

2013-2014 School Nominee Presentation Form

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 to the best of their knowledge. *In no case is a private school required to make any certification with regard to the public school district in which it is located.*

1. The school has some configuration that includes one or more of grades Pre-K-12. (Schools on the same campus with one principal, even a Pre-K-12 school, must apply as an entire school.)
2. The school has been evaluated and selected from among schools within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
3. 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.
4. 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.
5. 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.
6. 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.

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

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PART III – DOCUMENTATION OF STATE EVALUATION OF NOMINEE

Instructions to Nominating Authority: The Nominating Authority must document schools' high achievement in each of the three ED-GRS Pillars and nine Elements. For each school nominated, please attach documentation in each Pillar and Element. This may be the Authority's application based on the Framework and sample application or a committee's written evaluation of a school in each Pillar and Element.

Nominating Authority's Certifications

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

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

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

Name of Nominating Agency: **North Carolina Department of Public Instruction**

Name of Nominating Authority: **Mr. Ronald L. Collier, Architect, School Planning**
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

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



Date: 01/16/2014

(Nominating Authority's Signature)

The nomination package, including the signed certifications and documentation of evaluation in the three Pillars should be converted to a PDF file and emailed to green.ribbon.schools@ed.gov according to the instructions in the Nominee Submission Procedure.

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

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.



North Carolina Department of Public Instruction

2014 Green Ribbon Schools Application

School Contact Information

School Name: Exploris

District Name: N/A- Charter School

School Address: 401 Hillsborough Street

City: Raleigh State: NC Zip: 27603

Website: Exploris Website Link Facebook Page: Exploris Facebook Page Link

Principal Name: Summer Clayton

Principal Email Address: sclayton@exploris.org Phone Number: (919) 715-3690

Lead Applicant Name (if different): Shannon Hardy and Mark Congdon, Jr.

Lead Applicants Email: Shannon Hardy Phone Number: (919) 274-8880

Lead Applicant's Email: Mark Congdon Phone Number: (919) 916-9686

School Information

Level: [X] Middle (6 -8 or 9) School Type: [X] Charter

How would you describe your school's location? [X] Urban

Does your school serve 40% or more students from disadvantaged households? [] Yes [X] No

% Receiving FRPL: N/A (our school doesn't provide lunch-students bring their own lunches)

% Limited English Proficient: <1%

Other Measures:

Is your school in one of the largest 50 districts in the nation? [] Yes [X] No

Special Education: 12% Low-Income: 6% Academically Gifted Students: N/A

504 Students: 5% Minority/Diverse backgrounds/ethnicities: 21%

Total Enrollment: 205 Graduation Rate: 100% Attendance Rate: 98.77

Summary of participation in Green Schools Program.

Exploris Middle School is a model Global Education school in North Carolina. We believe that education should be a catalyst for solving present and future problems across the street and around the world. According to global education expert, David Selby, "(education should) address issues of development, equity, peace, social and environmental justice, and environmental sustainability. It encompasses the personal, the local, the national and the planetary. Along with these principles, its approach to teaching and learning is experiential, interactive, children-centered, democratic, convivial, participatory, and change-oriented." Exploris' articulation of its core values ground the school in this approach. These include: Curiosity, Reflection, Craftsmanship, Engagement, Collaboration, Relationships, Connections to Nature, Social Empowerment, Innovation, and Balance

Exploris utilizes an interdisciplinary, project-based curriculum. Aligned to the school's values, the bulk of each grade level's work centers on issues of environmental sustainability and STEM pathways. Each trimester, team teachers carefully examine the NC Essential Science, Social Studies, and Technology Research Standards as well as the Next Generation Science Standards and Common Core English and Math standards. Teachers then frame instruction around current, complex issues that serve as a compelling lens for the curriculum standards. Guiding questions, two to three case studies, hands-on project work, and a culminating, public event serve to further engage students. Each student completes research, collaborates on group projects focusing on elements of design, and is provided access to primary documents and local experts. These industry experts and community leaders across the state, include former NC Governor James Hunt, the NC Museum of Natural Sciences, and Raleigh City Farms. The students are also regular presenters at regional conferences, such as the North American Association of Environmental Educators, the NC Service Learning Coalition, and the NC Scaling STEM Conference.

By tackling current issues and working with experts to brainstorm solutions, students feel like they have something to offer the world. Two examples that highlight Exploris' approach to curriculum design include projects that grew out of multiple community partnerships. As part of an 8th grade study of water, student teams investigated environmental issues in the Neuse River Basin and used Earth Force curriculum to create action projects. Another grade level team built a network of public partnerships to create a citywide anti-litter campaign. The students worked with Raleigh's Public Affairs Department to film multiple PSA videos for local cable TV. They partnered with a local design firm to create a bus advertising campaign, and they lobbied the Raleigh City Council to install additional cigarette butt receptacles at city parks and transit stations. The students launched their campaign at the Walnut Creek Wetland Center to highlight the connection between litter prevention and clean water. Projects like these contribute to Exploris' success in creating independent learners, critical and creative thinkers, who are active and dedicated to environmental sustainability.

In Exploris' 16 year history, Exploris has been particularly interested in reducing its own environmental impact. Exploris trash has been reduced to about one bag per grade level through color-coded recycling bins, which include TerraCycle containers. Working with the school's landlords, an electrical timer was installed so that lights and the computer network automatically turn off during non-working hours. Additionally, new PVC plumbing was installed in 2009 to control lead in the school's drinking water, and a new white TPO roof was installed in 2009/2010 to help limit heat absorption in the building and limit the need for A/C during warmer months. Based on analysis of the water invoices since moving into the current building, Exploris has reduced domestic water usage by 19%, and has NO irrigation water usage.

Exploris is dedicated to improving the health of the school's students and staff. Efforts are focused in two ways: policies and actions regarding environmental health and a nutrition and fitness curriculum for students. First, Exploris protects the students and staff from hazardous contaminants. Second, Exploris' Health and Wellbeing curriculum combines the benefits of physical activity with instruction around the elements of a proactive, healthy lifestyle. The school participates in numerous health and wellness programs including the USDA's Healthier US School Challenge and a Farm to School program to use local, fresh food. Exploris also has an onsite vertical food garden, which supplies food to the community. The school's students spend at least 120 minutes per week in supervised physical education with at least 50% of the students' annual physical education taking place outdoors.

In summary, while Exploris continues to evolve, we also appreciate the process of the Green Ribbon Schools application as it guided us in directions that we had not previously considered.

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2014 Green Ribbon District Application

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

In the process of developing Green Ribbon Schools Application, we joined EPA ENERGY STAR. We have just discovered that we score a 78 and plan to apply for award.

2. Has your school, staff or student body received any awards for facilities, health or environment? Yes No

Year Award Received

- 2007: Coleman Mt. Everest 5.5K Challenge Top 25 Schools in the Nation
- 2007: NC Museum of Natural Science Educator of Excellence, Belize – Frank McKay
- 2007: Bright Ideas Grant, Walnut Creek Oral History Project
- 2008: NC Environmental Educator of the Year (EENC), Frank McKay
- 2008: Blue Planet Run Foundation Recognition - Safe drinking water to Tanzania
- 2008: REI Grant Recipient "Field Guide to Urban Wetlands"
- 2008: NC Museum of Natural Science Educator of Excellence, Belize, Shannon Hardy
- 2009: Blue Planet Run Foundation Recognition - Safe drinking water to Tanzania
- 2009: NC Museum of Natural Science Educator of Excellence, Yellowstone – Shannon Hardy
- 2009: NC Museum of Natural Science Educator of Excellence, Ecuador – Frank McKay
- 2009-12: Neuse RIVERKEEPERS Environmental Challenge, 8th grade
- 2008-10: Kennan Fellowship for Sustainable Literacy and Consumerism, Sonja McKay
- 2010: Youth Award-Raleigh Environmental Award
- 2010: Pearson Middle Grades Science Textbook Wetland Recognition, 8th grade
- 2010: Fred Fletcher Outstanding Volunteer Award for Environmental Service, 8th grade
- 2010: Time Warner – Connect A Million Minds International Representative, 8th Grade
- 2011: Bartlett Award (NEEF)
- 2011: Presidential Volunteer Service Award-8th grade Students received gold, silver, and bronze.
- 2011: Documentary Film Recognition (8 Films) North Am. Association of Environmental Education
- 2012: Outstanding K-8 Educators for Science, Mathematics, and Technology Education, Meredith Cheetham & Sonja McKay
- 2012: Youth Award-Raleigh Environmental Award, Exploris Middle School
- 2012: Presidential Volunteer Service Award- 7th/8th grade students received gold, silver, and bronze
- 2012: Presidential Innovation Award for Environmental Education, Frank McKay
- 2012: Disney Planet Challenge, Top 20 in the Nation, 1st Place in NC, 8th Grade Team
- 2012: NC Museum of Natural Sciences Nature Research Center Exhibit/Recognition-8th grade
- 2012: Aveda Beauty Project/Grant, Global Health Symposium for Peruvian villages, 8th Grade
- 2012: Bird Observation Project Recognition - NC Audubon, NC Museum of Natural Sciences, Walnut Creek Wetland Center (WCWC)
- 2012: NC Museum of Natural Science Educator of Excellence, Ecuador – Sonja McKay
- 2013: Kids Creating Community Content International Contest- First Place, 6th Grade Team
- 2013: Burroughs Welcome Fund Career Award for Science and Mathematics, Sonja McKay
- 2013: NC Museum of Natural Science Educator of Excellence, Yellowstone – Meredith Cheetham
- 2013: Presidential Volunteer Service Award-7th/8th grade Students received gold, silver, and bronze
- 2013: Southeastern Recycling Development Council Poster Award of North Carolina, 6th Grade
- 2013: North Carolina STEM Pilot School Recognition from North Carolina's Department of Public Instruction STEM Education & Leadership Board
- 2013: Wake Ed Partnership Innovation for Health & Nutrition Grant, Laura Piraino
- 2013: Turtle Tracking International GIS Day Recognition, University of NC at Wilmington, 6th Grade

Pillar I: Reduced Environmental Impact and Costs

Energy

1. Can your school demonstrate a reduction in Greenhouse Gas emissions? Yes No

- **Percentage reduction:** 24.5% Over 01/10-12/12
- **Initial GHG emissions rate (MT eCO₂/person):** 0.433
- **Final GHG emissions rate (MT eCO₂/person):** 0.306
- **Offsets:** No offsets were purchased by Exploris Middle School or by Hedgehog Holdings, the owner of the building.
- **How did you calculate the reduction?** The GHG emissions were calculated using the EPA Energy Star Portfolio Manager. Utility bills (electricity, natural gas, and water usage) were input in the Portfolio Manager which utilizes the energy consumption and appropriate emission factors (i.e. EPA eGRID) to calculate Greenhouse Gas emissions in ton CO₂e. Reports were generated using portfolio manager to estimate total (direct and indirect) GHG emissions (CO₂, N₂O, CH₄ as CO₂e) from facility energy usage for a baseline year (2010) and for the most recent full calendar year (2012). Portfolio Manager uses the methodology documented in the Greenhouse Gas Emissions Reporting Protocol developed by WRI/WBCSD. Emission reductions were calculated based on the change in total GHG emissions (24.5%) as well as the change in per capita GHG emissions (29.3%) between 2010 and 2012.

2. Do you track resource use in EPA ENERGY STAR Portfolio Manager? Yes No

- **If yes, what is your score?** 78

Exploris recently implemented usage of Portfolio Manager to evaluate and track our energy usage and GHG emissions over time and the performance of energy saving activities that have been implemented by Exploris as well as Hedgehog Holdings, the property owner.

- **If score is above a 75, have you applied for and received ENERGY STAR certification?**

Yes No Year: Exploris plans to apply for 2013.

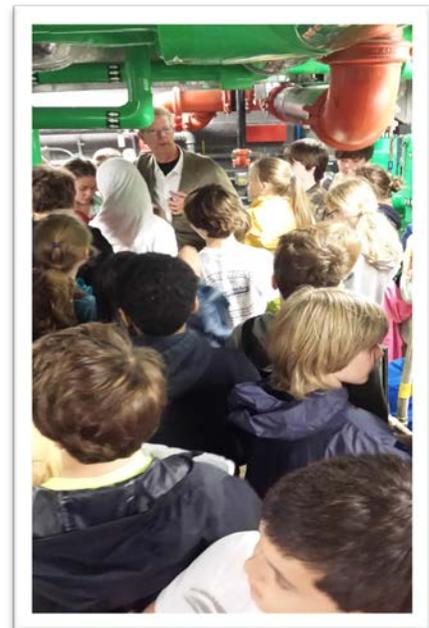
3. Has your school reduced its total non-transportation energy use from an initial baseline? (x) Yes () No

- **Current energy usage (kBTU/student/year):** 6854.3
- **Current energy usage (kBTU/sq. ft./year):** 106.7
- **Percentage reduction:** 24.4% **over (m/yy - mm/yy):** 01/10-12/12
- **How did you document this reduction?**

Exploris and Hedgehog, property owner, have implemented various energy saving measures and policies over the past several years, as summarized below:

- Recessed LED lighting installed.
- Lighting and computers/network on a timer.
- Bathroom lights motion activated.
- Conversion to Chromebooks from desktops and laptops.

Although documentation of the impacts of each energy savings measure are not available, Exploris has utilized Portfolio Manager to track energy usage at the facility and to identify and monitor the energy consumption changes over time.



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4. What percentage of your school's energy is obtained from:

- **On-site renewable energy generation:** NONE
- **Purchased renewable energy:** NONE
- **Participation in USDA Fuel for Schools, DOE Wind for Schools or other federal or state school energy program:** Yes No

5. In what year was your school originally constructed? *The building was constructed in 1930 and renovated in 2009.*

- **What is the total building area of your school?** 14,775 sq. ft.

6. Has your school constructed or renovated building(s) in the past ten years? Yes No

While the school is not green certified, it has a few features that promote a healthy environment.

- *The school has an electrical timer installed that limits the amount of wasted electricity by automatically turning off the lights and computer network during non-working hours.*
- *Should the school require touch up to its painted walls, only No-VOC paint is used.*
- *The flooring in much of the space is carpet tiles, which limits the amount of flooring needing to be replaced when damaged.*
- *The school was renovated from a building originally constructed in the 1930s. By keeping some of the existing character features, the school was able to recycle part of the building materials.*
- *The school is located in a business district that has daily recycling services.*
- *New white TPO roofing was installed in 2009/2010, which have been known to help limit heat absorption in the buildings and limit need for A/C during the warmer months.*

For renovated buildings:

- **Percentage of the building area that meets green building standards:** 0%
- **Total constructed area:** 14,775
- **Certification and year received:** 2009

Water and Grounds

7. Can you demonstrate a reduction in your school's total water consumption from an initial baseline?

- **Average Baseline water use (gallons per occupant):** 2.36 Gallons
- **Current water use (gallons per occupant):** 1.92 Gallons
- **Percentage reduction in domestic water use:** 19%
- **Percentage reduction in irrigation water use:** NO IRRIGATION USED.
- **Time period measured:** 12/2008-09/2013
- **How did you document this reduction?** *By reviewing and analyzing the water invoices from the time the school moved into the building.*

8. What percentage of your landscaping is considered water-efficient and/or regionally appropriate?: 100%
Types of plants used and location: *Students plant heirloom and non-GMO seasonal fruits, vegetables, and herbs.*

9. Describe alternate water sources used for irrigation.

Due to our location in downtown Raleigh, Exploris does not have access to natural green space. Students have designed and constructed a school alternative garden. 100% of this garden is water efficient. The school garden incorporates a closed, recirculating water system which is not connected to a potable domestic water source.

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10. Describe any efforts to reduce storm-water runoff and/or reduce impermeable surfaces.

As an urban middle school, space comes at a premium, our impermeable surfaces are minimized. Because our building is 3 stories, storm water runoff is 1/3 of a conventional one story school building. Our parking is consolidated with 8 teachers sharing 4 single parking spaces, and the remaining faculty shares 8 spaces 7am-7pm with an adjoining business. Parents use a public parking deck or street parking.

11. Our school's drinking water comes from: Municipal water source

12. Describe how the water source is protected from potential contaminants.

Exploris Middle School protects surrounding lakes, the water sources, by directing wastewater into the City of Raleigh wastewater treatment system. This treatment is split up into three stages. In the first stage, solid waste including debris and grease is removed from the water. It then moves into a biological process where microorganisms convert ammonia-nitrogen to nitrogen gas and then the microorganisms are removed. In the final stage, the water is filtered through sand filters and using UV light to disinfect it before returning it to the natural body of water.

13. Describe the program you have in place to control lead in drinking water.

Exploris Middle School reduces the lead in its drinking water by using treated city water. The most common way that the City of Raleigh treats water is a multi-phase system that first removes dirt and other particles suspended in the water, then filters the water to remove all particles, and finally disinfects the water usually using chlorine.

14. What percentage of the school grounds are devoted to ecologically beneficial uses?

Exploris has minimal greenspace. 95% of the area of our grounds is parking and sidewalks, with one small bed with a Shad Bush and two crepe myrtles. In an effort to create space, students have constructed and installed multiple planters including a vertical garden from the 2nd floor lanai.

Waste

15. What percentage of solid waste is diverted from landfilling or incinerating due to reduction, recycling and/or composting? Complete all the calculations below to receive points.

A - Monthly garbage service in cubic yards (garbage dumpster size(s) x number of collections per month x percentage full when emptied or collected): Exploris shares a garbage dumpster container with other businesses around the block, we calculated the average amount of garbage produced per month: 0.38 cubic yards per day x 22 days – 8.36 cubic yards of trash/month.

B - Monthly recycling volume in cubic yards (recycling dumpster sizes(s) x number of collections per month x percentage full when emptied or collected): City Recycling 1.8 cubic yards/month = 0.3 cubic yards (size recycling bin) x 6 full bins collected/month

C - Monthly compostable materials volume(s) in cubic yards (food scrap/food soiled paper dumpster size(s) x number of collections per month x percentage full when emptied or collected):

We had a difficult time eliminating pests during our last composting trial, so are not doing so now. We are currently exploring a partnership with a private service. Our limited budget does not allow for the \$600-\$1000 currently found for such service. NC public schools have lost approximately 1/3 of their public funding over the last five years.



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▪ **Terracycle foiled snack bags/ wrappers, juice boxes/pouches:**

Total of 0.51 cubic yards/3 months, 0.17 cubic yards/month

▪ **Recycling Rate = $((B + C) \div (A + B + C) \times 100)$:**

1.8 cubic yards recycling + 0.17 terracycle / 8.36 cubic yards of trash + 1.8 cubic yards recycling + 0.17 terracycle = $(1.97 / 10.33) \times 100 = 19\%$

▪ **Monthly waste generated per person = $(A/\text{number of students and staff})$:**

8.36/225 = 0.0037 cubic yards/person

16. What percentage of your school's total office/classroom paper content is post-consumer material, fiber from forests certified as responsibly managed and/or chlorine-free?

About 80% of the office/classroom paper content used/purchased is post-consumer material, fiber from forests certified as responsibly managed and chlorine free. This includes among others, paper towels, trash-can liners, bath tissue, and all boxes they come in.

17. List the types and amounts of hazardous waste generated at your school:

Medical waste (recycled through licensed company). Fluorescent bulbs and batteries are recycled through building landlord.

▪ **How is this measured? Minimal incidents.**

▪ **How is hazardous waste disposal tracked?** *Medical waste – to prevent exposure to blood, the staff wear gloves and dispose of all waste in a small plastic bag in the trash can. Medical waste is disposed through licensed medical waste disposal company.*

▪ **Describe other measures taken to reduce solid waste and eliminate hazardous waste.**

To reduce waste we reuse materials. For example, we are collecting toilet paper rolls and tissue boxes to reuse in art/classroom project. We also encourage students and staff to bring a waste free lunch to school, reusing snack/lunch containers, instead of plastic bags. We have had contests on which grade level can produce the least amount of trash per day. Students bring water bottles to reduce recycling plastic bottles. We reuse cardboard/boxes/poster board and paper in the classroom.

18. Which green cleaning custodial standard is used?

The custodial staff cleans Monday, Wednesday, and Friday. They do not use green products. They clean in the evenings minimizing student exposure to asthma inducing vapors.

• **What percentage of all products is certified?** *Bathroom hand cleaner is Green Seal certified, and classroom teachers use store purchased "green" products donated by parents.*

• **What specific third party certified green cleaning product standard does your school use?**

This is an area of weakness identified by our school through the Green Ribbon Schools application.

Alternative Transportation

19. What percentage of your students walk, bike, bus, or carpool (2 + student in the car) to/from school?:

As a charter school Exploris does not have a school bus system. Our school is considered one of the region's top STEM schools, for this reason our students commute an average of 23 minutes each way to attend Exploris.

Walk 1.9%, Bike 1.2%, City Public Bus System 3.2%, Carpool 48.8%, Single Rider 42.5%

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How is this data calculated? A group of 6th grade students collected data from students. Students indicated their mode of transportation to school and home. Since many families commute 10+ miles to downtown Raleigh for work and other schools, we defined "carpool" as 2+ working or learning within 3 miles of Exploris' campus. Each student had a value of 1.0. If 2 mornings the child used the city bus it would be 0.2 toward the sum of bus users. If the same child carpooled the other 3 morning and 5 afternoons we applied 0.8 to carpool.



20. Has your school implemented?

- Designated carpool parking stalls.
- A well-publicized no idling policy that applies to all vehicles (including school buses).

Exploris' urban location prohibits a "no idling policy". Since we load directly into active city streets with no designated loading zone, parents must park if they arrive early. Otherwise, we need to keep cars moving. If a parent arrives and the child is not prepared to load, we must send that parent around the block to return at a later time.

- Vehicle loading/unloading areas are at least 25 feet from building air intakes, doors, and windows.
- Safe Pedestrian Routes to school or Safe Routes to School

In 2010, our 8th graders successfully lobbied the city to install crosswalks and electronic crossing systems. A city engineer and police officer helped to design our carpool and individual rider loading zones. All children cross with parents or teachers. Students are trained for urban walking in the first week of school each year.

21. Describe how your school transportation use is efficient and has reduced its environmental impact.

Our students are encouraged to walk/bike to their parents' work or home. Our Parent Teacher Organization works to help parents develop carpools. Our arrival time has strong flow with no idling. Our afternoon congestion has been reduced from twenty minutes to less than ten by asking parents to park, stagger, and having numerous teachers to direct traffic and students.



22. Describe any other efforts toward reducing environmental impact, focusing on innovative or unique practices and partnerships.

In 2009, our school was forced to find a new facility. Exploris' school board chose a sustainable downtown site despite less expensive suburban options. Our downtown location gives us a centralized location for carpools and access to the city bus system. The city bus gives FREE passage to children under 12 and allows us to charter individual buses. We are within walking distance of community partners including the NC Museum of Natural Science, NC Museum of History, Contemporary Art Museum, and Raleigh Parks and Rec. We reduce our need for an auditorium or athletic fields by sharing space in a neighboring church and using city parks.

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

Environmental Health

1. Describe your schools Integrated Pest Management efforts, including IPM/ green certifications earned, routine inspections, pest identification, monitoring, record keeping, etc:

The pest control company assesses the building first with glue boards and bait stations to identify volume and type of pests. They inspect the property each time they apply pesticides and keep records of chemicals used and pests found. The treatment is limited to the required treatment needed to control pests in a multi-tenant facility in a downtown core. The treatment is applied once monthly to the perimeter of the building and only completed inside if necessitated by the school. This has changed from the previous treatment applied inside the school. There are no food facilities on site (ie – cafeteria to attract pests), and the building is managed to control for moisture leaks, which also have been known to attract pests such as rodent and insects. If there were to be a larger pest problem on site, such as a rodent or raccoon, no pesticides are applied for the treatment, and instead a capture and release method is used.

2. What is the volume of annual pesticide use (gal/student/year)? Describe efforts to reduce use:

*Current treatment is: .02 Gallons of Bifenthrin granules (.02% concentration) per student per year.
.004 Gallons of Onslaught (.25% concentration) per student per year.*

Pest control treatment was recently switched from the entire building to just around the perimeter of the building and treatment completed inside school as needed, thus limiting the amount of exposure to such pesticide and the amount of pesticides used regularly.

3. Which of the following practices does your school employ to minimize exposure to hazardous contaminants? Provide specific examples of actions taken for each checked practice.

- Our school prohibits smoking on campus and in public school buses.**
- Our school has identified and properly removed sources of elemental mercury and prohibits its purchase and use in the school.**
- Our school uses fuel burning appliances and has taken steps to protect occupants from carbon monoxide (CO).**
- Our school does not have any fuel burning combustion appliances.**
- Our school has tested all frequently occupied rooms at or below ground level for radon gas and has fixed and retested all rooms with levels that tested at or above 4 pCi/L OR our school was built with radon resistant construction features and tested to confirm levels below 4 pCi/L.** *Wake County is located in Zone 2 Moderate area on the EPA radon map for NC. Radon testing of the public schools in this area occurs in the northern part of the county where rock is prevalent.*
- Our school has identified any wood playground or other structures that contain chromate copper arsenate and has taken steps to eliminate exposure.** *N/A No school playground.*

4. Describe how your school manages and controls student and staff exposure to chemicals (including pesticides) routinely used in the school.

The school utilizes a cleaning service three nights a week, which cleans late at night and stores no cleaning products at the school. We ask parents who might provide supplemental cleaning supplies to donate only natural cleaners such as 7th Generation or Simple Green. The only cleaning product the school purchases is Shaklee's H2 Organic Super Cleaning Concentrate, which students use to wipe down tables. As mentioned above, insect treatment it used mainly outside. If a pesticide must be used in the building, it is done after school hours to limit staff/student exposure.

5. Describe actions your school takes to prevent exposure to asthma triggers in and around the school.

Exploris Middle School has a non-smoking environment. A cleaning service comes in at night to remove dust and spore three times per week. To prevent the spread of bacteria and viruses, students and teachers sweep and wipe down all surfaces daily. This includes door handles, glass around doors, tables, backs of seats, phones, railings, and keyboards. Cleaning solutions are fragrance free, bleach free "green solutions" used daily. All ventilation systems were replaced in 2009 in the building renovation. Air filters are maintained and changed regularly. The use of incense, candles, and fires are prohibited.

6. Describe actions your school takes to control moisture from leaks, condensation, and excess humidity and promptly cleanup mold or removes moldy materials when it is found.

The building is inspected regularly (at least once per month) for leaks in the building in susceptible areas such as pipes, toilets and HVAC units. Should a leak arise, it would be detected and contained immediately, thus limiting or eliminating mold growth. When the school was renovated in 2009, new plumbing was installed. Also, new roofs were installed in 2009/2010 which further helps to eliminate leak issues.

7. Our school has installed local exhaust systems for major airborne contaminant sources.

Yes No

8. Describe your school's practices for inspecting and maintaining the building's ventilation system and all unit ventilators to ensure they are clean and operating properly.

The schools HVAC systems and duct work were recently installed in the school in 2009. Since its installation, the HVAC units are inspected monthly, and the air filters changed at the same rate. With maintenance completed regularly by an outside provider (property management company), it helps maintain the schools ventilation system in a clean working order.

9. Describe actions your school takes to ensure that all classrooms and other spaces are adequately ventilated with outside air, consistent with state or local codes, or national ventilation standards.

The school meets all ventilation codes consistent with Section 503 of the Energy Conservation Code of the North Carolina State Building Code which sets standards of OA and ventilation.

10. Describe other steps your school takes to protect indoor environmental quality such as implementing EPA IAQ Tools for Schools and/or conducting other periodic, comprehensive inspections of the school facility to identify environmental health and safety issues and take corrective action.

Hedgehog Holdings, our property owner, has facility managers that work with our director, periodically inspect the facility, and confirm that Exploris meets all health and safety codes. The process of applying for the Green Ribbon Schools Award has led us to investigating the implementation of the EPA'S IAQ for Schools program. Students will be involved in inspection and documentation, assisted by the property owner and an outside commercial energy efficiency expert. Any health and safety concerns will be addressed immediately, and we will develop an action plan to monitor and optimize IAQ on an ongoing basis.

Nutrition and Fitness

11. Which practices does your school employ to promote nutrition, physical activity and overall school health? Provide specific examples of actions taken for each checked practice, focusing on innovative or unique practices and partnerships.

- USDA's Heathier US School Challenge.** *Exploris does not have a school cafeteria.*
 - Farm to School program to use local, fresh food.** *Exploris does not have a school cafeteria.*
 - Our school has an on-site food garden.** *In 2013 students received a grant to use planters to grow a variety of vegetables for families in need.*
 - Our school garden supplies food for our students in the cafeteria, a cooking or garden class or to the community.** *In 2011, our school began a partnership with Raleigh City Farms. On a weekly basis, students volunteer to weed and maintain a community farm that serves the local community. 6th/7th grade students participate in an annual sweet potato gleaning through the NC Food Bank.*
 - Our students spent at least 120 minutes per week over the past year in school supervised physical education.** *Students spend 90 minutes a week each year in school supervised physical education. As a part of their weekly work, students participated in various fitness routines, training circuits, foundational athletic skills, group games, and creative movement. As a project-based school, students walk to field studies, service projects, etc. on a weekly basis. Often, this can add up to 45 to 60 minutes a week.*
 - At least 50% of our students' annual physical education takes place outdoors.** *Students practice yoga and play games in a shaded city park 2 city blocks SE of our school. Students have weekly service projects that integrate science and physical labor on the Neuse River, Lake Raleigh, City Farm, Walnut Creek Environmental Center, Raleigh Greenways, and our school garden. Grade levels also visit state and university sites for specific outdoor team building activities. This includes canoeing, ropes courses, hiking, a marine study on Cape Lookout, and a 5-day Outward Bound course.*
 - Health measures are integrated into assessments** *Teachers promote wellness and body fitness through modeling and instruction over a variety of critical areas including food, exercise, sleep, collaboration, solitude and reflection. Assessment of student progress is measured through individual record setting and overall health achieved.*
 - At least 50% of our students have participated in the EPA's Sunwise (or equivalent program).**
 - Food purchased by our school is certified as "environmentally preferable"**
- N/A Exploris does not have a school cafeteria. PTO has made efforts to improve food vendors.*

12. Describe the type of outdoor education, exercise and recreation available.

Teachers and students utilize Raleigh City Parks for recreational opportunities including yoga, swimming, soccer, and Frisbee Golf. Raleigh has an extensive greenway system that we use for running, walking, and biking.

13. Describe any other efforts to improve nutrition and fitness, highlighting innovative or unique practices and partnerships.

Exploris partners with Local's Seafood and Ronnie Moore's Fruits & Veggies to do fall and spring CSA boxes for interested staff and families. Twenty five Exploris families and staff members participated in the CSA this year. Exploris' unique approach to Health and Wellbeing highlights nutrition and health for the body and mind.

Coordinated School Health, Mental Health, School Climate, and Safety

14. Does your school use a Coordinated School Health approach or other health-related initiatives to address overall school health issues? Yes No

If yes, describe the health-related initiatives or approaches used by the school:

HEALTH EDUCATION – Our Health & Wellness instructors include a series of lessons at all grade levels that address nutrition, sexuality, and emotional health. The NC Science Standards and the Next Generation Standards include healthy hearing and vision (6th), human body systems and genetics (7th), and microbiology/viruses and disease (8th).

PHYSICAL EDUCATION - This year we changed from a traditional P.E. model to a Health and Well-Being Program run by a certified yoga instructor and retired pastor who rode his bike cross-country. They use games, sports, meditation, and non-traditional movement to facilitate and strengthen intra and interpersonal connections with both the mind and body.

NUTRITION – Exploris does not have a cafeteria. In 2005 the faculty voted to remove soda and candy machines from school grounds. Our PTO contracts food vendors for 3 days a week. Since 2009 we have eliminated Chick-Fil-A and Dominoes and have experimented with local vendors that provide less processed ingredients, as well as vegetarian and gluten free options. Our faculty and parents do participate in a CSA (Community Supported Agriculture) with weekly pick-up at Exploris.



COUNSELING and PSYCHOLOGICAL SERVICES: As a small charter we contract with a speech therapist, occupational therapists, and school psychologist for an average of ten hours a week. We work closely with local doctors, psychologists, TEACCH Center for Autism at UNC Chapel Hill, and Wake County Health and Human Services to design curriculum on issues like eating disorders and bullying. Exploris has two full-time Intervention Specialists that design support for ALL students that need academic or behavioral interventions (RTI, IEP, and 504s).

HEALTHY SCHOOL ENVIRONMENT: Each student is a member of a CREW. Using an Outward Bound expression, our students “are CREW, not passengers.” The CREW teacher and 17-18 students explore Exploris’ core values through team-building activities (curiosity, craftsmanship, collaboration, engagement, connections to nature, relationships, social empowerment, innovation, balance and reflection), journal-writing, and service-learning projects. Each week the entire grade level holds a student-led MEETING. This is time to celebrate one another, share concerns, and ask questions.

HEALTH PROMOTION for STAFF: Exploris’ school values require physically, emotionally, and mentally fit faculty members. Our faculty plays hard and enjoys playing together! Our teachers have started run clubs, played rugby, wakeboard, kayak, snorkel, surf, mountain bike, hike, participate in triathlons, dance, practice yoga, swim with masters, and one recently walked the Spanish El Camino Santiago trail.

FAMILY/COMMUNITY INVOLVEMENT: With a faculty of less than 20, we depend on community and parent support. Our Parent Teacher Organization understands that we want to be a community center long after 3pm. We have about 20 clubs that could not exist without parent/community sponsorship. Many promote fitness including our 70-member Cross-Country team and 60-member soccer program. However, we also have yoga, martial arts, and an annual birding excursion. Parents also support students by sponsoring chorus, student-led Bible study, and coordinating space for our Muslim students’ daily prayer. Those students that seek intellectual competition will find Lego Robotics, Chess, Bridge-Building, Odyssey of the Mind, Science Olympiad, movie-making, and Minecraft. Our weekly service-projects in the field and annual grade level trips also rely on parents.

15. Does your school partner with any postsecondary institutions, businesses, nonprofit organizations, or community groups to support student health and/or safety? Yes No

One of our most important partnerships is with Outward Bound. As a symbol of passage to high school our 8th graders complete a 5-day course requiring fitness, craftsmanship, and collaboration through NC’s

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Southern Appalachian Mountains. Students not only challenge themselves, but gain reflection through a period of self-reliance while communing with nature.

16. Does your school have a school nurse and/or a school-based health center? Yes No

17. Describe your school's efforts to support student mental health and school climate (e.g. anti-bullying programs, peer counseling, etc.): *Beyond the broad work we do across grade levels, our 8th grade uses the Owning Up social curriculum to empower our student.. The curriculum addresses stereotypes, ownership for actions, sexuality, comfort zones, social pressure, and the root causes of social cruelty.*

Pillar 3: Effective Environmental and Sustainability Education

1. Which practices does your school employ to help ensure effective environmental and sustainability education? Provide specific examples of actions taken for each checked practice, highlighting innovative or unique practices and partnerships.

Our school has an environmental or sustainability literacy requirement.

According to the Organization for Economic Co-operation and Development (OECD), environmental literacy is best defined as "students' capacity to apply knowledge and skills ... and to analyze, reason, and communicate effectively as they pose, solve, and interpret problems in a variety of situations. (2010)" Exploris shares OECD's view that our key responsibility is in educating future generations to solve problems. In the Spring of 2013, we carefully crafted a new Mission, Vision, and Values.

MISSION *Exploris is a learning community that engages students in a rigorous, relevant, relationship-based education. This is done through experiential, project-based learning that empowers students to build a connected, just and sustainable world.*

VISION *Exploris will be a catalyst for solving present and future problems across the street and around the world.*

VALUES *Curiosity, Reflection, Craftsmanship, Engagement, Collaboration, Relationships, Connections to Nature, Social Empowerment, Social Empowerment, Innovation, and Balance.*

North Carolina's and national standards require critical thinking, but our faculty is intentional in our selection of texts like Omnivore's Dilemma and partners like the NC Museum of Natural Science. In the last year we have redesigned our interdisciplinary themes, rubrics, achievement reports, and student portfolios to ensure our graduates have the skills and conceptual foundation necessary for our rapidly changing world.

Environmental and sustainability concepts are integrated throughout the curriculum.

Exploris is founded on the principles of Global Education. According to David Selby and Graham Pike, international leaders in this approach, Global Education is based upon "the interconnectedness of communities, lands, and peoples, the interrelatedness of all social, cultural and natural phenomena, links between past, present and future, and the complementary nature of the cognitive, affective, physical and spiritual dimensions of the human being. It addresses issues of development, equity, peace, social and environmental justice, and environmental sustainability. It encompasses the personal, the local, the

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national and the planetary. Along with these principles, its approach to teaching and learning is experiential, interactive, children-centred, democratic, convivial, participatory, and change-oriented."

Grade levels develop one interdisciplinary theme per trimester. Each theme includes big ideas expressed through guiding questions, case studies, and one culminating, public event. These rigorous and relevant themes include research, current issues, collaboration with peers and experts, and elements of design. Teachers carefully frame the themes using the NC Essential Science, Social Studies, and Technology Research Standards as well as the Next Generation Science Standards. Student work incorporates Common Core English Language Arts and Math learning targets.

☒ Environmental and sustainability concepts are integrated into assessments.

At the end of each trimester students receive a five-page summative, standards-based "Achievement Report" linking Next Generation Science Standards and the Common Core to North Carolina's Science, Social Studies, and Technology standards. Exploris teachers assess for learning by triangulating student centered data; these include proficiency-based rubrics focused on learning outcomes not numerical scores, student self-and peer-assessments, and student led portfolio conferences.

Authentic summative assessment is best when revealed through student presentations. Exploris' culture, incentivizes student curiosity and craftsmanship through creative problem-solving and innovation. Sixth graders willingly give up lunch to prepare their turtle-tracking data for a video conference with a school in Alaska. Seventh graders use rubrics to polish their issues-based STEM projects about food which will be displayed in NC State University's heavily traveled "brickyard" on World Food Day. Eighth graders prototyped, ideated, and innovated, and were paid off by taking the top three design prizes for the 2012 Water Tower Competition.

Most importantly, our students are held accountable for their learning when they host adults including former NC Governor Hunt. When the North American Association of Environmental Educators held their conference in Raleigh in 2011, Exploris was a site visit and our guests were hosted by our student leaders. In 2012-2013, over 25 students presented in professional environments about their work including Scaling: STEM, NC GIS, NC Service Learning Coalition, and the NC Zoo.

☒ Students evidence high levels of proficiency in these assessments.

Exploris has a long history of exceptional academic performance. Exploris students outperform their counterparts enrolled in the local districts. Each year, the school has earned top honors on the State's School Report Card:

1997-2000 School of Excellence

2001-2002 School of Excellence and Distinction

2003-2012 Honor School of Distinction (the state's highest distinction)

Additionally, a nationally normed assessment, Measures of Academic Progress (MAP) for the 2012-2013 school year, revealed Exploris students to not only be outperforming their national grade-level peers, but to also have higher combined growth averages in all three subject areas tested (reading, mathematics, and language usage.

☒ Professional development in environmental and sustainability education is provided to all teachers.

Exploris teachers do not rely on textbooks, but instead look to industry and university experts. We have called on over 30 community/industry experts to engage in countless hours of on and off-site professional

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development. Whether it is a NC Wildlife Commission biologist, Kim McBride, framing our turtle study or NC State University School of Design architect, Tim Martin, supporting our teachers in design theory we depend on their expertise as we annually tweak curriculum and pedagogy.

Our core partner in professional development is the NC Museum of Natural Science. In 2008 we developed a Memorandum of Understanding that includes:

- unique docent and intern opportunities for our students and teachers.
- our students and teachers as initial samples when piloting new programs
- our teachers participation on Educator Treks in North Carolina and as Educators of Excellence on international environmental studies
- our teachers and museum scientists collaborating on designing teacher training
- Teachers have also individually pursued training in Earth Force's model for service-learning, Green Schools Network Conference, and NC Environmental Education Certification. In 2012-2013 Exploris focused on tightening our environmental literacy through standards-based assessment. We sent delegations to the Odyssey School in Denver, Colorado; Evergreen Charter - Asheville, NC's Green Ribbon School; and to the 2013 National Expeditionary Learning Conference in Baltimore.

2. N/A Exploris is 6-8 grade.

3. How does your school use sustainability and the environment as a context for learning science, technology, engineering and mathematics thinking skills and content knowledge?

The Exploris approach focuses on interdisciplinary themes and service-learning projects. As part of our school mission most of our work aligns with issues around sustainability, STEM pathways, and the environment. One of our annual year-long 6th projects is Turtle Tracking Research with the Centennial Wildlife Center and the NC Wildlife Commission. Students weekly track Eastern Box Turtles and collect data on feeding, growth, hibernation, and nesting. Each spring the students analyze data to pursue their research questions. The 7th grade's TRADEmark theme focuses on international trade and economics. The students created a multimedia Spoken Word presentation based on the book *A History of the World 100 Objects*. The students worked in small groups with mentors from a Raleigh firm, Laut Design, to design technology or an "object" that would benefit North Carolina's future. The students used models from nature like shoes for the blind inspired by knowledge about how shark's "see." The top designs were presented at the University of North Carolina's Emerging Issues Forum. Our 8th graders won 1st, 2nd, and 3rd place in the NC Water Environment Association's Model Water Tower competition. In preparation the students researched, met with engineers, and collaborated with Neuse RIVERKEEPERS Foundation.

4. How does your school use sustainability and the environment as a context for learning green technologies and career pathways?

The NC Essential Science Standards and Next Generation Science Standards push our studies into issues like energy, soil, and plant genetics. Over three years our middle school students engage in a number of natural contexts for green technology and careers. Currently the 6th grade is studying materials science with Dow Chemistry. They are using concepts in biomimicry to identify examples where the natural world minimizes or maximizes heat transfer. The students will interview with professionals that design, manufacture, or build these materials before designing windows, walls, rooftops, and floors for a future school. This energy study will later be extended when the same students profile their home's energy efficiency in 8th grade. This study focuses on issues around renewable and nonrenewable energy including careers through the Harris Nuclear Plant, NC Solar House, NC Biofuel Center, Duke Energy Envision Center, and CREE a NC-based LED company. Another example is that ALL of our 6th and 7th grade students will conduct a two-year study of soil and agricultural science. This includes tours of the Wake County Landfill, Waste Industries Recycling Center, and a speakers from Waste Zero, NC

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Department of Environmental and Natural Resources geologists, and a NC Nature Research Center plant geneticists.

5. Describe students' civic/community engagement projects integrating environment and sustainability topics.

A number of teachers use Earth Force's national service-learning curriculum. One key element to Earth Force is that the students design the service-project NOT the teacher. This is a challenging approach in that the teacher lets the children lead, and often ends up surprised by the results. The students research the issues, interview decision-makers, develop the focus, and seek a policy change. The Neuse River CREW service-project is currently in its 3rd year, but each year's product is vastly different. In 2011-12 the students focused on soil quality and developed a campaign to encourage Raleigh residents to test their soil before fertilizing "Green your lawn not the river." In 2012-2013 the students coordinated river clean-ups, created a website identifying animals on the riparian buffer (posted QR Codes for advertising), and shad hatchery that re-stocked about 700 shad fry. This year the students are working with an ornithologist to create a Citizen Science project building Prothonotary Warbler nest boxes, running clean-ups, and continuing the shad hatchery for the 5th year.



6. Describe students' meaningful outdoor learning experiences at every grade level.

The **6th grade** lithosphere and population dynamics study takes students from the Piedmont's Neuse River into NC's Coastal Plain where we spend an overnight trip studying coastal ecology by boating out to an uninhabited barrier island and hiking in a maritime forest. We study the structure, purpose, and movement of barrier islands; coastal history and culture; and the importance of dunes, marshes, and maritime forests.

Exploris **7th grade** learns about world hunger through a night in Heifer International's Global Village in Sharpsburg, MD. Through this program students experience one night as a citizen of a country that is living the economic and technological divide. The students are given housing, food, and bedding that replicates primitive living conditions in select countries where Heifer seeks to positively impact communities.

In **8th grade** Exploris believes that self-reliance is the foundation for scholarship for all of our graduates. We use outdoor challenges to nurture collaboration and perseverance without teacher and parent support. In the fall the students' hydrosphere study includes canoeing a section of the Upper Neuse River, and each spring the students' final expedition in geologic evolution is the completion of a 5-day Outward Bound course in the Table Rock/Linville Gorge Wilderness Area.



7. Describe how outdoor learning is used to teach an array of subjects in contexts, engage the broader community, and develop civic skills.

In 2006, one of our 8th grade teachers began to collaborate with Partners for Environmental Justice (PEJ) in the restoration of Walnut Creek, an urban creek that runs through an impoverished sector of Raleigh and is a tributary to the Neuse. In the first year our students documented senior's oral histories of environmental injustice in the Walnut Creek region. The city then built an Environmental Center at the site to bring environmental education into this region of the city. Since 2007 our 8th grade has integrated curriculum goals to develop and pilot resources for the citizens in Rochester Heights community. The work has included creating *A Field Guide to Urban Wetlands* (2007), website development (2008), designing vernal pool programs (2009), short documentary films (2010-2011), Bird Observation Project (2010-2011), and a city-wide anti-cigarette butt campaign (2012).

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In the spring of 2013 8th graders worked with the Walnut Creek Education Center, local designers, and content experts to develop four new programs: a nature trail scavenger hunt with metal tracing/rubbing stations and educational text; a permanent interactive timeline exhibit about the history of Walnut Creek; a watershed game for children; and a marketing campaign to attract local residents to the center.

8. Describe your partnerships to help your school and other schools achieve in the 3 Pillars. Include both the scope and impact of these partnerships.

Exploris is centrally located in the heart of downtown Raleigh. Teachers and students are empowered to partner with local government, non-profits, and businesses. Our landlord Hedgehog, LLC holds our values and in both renovations and daily operations works with us to decrease our impact and learn from our facility as a learning lab. Raleigh Parks and Recreation supports our use of multiple green spaces. In exchange we serve the city by cleaning downtown streams, pruning trees, and pulling invasive species. The City of Raleigh offers daily FREE recycling pick-up. The Capital Area Transit daily transports classes for service projects and fieldwork. Our Parent Teacher Organization supports organic spirit wear, healthier lunch options, and terra-cycling. Our students are weekly patrons of the Downtown Farmers Market, our parents and teachers participate in a weekly produce and seafood CSA (Community Supported Agriculture). In addition to our local partnerships, for over ten years Exploris has nurtured international student, teacher, and curricular exchanges with schools in Hiroshima, Japan and GeFrees, Germany. We have also regularly collaborated with an Environmental Science professor at Belize University, the Cultural Affairs Office of Nicaragua, and schools in India, Mexico, and Peru.



9. Describe any other ways that your school integrates core environment, sustainability, STEM, green technology and civics into curricula to provide effective environmental and sustainability education,

highlighting on innovative or unique practices and partnerships.

Twice a year the faculty and parents offer cross-grade extensions to our curriculum. Each fall we offer an elective, and in the late winter a literature circle. Some choices have included rock climbing, biking the greenway system, and walking cemeteries. One teacher also offers overnight trips connected with her literature or elective allowing a small group of students to study a topic of interest beyond the Common Core and NC Essential Standards. (1) Education of Little Tree is tied to a trip to the Great Smokey Mountain National Park to study elk herd and the Cherokee Qualla Boundary. (2) The Robinson Crusoe literature circle led to a 3-day camping adventure on South

Core Banks on an uninhabited NC barrier island. (3) Our most popular extension is our annual fall "Birding" elective. The students spend sunset and sunrise in Pocosin National Wildlife Refuge where students observe one of the worlds' highest densities of black bears, look for signs of red wolves, while investigating migrating Tundra Swans, Snow Geese, and other birds that winter in Eastern North Carolina. This excursion is now in its 7th year and includes Refuge Manager Howard Phillips and an evening talk with local her, Mayor Brian Roth, who was a key community leader in blocking the Navy's Outlying Landing Field (OLF) in the region.

