



U.S. Department of Education Green Ribbon Schools

**2011-2012 Presentation of Nominee to the
U.S. Department of Education**

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OMB Control Number: 1860-0509
Expiration Date: February 28, 2015

PART I - ELIGIBILITY CERTIFICATION

School and District's Certifications

The signatures of the school principal and district superintendent (or equivalents) on the next page certify that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct.

The school has some configuration that includes one or more of grades K-12. (Schools on the same campus with one principal, even a K-12 school, must apply as an entire school.)

2. The school achieves or comes close to achieving the goals of all three green Ribbon Pillars: 1) environmental impact and energy efficiency; 2) healthy school environments; and 3) environmental and sustainability education.
3. The school has been evaluated and selected from among schools within the state or Nominating Authority's jurisdiction (BIE, DoDEA), based on *documented achievement* toward the three Green School Pillars and Elements.
4. Neither the nominated public school nor its public school district is refusing 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.
5. OCR has not issued a violation letter of findings to the public school district concluding that the nominated public school or the public school district as a whole 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.
6. The U.S. Department of Justice does not have a pending suit alleging that the public school or the public school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
7. 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 public school or public school district in question; or if there are such findings, the state or public school district has corrected, or agreed to correct, the findings.
8. The school meets all applicable federal, state, tribal and local 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 School 2012

For Public Schools only: (Check all that apply) [] Charter [] Title 1 [] Magnet [] Choice

Name of Principal Dr. Kevin G. Bezy
(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in the official records)

Official School Name The Gereau Center for Applied Technology and Career Exploration
(As it should appear in the official records)

School

Mailing Address 150 Technology Drive
(If address is P.O. Box, also include street address.)

Rocky Mount VA 24151
City State Zip

County Franklin State School Code Number* 1481

Telephone (540) 483-5446 Fax (540) 483-5788

Web site/URL http://gereau.frco.k12.va.us E-mail kevin.bezy@frco.k12.va.us

I have reviewed the information in this application, including the award and eligibility requirements on page 2-4, and certify that to the best of my knowledge all the information is accurate.


(Principal's Signature) Date March 15, 2012

Name of Superintendent* Dr. Charles H. Lackey
(Specify: Mrs., Miss, Mrs., Dr., Mr., Other)

District Name* Franklin County Public Schools Tel. (540) 483-5138

I have reviewed the information in this application, including the award and eligibility requirements on page 2-4, and certify that to the best of my knowledge all information is accurate. I concur that this is one of the highest performing green school applicants in our state.


(Superintendent's Signature) Date March 15, 2012

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

PART II – SUMMARY OF ACHIEVEMENTS

Instructions to School Principal

Provide a concise and coherent "snapshot" that describes how your school is representative of your state's highest achieving green school efforts in approximately 600-800 words. Summarize your strengths and accomplishments. Focus on what makes your school worthy of the title U.S. Department of Education Green Ribbon School. Be sure to note if students were actively involved in preparing the application.

This summary should be written as a stand-alone document. It will provide the ED review panel with an overview of the school's green activities that were detailed in the application to the state, DoDEA or BIE evaluators. If the school is awarded a U.S. Department of Education Green Ribbon, this information may be shared with other schools, candidates for next year, the press, and the public.

PART III – DOCUMENTATION OF STATE EVALUATION OF NOMINEE

Instructions to Nominating Authority

For the pilot year, the Nominating Authority must review nominated schools for high achievement based on the schools' *documented achievement* toward reaching the goals of each of the three U.S. Department of Education Green School Pillars and elements. For each school being nominated by the Authority to ED, please attach state (or equivalent) evaluation materials (application) based on the Nominating Authority Evaluation Support Framework provided by ED to facilitate your evaluation of schools.

The Nominating Authority must review and sign the following certification for each school being nominated to ED.

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.

The school has some configuration that includes one or more of grades K-12. (Schools on the same campus with one principal, even a K-12 school, must apply as an entire school.)

2. The school achieves or is one of those overseen by the Nominating Authority which comes the closest to achieving the goals of all three green Ribbon Pillars:
 - 1) environmental impact and energy efficiency; 2) healthy school environments; and
 - 3) environmental and sustainability education.

3. The Nominating Authority has evaluated the school and selected it for submission to the U.S. Department of Education from among those schools overseen by the Nominating Authority which have applied for a Green Ribbon, based on *documented achievement*


toward the three Green School Pillars and Elements.

4. The school meets all applicable federal civil rights and federal, state, tribal and local health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency Virginia Department of Education

Name of Nominating Authority Dr. Patricia I. Wright, Superintendent of Public Instruction
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application, including the award and eligibility requirements on pages 2-4, and certify, to the best of my knowledge through a documentary verification assessment, that the school meets the provisions in this Part of the Nominee Presentation Form.

 Date 3/13/12
(Nominating Authority's Signature)

Note to Nominating Authority: The application, including the signed certifications and documentation of evaluation in the three pillars should be converted to a PDF file and emailed to Director, ED-Green Ribbon Schools at green.ribbon.schools@ed.gov according to the instructions in the Nominee Submission Procedure.

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 and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.

Abstract

The campus of The Gereau Center, which includes the Center for Energy Efficient Design (CEED) building, has a positive impact on the environment. The nontransportation energy use is down by 12.4% with the advent of solar hot water heaters, photovoltaic arrays, and wind power generators. The greenhouse gas emissions are down by 40.38. We generate .7% of our energy and 7% of the energy we purchase is renewable. The CEED, a new addition, has a PassivHaus certification, and we have applied for LEED certification. All of the new furniture purchased for CEED meets Virco's Greenguard standards. We have analyzed our building using the Energy Star certification guidelines.

The domestic use of water is down 31%. CEED's rainwater reclamation system allows the use of grey water to flush toilets and water the green roof and landscape plantings. The school division uses a green seal certified bio-renewable program for bulk cleaning supplies which increases the efficient use of water and results in no chemical waste. Newspapers used for instructional purposes are donated to local animal shelters. Fascopy paper, which is certified by the Forest Stewardship Council, is used, and all lavatory paper products are made from 100% recycled materials.

The Gereau Center and CEED have healthy and safe environments for students and staff. Both buildings were designed so students and staff can enjoy natural lighting and space. Classrooms are spacious and the colors and patterns were selected to produce a calming atmosphere. Synchronized clocks eliminate the need for jarring bells for class changes. Classroom and cafeteria seating, indoors and outdoors, promotes social interaction. Visitors can only access the building through the office, the door of which is electronically monitored. Classroom doors are kept locked. Intercom interruptions are kept at a minimum since classrooms have telephones.

Biohazard waste is handled by a certified outside contractor. An integrated pest management plan is in place which does not allow any use of pesticides. The picnic tables on the patio have been sealed or replaced with plastic coated metal tables. The indoor air quality is monitored closely. Filters are changed regularly, and the systems are designed to prevent closed-building syndrome. CEED has an energy recovery ventilation system which brings in fresh air. Its system uses geothermal to treat the air and the glycol from the solar water heater is also used to heat the air when needed. No buses idle in the parking lots or near the buildings' air intakes. Both buildings are kept clean with quat-based products, leaving no chemical residue.

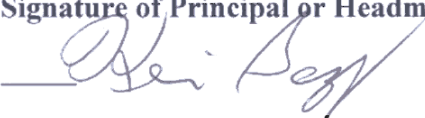
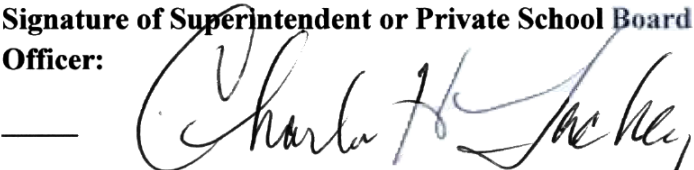
Almost 5% of the fruits and vegetables served in the cafeteria are grown locally. Students tried to grow vegetables in the greenhouse, but the tomatoes were eaten before they got to the cafeteria. Approximately 42% of all students are trained in first aid and CPR in partnership with the Red Cross. All students participate once a week in bullying prevention training. Every effort is made to keep students and staff safe.

Students have many and varied opportunities to become environmentally literate. A student-led, campus-wide recycling program in the cafeteria ensures all students are aware of their environmental responsibilities. On Arbor Day, all students are given a tree to plant. Students in all classes utilize problem-based learning activities emphasizing systematic scientific practices. The buildings' grounds allow the students to work outdoors to test model airplanes, rockets, solar-powered cars, tetrahedral kites; explore forensic entomology; conduct Project Learning Tree activities; take science exploratory hikes; and garden.

Students in the Environmental Module learn about endangered species, grow a variety of plants in the greenhouse, study water pollution, and participate in meaningful watershed education experiences. Students also use hydroponics in the greenhouse, highlighting alternative ways of growing plants. Students in the Architecture & Engineering Module design and build models of "green" homes. They participate in the Schools of the Future Design Competition and have won or placed in the competition multiple years.

The ultimate environmental learning experience, however, is the CEED. CEED is a net-zero energy educational and demonstration center. Highlighted technologies include earth berming, south facing solar orientation, thermal mass, geothermal energy, photovoltaics, solar hot water heaters, electricity producing wind turbines, rainwater harvesting, energy efficient appliances, daylighting, and PassivHaus design and construction techniques. The building is a template for residential and educational construction for the 21st Century. All the building's energy efficient functions are monitored by a computer system that records data and posts it on the CEED website along with pertinent weather data. Using the building components themselves as the focus, all students are immersed in the building's data through a variety of activities so they can see how the renewable energy technologies work. The posted activities and data make CEED the ultimate environmental research project for Franklin County students as well as the global community.

COVER SHEET

School Name: The Gereau Center for Applied Technology & Career Exploration		School Mailing Address: 150 Technology Drive, Rocky Mount, VA 24151	
Contact Person for the Green Ribbon Schools Application			
Name: Kevin Bezy		Position: principal	
Contact's Mailing Address: 150 Technology Drive, Rocky Mount, VA 24151			
Telephone: 540-483-5446		Fax: 540-483-5788	E-mail address: kevin.bezy@frco.k12.va.us
Principal's or Headmaster's Name: Kevin G. Bezy, Ph. D.		Telephone: 540-483-5446	
Signature of Principal or Headmaster: 		Telephone: 540-483-5446	
Superintendent's or Private School Board Chief Officer's Name: Dr. Charles Lackey, Ed. D.		Telephone: 540-483-5138	
<p>I certify that all information presented in this application is accurate and truthful; that the applicant school is eligible and fully compliant with applicable civil rights, health, safety, and environmental statutory and regulatory requirements; and that I approve and support the submission of this application.</p>		Date: 2/8/12	
<p>Signature of Superintendent or Private School Board Chief Officer: </p>			

SCHOOL ELIGIBILITY, COMPLIANCE, AND INFORMATION

Name of School: The Gereau Center for Applied Technology & Career Exploration	
School Division: Franklin County Public Schools	
Public <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Percentage of Disadvantaged Students
Title I/Eligible <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
State Accredited in 2011-2012 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
In Title I School Improvement 2011-2012 <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
The applicant school must verify that it is in compliance with applicable civil rights, health, safety, and environmental statutory and regulatory requirements.	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The nominated school or its division is not refusing United States Department of Education Office of Civil Rights (USED/OCR) access to information necessary to investigate a civil rights complaint or to conduct a divisionwide compliance review.
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	USED/OCR has not issued a violation letter of findings to the school/division concluding that the nominated school or the division as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if USED/OCR has accepted a corrective action plan from the school/division to remedy the violation.
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The United States Department of Justice does not have a pending suit alleging that the nominated school or the school division as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	There are no findings of violations of Individuals with Disabilities Education Act (IDEA) in a USED monitoring report that apply to the school or school division in question; or if there are such findings, the state or division has corrected, or agreed to correct, the findings.
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The school has no outstanding citations for violation of Federal environmental regulations and standards (including, but not limited to: Clean Air Act; Clean Water Act; Safe Drinking Water Act; Solid Waste Disposal/Resource Conservation and Recovery Act; Oil Pollution Act; Superfund/Comprehensive Environmental Response Compensation and Liability Act; Federal Insecticide, Fungicide, and Rodenticide Act; and Toxic Substances Control Act), nor has it resolved another noncompliance case within one year of concluding successful performance of all requirements of a settlement.
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The school has no outstanding citations for violation of Federal, state or local occupational safety and health regulations and standards, nor has resolved such a case within the past year.
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The school has no outstanding citations for violation of federal food and drug standards, nor has resolved such a case within the past year.
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The school has no outstanding citations for state or local environmental, health, existing building, fire, plumbing, mechanical, or property maintenance codes, laws or regulations, nor has resolved such a case within the past year.

Additional information about [eligibility](#) is available on the USED Green Ribbon Schools Web page at [Civil Rights, Health, Environment and Safety Statutory and Regulatory Requirements](#).

Green Ribbon Schools Response to Goals/Elements Template

GOAL AREA 1: POSITIVE ENVIRONMENTAL IMPACT

Element 1A: Zero Greenhouse Gas (GHG) Emissions

ENERGY

1A1.	Using the inventory module from Clean Air Cool Planet's Campus Carbon Calculator or similar green house gas calculator, what are your school's GHG emissions per person? 1.984 (MT eCO2/person)
Documentation: The building emitted 631 MT eCO2. There were 318 people in the building during 2011. See the appendix for a copy of the Statement of Energy Performance from the EPA Portfolio Manager.	
1A2.	Has your school received EPA's ENERGY STAR certification, and if so, in what year was the certification earned?

Yes No If "Yes," what year?

Documentation: We scored a 68 in energy performance rating on the EPA's Energy Star Portfolio Manager. Since 2003 we have purchased 2 appliances, a refrigerator and a dishwasher, for our Center for Energy Efficient Design (CEED). Both appliances are Energy Star rated. Since 2003, we have installed a solar water heater that preheats the water for the main building, a solar water heater that heats all the water for the greenhouse, and a solar water heater that heats the water for the CEED. The glycol from this heater is also used to heat the building during cold weather. The CEED has 2 types of wind power generators and 5 types of photovoltaic arrays.

1A3. Has your school reduced its total nontransportation energy use (i.e., electricity and temperature control) from an initial baseline?
 Yes No
 If "Yes," please provide:
 Percentage reduction: 12.04 %
 Measurement unit used (kBtu/Square foot or kBtu/student): kBtu/Square foot
 Time period measured: from 2009 to 2011

Documentation:

Year	Electricity & Propane	kBTU	Total kBtu by year	Area of building	kBTU/Square foot	Reduction from baseline
2009	830,200 kWh	2,832,759.59 ¹	4,159,908.39	63900 sq.ft.	65.10	N/A
	14,481 gal	1,327,148.8 ²				
2010	849,600 kWh	2,898,955.13	4,070,578.03	63900 sq.ft.	63.70	N/A
	12,784 gal	1,171,622.9				
2011	768,600 kWh	2,622,571.69	3,864,763.19	67500 sq.ft. ³	57.26	12.04%
	13,554 gal	1,242,191.5				

¹ The electricity was converted to kBtUs using the converter on this webpage: <http://www.iea.org/stats/unit.asp>
² The propane was converted to kBtUs using the conversion factor found on this webpage: http://www.energystar.gov/ia/business/tools_resources/target_finder/help/Energy_Units_Conversion_Table.htm
³ The addition of the Center for Energy Efficient Design increased the square footage of the building.

1A4. What percentage of your energy consumption is derived from:
 On-site renewable energy generation: 0.7 %
 Purchased renewable energy: 7 %

Documentation: We have produced 1406 kWh of on-site renewable energy in the last quarter of 2011, which is when our monitoring system started keeping track of the solar power generation. If I extrapolate this generation rate, the percentage of on-site generation would be 0.7 %. We generate heat from solar water collectors. This heat is used to heat the CEED building, but we are not able to compute the amount of energy that this system generates. We have added one 10 panel array solar concentrator photovoltaic power system, and three dual-tracking solar arrays. These systems are not on-line yet. The CEED building has two vertical axis wind turbines and one skystream wind turbine. The water for the main building is preheated by a solar panel. 7% of our energy purchased from American Electric Power (AEP) is renewable (see <http://www.aep.com/environmental/education/solar/powerPic/energy.aspx>). It is estimated that AEP's renewable energy will increase to 15% by 2020.

BUILDINGS

1A5. If your school has constructed and/or renovated buildings in the past three years, what percentage of the building area meets:

- Leadership in Energy and Environmental Design (LEED),
- Collaborative for High Performance Schools (CHPS),
- Green Globes,
- or other standards?

100%%
 What is the total constructed area? 3600 (SQ.FT.)
 What is the total renovated area? 0 (SQ.FT.)
 Which certification (if any) did you receive and at what level (e.g., Silver, Gold, Platinum)?
 LEED CHPS Green Globes Other Level

Documentation: We are applying for LEED certification for the Center for Energy Efficient Design (CEED), which is a new building on our campus built to PassivHaus standards. The certificate indicating our progress is in the appendix. The building has

been awarded PassivHaus certification. See: http://www.passivehouse.us/project_detail.php?id=1019	
1A6.	<p>What percentage of your school's total existing building area has achieved:</p> <ul style="list-style-type: none"> • LEED Existing Buildings: Operation & Maintenance, • CHPS Operations Report Card, • Green Globes • or other standards? <p>5.3%</p> <p>What is the total building area? 67500 (SQ.FT.)</p> <p>Which certification (if any) did you receive and at what level (e.g. Silver, Gold, Platinum)?</p> <p><input type="checkbox"/>LEED <input type="checkbox"/>CHPS <input type="checkbox"/>Green Globes <input checked="" type="checkbox"/>Other (name) PassivHaus Level</p>
Documentation: The 5.3% represents the new construction which is PassivHaus certified. See: http://www.passivehouse.us/project_detail.php?id=1019 . We are in the process of applying for LEED certification. See Appendices for the previous element.	
1A7.	<p>If your school reduces or offsets the greenhouse gas (GHG) emissions from building energy use, please provide:</p> <ul style="list-style-type: none"> • Current Total GHG Emissions (MtCO₂e) 631.23 • Baseline Total GHG Emissions (MtCO₂e) 671.61 • Change from Baseline: GHG Emissions (MtCO₂e) -40.38 • Time period: from 2009 to 2011 <p>Explain any offsets used.</p>
Documentation: The data is from the EPA Portfolio Manager.	
1A8.	<p>Has your school fully implemented the Facility Energy Assessment Matrix within EPA's Guidelines for Energy Management?</p> <p><input type="checkbox"/>Yes <input checked="" type="checkbox"/>No</p> <p>Has the school building been assessed using the Federal Guiding Principles Checklist in Portfolio Manager?</p> <p><input checked="" type="checkbox"/>Yes <input type="checkbox"/>No</p>
Documentation: See the appendix for a copy of the statement of energy performance.	
1A9.	<p>What percentage by cost (of all your school's furniture purchases) is certified under the Business and Institutional Furniture Manufacturers Association's "level" Ecolabel?</p> <p>100% of new purchases.</p>
Documentation: All furniture purchased for the new building, the CEED, meet Virco's Greenguard standard for indoor air quality certification. The furniture also meets the California Air Resources Board (CARB) regulations on formaldehyde emissions and the Consumer Product Safety Improvement Act of 2008 (CPSIA). See https://www.virco.com/b2c_virco/b2c/corp_stew/index_greenguard.html for Virco's policy regarding Greenguard®.	
1A10.	<p>Does your school have an energy and water efficient product purchasing and procurement policy in place?</p> <p><input checked="" type="checkbox"/>Yes <input type="checkbox"/>No</p>
Documentation: As of September 2011 the Gereau Center has completed the transition by switching from conventional bulk cleaning supplies to a green seal certified / bio renewable program for bulk cleaning supplies. The entire school division finished making the switch in November 2011. Our new systems use chemical dispensers that precisely measure the correct amount of product and water for each task the custodial staff is required to perform. There is no waste of chemical or water in the process. The chemical dispensers use no electricity and only use cold water rather than hot water which also saves on energy costs. This process also reduces waste considerably by using small recyclable containers thereby reducing the amount of plastic needed for packaging. All of the school division's bulk lavatory paper products are made from 100% recycled materials.	
1A11.	<p>Other indicators of the applicant's progress towards elimination of GHG emissions (Describe in detail and include metrics if available in the Documentation cell below.)</p>
Documentation: We are continuing to explore ways to reduce GHG emissions. The addition of the renewable energy generators on the campus will help to reduce our dependency on purchased energy. The CEED will be net zero once the concentrating photovoltaic array and the three dual axis photovoltaic arrays are connected. The school division has set a maximum heating temperature at 68° F and a minimum cooling temperature at 75° F in order to reduce the use of electricity and propane.	

Element 1B: Improved Water Quality, Efficiency, and Conservation

1B1.	<p>If you can demonstrate reduced total water consumption intensity (measured in gal/square foot) from an initial baseline, please provide:</p> <p>Percentage reduction in domestic use: 31.46 %</p> <p>Percentage reduction in irrigation: NA %</p> <p>Time period: from 2009 to 2011</p>
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Documentation: We do not irrigate. The data to show our reduced water consumption intensity came from the Town of Rocky Mount municipal utility billing system. With the addition of the Center for Energy Efficient Design (CEED), we included a rainwater reclamation system and a grey water storage system. Toilets in the CEED are operated using the non-potable water from these systems. The plants around the CEED and the green roof are watered using this non-potable water.

Water Intensity at The Gereau Center

Year	Gallons of water used	Square footage of the building	Intensity	Reduction
2009	406,000	63,900	6.3537	Baseline
2010	373,000	63,900	5.8372	N/A
2011	294,000	67,500 ^a	4.3556	31.46%

^aThe Center for Energy Efficient Design (CEED) was build on the campus adding 3,600 square feet.

1B2. Does your school have an irrigation system?
 Yes No
 If so, how often does your school conduct audits of facilities and irrigation systems to ensure they are free of significant water leaks and to identify opportunities for savings? N/A

Documentation: The CEED building has a portion of the roof planted with sedum to demonstrate a green roof. There is a system for irrigating this green roof with rainwater and gray water that is collected in a retention tank. This system is manually activated.

1B3. Describe how your school's site grading and irrigation system and schedule are appropriate for your 1) climate, 2) soil conditions, and 3) plant materials, with an emphasis on water conservation.

Documentation: We are in a climate that generally receives 44 inches of rain and 14 inches of snowfall per year (<http://www.franklincountyva.gov/resources/topography-climate>). This amount of rain lessens the need for irrigation. We do not water or irrigate any area on campus. We use Tree Gators® (<http://treegator.com/>) to water new trees until they can sustain themselves. The Tree Gators® keep the water from evaporating and maximize its effectiveness and limit waste. The plants around the CEED were selected for the following qualities: drought tolerant, native species, edible or medicinal value, food or shelter for animals, or deer resistant.

1B4. Do all your outdoor landscapes consist of water-efficient or regionally-appropriate (native species and/or adapted species) plant choices?
 Yes No
 If "No," what percentage of the total consists of this type of plantings: 20 %
 Describe the type and location of plantings.

Documentation: All of the plantings for the CEED were selected for water-efficiency and regional appropriateness. The other plantings on the campus were planted in 1996.

1B5. Are alternative water sources (e.g., grey water) used before potable water for irrigation?
 Yes No
 If "Yes," describe these alternative water sources.

Documentation: The watering of all plants at the CEED use non-potable grey water and rainwater. There are two 1700 gallon tanks buried in the ground for collecting rainwater from the roof and from a permeable paved area that surrounds the front of the CEED building. The grey water from the CEED building is also collected and reused. The plants in the greenhouse are watered with potable water due to its distance from the non-potable tanks. We are working toward using the non-potable water in the greenhouse.

1B6. If drinking water is acquired from the school's own well, are your drinking water sources protected?
 Yes No N/A
 If "Yes," describe how they are protected.

Documentation: We use town water.

1B7. Does your school have a program to control lead in drinking water (including voluntary testing and implementation of measures to reduce lead exposure in drinking water) in place?
 Yes No
 If "Yes," describe this program.

Documentation: The Gereau Center is connected to the Town of Rocky Mount's water system. The Town conducts its own water testing based on the Virginia Department of Health Regulations. There is no voluntary testing done within the school.

1B8.	Has your school been cited within the past three years for failure to meet federal, state or local potable water quality standards? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Documentation: N/A	
1B9.	Are all taps, faucets, and fountains used for drinking and cooking cleaned on a regular basis to reduce possible bacterial and other contamination; and are faucet screens and aerators regularly cleaned to remove particulate lead deposits? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If "Yes," how often is such cleaning conducted?
Documentation: All surfaces used for drinking and cooking are cleaned daily as verified by the head custodian of The Gereau Center. The faucet screens and aerators are cleaned monthly by maintenance staff.	
1B10.	Describe any other ways, not addressed above, that the school is improving water quality, efficiency, and conservation.
Documentation: We are using cleaning products that require less water and they work with cold water. We have a floor cleaning machine that reuses the water for several washings. It vacuums the water so that little is left to evaporate. Watering of plants is done with non-potable water as much as possible. Rainwater is reclaimed at the CEED. Students are taught how to make rainwater barrels through a cooperative program with the Blue Ridge Soil and Water Conservation District (http://brswcd.org/Home.html).	

GROUNDS

1B11.	What percentage of your school grounds are devoted to ecologically or socially beneficial uses (e.g., playgrounds, outdoor spaces designed and used regularly for social interaction, athletic or recreational areas, etc.), including those that give consideration to native wildlife? 19.12 % Please describe.
Documentation : The school sits on 15 acres of land. The following demonstrates outdoor usage of land for instructional use or environmental designations (The areas were computed from the maps on the Franklin County, Virginia government GIS website):44611 sq. ft. is designated as wetlands; 8944 sq. ft. used for the Media Design Module; 30842 sq. ft. used by the Aviation Module; 2250 sq. ft. patio for outdoor dining and instructional use; 17083 sq. ft. used by the Forensic Science Module as an outdoor lab area for entomology studies; 10988 sq. ft. used by the Engineering/Architecture Module for testing solar-powered cars; 791 sq. ft. used by the Environmental Science Module as a garden; the school yard has received the Certified Wildlife Habitat designation from the National Wildlife Federation. This is a designation for the entire school yard and I didn't include this in the computation above; The Grassy Hill Trail begins on the property of The Gereau Center. Community members and the students in the Environmental Science & Natural Resources Module regularly use the trail. 628 feet of the trail is on this campus. The trail leads through the Grassy Hill Natural Area Preserve: http://www.dcr.virginia.gov/natural_heritage/natural_area_preserves/grassyhill.shtml	

Element 1C: Reduced Waste Production

WASTE

1C1.	What percentage of waste is diverted from the landfill or incinerator by reuse, composting, and/or recycling: Monthly garbage volume (garbage dumpster size(s) X frequency of collection): 160 cubic yards. Monthly recycling volume(s) (recycling dumpster sizes(s) X frequency of collection): 2.4 cubic yards. Monthly compostable materials volume(s) (food scrap/food soiled paper dumpster size(s) X frequency of collection): 0 cubic yards. Recycling rate calculation: Total monthly recycling quantity plus total monthly compostable material quantity divided by total monthly recycling, composting, and garbage quantity x 100 = 1.5 %
Documentation: The garbage dumpsters are emptied daily even though they are not full. Using the formula above does not give a true approximation of our monthly garbage volume. Our actual volume is much less. The recycling volume is a closer approximation. We recycle plastic containers at breakfast and lunch. The students rinse their own containers, throw away the caps, and place the containers in a designated recycling receptacle. Newspapers are taken to the SPCA or Angels of Assisi, an animal rescue organization, for use in animal kennels.	
1C2.	What percentage of total office/classroom paper content <u>by cost</u> is postconsumer material or fiber from forests certified as responsibly managed by the <ul style="list-style-type: none"> • Forest Stewardship Council,

	<ul style="list-style-type: none"> Sustainable Forestry Initiative, American Tree Farm System, or other certification standard: <p>100%</p> <p>(If a paper is only 30% recycled, only 30% of the cost of that paper should be counted towards the recycled portion.)</p> <p>Which standard did you use?</p> <p><input checked="" type="checkbox"/> Forest Stewardship Council <input checked="" type="checkbox"/> Sustainable Forestry Initiative</p> <p><input type="checkbox"/> American Tree Farm System <input checked="" type="checkbox"/> Other: Please name: Programme for the Endorsement of Forest Certification Schemes</p>
<p>Documentation: The copy paper brand name is Fscopy, Ariva is its parent company. Ariva has Tri-Certification by the Forest Stewardship Council® (FSC), the Sustainable Forestry Initiative® (SFI) and the Programme for the Endorsement of Forest Certification Schemes (PEFC). The index cards and construction paper in use are certified by the Forest Stewardship Council® (FSC) All of the school divisions bulk lavatory paper products are made from 100% recycled materials. Total spent on copy paper, construction paper, and index cards for this budget year is \$2304.79</p>	
1C3.	<p>What percentage of total office/classroom paper content <u>by cost</u> is "totally chlorine-free" (TCF) or "processed-chlorine-free" (PCF)?</p> <p>0 %</p>
<p>Documentation: Most of the lavatory paper products are chlorine-free but very little of our classroom paper is chlorine-free. We do not have any information on that aspect.</p>	

HAZARDOUS WASTE

1C4.	<p>How much hazardous waste does your school generate?</p> <p>0.5 lbs/student/year.</p> <p>How was this calculated? The total weight of the waste was divided by the number of students enrolled List 1) each hazardous waste used and 2) the amount of each hazardous waste present at the end of the year</p>
<p>Documentation: 1) Biohazard waste; there was no chemical waste; 2) 150 lb of biohazard was present at the end of the year</p>	
1C5.	<p>How does your school monitor hazardous waste*?</p>
<p>Documentation: The waste is handled by a certified outside contractor, Environmental Options, Inc. (http://www.environmentaloptions.com/)</p>	
1C6.	<p>Is a Hazardous Waste Policy for storage, management, and disposal of chemicals in laboratories and other areas with hazardous waste in place and actively enforced?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Documentation: Our school division has policies for the proper handling of hazardous waste.</p>	
1C7.	<p>Has your school been cited within three years for improper management of hazardous waste according to Federal and State regulations?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>Documentation: Our Central office has certified that this is accurate.</p>	
1C8.	<p>What percentage of total computer purchases <u>by cost</u> are Electronic Product Environmental Assessment Tool (EPEAT) certified products? 100%</p> <p>How does your school dispose of unwanted computer and other electronic products? All unwanted electronic products are recycled. Unwanted, but usable, computers are cleaned and upgraded for distribution to families that cannot afford them.</p>
<p>Documentation: Documentation is on file at the Franklin County Public Schools Technology Department.</p>	
1C9.	<p>What percentage by cost of all cleaning products in use are "third-party certified" green cleaning products? 90%</p> <p>Which standard(s) are you using? green seal certified / bio renewable program; standards are set by Global Ecolabelling Network (http://www.globalecolabelling.net/).</p>
<p>Documentation: As of September 2011 the Gereau Center has completed the transition by switching from conventional bulk cleaning supplies to a green seal certified / bio renewable program for bulk cleaning supplies. The entire school division finished making the switch in November 2011. Our new systems use chemical dispensers that precisely measure the correct amount of product and water for each task the custodial staff is required to perform. There is no waste of chemical or water in the process. The chemical dispensers use no electricity and only use cold water rather than hot water which also saves on energy costs. This process also reduces waste considerable but using small recyclable container that reduce the amount of plastics that needed. This data is certified by the Assistant Purchasing Coordinator for the school division. Certificates are on file at the Franklin County Public Schools Maintenance Department.</p>	
1C10.	<p>Has your custodial program been certified by the ISSA Cleaning Industry Management Standard - Green Building</p>

	(or an equivalent standard). <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If certified by an equivalent standard, please list that standard.
Documentation: Our custodial program is not certified by the ISSA Cleaning Industry Management Standard – Green Building, but all of our cleaning supplies are certified by that organization.	
1C11.	Describe any other indicators, not included above, of the school’s reduction of solid waste and elimination of hazardous waste:
Documentation: All cleaning products are concentrated using fewer dispenser bottles. All cleaning products mix with cold water. A plastic milk bottle recycling station has been set up by students in the commons near the food service area. There is a school-wide promotion of the milk bottle recycling initiative using student-made posters; skits; and closed circuit, school-wide television announcements. Our newspapers are sent to a pet rescue organization in Roanoke for use in the animal kennels. Last year we received 150 newspapers from The Roanoke Times. We have reduced that number to 50 relying on the internet version of the paper for classroom use. The organic waste from the greenhouse is put in a compost bin to produce soil for use in the greenhouse.	

Element 1D: Use of Alternative Transportation to, during, and from School

1D1.	What percentage of students walk, bike, bus, or carpool (2+ students in the car) to/from school? 0% Describe how this information has been collected and calculated.
Documentation: The majority of our students use the bus system. Only a few students who are car riders do carpool.	
1D2.	Does your school have a no-idling policy on file and signs posted stating that all vehicles, including school buses and other vehicles dropping off and picking up students, are prohibited from idling on school premises? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Documentation: From the director of transportation of the Franklin County Public School system, “We don’t have a written no-idle policy however they [the bus drivers] are trained not to idle on school grounds.”	
1D3.	Are all vehicles loading and unloading areas at least 25 feet away from all buildings air intakes (including doors and windows)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Documentation: The closest bus to an air intake, in this case a non-opening window, is 44 feet.	
1D4.	Describe how your school transportation use is efficient and environmentally benign (e.g., the percentage of school-owned electric/hybrid/alternative fuel vehicles in your fleet, or other indicators of significant reductions in emissions).
Documentation: We do not have any alternative fuel vehicles in our fleet. There are new emissions standards for buses manufactured in 2007, 2008, & 2009. There were also new standards for buses manufactured in 2010 or after. We have 52 buses in our fleet that were manufactured in 2007, 2008, or 2009 which is 30.5% of our fleet. We have 9 buses manufactured in 2012 which is 5.3% of our fleet. These standards relate to reductions in the particulate from the exhaust. The 2010 standards are stricter than the 2007 standard. We have evaluated the routes that our buses take to cut down on the length of the trips and the amount of fuel used.	
1D5.	Have “Safe Pedestrian Routes” to school or "Safe Routes to School" been designated, distributed to parents, and posted in the main office? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Documentation: There are sidewalks through town that lead up to The Gereau Center. No routes have been distributed to parents or posted in the main office. There are no students who live within walking distance of the school.	
1D6.	Please describe other important accomplishments that have been made in improving your school site’s environmental footprint and eliminating any negative environmental impact.
Documentation: In 2010 we dedicated the Center for Energy Efficient Design (CEED). The building is a PassivHaus that demonstrates energy-producing devices and energy-saving practices. The CEED was built as a teaching space for our students as well as a community resource for adult education and as a demonstration of on-site energy production. See: http://ceed.frco.k12.va.us and http://www.labs21century.gov/community/partnership/partners/gereau.htm	

GOAL AREA 2: Positive Impact on Students’ and Staff Members’ Health

Element 2A: Integrated School Environmental Health Program

INTEGRATED PEST MANAGEMENT

2A1.	Does your school have an integrated pest management plan in effect to reduce or eliminate pesticides? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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Documentation: The plan is on file at the Franklin County Public School Maintenance Department.	
2A2.	Does your school provide notification of your pest control policies, methods of application, and requirements for posting and pre-notification to parents and school employees? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Documentation: The food services staff is aware of the policies. The other staff has access to the information which is stored in the Office. When the current policies were adopted, notification was placed in the local newspaper and in the Efficiency Review posted on DOE website (http://www.doe.virginia.gov/school_finance/efficiency_reviews/franklin_co.pdf).	
2A3.	Does your school maintain <u>annual summaries</u> of <ul style="list-style-type: none"> • pesticide applications, <input checked="" type="checkbox"/>Yes <input type="checkbox"/>No • copies of pesticide labels, <input checked="" type="checkbox"/>Yes <input type="checkbox"/>No • copies of notices and Materials Safety Data Sheets (MSDS) <input checked="" type="checkbox"/>Yes <input type="checkbox"/>No • in an accessible location? <input checked="" type="checkbox"/>Yes <input type="checkbox"/>No
Documentation: MSDS manuals are kept in the office in an accessible location. A notebook dedicated to pest control policies is also in the office.	
2A4.	Does your school prohibit children from entering the pesticide area for at least 8 hours following the application or longer, if feasible, or if required by the pesticide label? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Documentation: We do not apply pesticides. If we did, we would restrict students from entering the building as per label directions.	

VENTILATION

2A5.	Does your school meet: <ul style="list-style-type: none"> • ASHRAE Standard 62.1-2010 (Ventilation for Acceptable Indoor Air Quality) <u>or</u> • The current state or local code? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If “Yes,” which standard does your school meet?
Documentation: Our building meets state and local code for acceptable indoor air quality. Each air handlers has a make-up air damper which cleans the air, heats or cools the air, and adds fresh air as necessary. The unit is set to add fresh air regardless of the demand for heating or cooling. The system is designed to prevent closed-building syndrome.	
2A6.	Are local exhaust systems (including dust collection systems, paint booths, and/or fume hoods) installed at all major airborne contaminant sources, including science labs, copy/printing facilities, chemical storage rooms? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If “No,” which airborne contaminant sources or areas do not have exhaust systems installed?
Documentation: We have a dedicated exhaust system for the science lab that uses chemicals. We do not have a local exhaust system in the areas where photocopies are located.	
2A7.	Has your school installed energy recovery ventilation systems, where feasible, to bring in fresh air while recovering the heating or cooling from the conditioned air? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Documentation: The CEED building has an energy recovery system which brings in fresh air and recovers the heating or cooling from the conditioned air. The system uses geothermal to treat the air as well. The glycol from the solar water heater is used to heat the air in the heating seasons. CO ₂ sensors in the CEED initiate an air exchange when the CO ₂ level rises.	

CONTAMINANT CONTROLS

2A8.	Radon: Have all ground-contact classrooms been tested for radon within the past 24 months: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No What percentage of all classrooms with levels greater than 4 pCi/L has been mitigated in conformance with ASTM E2121? N/A%
Documentation: The main building was tested and found to be well below 4 pCi/L. It has not been retested since that test. The new building was tested in 2011. The documentation is on file at the Franklin County Public Schools Maintenance Department.	
2A9.	Carbon Monoxide (CO): If your school has combustion appliances, does your school <ul style="list-style-type: none"> • have an inventory of all combustion appliances <input checked="" type="checkbox"/>Yes <input type="checkbox"/>No • annually inspect these appliances to ensure no release of Carbon Monoxide (CO)? <input checked="" type="checkbox"/>Yes <input type="checkbox"/>No

	<ul style="list-style-type: none"> <input type="checkbox"/> The school has no combustion appliances. Are CO alarms installed that meet the requirements of the National Fire Protection Association code 720? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Documentation: Our school has two boilers, the only combustion appliance on the campus. They are tested annually by a trained member of the division maintenance staff. We do not have CO alarms.	
2A10.	Mercury: Have all unnecessary mercury containing devices been replaced with non-mercury devices? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Please explain. Does your school recycle or dispose of unwanted mercury laboratory chemicals, mercury thermometers, gauges and other devices in accordance with federal, state and local environmental regulations? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Documentation: We have no mercury containing devices. If we had such devices, we would dispose of them through Environmental Options, Inc. (http://www.environmentaloptions.com/).	
2A11.	Chromated Copper Arsenate (CCA): Have all wooden decks, stairs, playground equipment or other structures treated with Chromated Copper Arsenate been either removed or sealed within the past 12 months? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Documentation: There are four picnic tables on campus that are used by environmental science students to pot plants. The tables are made from treated lumber which has been sealed within the past month. The tables for dining have been replaced by plastic coated metal tables. There are no treated lumber structures on campus.	
2A12.	Asthma Control: Does your school have an asthma management program in place consistent with the National Asthma Education and Prevention Program's (NAEPP) Asthma Friendly Schools Guidelines? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Documentation: We do not have a written asthma management program in place. We handle asthma management on a case-by-case basis. The school nurse works with students who have asthma and communicates their needs to appropriate staff. We have used an ion air purifier in the past for a teacher who needed help with asthma control.	
2A13.	Indoor Air Quality: Has your school developed and implemented a comprehensive indoor air quality management program consistent with EPA's Indoor Air Quality Tools for Schools? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Documentation: We do not have a written comprehensive indoor air management program. We monitor and check all the elements listed on the EPA Indoor Air Quality webpage, but we have not put these elements together into a comprehensive plan. All air filters in the building are changed every three months by a certified division maintenance staff member.	
2A14.	Moisture Control: Are all structures visually inspected on a regular basis and free of mold, moisture and water leakage? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is indoor relative humidity maintained below 60% (cold climates during freezing temperatures should target 20-30%)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Are moisture resistant materials/protective systems installed (e.g., flooring, tub/shower, backing, and piping)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Documentation: A qualified division maintenance staff member regularly monitors moisture control. He records humidity and temperature in the building. Problems are reported to the Director of Maintenance who initiates a search for causes and implements solutions.	
2A15.	Chemical Management: Does your school have a chemical management program in place that includes the following elements: <ul style="list-style-type: none"> Chemical purchasing policy, including low- /no-VOC products <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Chemical inventory <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Storage and labeling <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Training and handling <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Hazard communication <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Spills, clean up, and disposal <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Select EPA's Design for the Environment approved cleaning products <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Explain any missing elements or additional components of your school's chemical management program.
Documentation: This is a link to our chemical supplier which illustrates their commitment to safe cleaning supplies: http://www.spartanchemical.com/sustainability . Custodial staff is trained annually in chemical management. The Hazardous Materials Training took place on October 24, 2011 and was conducted by a trained member of the division maintenance staff. As far as disinfectants are concerned, we use a quat-based product. Quat-based disinfectants carry a positive charge. Bacteria, viruses, and fungi carry a negative charge. When a bacteria-laden surface is sprayed or mopped with a disinfectant, the charge distribution of	

the bacteria cell changes from negative to positive. This results in the disruption of the bacteria cell wall and eventual death to the microbe. No dangerous substances are left behind once the disinfectant is used. The division maintenance department manages the chemical inventory for the school system.

2A16. Secondhand Tobacco Smoke: Is smoking prohibited on campus?*

Yes No

Documentation: For the policy see: <http://www.boarddocs.com/vsba/frco/Board.nsf/Public#>

Element 2B: High Standards of Nutrition, Fitness, and Quantity of Quality Outdoor Time for both Students and Staff

FOOD AND NUTRITION

2B1. Has your school earned USDA's Healthier US School Challenge award for school food?
 Yes No
 List award level earned.

Documentation: N/A

2B2. What percentage (by cost) of food purchased is certified as "environmentally preferable" (e.g., Organic, Fair Trade, Food Alliance, Rainforest Alliance, etc.)?
 0 %

Documentation: N/A

2B3. What percentage (by cost) of food purchased is grown and processed within 200 miles of the school (including food grown on school grounds)? 4.9 %
 Does the school have an on-site garden in which the students participate?
 Yes No

Documentation: See the appendix for documentation.

2B4. Does the school have an on-site food garden?
 Yes No
 If "Yes," does the school garden supply food for the school cafeteria?
 Yes No

Documentation: Last year, we grew grape tomatoes in our greenhouse to be served in the cafeteria. Our biggest problem was that greenhouse students were eating the tomatoes before they reached food services. We are continuing to experiment with growing food for the food services program at The Gereau Center. See pictures in the appendix.

PHYSICAL EDUCATION, OUTDOOR OPPORTUNITIES, AND UV SAFETY

2B5. What percentage of students over the past year engaged in at least 150 minutes of school-supervised physical education and/or outdoor time per week? 100%

Documentation: The Gereau Center is in a partnership with a more traditional middle school. All students spend 50% of their time at both schools. We do not have gym facilities on our campus, however all our students take health and Physical Education at the other school.

2B6. What is the average amount of time over the past year that each student engaged in school-supervised physical education (including outdoor time) per week?
 212.5 minutes/week

Documentation: Our classes are 85 minutes long. Over the course of a year each student has 90 days of Health and Physical Education supervised by a state certified physical Education teacher.

2B7. What percentage of school-supervised physical education is spent outdoors?
 30 %

Documentation: The department chairperson estimates the percent of outdoor school-supervised physical education to be 30%.

2B8. What percentage of your school's current student body has participated in EPA's Sunwise Program or an equivalent program regarding UV protects and skin health?
 0 %

Documentation: The chair of the Physical Education department at Benjamin Franklin Middle School, where our students receive their physical education instruction, states that we do not participate in the EPA's Sunwise Program. The teachers do touch upon UV protection and health when they discuss cancer.

COORDINATED SCHOOL HEALTH, MENTAL HEALTH, SCHOOL CLIMATE, AND SAFETY

2B9. Does the school use a Coordinated School Health approach or other health-related initiatives to address overall

	<p>school health issues? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If “Yes,” describe the health related initiatives or approaches used by the school.</p>
<p>Documentation: Our school nurse, who is a registered nurse, acts as the school health officer. She conducts training in health-related issues at faculty meetings and ensures that all staff members have participated in the Blood Borne Pathogen training. She participates, with other staff members, in the Glucagon training. She administers the faculty weight loss program. She has posted proper hand-washing posters in restrooms on the campus.</p>	
2B10.	<p>Does the school partner with any community groups to support student health and/or safety? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If “Yes,” describe these partnerships.</p>
<p>Documentation: We have a partnership with the American Red Cross to instruct students in first aid and CPR. All students in the Health & Human Services Module take part in this initiative. 42.2 % of our students take this course.</p>	
2B11.	<p>Describe any other measures regarding <u>the school's built and natural environment</u> that your school takes to protect student and staff health and which you feel should be considered.</p>
<p>Documentation:</p> <ul style="list-style-type: none"> • The Gereau Center was built with a realization of the relationship of natural light and space to emotional health. The commons has a high ceiling with natural light entering from two floors of insulated glass windows. The classrooms are spacious with full walls of windows. An outdoor dining area offers staff and students dining under the sky, emphasizing the students’ connection to the world around. The seating configuration in the commons encourages social interaction. • Colors and patterns were selected to produce a calming atmosphere. Synchronized clocks rather than bells are used to signal the change of classes. Intercom all-calls are not allowed. These measures are designed to produce a quiet learning environment. • Safety, associated with student and staff emotional health, is maintained by a building that restricts entry to outside individuals. All classroom doors are locked. Access to the students is restricted. Visitors can only enter the building through the office. A camera in the lobby, connected to a monitor in the office, records all visitors as they enter the building. Other cameras are located at strategic areas in the building. Lock down drills, fire drills, and evacuation drills are conducted. All teachers carry emergency bags on drills. The bags contain first aid items. The building is located in close proximity to the fire department and the police station. • The school conducts a Rachel’s Challenge program for all students through weekly small group meetings. This program is designed to reduce bullying and increase civility among students. 	

GOAL AREA 3: Environmentally Literate Students

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

LEARNING AND ENVIRONMENTAL LITERACY

3A1.	<p>High Schools: What percentage of last year's graduates scored proficient or better during their high school career on state or school:</p> <ul style="list-style-type: none"> • environmental education assessments? % • sustainability assessments? % • environmental science assessments ? % <p>Briefly describe the assessment(s).</p>
<p>Documentation: The Gereau Center is an 8th grade school.</p>	
3A2.	<p>High Schools: Does your school or school division’s program of study have coursework that permits students to graduate environmentally (or sustainability) literate? <input type="checkbox"/> Yes <input type="checkbox"/> No If “Yes,” please describe.</p>
<p>Documentation: The Gereau Center is an 8th grade school. The high school which our school feeds has a full range of science courses, all of which touch upon environmental and sustainability issues. Students may enroll in environmental science courses as electives.</p>	
3A3.	<p>Are environmental and sustainability concepts integrated throughout the curriculum? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If “Yes,” please describe how environmental and sustainability concepts are integrated among various disciplines, grade levels, or courses in your school.</p>
<p>Documentation: Environmental and sustainability concepts are woven throughout the curriculum. The career exploration classes employ environmental and sustainability concepts to demonstrate how these concepts relate to careers in the appropriate fields.</p>	

<p>These concepts are included in Arts, Aviation, Environmental Science, and Health & Human Services, to name a few. The concepts are integrated in the curriculum through the goals & objectives, instructional activities, and practices. Student-made, school-wide television public service announcements are made to reinforce environmental concepts. We are moving to increase these connections.</p>	
3A4.	<p>High Schools: What percentage of your eligible graduates last year had completed Advanced Placement Environmental Science during their school career? %</p> <p>What percentage of these students scored 3 or better on the Advanced Placement Environmental Science assessment? %</p>
<p>Documentation: The Gereau Center is an 8th grade school.</p>	
3A5.	<p>If neither your state nor school conducts environmental science, sustainability, or environmental education assessments, what percentage of your students scored proficient or better on science education assessments in the last year? 92.16 %</p> <p>Please provide data by grade level/subject Science SOL test.</p>
<p>Documentation: 92.16 % of the 8th grade students enrolled at The Gereau Center passed the 8th grade SOL test. All of our students are 8th grade students.</p>	
3A6.	<p>Are teacher professional development opportunities in environmental and sustainability education provided for <u>all</u> teachers in your school?</p> <p><input type="checkbox"/>Yes <input checked="" type="checkbox"/>No</p> <p>If “Yes,” please describe these professional development opportunities including the number and percentage of teachers who participated in these over the last 2 years.</p>
<p>Documentation: Our Environmental Science and Natural Resources Module teacher seeks out and enrolls in workshops that deal with environmental and sustainability education. On an average she participates in 2-3 weekend workshops a year.</p>	
3A7.	<p>Does your school's environmental education program pay particular attention to scientific (systematic) practices, including</p> <ul style="list-style-type: none"> • 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 and applications based on evidence? <p><input checked="" type="checkbox"/>Yes <input type="checkbox"/>No</p>
<p>Documentation: The goals and objectives that address scientific (systematic) practices embedded in our curriculum. Our teachers have been trained in Problem-Based Learning (PBL) and use this approach in their instructional activities in all courses, including career exploratory electives. Problem-Based Learning is steeped in scientific practices. This website provides a good overview of the PBL process: http://www.makinglearningreal.org/index.html</p>	
3A8.	<p>All Schools: Do your students engage in Meaningful Watershed Education Experiences (MWEE) or have other meaningful outdoor experiences (investigative or experiential projects that engage students in critical thinking, problem solving and decision making) at every grade level?</p> <p><input checked="" type="checkbox"/>Yes <input type="checkbox"/>No</p> <p>If “Yes,” please describe these experiences for the last school year and how many different classrooms and students were involved. If not all grades, specify which grades.</p>
<p>Documentation: See the appendix for a teacher-written description of the Meaningful Watershed Education Experience. All students enrolled in the Environmental Science and Natural Resources Module, approximately 50% of our enrollment, participate in this experience. Pictures are included in the appendix.</p>	

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

3B1.	<p>Do your students matriculate or graduate with a robust general science education that includes a deep understanding of life, physical, and Earth sciences?</p> <p><input checked="" type="checkbox"/>Yes <input type="checkbox"/>No</p> <p>How many hours per week on average do students spend in science content classes?</p> <p>212.5 hrs.</p>
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Documentation: All of our students take Science 8 which is a combination of life, physical, and earth science. We follow the Virginia Science 8 Curriculum as found on the DOE website: (http://www.doe.virginia.gov/testing/sol/blueprints/science_blueprints/blueprint_science8.pdf).

3B2. High School: If your school is a high school, does your curriculum provide a demonstrated connection between classroom content and college and career readiness, particularly to post-secondary options that focus explicitly on environmental and sustainability fields, studies, and/or careers?
 Yes No
 If "Yes," please describe these college and career connections.

Documentation: The Gereau Center is an 8th grade school.

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

3C1. Are all students required to conduct an age-appropriate, self-selected civic/community engagement project at every grade level?
 Yes No If not in all grades, specify which grade levels and subjects.
 What percentage of these projects focused on environmental or sustainability topics? 100 %
 What percentage of students satisfactorily completed such a project last year?
 24.43 %

Documentation: The students enrolled in the second quarter Environmental Science Module grow plants which they use to create gift baskets. In late December, the teacher and students visited local nursing homes to give the gift baskets to residents, the majority whom are elderly. This class also grows plants in the greenhouse for sale to community members. The students in the class maintain a Trout in the Classroom (<http://www.troutintheclassroom.org/>) project.

3C2. High School: What percentage of last year's graduates scored proficient or better on a community or civic engagement skills assessment?
 %
 Describe the assessment.

Documentation: The Gereau Center is an 8th grade school.

3C3. All Schools: Does your school partner with local academic, businesses, government, nonprofits, informal science institutions, and/or other schools to help advance your school, other schools (particularly schools with lesser capacity in these areas), and/or the community toward meeting the three overarching goals of Green Ribbon Schools?
 Yes No
 If "Yes," please describe the scope and impact of these partnerships:

Documentation: The Gereau Center has a partnership with the science and education departments at Ferrum College for the purpose of writing curriculum for the Center for Energy Efficient Design (CEED). The college students who are science majors will collaborate with students who are enrolled in the education programs. They will take the data produced by the solar, wind, and other applications in the CEED and using this data to create lesson plans to be posted on the website. Teachers of K-12 students, anywhere in the world, will use these plans to help their students understand energy concepts, environmental awareness, and reducing their carbon footprint. The students will use real time and archived data to perform their calculations. There is a weather station on campus. The data for the station will also be on the website so students will be able to compare energy production with the weather conditions. The CEED website, currently in progress, can be found at: <http://ceed.frco.k12.va.us/>. The Mobile STEM lab from Institute of Advanced Learning and Research (IALR), Danville, VA visited The Gereau Center for our students to explore STEM related interactive displays. See the appendix for Element 3B1 for pictures. The IALR web site is: <http://www.ialr.org/education/470>.

3C4. All Schools: Does your school provide outdoor learning opportunities for students (e.g., outdoor classrooms)?
 Yes No
 If "Yes," describe how outdoor learning is used to teach an array of subjects in context, engage the broader community, and develop civic skills:

Documentation: The school sits on 15 acres of land. The following demonstrates outdoor usage of land for instructional use: the Media Design Module for outdoor filming; the Aviation Module tests model airplanes, rockets, and tetrahedral kites; patio for outdoor instructional use; the Forensic Science Module as an outdoor lab area for entomology studies; the Engineering/Architecture Module for testing solar-powered cars; the Environmental Science Module for gardening, the students in this module use the Grassy Hill Trail for science exploratory hikes, and conduct Project Learning Tree activities; the Health & Human Services Module for trust-building activities.

3C5.	All Schools: What other indicators or benchmarks (quantified whenever possible) of your progress towards the goal of 100% of your graduates being environmental literate does your school feel should be considered by the review committee?
Documentation: We have a school-wide plastic milk bottle recycling program. The program is promoted by student-made posters throughout the building, student-written skits, and public service announcements that are broadcast on the closed circuit television system on which our morning announcements are made. In two months time we have recycled 98.0 pounds of plastic through this initiative. Curriculum changes are guaranteeing that all students at The Gereau Center will enroll in a science class rich in environmental and sustainability concepts.	

Crosscutting Questions:

CcQ1.	If your school is participating in a local, state, or nationally recognized green school program, please explain what program and what level (if applicable) your school has achieved?
Documentation: The school yard has received the Certified Wildlife Habitat designation from the National Wildlife Federation. The Environmental Science Module teacher uses Project Learning Tree, Project Wild, Project Wet, and NEED activities. She is trained in School Yard Ecology, Coyote Mentoring, and NEED. We are a partner with Labs21 [®] , which is dedicated to improving the environmental performance of U.S. laboratories. Labs21 [®] is sponsored by the US Environmental Protection Agency (EPA) and the US Department of Energy (DOE). See: http://www.labs21century.gov/community/partnership/partners/gereau.htm The students in the Environmental Science and Natural Resources Module maintain a Trout in the Classroom (http://www.troutintheclassroom.org/) project. On Arbor Day, the students in the Environmental Science and Natural Resources Module pass out saplings to every student for planting at home. The students in the class separate the trees and prepare them for survival by wrapping them in wet newspaper. The trees are distributed as the students are boarding the buses at the end of the day.	
CcQ2.	If your school has received any green school, environmental, healthy school, environmental education, or sustainability education awards, please describe.

Documentation

2005	National Award of Excellence	Council of Education for Facility Planners, International ¹
2005	Award of Commendation	Council of Education for Facility Planners, International
2005	1 st Place Schools of the Future Competition	Council of Education for Facility Planners, International
2006	National Award of Distinction	Council of Education for Facility Planners, International
2006	Award of Commendation	Council of Education for Facility Planners, International
2006	2 nd Place Schools of the Future Design Competition	Council of Education for Facility Planners, International
2009	Schools of the Future Award	Council of Education for Facility Planners, International
2009	3 rd Place Schools of the Future Design Competition	Council of Education for Facility Planners, International
2010	Cool Citizen Award in Government Category	Roanoke Valley Cool Cities Coalition – All Affiliates Conference
2011	Innovations in Green School Design, Retrofit, and Learning Opportunities	Virginia Sustainable Building Network & US Green Building Council

¹The Council of Education for Facility Planners, International sponsors the Schools of the Future Design Competition (<http://www.cefpi.org/i4a/pages/index.cfm?pageid=3550>) in which teams of students design schools that use building and environmental features to improve student performance.

Appendix A

The Gereau Center for Applied Technology & Career Exploration

Team Members:

Suzanne Rogers, assistant superintendent, Franklin County Public Schools
 Elaine Hawkins, coordinator of testing, Franklin County Public Schools
 Claude Scott, Head Custodian, The Gereau Center
 Lori Sloan, Environmental Science Module Teacher, The Gereau Center
 Kevin Bezy, Principal, The Gereau Center
 JT Hodges, Assistant Purchasing Coordinator, Franklin County Public Schools
 Charles Hutto, Supervisor of Food Services, Franklin County Public Schools
 George Washington, Director of Technology Services, Franklin County Public Schools
 Steve Oakes, Director of Facilities & Transportation, Franklin County Public Schools

Donna Carter, Supervisor of Transportation, Franklin County Public Schools
Darryl Spencer, Supervisor of Maintenance, Franklin County Public Schools
Roger Houchins, Maintenance, Franklin County Public Schools
Adam Cohen, Design-Builder, Structures Design/Build, LLC
Diana Christopulos, Director, President & Board Chair, Roanoke Valley Cool Cities Coalition
Barbara Shaffer, Media Design Module Teacher, The Gereau Center
Tom Woodford, Certified Energy Manager, Appalachian Power Company
Kathy Wray, payroll & accounts payable clerk, Franklin County Public Schools
Lee Cheatham, CPA, Director of Business & Finance, Franklin County Public Schools
Heather Sneed, School Division Nutritionist, Franklin County Public Schools
Students from the Environmental Science & Natural Resources Module, The Gereau Center
Site-Based Management Team, The Gereau Center
 Gina Simpson, Arts Module Instructor
 Cathy Huffman, Legal Science Instructor
 Andrea Jennings, School Health Officer
 Regina Johnson, Guidance Counselor
 Barbara McCubbin, Students with Disabilities Lead Teacher
 Sandy Sampson, Aviation/Aerospace Instructor
 Alison Jones, Mathematics Instructor
 David Thorp, Civics & Economics Instructor
Cheri Neely, school volunteer
Charles Bowles, Assistant Supervisor of Buildings and Grounds, Franklin County Public Schools

Appendix B
Documentation for the Standards

ELEMENTS 1A1, 1A2 & 1A8

OMB No. 2050-0347



STATEMENT OF ENERGY PERFORMANCE
The Gereau Center for Applied Technology & Career
Exploration

Building ID: 3004963
For 12-month Period Ending: December 31, 2011¹
Date SEP becomes ineligible: N/A

Date SEP Generated: January 27, 2012

Facility The Gereau Center for Applied Technology & Career Exploration 150 Technology Drive Rocky Mount, VA 24151	Facility Owner Franklin County Public Schools 25 Bernard Lane Rocky Mount, VA 24151	Primary Contact for this Facility N/A
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Year Built: 1996
Gross Floor Area (ft²): 67,500

Energy Performance Rating² (1-100) 68

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	2,663,902
Electricity - On-Site Solar(kBtu)	10,529
Propane (kBtu)	1,242,192
Natural Gas - (kBtu) ⁴	0
Total Energy (kBtu)	3,916,623

Energy Intensity⁴

Site (kBtu/ft ² /yr)	58
Source (kBtu/ft ² /yr)	151

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	631
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Electric Distribution Utility

Appalachian Power Co (American Electric Power Co Inc)

National Median Comparison

National Median Site EUI	69
National Median Source EUI	179
% Difference from National Median Source EUI	-16%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁵ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
N/A

Notes:
1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Values represent energy intensity, annualized to a 12-month period.
5. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2622T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

EPA Form 5900-16

ELEMENT 1A5 & 1A6

LEED Certification Review

Center for Energy Efficient Design

Rocky Mount VA 24151 US | Registered 9/15/2009

Design Appeal Review

Credit Summary

Credits	Attempted	Awarded	Anticipated	Pending	Denied
Design	64 pts/33 crds		58 pts/28 crds		
Construction	16 pts/18 crds				
Total	80 pts/51 crds		58 pts/28 crds		

Note: Credits in review are only included in the Attempted point and credit totals.




Registration

Payment Cleared 09/15/2009

Design Phase

	Submit Review Date	Anticipated Return Date	Review Returned Date	Review Length	Payment Status
 Design Preliminary Review Attempted: 64 points Anticipated: 23 points Pending: 41 points Denied: 0 points # of credits Submitted : 37 View Snapshot	02/22/2011	03/29/2011	04/18/2011	Regular	Payment Cleared 02/22/2011
 Design Final Review Attempted: 40 points Anticipated: 35 points Pending: 0 points Denied: 5 points # of credits Submitted : 18 View Snapshot	09/21/2011	10/13/2011	10/18/2011		
 Design Appeal Review View Snapshot	12/22/2011	01/31/2012	Regular	Payment Cleared 12/22/2011	

Construction Phase

-  Construction Preliminary Review
-  Construction Final Review
-  Construction Appeal Review

ELEMENT 1B11



Students working in garden area



Students studying a sectioned area



Students cleaning a trail



Students working in the herb garden



Trail Head



Wildlife Habitat sign

ELEMENT 2B3

FRANKLIN COUNTY SCHOOL FOOD SERVICE

**FARM TO SCHOOL VENDOR EXPENDITURES
2010-2011**

	August	September	October	November	December	January	February	March	April	May	June	TOTAL
FCHS	\$0.00	\$3,645.80	\$2,341.14	\$4,066.25	\$3,288.14	\$913.81	\$1,718.05	\$3,565.77	\$3,770.46	\$1,304.33	\$5,181.93	\$29,795.68
BFMS-W	\$325.00	\$860.75	\$299.03	\$1,314.51	\$793.26	\$131.00	\$175.50	\$1,513.00	\$2,000.50	\$256.54	\$2,712.42	\$10,381.51
BFMS-E	\$0.00	\$2,115.25	\$520.19	\$1,186.20	\$1,186.10	\$75.00	\$249.50	\$1,243.75	\$63.50	\$1,625.79	\$1,193.58	\$9,458.86
CATCE	\$0.00	\$195.25	\$268.00	\$574.75	\$324.25	\$0.00	\$0.00	\$552.50	\$299.00	\$19.29	\$766.51	\$2,999.55
BM	\$0.00	\$1,259.95	\$474.29	\$966.50	\$771.75	\$145.75	\$322.50	\$764.75	\$513.50	\$224.29	\$841.75	\$6,285.03
BC	\$0.00	\$923.32	\$207.42	\$126.30	\$164.30	\$452.40	\$335.00	\$685.75	\$78.00	\$53.54	\$630.91	\$3,656.94
CA	\$0.00	\$1,662.09	\$474.58	\$1,062.58	\$792.50	\$177.25	\$376.25	\$1,327.75	\$976.82	\$160.54	\$2,032.25	\$9,042.61
DU	\$0.00	\$479.17	\$395.78	\$963.95	\$105.40	\$498.25	\$255.25	\$749.00	\$500.50	\$17.29	\$1,089.25	\$5,053.84
FE	\$0.00	\$652.69	\$470.58	\$544.25	\$485.20	\$127.67	\$83.47	\$268.25	\$295.75	\$7.29	\$982.15	\$3,917.30
GH	\$0.00	\$1,242.83	\$223.49	\$929.10	\$390.95	\$486.00	\$378.15	\$1,184.48	\$749.50	\$355.66	\$890.38	\$6,830.54
HE	\$0.00	\$996.10	\$156.45	\$220.30	\$527.15	\$51.00	\$227.45	\$814.45	\$831.25	\$42.53	\$784.18	\$4,650.86
LW	\$0.00	\$81.92	\$587.69	\$1,530.45	\$1,097.31	\$195.50	\$898.15	\$1,625.45	\$1,372.50	\$597.51	\$2,698.57	\$10,685.05
RM	\$0.00	\$557.47	\$462.13	\$1,270.50	\$1,292.26	\$182.11	\$730.85	\$1,441.75	\$1,040.50	\$356.53	\$2,106.88	\$9,440.98
SC	\$0.00	\$239.45	\$403.02	\$817.50	\$396.75	\$448.75	\$395.55	\$1,325.20	\$1,130.25	\$206.45	\$1,511.37	\$6,874.29
SO	\$0.00	\$456.85	\$317.25	\$236.75	\$282.09	\$353.25	\$464.40	\$1,127.96	\$1,198.50	\$289.24	\$1,489.50	\$6,215.79
WG	\$0.00	\$22.50	\$195.38	\$534.31	\$156.50	\$434.90	\$317.75	\$659.75	\$243.75	\$17.28	\$308.75	\$2,890.87
	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TOTAL	\$325.00	\$15,391.39	\$7,796.42	\$16,344.20	\$12,053.91	\$4,672.64	\$6,927.82	\$18,849.56	\$15,064.28	\$5,534.10	\$25,220.38	\$128,179.70

ELEMENT 2B4



Greenhouse area used for growing tomatoes and for the school plant sale



Aquaponics used for herbs and vegetables



Outdoor bed used for growing herbs

ELEMENT 2B11



Commons area at lunch



Food Service Area



Classroom



Outdoor dining



Rachel's Challenge poster



Rachel's Challenge poster

ELEMENT 3A8

Meaningful Watershed Experience Description

Students in the environmental module at The Gereau Center experience their watershed through a network of activities linking trees and water quality. They often begin at the base of the mountain in the wetlands where they discover keystone species indicating the edge where one ecotone meets another. It is here the diversity is greatest and students locate places where wildlife find water, food, shelter, and a place to raise their young. It is in this place students begin to meet the plants such as the wild rose or blackberry getting their attention as the thorns grab their clothes. They learn the rose hips provide vitamin C for humans and wild animals. Students wonder at the clear, sparkling water flowing from a small waterfall

gushing from the saturated wetland soil on its way to the stream across the street. They look up to find the mountain gap where this water springs out of Grassy Hill above them.

This site was donated by a local family to the Nature Conservancy and is now cared for by the Natural Resources Conservation Service. After examining topographic images and mapping their watershed, students learn they live at the headwaters of the Roanoke River watershed which flows through the soil and across the land to the Albemarle–Pamlico Sound in North Carolina. As each student relates their own sense of place within this watershed, stories are shared about the creeks, streams and rivers in which they like to play and fish and swim. These young people know their responsibility for keeping their part of the watershed clean because everyone lives downstream.

After learning about the local history of lightning strikes and fire suppression on Grassy Hill, they see pictures of Menge's Fame Flower (G3/S1) an endangered plant and other mountain residents like the Carolina Thistle, Blazing Star, and common trees living on the magnesium rich rocks along the path they will hike. Students learn about watershed tea and the importance of tree leaves feeding the streams, and their roots holding the soil in the watershed.

Young faces beam with excitement as they begin the ascent up the mountain trail. One student finds a tree fallen across the path revealing its age. Another curious observer moves to get a closer look to see if something is living in the big hole at the base of a tree. Looking at the whole forest picture, they closely observe patterns in nature that tell the history of this mountain forest while gathering leaves to identify individual species along the way. An heirloom apple collected from the stream sparks questions and peaks curiosity of its origin. Student questions indicate their awareness of the importance of forestlands in maintaining our watershed. Their search gets in depth as they enter the stream looking for salamanders and other organisms; clues for discovering the quality of the water. The students stop to pause and find a sit spot, a quiet time to be with nature and reflect. The only sound heard in the forest is the wind blowing through the trees. One student gently lifts the sparkling stream water between his fingers. Individual students experience the headwaters of the collective watershed and will follow the creek down the mountain to the stream that weaves through the forest near the wetland.

It is in this protected riparian buffer students will sample the stream using the Save Our Streams methods they learned in the classroom. The macroinvertebrates they collect will help them identify the water quality of this stream. Giggling is heard as they check the speed of the water with a tennis ball and stopwatch. They climb down a steep bank to check the pH and lift rocks looking for treasures. One student sighs as they have to get back to school and comments she doesn't like to end her time in nature. We all agree. As we walk back to school, some of the students make a vow to bring back bags and gloves to clean up the trash around the stream. They share stories of clean ups they have done in their own neighborhoods. One student comments they put fences up on their farm so the cows cannot get into the water. Another student shares the story of the day their manure pond broke loose contaminating the Pigg River. We all remembered that day. The water treatment plant even had to shut down. The connections these students make between their actions, choices and maintaining the quality of their watershed is lifelong learning.

Back in the classroom, the light is turned on as students are asked if they are connected to mountain top coal removal. Most answer no. Viewing parts of *Coal Country*, students identify the values and beliefs of the people imbedded in this very local issue. Students listen intently as one teacher shares his family history connected to coal and what it was like when his father mined coal and died in a long wall mine in Virginia. Listening to Judy Bonds share deep concern for her community and the black water flowing in Coal River, the students cannot help but feel the despair of these nearby families torn apart by opposing views on this volatile issue. They learn of the inspirational steps she takes to save her river and her beloved mountain. In her passing, they learn it is the Clean Water Act and the endangered critters living in the river that save her mountain, the river and the people for whom it is their lifeblood.

As students experience a holistic watershed journey, they think twice about throwing a bag or bottle from their car into the creek. They know there is something alive in the water they want to protect. They appreciate the trees blowing in the cool mountain air and the rivers that feed the forest and bring life to their community and everyone downstream.



On the trail investigating the watershed

ELEMENT 3B1



At the top of the trail



At the stream



Students in the forensic science lab



Mobile STEM lab from Institute of Advanced Learning and Research, Danville, VA (IALR)



Mobile STEM lab from



Mobile STEM lab from IALR



Students conducting landfill experiment



Student collecting data using a microscope

ELEMENT 3C1



Trout in the Classroom aquarium



Plants for sale in the greenhouse



Students with plants for nursing home residents

ELEMENT 3C4



Environmental Science student



Aviation students testing kites



Legal Science students lifting fingerprints



Social studies students listening to lecture



Student examining pond



Life skills students conducting nature studies



Crash team exhibits



Outdoor entomology demonstration



Trail head of the Grassy Hill Trail



Student investigating tree features



Student on Grassy Hill Trail behind the school



Student exploring wildlife on the trail