U.S. DEPARTMENT OF EDUCATION

GreenRibbonSchools

2014-2015 School Nominee Presentation Form

U.S. Department of Education Green Ribbon Schools 2014-2015

☐ Charter ☐ Title I ☐ Magnet ☐ Private X☐

Independent Name of Principal: Dr. Daniel Shelton

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

Official School Name: Kirk Middle School

(As it should appear on an award)

Official School Name Mailing Address: 140 Brennen Drive

Newark, DE 19713

(If address is P.O. Box, also include street address.)

County: New Castle State School Code Number *:374

Telephone: 302-454-2164 Fax: 302-454-3491

Web site/URL: kms.org E-mail: daniel.shelton@christina.k12.de.us

**Private Schools: If the information requested is not applicable, write N/A in the space*

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

Have reviewed the information

Daniel Shelton

Date: 1/29/2015

(Principal's Signature)

Name of Superintendent: Dr. Freeman L. Williams

(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in official records)

District Name:

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

Dr. Freeman Williams

Date: 1/29/2015

(Superintendent's Signature)

U.S. DEPARTMENT OF EDUCATION

GreenRibbonSchools

Nominating Authority's Certifications

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

1. The school has some configuration that includes grades Pre-K-12.
2. The school 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 and sustainability education.
3. The school 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: Delaware Department of Education

Name of Nominating Authority: Mrs. Tonyea Mead

(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.

Tonyea Mead _____ Date:2/1/2015 (Nominating Authority's Signature)

U.S. DEPARTMENT OF EDUCATION

GreenRibbonSchools

1. School Profile

School Name: **Kirk Middle School**

Street Address: **140 Brennen**

Drive City: **Newark**

State: **Delaware**

Zip: **19713**

School Website: **kms.org**

Principal Name: **Dr. Daniel Shelton**

Principal Email Address: **daniel.shelton@christina.k12.de.us**

Principal Phone Number: **302-454-2164**

Total school enrollment (Fall 2014): **832**

District Name: **Christina School**

District

School type and demographics:

2. Application Team Information

Lead Applicant Name (who prepared the application): **Helene Ross Williams**

Lead Applicant Title (e.g., teacher, principal): **Mathematics**

Teacher Lead Applicant Email:

helene.rosswilliams@christina.k12.de.us Lead Applicant Phone

Number: **302-333-4832**

Application Team Members (Others who helped prepare this application)

	Name (First and Last)	Title/Department
1	**Jackie Kook**	**Agriscience Teacher**
2	**Nick Vacirca**	**Facilities Manager**

3. Summary Narrative

(NOTE: This is the 800 word summary that will be used to describe your school's programs and efforts towards the three pillars. If selected for an award it will be used in press releases and other outreach materials. You may want to return to this question after answering the remaining questions below.)

U.S. DEPARTMENT OF EDUCATION

GreenRibbonSchools

Summarize the school's efforts in all three pillars. Focus on your commitment and progress towards meeting Green Ribbon School criteria, especially:

- Partnerships or memberships the school has developed to meet your green goals
- The people, including any student team, involved in your Green School efforts
- Your progress thus far, including results and benefits
- The plan to sustain your

work (Maximum 800 words)

Kirk Middle School Recycling Club (KMSRC) teamed with 4H after-school program in our building in September, 2013. Since this time, we have assisted Gauger, another Christina middle school in starting a recycling club in that building. Last year KMSRC had 9 students who participated. This year, we have 24 students who participate in activities on a regular basis. In addition to collecting the recyclables in our building, students have been active in building a Monarch Butterfly Waystation, attending field trips that promote environmental awareness, participating in a tri-state contest sponsored by the Philadelphia Zoo and new to our program is conducting energy & air quality audits.

Since starting KMSRC in 2011, it is obvious at Kirk how far recycling has come. The result of our efforts is that recycling is a constant at Kirk. Our recycling efforts have involved different groups of people. Our recycle club students are the driving force behind the recycling efforts at Kirk. They communicate effectively with other students in the school. These groups of student leaders are the primary collectors of recyclable materials at Kirk and take additional responsibility for the data collection and reporting. Staff has greatly increased their participation in our recycling program through education provided by the students in the recycling club
along with our newsletter, Recycle News which encourages staff to dispose of things properly. These efforts have translated into measurable results. According to our data, there has been an increase of 245% over the amount collected this time last year. Staff members have definitely helped to create a culture of recycling at Kirk. The custodial staff has come a long way in making the program a success. They are making stronger strides towards identifying recycling materials and disposing of those materials properly.

We are working toward having a school that performs all environmental activities with consistency; this is the meaning of sustainability. We plan to submit an application for DE Pathways to Green Schools. We plan to keep the successful partnership with the 4H program. Many schools and districts have accepted a

"Green Schools" challenge and have developed programs that promote and maintain healthy sustainable schools for their students. These programs include: Energy Management, Inventory Management, Recycling Program and Green Cleaning. Christina School District Facilities Services are starting to develop these programs District-Wide. We will continue to encourage our District to develop comprehensive sustainability programs because this will guarantee sustainability for Kirk and move other schools to better environmental practices.

Crosscutting Questions: Awards and Programs

These two crosscutting questions are **10% of your overall score**.

4. Does your school participate in a local, state, or national green schools program (e.g., Eco Schools USA, Project Learning Tree Green Schools)?

( ) Yes
(**x**) No

If yes, which program(s) are you participating in, what level(s) are in progress, and what level(s) have you achieved?

	Program	Level in Progress	Level Achieved (include date achieved)
1			

5. In the past five years, has your school, staff, students or student groups received any awards for environmental stewardship, student and staff health and wellness, or environmental education/civic programs?

(**x**) Yes
( ) No

If yes, provide award details below.

	Award	Awarded to	Awarded by	Year Received
1	**Honorable Mention**	**KMS**	**DE DOE**	**2014**
2	**Monarch Butterfly Dedication**	**KMS**	**Dr. Freeman**	**2014**
3	**Composting Dedication**	**KMS**	**Dr. Freeman**	**2014**
4	**Universal Recycling Grant**	**KMS**	**DE DNREC**	**2014**

5	**(a) Recognition of Achievements & (b) Green Apple Day of Service**	**KMS**	**Delaware Valley Green Building Council**	**2014**

Pillar 1: Reduce environmental impact and costs

Pillar 1 includes four main elements and is **30%** of your overall score.

Element 1A: Energy conservation strategies

6. Which of the following programs or practices has your school implemented to conserve energy and to protect our environment from the negative effects of buildings and transportation? (Check all that apply)

[**X**] Our school has an energy management plan in place that describes the steps we are taking, the key participants, our goals, and a schedule for conserving energy and reducing energy costs.
[ ] Our school participated in an energy efficiency program that resulted in a comprehensive energy audit and cost effective energy efficiency improvements. [ ] Our school has met our energy conservation target every year since we started our program.
[ ] Our school energy use is tracked and benchmarked using EPA ENERGY STAR Portfolio Manager or an equivalent program.
[ ] Our school is EPA Energy Star certified this year.

[ ] 5% or more of the energy used at our school is obtained from on-site or off-site renewable energy sources.
[ ] Our school was built or modernized to meet Leadership in Energy and Environmental Design (LEED), Green Globes, Living Building Challenge, or another green building standard.
[ ] Our school has a greenhouse gas emission reduction plan in place that targets energy use. We measure our annual progress against our reduction goal.

7. Use the list above as a guide to describe how your school programs, policies, and actions have reduced the amount of energy used in your building(s). Include data. Also include information about your efforts to protect our environment from greenhouse gas emissions, how you set your goals for reduction, and how you measure your progress. (Maximum 250 words)

The Christina School District has assembled a series of goals and guidelines to encourage energy conservation district-wide. It is important that all buildings are aware of and are following these guidelines.
GOALS FOR DISTRICT ENERGY PROGRAM
•Conserve energy so that the instructional program and support services can be

effectively delivered while conserving energy dollars.
•Eliminate energy waste in our buildings and at the same time ensure a comfortable and safe learning environment for all students and staff.
•Educate every student and employee to contribute to energy efficiency in our District. •Every person will be expected to be an "energy saver" as well as an "energy consumer".
•Implement strategies to reduce energy demand.

Our school participates in a demand reduction program during the months of June – Sept each year. On specified days, the build sheds all possible energy generated by lights, HVAC equipment, roof top units and miscellaneous computer equipment.

Element 1B: Water quality, efficiency, and conservation

8. Which of the following practices contribute to the protection and conservation of the school domestic (drinking) water? (Check all that apply)

[**X**] We are served by a community/city/county owned water provider that is required to report annually on the quality of our water.

[ ] Our school has its own well and we do water sampling in accordance with our local and state health authorities.
[**X**] Our building maintenance department cleans all water taps and drinking fountains on a regular basis to prevent bacterial contamination.
[ ] We have a water reduction plan in place that includes: [**X**]
low-flow water fixtures
[**X**] native drought-tolerant plants
[**X**] minimal or no landscape irrigation
[ ] Our school water use is tracked and benchmarked using EPA ENERGY STAR Portfolio Manager or an equivalent program.
[ ] We use only non-potable water (such as water collected from a rain barrel or rain cistern) for irrigation.
[ ] Our school has a greenhouse gas emission reduction plan in place that targets water use. We measure our annual progress against our reduction goal.

9. Use the list above as a guide to describe how your school implemented and is maintaining your water conservation program including your baseline, your goal, and your reduction rate to date. Explain how you will continue to reduce water use to meet your goal. Include who in the school participates in the water conservation program. Describe the work done to protect water taps and drinking fountains from bacterial contamination. (Maximum 250 words)

Christina School District Water Conservation Policy ensures that all plumbing (leaks, faucets, flush values, etc.) and/or areas where water is entering the

building (i.e. roof leaks, basement water intrusions) or humidity sources (condensation on pipes, sweating walls) are reported and repaired immediately.

We have renovated 2 sets of 3 of the major restrooms in the school. We have installed waterless urinals, metered flush valves, metered faucets and hand dryers in each restroom. Once funding is available, we will complete renovations to the third set of restrooms.

It is the responsibility of the custodial staff to disinfect water taps and drinking fountains daily.

Element 1C: Waste Management and Product Procurement

10. Which of the following programs has the school initiated and maintained to reduce solid waste, eliminate hazardous waste, and procure environmentally preferable products? (Check all that apply)

[**x**] Our school has initiated and maintained a solid waste management plan that includes waste reduction practices, collection of recyclable and compostable materials, elimination of hazardous waste, and preferred-purchasing requirements.
[**X**] Our recycling program collects every material that is collected in our city/county.
[**X**] Our school composts organic materials on site.
[ ] Our school only purchases office/classroom paper that is 50% or more post-consumer material.
[**x**] Our school only purchases office/classroom paper made of fibers from forests certified as responsibly managed in accordance with Forest Stewardship Council, Sustainable Forestry Initiative, or a comparable certification standard.
[ ] Our school purchases office/classroom paper that is totally chlorine-free (TCF) or processed chlorine free (PCF).
[ ] All new furniture purchases are certified by the Business and Institutional Furniture Manufacturers Association or a comparable standard.
[ ] Hazardous and dangerous products at our school have been reduced or eliminated.
[**x**] Hazardous, dangerous, and universal wastes at our school are handled and disposed of in accordance with federal and state regulations.
[**x]** Our school has a greenhouse gas emission reduction plan in place that targets solid waste reduction and recycling. We measure our annual progress against our reduction goal.

11. Use the list above as a guide to describe your solid waste management plan, including goals, materials you collect to be recycled or composted, your current recycling rate, and how you calculated the recycling rate. Include who participates in the waste management program, any student learning objectives, and the educational and

environmental benefits to date. Provide an overview of your environmentally preferred purchasing. (Maximum 250 words)

KMSRC collects paper, boxes, plastic containers, cans, glass bottles & aluminum foil products. Our current recycling rate averages 6831.83 dry quarts (8.5 yd^3) per month. This number is derived from the size of our recycling containers located throughout the building and students' recording of the amount in each bin. Our bin capacities are: 13, 28, 41 or 140 dry quarts. Students evaluate the bins as either full or half-full.

Learning objectives for students in KMSRC are:

- ✓ Increase students' interest and increase their understanding of recycling as it pertains to the waste we generate and how we handle it.
- ✓ Identify types of waste generated by human activities.
- ✓ Become familiar with ways to deal with various types of waste material
- ✓ Develop an awareness of the responsibility of all groups to protect our environment through the correct handling of waste.
- ✓ Become aware of recycling efforts in our local schools and communities, across Delaware, and across the U.S.
- ✓ Design a communication plan aimed at increasing public awareness
- ✓ Develop and present effective presentations and exhibits that will enhance sustainable actions and habits in others.
- ✓ Become acquainted with types of careers associated with environmental sustainability; explore the skill sets required for entry-level positions.
- ✓ Conduct a survey to consider how individuals could change practices to reduce waste generation.

Educational & environmental benefits are measurable. Our students actively engage in recycling and collect data on the collection of materials. To date we have collected 58,374 dry quarts or 72 cubic yards of recyclables.

Element 1D: Alternative transportation

12. Our school provides the following alternative transportation options to driving in single occupancy vehicles to and from school. (Check all that apply)

[ ] Our school participates in a "Safe Routes to School" or similar program.
[ ] Our school has designated carpool parking stalls.
[ ] Our school offers yellow school bus service.
[ ] Our school is served by city/Metro public transportation service.
[**X**] Our school has a well-publicized no idling policy that applies to all vehicles including school buses.
[X] Our school has a vehicle loading/unloading area(s) at least 25 feet from building air intakes, doors, and windows.
[ ] Our school has a greenhouse gas emission reduction plan in place that

targets transportation. We measure our annual progress against our reduction goal.

13. Use the list above as a guide to describe alternative transportation options to driving in a single occupancy vehicle to and from school. Included how the alternatives are promoted, any data you have about participation in school bus service, public transportation, carpools, ride-sharing, and commuting to school by walking or biking. (Maximum 250 words)

Pillar 2: Improve the health and wellness of students and staff
Pillar 2 includes two main elements and is **30%** of your score.
Element 2A: An integrated school environmental health program

14. Which of the following programs or practices does your school implement to ensure the environmental health of the school community? (Check all that apply)

[**x**] Our school implements an up-to-date Integrated Pest Management program.
[**x**] Our school implements an up-to-date Indoor Air Quality Management Plan modeled after the EPA's Indoor Air Quality (IAQ) Tools for Schools or other national recognized model.
[ ] Our school has identified and properly removed sources of elemental mercury and prohibits its purchase and use in the school.
[**x**] Our school does not have any wood playground equipment or other structures that contain chromate copper arsenate or we have identified these structures and have taken steps to reduce exposure.
[**x**] Our school has a comprehensive green cleaning program.
[ ] Our school has tested all frequently occupied rooms at or below ground level for radon gas and has fixed and retested all rooms with levels that tested at or above 4 pCi/L or our school was built with radon resistant construction features and tested to confirm levels below 4 pCi/L.
[**x**] Our school has an Asthma Management Program consistent with the National Asthma Education and Prevention Program.
[**x**] Our school has a chemical management program in place, with elements of purchasing, inventory, storage, training, spills, and hazards communication.

15. Use the list above as a guide to describe how your school implements and measures the success of your integrated environmental health programs and practices to ensure the health and safety of the school community. Include information on how your school addresses exposure to health hazards including radon, chromate copper arsenate, carbon monoxide, chemicals, asthma triggers, and mold.
(Maximum 250 words

- Parents of students with asthma are to provide the nurse with an "Asthma Action Plan" consistent with the American Lung Association.
- Under the Emergency Planning and Community Right-To-Know Act, any substance on School District property containing potentially hazardous ingredients is required to have available for public review a Material Safety Data Sheet (MSDS). MSDS's

should be stored in a single document located in the Chief Custodian's office. If any questions arise regarding the characteristics of a particular product, a review of the MSDS will reveal specifics regarding: Health Concerns, Environmental Concerns, Storage Requirements, Disposal Requirements, Cautions Regarding Proper Use and/or Application and Potentially Hazardous Ingredients.
- We recently completed our first survey about indoor air quality with the faculty at Kirk Middle School. The survey will be completed every six weeks.
- Facilities Services monitors the following parameters for Indoor Air Quality:
    - Physical Parameters (Temperature, Relative Humidity, Air Movement, Ventilation, Filtration and Pressurization)
    - Chemical Parameters (Carbon Monoxide and Total Volatile Organic Compounds
    - Biological Parameters (Fungal Bio-Aerosols and Bacterial Bio-Aerosols)
- Under the AHERA, the United States EPA requires each elementary and secondary school to perform a 6 month surveillance and 3 year re-inspection for ACM and to prepare an asbestos management plan.

2B. High standards of nutrition, fitness, and quality outdoor time for both students and staff

16. Which of the following programs or practices does your school implement to promote nutrition, physical activity, and overall school community health? (Check all that apply)**.**

[ ] Our school participates in the "Coordinated School Health" program (www.cdc.gov/HealthyYouth/cshp/).
[ ] Our school participates in the USDA's Healthier School Challenge.
[ ] Our school participates in a Farm to School or comparable program to use local, fresh food in our cafeteria.
[**x**] Our school has a food garden either on-site or in close proximity to our building, which is utilized by the cafeteria or by teachers.
[**x**] Over the past year, our students spent an average of at least 120 minutes per week (for middle and high schools) or 90 minutes per week (for elementary schools) in school supervised physical education.
[ ] At least 50% of our students' annual physical education and physical activity (including recess) takes place outdoors.
[ ] At least 50% of our students have participated in the EPA's Sunwise or equivalent program (to protect students from skin cancer).
[**x**] Our school integrates health measures into student assessments.

17. Use the list above as a guide to describe how your school implements high standards of nutrition, fitness, and quality outdoor time for both students and staff. (Maximum 250 words)

• This school year at Kirk, there is a staff member who reads the Delawell information that is provided to all state employees. She informs the staff through e-mail about anything that she feels is important to our staff. The e-mails are to encourage staff to take a closer look at the information and programs offered through Delawell.
• Kirk is having a biggest loser competition for the staff starting this week and having an end date of spring break. The competition starts with weighing in on January 6. It is a $10 buy in and the person who loses the most weight by the deadline will win the pot.
• The overall goal for nutrition education for Christina School District is to promote the integration of nutrition education into curriculum areas. Schools should provide nutrition education and engage in nutrition promotion. Nutrition education will be age appropriate, reflect cultural diversity, and provide opportunities for students to practice skills learned. We will: Integrate nutrition education into the respective subject areas with the help of credentialed health educators and nutrition professionals from DOE and other sources. Topics to include but not limited to nutrition facts labels, energy expenditure, media awareness, food groups, portion control, etc. Instruction should be standard based and ongoing.

Pillar 3: Provide effective environmental and sustainability which incorporates STEM, civic skills, and green career pathways

Pillar 3 includes three main elements and is **35%** of your overall score.

Element 3A: Interdisciplinary learning about the key relationships between dynamic environmental, energy, and human systems

18. Describe how your school integrates and assesses/measures students' environmental or sustainability literacy at each grade level including curriculum, courses, outdoor learning, and assessments. (Maximum 250 words)

At the 6th grade science level, students learn earth history and properties of matter. At the 7th grade science level, students learn diversity of life and some

genetics, and at the 8th grade science level students learn ecosystems and weather. Additionally, the agriscience program offers courses in grades 6-8, with students learning wildlife/environmental sciences (including sustainability) as well as domestic plant and animal sciences. The ~8,000 sq ft courtyard serves as an outdoor classroom for lessons within these units. Students in the agriscience program maintain existing outdoor activities such as composting, a Monarch Waystation (butterfly garden), a wildfowl enclosure with doves and pigeons, a pond area with a two-species duck colony, and a layer hen flock that provides table eggs to the family and consumer science program. Students will be installing additional plant materials in the wildfowl and pond enclosures, adding an enclosure for a second layer hen flock, and installing additional compost containers courtesy of a grant received through the Department of Natural Resources and Environmental Control. Students will also be planting a pre-dug rain garden to assist with drainage and erosion, creating a mini orchard and several other gardens (from herbs to vegetables), and growing/propagating plants in our small greenhouse. Finally, students are assessed through participation and demonstration of knowledge on the basis of growth, with the proficiency rating requiring demonstration of knowledge and techniques in environmental sustainability and natural resource management.

19. Describe professional development opportunities available to your teachers in environmental and sustainability concepts and the number and percentage of teachers who participated in these opportunities during the past 12 months. (Maximum 250 words)

* Jackie Kook and I are members of Delaware Association for Environmental Education.

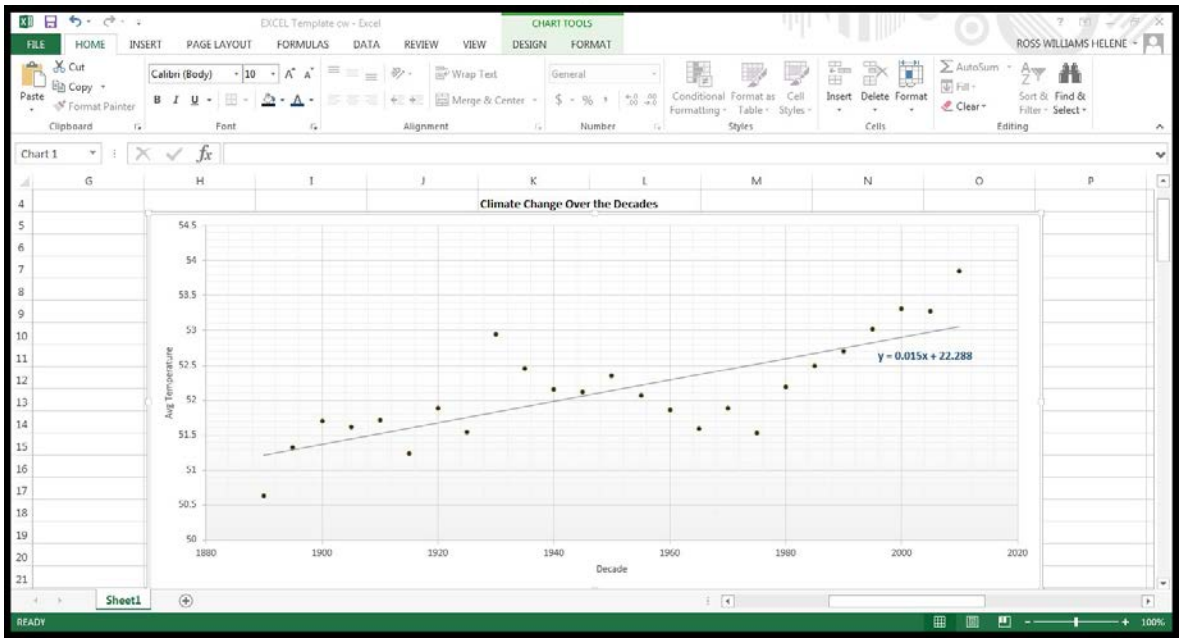
* Christina School District does not provide teachers with professional development on environmental and sustainability issues. However, there are some professional development opportunities elsewhere in Delaware. For the last year, I have provided some of this information to Kirk teachers through the recycle newsletter. There has been only a few teachers (less than 5% of the faculty) that have taken the opportunity to learn more on these topics.

Element 3B: Use of the environment and sustainability to develop STEM content knowledge and thinking skills to prepare graduates for the 21st century technology-driven economy

20. Describe how environmental and sustainability education at your school supports teaching science and engineering practices (e.g., asking questions, developing and using models, planning and carrying out investigations, analyzing and interpreting data, using mathematics and computational thinking, constructing explanations, and engaging in argument from evidence) and supports robust general science education that includes a deep understanding of life, physical, and earth sciences. (Maximum 250 words)

Sustainability is the driving force behind the decisions made in planning the courtyard use areas. Teaching students – and other Kirk community members – about composting, raising and harvesting food plants, reducing erosion and pollution, and fostering habitat for wildlife are integral components of the program. The expressive arts/career and technical education department has been working on a multi-disciplinary STEM project in which each different discipline offers a component of an overall project, which this year was focused on a breakfast program for needy families in our school community. The core curricular departments also have a STEM project, each discipline completing one part of an interdisciplinary project such as colony collapse disorder or carbon footprints and climate change. These programs involve the use of computer programs such as Microsoft Office, research on the topics at hand, and composing a written report while also preparing an oral presentation. Students in the agriscience program monitor a number of different things, such as the size and weight of the 13 box turtles in the courtyard, daily weather conditions (temperature, humidity, foot candles of light, and precipitation) in various locations of the courtyard, and the growth and development of embryonic chickens through egg incubation. They use this information to track regular changes in each of these areas as well as make predictions and modify variables to impact the results. Once the DNREC grant funding is received, students in the agriscience and family and consumer science programs will pilot a food composting program in conjunction with the Recycle Club as well.

21. Describe how your curriculum connects classroom content to career and college readiness, particularly post-secondary options that focus on environmental and sustainability field studies and/or careers. (Maximum 250 words)



2014 STEM Project Data

Christina School District STEM project for 8th grade focused on climate change. Our essential question, "How can we use data to prove climate change is really happening?" guided students to look at one aspect of climate – temperature. They gathered information and interpreted findings using a mathematical equation for the line of best fit. Explaining how the data was configured (by decade), displayed (scatter plot) and interpreted (equation - determining meaning of slope and y-intercept) answered the essential question.

STEM project connection was made when students observed & experimented with some green technologies during our DTCC field trip. They also received much information on associate degree careers in: Energy Management, Environmental Engineer Technology, Environmental Technology Water Quality and Renewable Energy Solar.

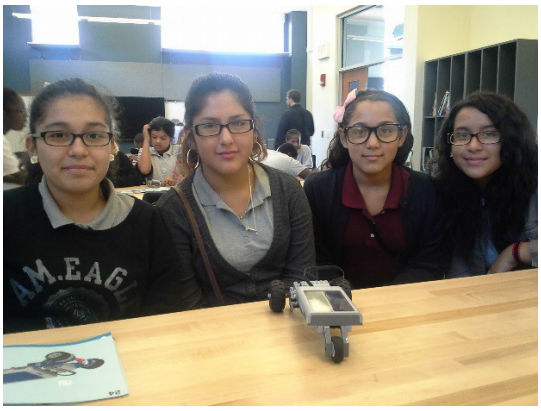
At the end of this application is The Cougar Courtyard Handbook. Our courtyard is an extension of the Agriscience program at Kirk.

Element 3C: Development of civic engagement knowledge and skills, and students' application of these to address sustainability and environmental issues in their community

22. Describe your students' civic and/or community engagement experiences integrating environmental and sustainability topics/concepts, field studies, community service, etc. Address if and how students conduct an age-appropriate community engagement

projects around a self-selected environmental or sustainability topic at every grade level; and partnering with local academic, business, informal science institutions and/or other schools to help advance the school toward the 3 Pillars and/or assist the progress of (an) other school(s), particularly a school with lesser capacity in these areas) (Maximum 250 words)

*Kirk Middle School reaches out to the community through our newsletter. Thus far, we have participated and in some cases, raised money in several community events: Green Apple Day of Service, Fundraiser for Breast Cancer Awareness, Fundraiser for Prevention of Juvenile Diabetes & an Old Shoes Drive through TerraCycle.
*Students at Kirk are participating in the Albert M. Greenfield UNLESS Contest sponsored by the Philadelphia Zoo. This is a 6 month project that encourages students to rethink recycling. Students create a positive Rethink Recycling campaign to engage their families, school and community. Campaign must be specific and measurable. Campaign must increase the amount of products recycled.
*Kirk Middle School is registered Monarch Waystation in New Castle County. Students were very active in the planning, preparation and maintenance of the butterfly garden. At present, students are engaged in a research project on the Monarchs to understand the effects of food shortage and global warming on the species.
*In October, 2014 KMSRC began working with 4H program at Gauger Middle School to assist them in starting a recycle club at that school.



Field Trip to DTCC
Students built solar powered cars

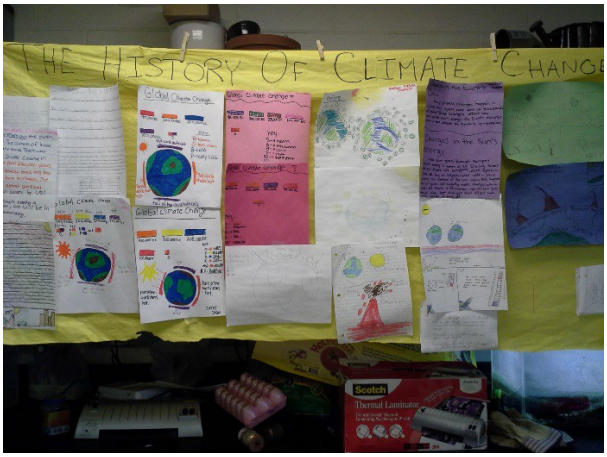
Composting Dedication Sep 2014
KMSRC poses with Dr. Williams



Monarch Butterfly Garden – Beginning to Completion 2014

Field Trip to DuPont EEC

Field Trip to DSWA Recycling Center



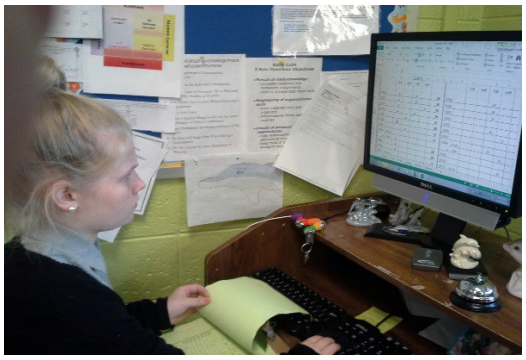
U.S. DEPARTMENT OF EDUCATION

GreenRibbonSchools

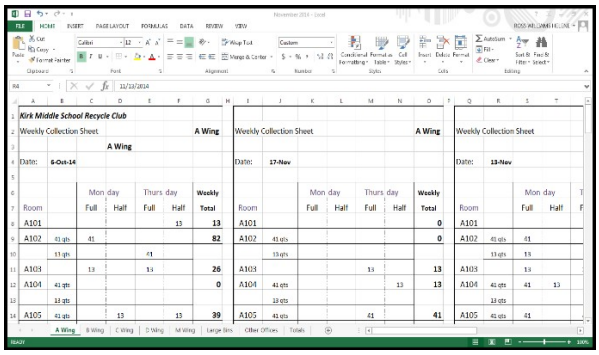
IRK MIDDLE SCHOOL RECYCLE CLUB

Collection

Disposal



Data Input



Data Evaluation

The Courtyard Handbook

Why School Gardening?

According to www.kidsgardening.org, the students, parents, and community of a school can benefit from a school garden. Not only can a school garden raise access to and awareness of fresh fruits and vegetables, but it can also foster pride among those involved with the program. Educators have noted improvements in student development categories such as social skills, school attitudes, volunteerism, and scholastics. While science, health, and nutrition are the subjects most likely to be taught through garden activities, all disciplines can benefit from the presence of a school garden.

The goal of The Cougar Courtyard is to provide a safe, outdoor classroom for the Kirk community to utilize. This handbook is only a start in offering discipline-specific and interdisciplinary ideas and activities; additional lessons can be designed or located and used by anyone. Some of these activities can be done in the classroom, while others require the use of the courtyard itself.

What is in the courtyard?

Currently, the courtyard is divided into a series of areas based on use. Space is allocated for the following purposes:

- Pond area and duck enclosure
- Poultry enclosure
- Wildfowl enclosure
- Monarch butterfly garden (certified Monarch Way Station)
- Rain garden
- Compost areas
- Picnic/seating area
- Raised gardens
- In-ground gardens
- Greenhouse
- Herb garden
- Bird/butterfly garden
- Mini orchard

Sustainability is the driving force behind the decisions made in planning the courtyard use areas. Teaching students – and other Kirk community members – about composting, raising and harvesting food plants, reducing erosion and pollution, and fostering habitat for wildlife are integral components of the program.

Finally, as part of the Delaware Valley Green Building Council's Green Ribbon Schools initiative, the courtyard and this handbook serve as the backbone of the pillars, which are "to reduce environmental impact and costs; improve the health and wellness of schools, students, and staff; and provide environmental education, which teaches many disciplines, and is especially good at effectively incorporating STEM, civic skills, and green career pathways" (www.dvgbc.org/greenschools/green-ribbon-schools-resources).

Science Activity Ideas
Topics:
Simple Machines
Observe the function of the greenhouse window automatic operating system Earth History
Obtain rock samples
Observe the effects and prevention of soil erosion Forces That Cause Motion

Use a variety of surface types (soil, vegetation, concrete) and/or inclines to determine the effect of external forces on an object's motion
Properties of Matter
Take soil samples and separate particle types, another lesson
Create and use thermometers Diversity of Life
Study a variety of life by collecting plant debris
Observe aquatic life using pond water
Collect plant life to observe flowers, seeds, and stem structures

Genetics

Grow seeds to plant in the garden
Study Mendel's pea plant experiment

Ecosystems

Study the various ecosystems created in the courtyard
Set up quadrat lab to estimate population density of various soil-dwelling organisms
Observe a food chain/web

Weather

Measure temperature variations at different levels of the pond to demonstrate the way the sun heats the water
Compare climactic conditions (wind, temperature, precipitation, etc.) in the courtyard and outside the building to demonstrate the concept of a microclimate
Make observations of general weather conditions

Social Studies Activity Ideas

Topics:

Geography

Study the rain garden concept (and other agricultural methods such as terracing and contour farming) to understand how humans shape the environment
Build a vertical garden
Create a plan for a green roof at Kirk

Civics

Write letters to elected officials requesting protection of a local wildlife habitat
Debate the necessity of laws protecting endangered species

Economics

Calculate the value of the layer hen flock in terms of egg supply and demand
Study trade agreements related to U.S. agricultural imports and exports
Determine the financial impact of raising vegetables in a home garden on a family