias, are recycled by the school district maintenance department with funds being used to travel to the state and national energy conferences. CFL (screw in bulbs and normal batteries) are placed in the recycling bin at Lowe's. Confidential papers and state test booklets are picked up two or three times a month by Document Destruction Services® and shredded and then recycled. Wooden pallets are given to the teachers or local farmers to stack firewood or hay. Obsolete furniture and clothing left over at the end of the year is donated to Christian Love Ministries® (an alcoholic drug addiction facility) or the REACH, Inc. in Murphy (a shelter for battered women and children) to be sold in*

*their thrift stores for the benefit of their organizations. Ink toner cartridges are shipped back to Staples for recycling. Oil, batteries, transmission fluid, oil filters, metal parts, and tires are recycled by the bus garage with the standards set by the North Carolina Department of Transportation-Department of Public Instruction.*

*Future plans for Cherokee County Schools are to keep applying for grants to completely change the lighting format from CFL to LED.*

## Pillar 2: Improve the health and wellness of students and staff

Describe how your district improves the health and wellness of students and staff by integrating a school environmental health program and promoting sound nutritional and fitness practices. You should discuss integrated pest management, contaminant controls and ventilation, asthma controls, indoor air quality, moisture control, and chemical management. Address the amount and type of outdoor time that your students and staff have, as well as the types of fresh, local, and organic food that they eat. Other components you may want to include are: health education, health services, counseling, psychological and social services, staff health promotion and family and community involvement.

*Cherokee County Schools recognizes that in order for students to be successful academically, they must be healthy. Cherokee County Schools has implemented a school health program to help school aged children achieve and maintain optimum health. The goal of the school health program is to help each child maintain a healthy lifestyle and to promote physical, emotional, and intellectual growth. The school health program helps meet the needs of students, parents, the school, and the community, thus facilitating effective education and positive student outcomes. Cherokee County Schools has also implemented a wellness policy to help address health and nutritional needs of students.*

*Nutrition promotion and education provide appropriate instruction for the acquisition of behaviors that contribute to healthy lifestyles for students and works to educate, encourage, and support healthy eating by students. Cherokee County Schools provides nutrition education within the Healthy Living Standard Course of Study and the grade level expectations as mandated in the Essential Standards by the State Board of Education. Nutrition education is designed to provide all students with knowledge and skills needed to live healthy lives. Nutrition education and promotion extends beyond the school environment by engaging and involving families and communities. School staff may collaborate with community organizations to provide opportunities for student projects related to nutrition. Nutrition education is provided throughout the school system in classrooms, cafeterias, homes, and community media.*

*Foods provided through the National School Lunch and School Breakfast Programs must comply with federal nutritional guidelines and standards. Food selections are in compliance with states nutritional standards. Competitive foods must meet also nutrition standards. Fresh produce and fruits are available at each meal provided by school cafeterias. Local products are used when available.*

*The physical education program is also used to promote lifelong physical activity and skills and knowledge necessary to promote healthy lifestyles. To address issues such as obesity, cardiovascular disease, and Type II Diabetes, students enrolled in kindergarten through eighth grade must have the opportunity to participate in physical activity as part of the physical education curriculum. Physical education provides guidance to help students understand the value of being physically active and the types of activities that contribute to fitness. School personnel provide opportunities for age and developmentally appropriate physical activity during the school day. Schools must provide a minimum of thirty minutes of moderate to vigorous activity daily for kindergarten through eighth grade students.*

*Physical activity is provided outdoors during physical education class or during scheduled recess time. Recess is always provided outdoors weather permitting.*

*In addition to the standards above, Cherokee County Schools has implemented the following school based activities to promote wellness: schools provide a safe and clean meal environment, adequate time to eat meals, drinking water is available at all meal periods throughout the school day, food will not be used as a reward or punishment, and administrators, teachers, food service personnel, students, parents, and guardians will be encouraged to serve as positive role models to promote student wellness..*

*As part of the school health program, the school nurse identifies students with chronic health conditions and special health care needs including asthma. Emergency action plans are developed in collaboration with parents and implemented by staff as needed. Asthma controls include identification of asthma triggers such as cold temperature, weather, pollen, dust, and aerosol sprays. Students and teachers are educated to avoid the use of aerosol sprays in the classroom, hallways, and restrooms. Students identified with asthma take prescribed medication before physical activity and recess as instructed by their physician to prevent asthma complications.*

*The health issues of school children today include not only problems related to disabilities, disease, and injury, but also those related to behavioral and emotional factors and developmental delays. The range of services needed extends beyond the simple identification and control of contagious disease. Students with behavioral and emotional needs are identified by staff members including nurses, teachers, school counselors, and school social workers. Further referral for mental health evaluation and services is also an important role of the school counselors, social workers, and school nurses. Partnership with other community agencies is also important in helping students be successful in school. The school health program collaborates with community agencies for referrals for mental health services, dental, vision, and further medical care. All of these agencies work to promote the health of students. Healthy students are able to learn better and have greater academic success. Improved academic performance decreases the likelihood that students will drop out of school and improve the county's graduation rates. Improved graduation rates benefit the community as a whole by increasing the number of students who will go on to receive higher education degrees. This may result in improved socioeconomic status of the community.*

*Cherokee County Schools also maintains a school health advisory council to help address health and nutrition issues and compliance with the wellness policy. The school health advisory council is composed of representatives from the school system, the local health department, and the community. The school health advisory council meets on a quarterly basis.*

*Staff health promotion is provided in collaboration with school nurses. Health screenings such as blood pressure and body mass index screening are provided at request. Coordination with the local health department also provides routine lab work and screening as needed for staff members.*

*Integrated Pest Management: CCS contracts with Orkin Pest Control to control insect and rodent pests throughout the district. This company has to meet the standards set-forth by NC in using pesticide chemicals in our schools. Bait traps for insects and sticky traps for rodents are used in the buildings. Any spraying that occurs after hours or on the weekends. This company is the only group allowed to dispense pesticides in our buildings.*

*Contaminant Control and Ventilation: 99% of all painting occurs during the summer months using low VOC paints that have had mold/mildewcide added to reduce airborne vapors and mold spores. All floors are stripped/waxed during the summer months when the buildings are not occupied.*

*Indoor Air Quality: As part of the energy program, CCS has an air filter changing schedule for 3 times per year. Currently, the months of January, May and October are being scheduled. The filters are provided by our chemical supplier and are delivered directly to the schools where they are changed by the custodians.*

*As part of the "EnergyStar" program we have brought a licensed Energy Engineer into the school system to verify that our CO2 levels meet or exceed the standards set by the EPA.*

*Moisture Control: During the summer months the HVAC/chiller systems are run for 4 hours per day for 3 days per week to make sure that we do not start a mold growth. In the buildings that have underground areas an additional standalone dehumidifier is set to run at the 50%humidity level.*

*Chemical Management: Four years ago we hired a company to come an remove all chemicals from the science departments and all unlabeled cleaning chemicals from the schools. We have removed most of the harsh chemicals from the schools and replaced with newer products as they become available.*

*All current chemicals are kept behind locked doors with the required MSDS sheets kept in a notebook in the principal's office.*

*Any new chemicals added to the inventory come with an MSDS sheet-provided by the chemical supplier.*

## Pillar 3: Effective Environmental and Sustainability Education

Describe how your district provides effective environmental and sustainability education by incorporating STEM, civic skills, and green career pathways. Provide examples of interdisciplinary learning about the key relationships between dynamic environmental, energy, and human systems. Demonstrate how your district uses the environment and sustainability to develop STEM content, knowledge, and thinking skills. You should also discuss how your district develops and applies civic knowledge and skills to environmental and sustainability education.

*According to the United States Department of Commerce, the growth of STEM-related jobs over the last 10 years was three times that of non-STEM fields. Employment offers the greatest motivation but it's not the only reason STEM curricula make sense for our students. Putting STEM together in our regular instruction engages students in problem solving and finding solutions. STEM integration allow us to create learning environments that allow our students to be more active. Whenever this happens, our students are engaged in their own learning causing them to better remember what they have learned.*

*Cherokee County Schools has seven sites that are members of the 21st Century Community Learning Center (CCLC) Afterschool Program. This program provides academic enrichment activities that support STEM concepts funded by a Title IV, Part B federal grant. Students in K-8 tackle engineering challenges as part of their after school academic enrichment activities. Each of the sites utilize the EiE (Engineering Is Elementary) curriculum which meets both state and federal academic standards.*

Teachers participate in STEM professional development

*Cherokee County Schools' mission with this program is to support educators and children with curricula and professional development that develops engineering literacy. 21st CCLC teachers, as shown at the right, participate in professional development to learn how to engage their students in engineering by attending the EiE workshop. Then, teachers utilize the EiE curriculum to empower youth to tackle real-world engineering problems using the engineering design process, creativity, and collaboration. Woven into the EiE curriculum, is the 5 step engineering process which includes: Ask-what is the problem; Imagine-what are the solutions; Plan-draw a diagram; Create-follow a plan and create something; Improve-evaluate, test and make it better. Units taught during the school year include "Green Engineering" with an engineering a recycled racer project, "Agriculture Engineering" with a designing hand pollinators project, "Mechanical Engineering" with a designing windmills project (as shown to the left), "Ocean Engineering" with a designing submersibles*

Students perform experiment in Wind Energy

*project, "Chemical Engineering" with an improving play dough process, and "Aerospace Engineering" with a designing parachutes project.*

*To further engage our students in STEM, an interactive robotics program has been implemented using LEGO ® WeDo kits. These kits allow our students to create working, autonomous robots using LEGO bricks, motors, gears, wheels, rubber bands, string, and sensors. Building robots provides many learning opportunities about simple machines, especially gears, wedges, and pulleys. To make their robot move, students have to write computer programs using an easy-to-learn, drag-and-drop block programming language to tell their robots what to do.*

*Students are also exposed to the website code.org where they were allowed to work through tutorials to create programs to solve problems and develop interactive games or stories they can share. Examples include graph paper programming, real-life algorithms, and binary bracelets. As follow-up in the classroom, Cherokee County Schools participate in the Hour of Code week in December. Students participate in this one-hour introduction to computer science which is designed to demystify code and show that anybody can learn the basics. Participating educators help to show our students that anybody can benefit from programming and promote the need for computing skills. According to the Bureau of Labor Statistics, there will be one million more computing jobs than students over the next 10 years. Also, more than 50 percent of all projected math and science occupations are in computing occupations.*

Students perform experiment in Ocean Engineering

*Cherokee County Schools held a six-week K-5 STEM Summer Academy during the months of June and July 2014 for students of the 21st Century Community Learning Centers Afterschool program. Teachers integrated the EiE curriculum into their daily lessons to support the biweekly themes.*

*The first two-week unit involved students in studying the field of ocean engineering. Students learned about sounding poles and sonar as they mapped a section of ocean floor to learn how engineers design submersibles to collect ocean data. They then applied their knowledge of density, floating, and sinking as they designed their own submersible, equipped it with research instruments, and retrieved packages from their model ocean floor, as shown to the right. As an extension to this unit, students enjoyed a field trip to Titanic Museum in Pigeon Forge, TN and outreach lessons from Ripley's Aquarium, Gatlinburg, TN.*

*During weeks three and four, students focused on chemical engineering. Activities in this unit reinforced the science concepts of "solid" and liquid" as students explored the properties of different materials and the properties of mixtures of materials. Their engineering challenge was to design a process for making high-quality play dough. Students also visited WonderWorks in Pigeon Forge, TN and participated in "What's up with Matter?" outreach lessons provided the Creative Discovery Museum from Chattanooga, TN.*

**Students perform experiment in Aerospace Engineering**

*Lastly, in weeks five and six students were introduced to aerospace engineering by learning how aerospace engineers use their knowledge of astronomy to design space technologies. Students applied their knowledge of drag and conditions on other planets to engineer a model parachute (as shown at the left) that was "mission ready" to land a payload on a planet with an atmosphere much thinner than Earth's. To top this unit off, students visited Tellus Science Museum at Cartersville, GA and participated in a space mission at the UTC Challenger Learning Center in Chattanooga, TN.*

*Professional development is available for teachers and after-school program leaders in an on-going basis for training on STEM concepts. Additional professional development is provided to teachers through WRESA and Science House. Their mission is to motivate and prepare K-12 students, through innovative programs, to study and work in STEM fields. In addition, they work to educate and empower K-12 STEM teachers to effectively integrate innovative STEM content, research, and technologies into their practices. As part of the North Carolina New Schools initiative, teachers attend the STEM day workshop in Charlotte annually where they learn about industry-based experiences and better understand the modern workplace. They learn what skills are necessary for workers involving STEM. The STEM Day provides exposure to real-world skills through learning experiences developed by participating employers. Teachers leave better equipped to bring the world of work into their classroom. Since receiving STEM professional development, teachers can now better incorporate lessons and labs on science and engineering concepts as well as integrated math and technology skills.*

*Cherokee County Schools is the recipient of a Golden Leaf grant which is providing our 1:1 Chrome Book initiative for students in grades 6-12. The Chrome Books will assist in preparing our students to be more thoughtful, creative problem-solvers that can think critically about global issues. The Chrome Books will also increase student engagement and access to technology resources which can provide a more individualized instruction setting for our students. Cherokee County Schools was also the recipient of the 2013-14 STEM-E grant provided through the Cherokee Preservation Foundation. This grant was*

*awarded to the Western EdNet group consisting of Cherokee, Clay, Graham, Swain and Jackson counties. The purpose of the grant was to provide essential STEM professional development to our teachers and supplemental resources for our students. This provided for the opportunity for our teachers to attend the ISTE Technology Conference in Atlanta and the NC TIES conference. This also provided promethean board training for our teachers and allowed them to attend local and regional technology workshops. Each high school STEM and STAC student club received funds to provide supplemental technology resources for their schools. We are the recipients of the STEM E-Next Steps grant to be awarded during the 2014-15 school year for further professional development for teachers and resources for students.*

***Development of civic knowledge and skills through environmental and sustainability education***

*Youth civic engagement can contribute to positive change for all of society and the environment. Service projects and community and/or civic involvement is an essential way to empower our county's young people to make a difference.*

*Cherokee County Schools takes advantage of our rural, mountain setting and uses our outdoor learning spaces to teach our students STEM content, knowledge, and thinking skills. We utilize many of our local civic organizations to provide supplemental environmental and sustainability education programs and opportunities for our students.*

*4-H is one of our most active organizations. School enrichment programs are offered to our students by our 4-H extension agent, Shannon Coleman, to the following grades:*

- *2nd grade: Bug Out and Embryology*
- *2nd and 3rd grade at Murphy Elementary School: 9-week Steps to Health program which focuses on the importance of eating healthy and moving more.*
- *3rd grade: Shoot for the Start and Soil Solutions*
- *4th grade: Advanced Soil Solutions*
- *5th grade: Vermicomposting*
- *6th grade: Energy Transformation*
- *7th grade: Power of Wind and Experimenting with Embryology*
- *7th grade: AG Day – All 7th grade students attend and listen to guest speakers talk about agricultural related jobs and necessary skills. Students rotate through 8 to 10 different guest speakers and ag-related jobs.*
- *5th – 9th grades: Health Rocks*

*National 4-H Science Experiments provided by 4-H Agent Shannon Coleman are available to all of our classrooms that include the following:*

- *Wind Energy – students build and test wind turbines.*
- *Ecobots – students learn about how robots can help clean-up chemical spills. They build and modify a small robot.*
- *Biofuels – students learn different alternative fuels.*
- *H2O – students learn how to conserve water and the importance of the water supply.*

*Currently, 4-H is offering a pilot high school curriculum program called "Microbes: the World Within" at one of our high schools. This curriculum is about the human body and how it is a biome of its own and the relationship of bacteria within the body. Agent Shannon Coleman also offers the ASPIRE program to high school students. This program is an ACT prep class using Princeton Review materials and provides strategies to improve ACT scores in rural counties.*

*In addition to the many curriculum offerings, 4-H offers a Teen Leadership Council of Cherokee County. Selected students participate in service projects around the county and attend leadership training around the state. Regular 4-H clubs are available at all seven after-school program centers. 4-H shooting clubs are available at two high schools and three middle schools. Students may also participate in the Cherokee Rider's 4-H Horse Club.*

*Cherokee County "Big Sweep" project involves individual students and teachers, as well as multiple student organizations, working in conjunction with the USDA Forest Service in an annual lake, stream, and waterway trash clean-up effort during the month of September.*

*The Cherokee County Arts Council received a collaborative grant that allowed our students to build an arbor on the Murphy Riverwalk.*

*Students worked with the Hiwassee River Watershed Coalition to remove invasive plant species along our waterways and plant indigenous species in their place.*

*Personnel from John C. Campbell Folk School and students from one of our high schools worked together last year and helped develop a plan to reduce the Folk School's energy use saving them thousands of dollars in cost avoidance.*

*Cherokee County Schools is working diligently to create an enduring environmental and sustainability education and offer service learning opportunities for our students. We are a state leader in energy conservation and recognized as an ENERGY STAR leader and green leader in our area.*