



School Nominee Presentation Form

ELIGIBILITY CERTIFICATIONS

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 grades early learning to 12.
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. The Department of Defense Education Activity (DoDEA) is not subject to the jurisdiction of OCR. The nominated DoDEA schools, however, are subject to and in compliance with statutory and regulatory requirements to comply with Federal civil rights laws.
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.
7. 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.

U.S. Department of Education Green Ribbon Schools 2015-2018

Public Charter Title I Magnet Private Independent Rural

Name of Principal: Ms. Diane Dunne

Official School Name: Mackintosh Academy Littleton

Official School Name Mailing Address: 7018 S. Prince Street, Littleton, CO 80120

County: Arapahoe

State School Code Number *: N/A

Telephone: 303-794-6222 Fax: N/A

Web site/URL: www.mackintoshacademy.com/littleton E-mail: diane@mackintoshacademy.com

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

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

Date: 3/27/2018

(Principal's Signature)



Name of Superintendent: N/A
(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in official records)

District Name: N/A

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

(Superintendent's Signature)

Nominating Authority's Certifications

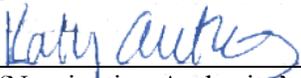
The signature by the Nominating Authority on this page certifies that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

1. The school has some configuration that includes grades Pre-K-12.
2. The school is one of those overseen by the Nominating Authority which is highest achieving in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
3. The school meets all applicable federal civil rights and federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency: Colorado Department of Education

Name of Nominating Authority: Dr. Katy Anthes, Ph.D.

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


Date: 3/27/2018

(Nominating Authority's Signature)

SUBMISSION

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

OMB Control Number: 1860-0509
Expiration Date: March 31, 2018

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.

2018 U.S. Department of Education Green Ribbon Schools Award

Mackintosh Academy, Littleton, Colorado

On a snowy day in May 2015, six seventh grade students at Mackintosh Academy in Littleton, Colorado, flipped the switch to turn on solar panels on all three campus buildings. The year before, as part of their International Baccalaureate (IB) Exhibition project, these same students pressed the “send” button to submit their application for a \$96,000 grant from the State Farm Youth Advisory Board to bring solar power to Mackintosh. And they won!

Installing solar panels brought monetary savings and a reduction in carbon footprint to Mackintosh Academy Littleton, but, more importantly, it lit the way to a living vision of the school as a Smart Village that strives every day to be a wise, compassionate, collaborative, innovative, diverse and sustainable center for teaching and learning. Solar panels are an exciting and useful technology but their impact at Mackintosh extends far beyond the clean energy they generate. Those original six students established the basis for a Solar Scholar tuition assistance fund, seeded with the savings from the solar panels. As a result, the funds now support four Solar Scholars at Mackintosh.

For the solar power project and resulting environmental initiatives, Mackintosh Academy Littleton was awarded the President's Environmental Youth Award (PEYA) by the EPA in April of 2016. In addition, the school has been awarded two grants from the Colorado Garden Foundation, for researching and planting native plants as a sight barrier and for installing a hydroponic system in our greenhouse. Students were actively involved in planning and implementing both of these projects. In the fall of 2016, Mackintosh was invited to participate at the bronze level in the Colorado Department of Public Health & Environment's (CDPHE) Environmental Leadership Program (ELP). In 2017, Mackintosh applied for and received acceptance in the ELP at the Silver level, and the school is already taking steps to go for Gold!

Mackintosh Academy Littleton embraces and excels in all three ED-GRS Pillars, demonstrated in the virtual tour of campus, outlined below:

Pillar One: Reduced Environmental Impact and Costs

- **Student-driven initiative: Solar panels on all campus buildings.** As you drive onto campus, one of the first things you will notice are the shining solar panels on top of the north building. The two other buildings also have panels. You can learn about the history and impact of this project a colorful informational sign outside the east building.
- **Student-driven initiative: Messh Kits.** Stop by the fifth grade on pizza Friday and you will see students, faculty, and parents using reusable plates and then collecting them to be washed later.
- **School and family participation: Single stream and glass recycling programs.** Visit first grade, and you will find a well-used blue recycling bin. And watch, as on Wednesday mornings, parents drop off, along with their children, bags of bottles and jars for the glass recycling program.
- **Solar-powered outdoor fountain:** Join a group of third graders as they cast their shadows to experience the impact of solar panels on our fountain.
- **Energy-efficient windows, insulation, solar tubes, venting skylight, motion-activated LED lighting in our most recent capital improvement.** If it's a little too warm when you visit the reception area, push the button on the remote-controlled venting skylight and let in some fresh air.
- **Parent Council-driven initiative: Water bottle filling station in gym.** Line up with sixth graders in the gym after PE to fill your re-useable water bottle and count how many plastic water bottles the school has avoided using (more than 500!).
- **Student-driven initiative: Terracing erosion control project, gardening and greenhouse.** Pick tomatoes and basil in January with eighth grade gardeners and then sell them at car line to support the greenhouse.
- **School supply recycling program.** Tear out (and recycle) used notebook pages with second graders, so they look fresh and new and ready for the next school year.

- **Use of natural cleaning products:** With the fifth graders, spray environmentally friendly cleaner on the tables at the end of the school day.

Pillar Two: Improved Health and Wellness

- **Use of organic fertilizers and community garden potlucks to suppress weed growth.** Pull weeds and trim bushes with kindergarten parents during the summer.
- **Air quality enhancements: Windows that open and consistent maintenance of HVAC filters.** Open those windows in the 1/2 classroom during a warm May afternoon.
- **Cleaning and chemical supplies stored in locked areas:** Observe the Pre-K teacher as she carefully stows away bleach after cleaning up from a day with our youngest students.
- **Physical Education, outside lunch, and recess for all students, every day.** Enjoy a cross-grade soccer game during lunch on the always-busy athletic field.
- **Movement and mindfulness on campus.** Join middle school students for Mack Movement before classes or walk the student-designed meditation path with a group of very mindful fourth graders.
- **Contract with Children’s Hospital to provide health/safety training and oversight.** Listen in on the Health and Safety Coordinator’s periodic reviews of our school practices.
- **Relationship with Littleton Police Department to overview safety practices and procedures.** Watch the orderly practices for fire, secure perimeter, and lockdown drills designed with local law enforcement.

Pillar Three: Effective Environmental and Sustainability Education

- **International Baccalaureate curriculum units: How We Share the Planet.** Listen as kindergarteners explain how they use repurposed materials to create designs for energy saving devices.
- **Annual Solar Inquiry to analyze data from solar panel monitoring system.** Join Pre-K/eighth grade buddies as they investigate real-time and long-term data on how much energy the school generates from the solar panels.
- **All-school Conserve Energy days.** Ask a second grader how and why they are disabling “energy vampires” in their classroom.
- **Active greenhouse and planting projects school-wide and integrated with curriculum.** Lend a hand to seventh graders as they hoist and attach the shelving they designed for the hydroponic system.
- **Environmental speakers in class and school-wide assemblies.** Raise your hand, along with others much younger than you, to ask questions about the details of single stream and glass recycling.
- **Green Team of teachers to promote environmental activities and focus.** Contribute your ideas during a Green Team meeting to plan activities for our annual Earth Day festivities and service.
- **Ongoing community service and environmental action, on and off campus.** Hold a trash bag open for a fourth grader as she picks up trash at the school’s adopted neighborhood Ridgeview Park.
- **Annual middle school participation in the World Affairs Challenge.** Applaud the seventh and eighth grade team as they present their award-winning idea for using aquaponics to address food insecurity in Puerto Rico.

As you can tell from this virtual tour, the Mackintosh community is living the values of the Green Ribbon program. Students continue to be the driving force behind what we are doing and why. Starting with the hard work and clear vision of those six sixth graders, Mackintosh students are intricately involved with and sometimes initiate many of the examples of the school’s sustainability. These students will forge the path in future endeavors, like applying for the gold level of the Colorado ELP, expand Mackintosh’s Green Team, and incorporating “green” components, like a green roof, into the school’s proposed capital expansion. And more inspiring, these students will design approaches to sustainability we can’t even imagine.

Mackintosh is a small school with a big heart and a deeply held conviction that will lead the way to a brighter future. Mackintosh’s students have sounded a clear call to action that the adults in the Mackintosh Academy community are excited, and, in fact, compelled to follow.

School Demographics:

- Grade Level: K-8
- School Type: Private/Independent
- School Setting: Suburban
- Is your school in one of the largest 50 districts in the nation? No
- Does your school serve 40% or more students from disadvantaged households? No, but 35% receive tuition assistance
- % Receiving Free and Reduced Price Lunch: 6 qualified
- % Limited English Proficient: 6 bilingual

School Enrollment/Graduation/Attendance:

- Total Enrolled: 114
- Graduation Rate: 100%
- Attendance Rate: N/A

Awards/Recognition:

- Is your school participating in a local, state, or national school program, which asks you to benchmark progress in some fashion in any or all of the Pillars? Yes, 2017 Silver Level, Environmental Leadership Program, Colorado Department of Public Health and Environment
- Has your school received any awards for facilities, health, or environment? Yes, 2016 Bronze Level & 2017 Silver Level Environmental Leadership Program, Colorado Department of Public Health and Environment; President's Environmental Youth Award 2016

Pillar 1: Reducing Environmental Impact and Costs

Element 1A: Reduced or Eliminated Greenhouse Gas Emissions

Describe the school's plan to manage and reduce energy use, such as an energy master plan, an energy conservation plan, an energy charter, an energy action plan, and/or energy conservation guidelines.

Our energy reduction plan was sparked by our 2014 sixth grade class, who applied for and were awarded a grant from the State Farm Youth Advisory Board to install solar panels on all campus building roofs. This initiative was intended to reduce greenhouse gas emissions resulting from our school's use of power from the local energy grid that is largely coal-driven.

Since then, we've been inspired by these students and the rest of our students who've enthusiastically supported and suggested a wide array of environmental initiatives and activities in our school. We have expanded and formalized our energy conservation plan. We are now working with Management & Engineering Services (MES) of Broomfield, CO to implement an ISO 14001:2015 Environmental Management System (EMS). This dashboard system will allow us to further develop and track our energy conservation and other sustainability efforts.

With the help of MES, we have created an environmental policy statement to underpin our energy conservation efforts. This policy statement will be posted on our website and in classrooms, and included in our 2018-19 parent and staff handbooks.

The policy reads: “

Mackintosh Academy Littleton is committed to providing a quality service in a manner that ensures a safe and healthy workplace for our employees and students and minimizes our potential impact on the environment. We will operate in compliance with all relevant environmental legislation and we will strive to use pollution prevention and environmental best practices in all we do.

Mackintosh Academy Littleton will:

- integrate the consideration of environmental concerns and impacts into all of our decision making and activities,
- promote environmental awareness and action among our employees and students and encourage them to work in an environmentally responsible manner,
- train, educate and inform our employees and students about environmental issues that may affect their work,
- reduce waste through re-use and recycling and by purchasing recycled, recyclable or re-furnished products and materials where these alternatives are available, economical and suitable,
- promote efficient use of materials and resources throughout our facility including water, electricity, raw materials and other resources, particularly those that are non-renewable,
- avoid unnecessary use of hazardous materials and products, seek substitutions when feasible, and take all reasonable steps to protect human health and the environment when such materials must be used, stored and disposed of,
- purchase and use environmentally responsible products accordingly,
- where required by legislation or where significant health, safety or environmental hazards exist, develop and maintain appropriate emergency and spill response programs,
- communicate our environmental commitment to parents, students, and the public and encourage them to support it,
- strive to continually improve our environmental performance and minimize the social impact and damage of activities by periodically reviewing our environmental policy in light of our current and planned future activities.”

An example of one of our energy conservation activities is our yearly student-led “Conserve Energy Day.” The goal of this activity is to determine ways that we can reduce energy consumption while school is in session. Using data from the solar panel monitoring system, the students’ analyses have resulted in taking energy-saving actions such as turning off classroom lights and using natural light, not using or unplugging microwaves or other energy devices (called “energy vampires”) during the day, turning off the A/C, and not charging laptops at

school. Students, faculty, and staff evaluate these practices and determine which ones to implement to further reduce overall energy consumption on campus.

Describe how, and to what degree, the school can demonstrate a reduction in energy use and/or in greenhouse gas (GHG) emissions from an initial baseline. Include data on baseline and current energy usage (kBTU/student/year and/or kBTU/sq.ft./year), percentage reductions, and years.

Since installing our solar panels in June 2015, we have produced 93.1 MWh of electricity as of January 2018. This equates to a reduction of 69.2 metric tons of carbon dioxide. Over the past three years, we have also reduced the amount of natural gas used by 225 therms, largely as a result of installing a new, high-efficiency water heater. That reduction equates to 25.2 metric tons of carbon dioxide. Moving forward, our EMS dashboard will allow us to more thoroughly track reduction in GHG emissions.

Describe how the school tracks resource use in EPA ENERGY STAR Portfolio Manager or a similar tool and what the results of the tracking have shown. Include ENERGY STAR Rating if possible.

To date, we have been tracking our resource use via the solar data collection system available through AlsoEnergy. <http://s34820.mini.alsoenergy.com/Dashboard/2a566973506547484341554b772b71413d>. This dashboard shows that we have produced 93.1 MWh over the lifetime of the system, which equates to 1,646 trees planted, 46,543 gallons of water saved, and 7,223 gallons of gasoline conserved.

With our new EMS dashboard, we will be able to track not only our solar production and electricity usage, but also water and natural gas usage. We believe this data will help us further improve our conservation program.

Describe how/whether the school's energy is obtained from on-site renewable energy generation, purchased renewable energy, or other renewable/green energy sources. Include specific energy sources and percentages if possible.

The bulk of our electricity is produced by our on-site solar panels. Our meters show that we use 40,000 kWh per year. In 2017, we produced 33,850 kWh and consumed 41,189 kWh, which means that we obtained 82% of our energy from solar. In 2016, we produced 38,000 kWh and used 42,128 kWh for 78% of our energy use from solar. The overall trend is that we are reducing our energy usage and increasing our reliance on solar, and therefore minimizing the energy that we purchase from the traditional grid (which may not be from renewable sources).

Describe how/whether the school has constructed or renovated portions of the school building(s) in the past 10 years that meet "green" building standards or have focused on improved energy conservation.

In 2016, we completed environmentally responsible renovations and new construction, which were the first major improvements on our campus since 2000. New construction included installing all LED lighting, increased insulation (R factor of 25), a high-efficiency HVAC system, low VOC emission carpet, solar tubes to reduce lighting needs, a vented skylight in the main stairwell, and a solar-powered outdoor decorative fountain. For existing structures, we improved our insulation around outside doors and windows to reduce heat loss and air conditioning loss.

We are proposing a 4,600-square-foot addition and are partnering with local environmental experts to ensure that this addition is constructed in the most sustainable manner possible.

Are there any other actions your school has taken (not covered above) to support Element 1A?

When a hot water heater began to fail, a sixth grade student took the initiative to research the best energy-efficient hot water heater to replace the old heater. His efforts resulted in Bradford White, a manufacturer of high-efficiency water heaters, donating a replacement to the school. This new equipment has contributed to a reduction of 225 therms in our natural gas usage in 2017.

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

Describe how, and to what degree, the school can demonstrate a reduction in the total water consumption from an initial baseline. Include data on baseline and current water usage (gallons per occupant), percentage reductions, and years.

Between 2014 and 2017, our water usage decreased from 549,000 gallons/year to 517,000 gallons/year, a drop of 32,000 gallons or nearly 6%. Interestingly, over that time our enrollment increased from 90 full-time students to 115, which is a 28% increase. This demonstrates that while our school population is growing, students and staff alike are becoming more mindful of our water usage and more diligent about conservation.

Describe school's water-conserving efforts, including fixtures and appliances (e.g., waterless urinals, dual flush toilets, etc.)

All of our classroom sinks have low-flow faucet heads to conserve our water use. As we update our facilities, we will be installing more efficient toilets as well. We installed an energy-efficient hot water heater, donated by an industry-leading manufacturer, to replace an old, highly inefficient one. In 2016, we repaired a portion of our irrigation system that was showing signs of leakage and inefficiency.

Describe the school's efforts and results for developing water-efficient and/or regionally appropriate plant selection/landscaping and the use of alternative water sources for any irrigation needs.

A large portion of our campus has been xeriscaped and planted with native, drought-tolerant plants to match our Colorado climate. An outdoor drip watering system was installed to reduce evaporation when irrigating the landscape. In 2016, middle school students designed and built terraces (designed to resemble Incan terraced land) to reduce erosion in a sloped area of our playground and provide outdoor gardening space. In the past two springs, the middle schoolers have planted butterfly- and bee -friendly native plants in the terraced gardens. The most recent tree planted on our campus, donated by a grandparent in 2017, is a Colorado blue spruce, native to our area.

Describe the school's efforts and results in reducing storm water runoff from the school site and/or reducing impermeable surfaces on school grounds.

With the exception of our parking lot, the majority of our campus has been landscaped to have porous surfaces to allow water runoff to return to the water table.

Describe how the school ensures that all school water sources are protected from potential contaminants including lead.

We meet all industry standards as outlined and required by Denver Water Company, Water Quality report, 2017. https://www.denverwater.org/sites/default/files/2017-05/water-quality-report-2017_0.pdf

Describe the school's planning and implementation to develop school grounds for ecologically beneficial uses such as rain gardens, wildlife and native plant habitat, and outdoor classrooms. Include percentage of school grounds for school garden, xeriscaping, etc.

The terraced gardens, built by the middle school students, eliminate soil erosion near the playground and provide an area for native plants to grow. The xeriscape bushes and plants on the west side of our campus are designed to provide a natural fence and are low-water plants. On Earth Day 2016, students constructed a meditation path of rocks and gravel among the trees in the southeast corner of our campus. In 2017, the students all participated in planting a blue spruce tree on our campus donated by the grandmother of two students. It is a standard school procedure to replace any trees that are removed. The pre-kindergarten students and their parents built raised beds in their playground area and planted edible plants that they harvest. Approximately 20% of our campus is dedicated to school gardening and xeriscaping.

Are there any other actions your school has taken (not covered above) to support Element 1B?

We've had many student-initiated actions addressing water conservation and water quality issues. These include awareness campaigns for ways to conserve water on campus through posters and public service announcements as well as fundraising for non-profit organizations such as Charity: Water, which provides water filtration to people in need of clean and safe drinking water.

Element 1C: Reduced Waste Production

Describe how, and to what degree, the school implements a school-wide plan of waste reduction, recycling, and/or composting in order to divert significant solid waste from the landfill or incineration. Include data on baseline and current recycling and composting rates (e.g., cubic yards per year, monthly waste generated per person, monthly recycling/composting rates), percentage reductions, and years.

Annual Amount Recycled

- Glass recycling program through Clear Intentions: We collected 5000 lbs. in 2016 (the first year of the program) and 9187 lbs. in 2017, nearly doubling our impact! We invite our families and neighborhood to drop off glass for our bins.
- Paper, cardboard, metal, and plastics recycling through Alpine Recycling: There is a weekly pickup of 3 cubic yards, totaling 300 lbs. each week. This amounts to 15,600 lbs. per year, which has stayed consistent over the past few years.
- Terracycling: we have recycled juice pouches, "Lunchable" containers, writing utensils, "GoGo Squeeze" containers, and energy/granola bar wrappers. Since the program's inception in 2015, we've recycled 7,050 energy bar wrappers, 509 GoGo Squeeze containers and 1,107 drink pouches (only aggregate numbers are available). Unfortunately, Terracycling cancelled the recycling programs for juice pouches, Lunchable containers, and writing utensils, so in 2017 to address this issue, the students came up with alternative ways to recycle these items. They turned the juice pouches into cell phone carriers that were used by parents during our annual school auction; the Lunchable containers were put into our regular recycling stream; the lids from the writing utensils (markers) were used to create artwork (flowers) that are mounted on the school fence.
- Reusable school supply collection: At the end of the school year, each class collects binders, composition books, writing utensils, paper, and spiral notebooks in their own classroom. These items are redistributed for use the next year. A count of the items was not coordinated, but several large bins of items were collected.

Annual Amount Composted

- Pounds (lbs.) composted: 150 lbs. annually. For the past four years, our students have deposited their compostable food items into our school composter on a daily basis following snack breaks and lunch. It has become a simple part of the students' routine when they clean up after they eat. In addition, several middle schoolers designed a compost tea system this past spring, which allows us to collect the nutrients from the compost in liquid form to be used when watering our gardens. We use the compost tea in our new hydroponics system in the greenhouse. The first and second grade class developed a vermiculture composting system in their classroom and collected necessary food scraps from students to feed their worms. Finally, at the end of each day, the middle school students take the used Keurig coffee cups and dispose of the coffee grounds in the composter and recycle the plastic cups.

Describe how, and to what degree, the school uses office/classroom paper content that is post-consumer material, fiber from forests certified as responsibly managed and/or chlorine-free.

Although we do not purchase post-consumer copier paper, each classroom has a bin in which to collect scratch paper to be repurposed, thus significantly reducing the amount of fresh paper consumed.

Describe the school's efforts in storing/maintaining an inventory of potentially hazardous materials used in various programs, if any (e.g., science, art, maintenance, cleaning, pest control, etc.).

In conformance with Colorado school regulations, all appropriate precautions are taken to store chemicals used in science classes to prevent harmful exposures and injuries in the laboratory. All hazardous substances are stored in a locked safe according to the EPA guidelines.

Describe how, and to what degree, the school has reduced/eliminated hazardous waste generation over a measurable baseline. Include specific waste such as batteries and CFL light bulbs.

Mackintosh produces a negligible amount of hazardous waste, so baseline numbers are not tracked at this time. Batteries and CFL light bulbs are taken to local hazardous waste collection sites on an annual basis.

Describe the school's green cleaning custodial practices, including green cleaning products, services, advanced equipment, and/or policies.

Our teachers have transitioned to using natural cleaning products in our upper grade classrooms. However, our professional cleaning company continues to use their own products, some of which may not be green. Mackintosh will be working with this company to identify viable green products to be used at the school.

Describe how the school's purchasing practices specifically promote environmentally preferable purchasing/green purchasing, as applicable, for consumable products, furniture, and equipment for administration, instruction, and/or maintenance.

In alignment with our sustainability philosophy, the majority of our recent furniture is secondhand items purchased from other schools and institutions. In addition, we have received donated furniture, computer, and office items that businesses would have discarded and or sent to the landfill.

Are there any other actions your school has taken (not covered above) to support Element 1C?

The Parent Council recently purchased and installed a water bottle filling station with a Water Sentry Plus 3000 gallon filter included. Since January 2018, 510 plastic water bottles have been saved by using the bottle filling station.

In 2016, our first and second graders initiated a scrap metal drive to help recycle metal products in our community. This class also formed an Environmental Satisfaction Club to clean up the grounds and safeguard our school environment.

At the beginning of each year, students assemble and sell "MESSH" kits for families to use at school events. Kits include reusable dishes and silverware (purchased at thrift stores) in a mesh bag. Each classroom has an assortment of reusable dishes and silverware (also from thrift stores) for students and teachers to use for snacks and lunch. Staff bring their own reusable plates and forks to staff meetings. There has been a 50% decrease in the amount of waste produced at all school events and during the school day.

Students spent several months in art class designing and creating a chandelier out of used plastic water bottles in the style of Chihuly glass. It hangs in our main stairwell. The 5th and 6th grade students created artwork out of used marker pen tops. The artwork is mounted on the fence at the entrance to our school.

Upon learning that the Terracycling company would no longer recycle juice pouches, the students decided to create cell phone carriers/name tags out of the pouches. These carriers were used, instead of creating paper or plastic name tags, at our annual school auction and have been stored for future use. The result? 150 reusable name badge lanyards.

Element 1D: Use of Alternative Transportation

Describe how/whether the school is reducing its transportation energy use through means such as encouraging a) walking or bicycling to and from school, b) expanded school bus use, or c) EV charging stations. Include data and results of the efforts.

As an independent school that draws students from across the Denver Metro area, we do not provide bussing services. However, students are highly encouraged to walk or bike to and from school whenever possible. Mackintosh sponsors a bike/walk to school day every fall to encourage students to use alternative modes of transportation on a regular basis.

Describe the school's implementation of the following green transportation practices: a) efficient carpooling; b) no-idling loading areas; c) safe routes to school; and/or d) expanded bicycle storage.

To encourage more carpooling, the parent council maintains a carpooling map. We successfully petitioned the City of Littleton to install a crosswalk sign to increase safe road-crossing for students who walk and bike to school. To avoid cars idling during carline pickup, we have a staggered release schedule that prevents long backups in our parking lot. During morning dropoff, we have an adult present to help move students efficiently from their vehicles to avoid long idling times.

Describe how/whether the school has implementation practices that focus on transportation efficiency, reduced environmental impact, or other creative ways of promoting alternative transportation. Include data and summary results of the efforts.

We recognize that transportation efficiency is an area of opportunity for us. A recent poll revealed that nearly 90% of our students arrive each day in a single-family car. While those who live close enough often walk or bike, most students live outside of a two-mile radius of our campus, and we are on a residential street with limited public transportation. Our Green Team is actively researching ways to make carpooling more attractive to our families and decrease the environmental impact of our commuter population.

Are there any other actions your school has taken (not covered above) to support Element 1D?

We use public transportation when possible for field trips, especially when visiting downtown Denver. A significant number of families have moved into the immediate neighborhood to reduce their commute.

Pillar 2: Improving the Health and Wellness of Students and Staff

Element 2A: Integrated School Environmental Health Program

Describe the efforts in implementing the school's or the school division's Integrated Pest Management (IPM) plan in the school, including: year of implementation, program responsibility/oversight, pest monitoring process, record keeping, notification practices, and efforts to reduce pesticide use.

As a small school, our pest management activities are minimal. Our longtime groundskeeper is responsible for making sure our outdoor spaces are weed- and pest-free. Our facilities contractor monitors and manages any indoor pest issues that very occasionally arise. Our Assistant Head of School and Business Manager are notified and maintain records when issues occur.

Although we do not have a formal IPM, we strive for the least toxic and invasive methods possible. We use organic fertilizers and minimize pesticide use on our turf. We hold parent gardening potlucks during the summer for weed control to minimize use of harmful chemicals. When the rare pest issue occurs, great care is taken to use methods that are not accessible or harmful to our students.

Describe how, and to what degree, the school's efforts and practices have minimized/eliminated student and staff exposure to the potentially hazardous contaminants including: cigarette smoke, mercury, carbon monoxide, fuel burning combustion appliances, airborne contaminate sources, asbestos, radon, chromate copper arsenate, and lead.

Located in a low-traffic residential neighborhood, our school's exposure to potentially hazardous contaminants is minimal. We have a smoke-free environment, both indoors and outdoors. We have well-ventilated classrooms that have doors and windows that open to the outside for fresh air. Environmentally friendly low-VOC flooring minimizes harmful off-gassing, and carbon monoxide monitors are in place. An asbestos plan complying with state requirements is in effect, and radon mitigation has been performed.

Describe the plan and timetable for inspecting and maintaining the school's ventilation systems and all unit ventilators and for ensuring that the systems are clean and operating properly.

Inspecting and maintaining our ventilation systems is a regular part of our facilities contractor's duties. All filters are checked and replaced at least twice a year, and any cleaning issues that arise are taken care of in a timely manner.

Describe how, and to what degree, the school ensures that all classrooms and other spaces are adequately ventilated with outside air, consistent with state or local codes, or national ventilation recommendations and standards.

We are in conformance with Colorado State School Regulations 5-301 through 306, which regulate ventilation in schools. All of our classrooms have windows and doors that open to the outside and we do not use unvented combustion appliances. Filters are cleaned and maintained as described above and our environment is fully smoke-free.

Describe how the school has taken specific and comprehensive actions to prevent exposure to asthma triggers in and around the school.

Our parent handbook describes us as an "allergy-aware" environment, and our policies protect students against many of the most common asthma triggers. For example, pets are not allowed on campus, grass clippings are immediately removed from our grounds, and our HVAC filters are regularly maintained. Our facilities are cleaned nightly with environmentally friendly products and filtered vacuum cleaners to reduce dust particles and debris.

Describe how the school has taken specific steps 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: a) identify environmental health and safety issues; and b) take corrective actions.

In addition to the steps outlined above, we comply with state regulations for procedures and annual inspections. Our new Environmental Management System, currently being developed, will provide concrete steps and annual benchmarks to assist in protecting indoor environmental quality and corrective actions.

Describe the school maintenance and implementation of an up-to-date plan and its careful enforcement in managing and controlling student and staff exposure to chemicals that are used in the school (e.g., pesticides, cleaning supplies, fuel, paint).

We are in conformance with Colorado State School Regulations 8-101 through 125, which regulate chemical storage, cleanup and inventory procedures. Paint and cleaning supplies are stored in a locked shed away from student access. We follow all established protocols regarding chemical storage in our science classroom spaces. In addition, our Pre-K is licensed through and meets all requirements of the Colorado Department of Human Services and Tri-County Health Department with regard to exposure to chemicals.

Describe the school's routine inspections and prompt action to: a) control moisture from leaks, condensation, and excess moisture; and b) clean up mold or remove moldy materials promptly when found.

Our facilities contractor regularly inspects for leaks, moisture and condensation, and cleans and repairs any affected areas. We also have a standing informal contract with a restoration company, who provide mitigation services for major events that cause any water damage.

Element 2B: Nutrition and Fitness

Describe the school's implementation of the following programs (or programs with similar intent) and results and outcomes related to the targeted efforts.

Nutrition and fitness recognition programs (such as USDA's Healthier US School Challenge and the Governor's Nutrition and Physical Activity Awards Program)

Daily P.E. classes include a goal related to that day's activity and students are asked to focus on one of the International Baccalaureate Profiles, such as "risk-taker," "committed," or "caring." Longer term goals are set when our P.E. teacher administers the Presidential Physical Fitness test at the beginning and end of a dedicated fitness unit. Students review their results, choose an area of improvement, keep a journal of their performance and compare their beginning and ending results. Although we do not have documented long-term

results, we do know that most students see improvement in their fitness goals. Students are asked to reflect on their results and write about what they did well at and what they might do differently to improve further.

A "farm to school" program to use local, fresh food and/or a food purchasing programs identified as "environmentally preferable"

Because we do not have a school cafeteria, we do not have a "farm to school" program or any food purchasing programs. However, for staff, student and community events, we attempt to use local suppliers and caterers who are in sync with our philosophy of sustainability and nutritional quality.

In addition, we are affiliated with Slow Food Denver, a group dedicated to preserving food traditions and heritage, supporting local food producers and purveyors, promoting sustainable agriculture, influencing food policy, protecting biodiversity, and educating members, schoolchildren and the greater community about the pleasures of growing and eating food.

On-site garden that may supply food for students in the cafeteria or to the community

Our school greenhouse program grows edible plants such as tomatoes, peppers, cucumbers, lettuce, squash, and herbs that are sold to our community. Our greenhouse facilities consist of an 11' x 12' greenhouse and three 6' x 4' terraced gardens that were constructed by students in conjunction with their studies of Macchu Picchu. When our harvest permits, we have hosted a "community salad" event and invited a local chef to speak, followed by a community meal featuring our fresh produce. The installation of hydroponics, supported by a grant from the Colorado Garden Foundation, has allowed us to increase production.

UV protection and skin health promotion, such as the EPA's "Sunwise" Program

Because of our sunny Colorado location, we are quite aware of the issues regarding skin health and sun exposure! We promote skin health by requiring sunscreen permission slips so that our staff can apply sunscreen to students. We promote protective hats for outdoor field trips and school activities such as Field Day. Our patio area, which is where our students have lunch each day, has umbrellas to provide shade and our campus has ample shade trees.

Describe the school's practice related to physical education and whether they meet or exceed state guidelines and minimum requirements.

Because we recognize the importance of physical activity for student health and learning outcomes, every student at Mackintosh Academy has 30 minutes of physical education every day, totaling 150 hours per week. This dedicated daily P.E. time is increasingly rare in today's schools, and something we are committed to continuing. Our P. E. curriculum is closely integrated with our classroom IB Units of Inquiry and is thoroughly assessed on the students' report cards.

Describe the type of outdoor education, exercise, and recreation activities available to students.

Outdoor education, exercise and recreation are an integral part of our school's goal of nurturing well-balanced, healthy students. In addition to daily PE, all students are given several recess breaks each day to play outside on the playground. Our playground includes standard play equipment, a soccer field, basketball court, a meditation maze, and a "Gaga Pit" so that students have choices to rotate between. Many of our IB Units of Inquiry have outdoor field trip elements that include the Carson Nature Center, Denver Botanic Gardens and Littleton Historical Museum; more formally, our fourth graders go to an outdoor education center (Calwood) for three days/nights each year. The fifth/sixth graders attend the Jeffco Outdoor Learning Lab for three days/nights, and seventh/eighth graders spend a week volunteering at the Pine Ridge Indian Reservation in South Dakota. Our middle schoolers participate in 15 minutes of "Mack Movement" yoga practice to help them ground and focus at the beginning of each school day.

Describe the school's efforts and progress to improve staff wellness in the areas of nutrition and increased physical activity.

Because our school does not have a cafeteria, our staff provide their own lunches. They strive to model healthy eating practices and good nutrition, and follow the lunch guidelines provided to parents (e.g. limiting sweets, etc.). We recently added yoga and mindfulness to begin our bi-weekly staff meetings. Staff are led through gentle yoga exercises and guided meditation prior to beginning the meetings. In the past, teachers have participated in informal "steps challenges" where they walk together around the field during recesses and log their steps on Fitbits or other similar devices.

Element 2C: Coordinated School Health, Mental Health, School Climate, and Safety

Describe how the school is implementing a range of partnership programs with the local health department, businesses, postsecondary institutions, and other members of the community to improve students' and school staff members' nutrition, fitness, and safety.

Among our partnership programs are:

- contracting with Children's Hospital for training and oversight for health and safety procedures;
- consulting with the Littleton Police Department on campus safety procedures, internet safety, and bullying prevention;
- inviting community speakers on nutrition, food waste and health topics;
- hosting parent education events on topics such as brain health, ADHD, and internet safety; and
- partnering with local bike shop to present bicycle safety information.

Describe the school's use of a Coordinated School Health approach or other health-related initiatives to address overall school health issues. This could include comprehensive wellness policies and/or a health and wellness committee/team.

Although we do not use the formal Coordinated School Health approach, we are in alignment with its standards of creating a healthy and safe school environment via school, family, and community involvement. In addition to maintaining a healthy and sustainable school environment, as outlined in earlier sections, we pay close attention to our students' mental health and create a supportive school climate. Mackintosh Academy recognizes the nationally accepted definition of bullying as found in www.stopbullying.gov, a Federal Government website managed by the Department of Health and Human Services. A strong anti-bullying policy is in place and communicated to students and families. All teachers integrate health and wellness activities into their IB Unit of Inquiry curriculum, as appropriate, and are trained to respond to the social-emotional needs of our population. A dedicated learning specialist provides extra support for students with exceptional learning or mental health needs. Our parent community is highly engaged, with at least 75% regularly supporting the school via helping in the classroom, supporting field trips, volunteering and organizing school events. These elements all combine to create a school climate that is nurturing, healthy, and supportive for our entire community.

Describe how the school addresses school health professional services for student needs, including the presence of a full-time school nurse in the school and/or a school-based health center.

Because of our small size, we do not have a full-time school nurse, but rely on our contract with Children's Hospital for guidance. Several staff members are trained as health coordinators, and one is designated a health and safety coordinator. Staff regularly communicate with parents regarding illness outbreaks and wellness practices that curb the spread of illness in our student body.

Describe how the school addresses and implements comprehensive programs to support student mental health and positive school climate (e.g., anti-bullying programs, peer counseling, etc.).

Our mission statement acknowledges the importance of nurturing our students' social-emotional health as well as physical health. In promoting the "compassionate hearts" of gifted children as our mission states, we implement International Baccalaureate social-emotional curriculum. This curriculum focuses on empowering students to be balanced, reflective, caring, open-minded, principled and knowledgeable, along with being risk-takers, inquirers, thinkers and communicators. These qualities are modeled, promoted and assessed in our everyday instruction. In addition, we have a clear and compassionate positive discipline and anti-bullying policy

that is communicated to students and parents. Teachers receive professional development related to bullying and conflict issues.

Pillar 3: Providing Effective Environmental and Sustainability Education

Element 3A: Shared Responsibility for Environmental Learning

Describe the school's focus on environmental and sustainability literacy specifically reflected through schoolwide practices and programs, lesson planning, and/or school curriculum documents.

We have a rich foundation in environmental literacy which is embedded in the culture of our school.

Examples of sustainability literacy:

- Speaker from Waste Management provided information about how and what can be recycled.
- Speaker from Clear Intentions provided information about how and what glass can be recycled.
- Assemblies from various local conservation organizations (such as Audubon Society, Wild Wings, and HawkQuest) presented information about environmental issues.
- Students regularly educate each other around Terracycling, composting, recycling, water conservation, and environmental issues.
- International Peace Day and Autumnal Equinox Celebration: Each September we engage in an all-school learning and data collection on the energy consumption of the school. Each student also engages in annual service projects which often connect to school and local pond and park clean-up and greenhouse-gardening maintenance.
- Annual Earth Day activities, assembly, and service projects, including personal and classroom carbon footprint reduction measures (as decided by each classroom) school clean-up, and local park clean ups.
- We adopted a local park and work with local managers in regular clean-up efforts.

Lesson planning and/or school curriculum documents:

We practice the International Baccalaureate curriculum. Consequently, our lesson planning encourages all teachers to connect subjects and real-life events and provide opportunities for community service. Our classes are required to complete six sustained units of study a year. One of the units must be "How We Share the Planet" that typically relates to Environmental and Sustainability Literacy and Understanding.

As part of the IB program, we are required to have staff create all-school curricular policies that drive our site-based decisions and day-to-day operations. One policy is the "Action Policy." Our "Action" aspects of the school have often included service for the environment. Our Action Policy includes clear descriptions for:

- Global Stewardship
 - The Green Committee (driving force for all school environmental initiatives);
 - Recycling, composting; and
 - Support reusing, repurposing, and recycling of all materials including glass, school supplies, lunch packaging, and any materials that can be used for Makerspace projects.
- Action
 - Action that is initiated by the student(s) is a key component to the IB Programme. Staff members are expected to help plant the seeds of knowledge and understanding, and the students will germinate them into action. Action comes from the student and will be supported by the staff through:
 - Providing opportunities for students to develop skills and attitudes that lead to taking action;
 - Supporting students in carrying out the action cycle;
 - Providing opportunities for student action to be an integral part of the curriculum or an extension of the curriculum;
 - Honoring student action by recording it in the class action log and posting pictures of actions taken within the classroom and school;
 - Exhibition (sixth grade) students will incorporate authentic action as part of their project;

- Middle Years students participate in an IB Community Project each year. Every other year, this includes a week-long overnight trip. All students are expected to attend the trip and curriculum will be integrated throughout the year to connect with this service trip.
- We ask that students seek appropriate permissions and support from their classroom teacher prior to initiating any action activity.

Describe how, and to what degree, the school has integrated environmental and sustainability concepts throughout its instructional program and across subject areas and grade levels.

As noted above, of the six transdisciplinary themes that students explore each year (How We Share the Planet) is specifically focused on the environmental sustainability and global interdependence. Also woven into the entire year's scope and sequence for each class are the Next Generation Science Standards which include specific guidelines at each grade level in "Earth and Human Activity." These include detailed standards and learning outcomes in environmental and sustainability concepts.

Each classroom unit has an action component frequently connected to environmental awareness and issues. Teachers are required by the IB to have a planner that explicitly describes the scope and sequence for delivery of all environmental learning. Specifically, the "How We Share the Planet" unit is an inquiry into the rights and responsibilities in the struggle to share finite resources with other people and with other living things.

Schoolwide: The gardening program at Mackintosh Academy is a central component of our "Smart Village Initiative" which strives to develop and maintain sustainable "green" practices across our campus. Our gardening program revolves around our greenhouse, terraced gardens, and raised beds. All pre-kindergarten through eighth grade students at Mackintosh are involved in the gardening program either voluntarily or through curricular units.

Since the greenhouse was built in 2013, the students have worked to develop it into a working and thriving school "farm." Between 2015 and 2017, the students successfully grew, harvested, and sold a substantial amount of salad greens, herbs, tomatoes, peppers, cucumbers, carrots, and squash. As a result of their success, the students were eager to expand their gardening knowledge and increase their crop production. In response to the students' enthusiasm, Mackintosh applied for and received a grant (from the Colorado Garden Foundation) to install hydroponics in the greenhouse. The students have been actively working to learn the ropes of hydroponics on a daily basis since August 2017.

The teachers and Curriculum Coordinator look for authentic connections between their classroom academics and gardening. For example, during a unit about sustainable communities, the middle schoolers learned about the agricultural terracing systems used by the ancient Incans. The students then designed and built a set of terraces on campus in which they planted bee and butterfly-friendly plants and herbs, as well as a patch of pumpkins. Earlier this fall, during their plant unit, the first and second graders planted dozens of bulbs in our raised beds and are eagerly awaiting to see them grow and bloom in the spring. In addition, the pre-kindergarten students and their parents built their own raised beds in their playground area and have planted and harvested edible plants for their class. Just recently, the kindergarteners planted "magic beans" after reading "Jack and the Beanstalk." The entire Mackintosh community, including all 114 students, 22 faculty, and families, participates actively and enthusiastically in our gardening program throughout each school year.

Pre-Kindergarten: Our Pre-K students have an outdoor garden which they tend to in the fall and spring. Their program pulls from educational approaches that constantly incorporate nature and use the outdoors as their classroom.

Kindergarten: Kindergarten students study a unit with the title "We have rights and responsibilities to self and the world as we share finite resources which focuses on local resources and the resources of the rainforests." Students look at where resources come from and our responsibilities toward resources.

1st-2nd Grades: Study units on sharing water and plant resources. Their studies have led to several student-inspired actions including a recess "Environmental" club. Field studies included going to the Carson Nature Center to volunteer in planting wetland seeds along the shore of a pond in order to stabilize it and create habitat for animals.

3rd-4th Grades: Study units on tress, invertebrates (which relates to worm composting), ecology, and how organisms interact with one another and with their environment, which includes study of the management and protection of systems. Their field studies at Chatfield Reservoir inspired a note from the coordinator that stated, "Stu (the ranger at Chatfield) was SO impressed by what the kids did! He really could not believe it, and said you changed his outlook on student groups who want to help out in the park."

5th-6th Grades: As part of their capstone service project, the Exhibition, they regularly learn sustainability and environmental issues. The 2014 Exhibition resulted, as mentioned before, in a grant for installing solar panels on our campus buildings.

7th-8th Grades: Our science classes incorporate our greenhouse into their studies of agriculture, botany, food resource stainability. Their field studies on campus and within the community directly relate to local and world environmental and sustainability concepts. We are able to relate their science studies to mathematical studies and social studies/ humanities studies, especially in our interdisciplinary unit that prepares students for the World Affairs Challenge or the unit that prepares students for their week-long service trip to the Pine Ridge Indian Reservation. Our seventh/eighth graders used world agriculture practices to design and develop a Machu Picchu inspired terraced garden and turn their greenhouse hydroponic.

Describe how the school's assessment materials across subject areas and grade levels have clear expectations and target proficiency levels for environmental and sustainability concepts. Include quantifiable measures, indicators, or benchmarks of progress toward environmental literacy and/or environmental proficiency.

Students are required by the IB to demonstrate their understanding of the transdisciplinary theme of "Sharing the Planet" through completing a summative project focused on environmental learning. In addition, students are encouraged to take action following each unit. For example, the third/fourth graders adopted a biome to maintain and care for and learned to identify and eradicate invasive weeds: our school has adopted a neighborhood park that the students care for quarterly, the first/second graders planted native plants in a local wetland to help maintain the health of the ecosystem, the Student Leadership Council organized a volunteer effort to assist nearby neighbors with raking leaves and picking weeds.

We ensure the proficiency levels as outlined in the Next Generation Science Standards for each grade are met. For each learning outcome within a unit (both the NGSS and Mackintosh Learning Outcomes), we collect evidence to determine a student's level of understanding.

Describe the school's emphasis on ensuring that professional development in environmental and sustainability education is offered to teachers.

Annual training in the IB and science courses includes delivery of cutting-edge environmental education curriculum. Teachers have used opportunities provided by the school or through grants to attend training in environmental education over the years from a variety of organizations, included Project Wild, South Suburban Nature Centers, Project Learning Tree, and the Teacher Enhancement Program at the Colorado School of Mines' Continuing and Professional Education Services.

Are there any other actions your school has taken (not covered above) to support Element 3A?

We are in the process of developing an Environmental/Sustainability matrix to be added to all of our curriculum planners. Our teachers will then be able to reflect on and assess the E/S goals of that IB Unit of Inquiry. To develop this matrix, we will be adapting the Colorado Alliance for Environmental Education's EE Standards, asking to what extent our planners:

1. Connect content across disciplines related to natural and human systems
2. Understand the connections between people and places and the interrelationships between humans and the environment
3. Demonstrate processes and skills including critical thinking, inquiry and issue investigation
4. Participate in proactive decision-making in their community and school

Element 3B: Use of the Environment and Sustainability to Develop STEM Content

Describe how the school uses sustainability and the environment as a context or theme for connecting/learning STEM thinking skills and content knowledge.

At least once a year, each classroom studies a unit specifically addressing an environmental context in How We Share the Planet. As students mature, their focus on critical thinking about sustainability practices deepens, as they are increasingly asked to consider the long-term effects of their actions and worldwide trends.

Specifically, when preparing for the World Affairs Challenge, our middle school students are asked to consider and report on sustainability practices in their presentations. The students' proposals this year included addressing energy problems in underserved countries with independent mini-grids that provide electricity via solar, wind and wave power, and addressing food insecurity in Puerto Rico by installing aquaponic greenhouses to provide produce and fish for the communities.

Describe the school use of sustainability and the environment as a context for connecting and learning green technologies and career pathways.

We are committed to learning about green technologies, especially in harnessing knowledge, understanding, and data collection from our solar panels. This occurs at every grade level but is strongest starting in the fifth grade when the mathematical and scientific understanding allows for greater data collection and analysis. This collection and analysis of our school's energy consumption, with monitoring software that directly correlates to "trees planted" and "gallons of water saved," allows students to visibly and quantitatively connect green technologies with the environment.

Element 3C: Development and Application of Civic Knowledge and Skills

Describe the school's emphasis on outdoor learning as a tool to: a) teach an array of subjects in context; b) engage the broader community; and c) develop important civic skills.

In addition to overnight stays at Calwood, Pine Ridge Indian Reservation, and the Jeffco Outdoor Lab School (mentioned above), our students participate in maintaining our greenhouse and learning gardening skills. These trips and activities allow our students at every grade level to learn about the environment and sustainability practices while interacting in the larger community and taking on civic projects. Please see below for more examples of community outreach projects and partnerships that allow students to hone their community/civic engagement and skills.

Describe: a) how/whether, and to what degree, the school promotes and encourages students to conduct class or individual, age-appropriate, civic/community engagement projects; and b) the important outcomes that have been achieved (using data as appropriate).

Our Action Policy and each teacher's lesson planning encourages students to conduct student-initiated action. Because it is generated by students, this action is age-appropriate. It often engages students in community (school or local) projects.

Classes participate in field trips on a regular basis, capitalizing on local resources in learning about environmental or civil issues. All field trips and projects are tied to learning outcomes, and teachers reflect on the efficacy of projects and field trips in meeting those standards.

Community outreach projects include:

- volunteering at Village Head Start and nursing homes
- painting electrical boxes in city of Littleton
- raking leaves for immediate neighbors
- adopting a nearby park for cleanup and weed removal
- hosting an annual girls and science workshop that includes students from the surrounding community
- offering enrichment classes on classes after school and during the summer

Describe the innovative practices and/or partnerships the school promotes and participates in to support environmental and sustainability education.

As outlined previously, we have partnerships with Clear Intentions (glass recycling), Terracycling (packaging recycling), Carson Nature Center, Chatfield Audubon Society, The Wildlife Sanctuary, Slow Food Denver, and the City of Littleton (park clean up and maintenance).

Describe how, and to what degree, the district's environmental and sustainability education efforts have shown growth in academic achievement among students over time. Include data as applicable.

We do not have data that charts our students' academic progress in relation to environmental and sustainability efforts. However, we believe that the hands-on, inquiry-based learning that we provide around the environment and sustainability is directly connected with our students' high achievement in science, mathematics and writing. Our graduates typically place into higher-level or honors high school classes in these areas. More importantly, we are confident that we are nurturing thoughtful, informed, committed students who are environmentally aware and will continue to make a difference in their communities.