



## Champlin-Brooklyn Park Academy Math Garden

**A Unique Lesson the Entire School Enjoys**



*Anoka-Hennepin School District*

A large, round garden outside Champlin-Brooklyn Park Academy for Math and Environmental Science (CBPA) offers more than meets the eye.

Sure, it's beautiful — this year the garden features five different flower types, including petunias, dahlias, marigolds, geraniums, and begonias. But it's also a year-long project and something that Melissa Sloneker's fifth-grade transition math students get excited for almost as soon as the school year begins.

"It's a school tradition, and the incoming transition math kids know it's coming and get excited for it," she said.

The garden itself is actually a great big pie chart — and it's something that Sloneker's transition math class, which usually comprises of about 25 fifth graders every year, plan and plant themselves.

"It's part data project, part math project, part Junior Master Gardener program project, and part environmental science project. 'It's also really fun!'"

part math project, part Junior Master Gardener program project, and part environmental science project. "It's also really fun," Sloneker said.

For example, last year, petunias earned 44 percent of the student-vote, so the pie-section of petunias in the garden reflected that. It was the biggest section. Meanwhile marigolds earned just eight percent of the vote, so the marigold section of the garden is much smaller.

"The end result is so beautiful," Sloneker said. "And it's so fun to see it actually blooming — you can see the popular votes and what the kids in school liked."

The project actually takes all year, Sloneker said. While the planting of the garden occurs in the spring, a lot of other work

What's interesting is it reflects the preferences of the entire school, which makes it a whole-school experience. In the spring, Sloneker's transition math students will have CBPA's student-population fill out a survey asking them to pick their favorite flower from a list of five. Once completed, the results are compiled, and a pie chart created. The garden is that chart.

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part math project, part Junior Master Gardener program project, and part environmental science project. "It's also really fun," Sloneker said.

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## The Tomatosphere Project Stevenson First Graders Help Grow Future Space Food

*Fridley Public Schools*

Stevenson Elementary 1st graders are helping NASA astronauts maintain a healthy diet for their future space travels. The students are collecting data as part of the Tomatosphere project, a program that offers students the opportunity to learn from "space" tomato seeds right here on Earth. Through the project, students use scientific processes to learn about plants in space, reinforcing their inquiry and exploration skills.

The project's purpose is to gather information about the effect that spaceflight has on seeds. To better understand how plant seeds react to microgravity, tomato seeds were sent on a 37-day round-trip to the International Space Station (ISS). These seeds were then distributed to classrooms across the U.S. and Canada for a blind-study where students compare "space" tomato seeds to seeds that never left the Earth.

Stevenson 1st grade teacher Breana Kalal said the project fits perfectly into the International Baccalaureate (IB) Primary Years Programme (PYP) unit "How the



"I believe that any time you give students hands on learning where they get to touch, explore, investigate and inquire, the learning really takes hold. We try to incorporate student-led inquiry into all subject areas to create rich learning environments that students are passionate about."

— Breana Kalal  
Stevenson Elementary

World Works," which focuses on how plants and animals grow and change in predictable ways through life cycles.

"The Tomatosphere project provides us a fantastic opportunity to talk about how environment can impact life cycles," said

Kalal. "It raises the question: can exposure to space and lack of gravity cause the predictability of the plant life cycle to change? And if it does, how so? We can accurately predict how things here on Earth work but do they work the same in space?"

Kalal added that the students enjoy the project because of the "hands on" experience.

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- March 23, 2019  
Junior Visit Day Open House
- April 2, 2019  
Culinary Skills Challenge @ SMSU

## Horizon West Students Compare Growing Methods With Service-Learning Project



Moorhead Area Public Schools

A sixth-grade group at Horizon Middle School West Campus explored variables in science by comparing hydroponic tower gardening to traditional gardening, documenting data for both growing methods.

“What sprouted this idea for us was

reading an article that discussed the importance of eating fresh produce and the issues that come with limited growing space in cities, especially for those who live in apartments,” Cook said. “We were presented with an opportunity to tie in the experimental design process along with learning about the future of hydroponics.”

Students in Ondrea Cook’s classes each grew a plant hydroponically in a tower garden and grew a plant in soil.

The hands-on project incorporated science, mathematics and language arts. The students began by reading articles that explained the problem with some cities running out of space for families to grow their own food, Cook said. Students then researched hydroponics,

including the types of plants that could be planted and things to expect while taking care of plants.

“Once we were finished with the majority of our research, we set up a Google Doc that served as their lab journal,” Cook said.

The students designed the experiment and

kept track of questions they wanted to answer throughout the project, she said. They also documented their data, observations and photos of their plants multiple times each week.

“We calculated the amount water both types of growing methods were using as well as the amount of space needed to grow the plants hydroponically compared to the amount of land they would need to grow,” Cook said.

Throughout the project, data was analyzed and the students discussed the experiment.

“Many students grew fond of checking on their plants and were excited to see the progress that was made,” Cook said. “The most exciting part of this project for the students was harvesting and eating their very own produce. The students made green fruit smoothies, pesto and salads with their food.”

After sampling food they had grown, the students were asked how they could use this project to serve others in the school and outside of school. They ended up bagging up a variety

of greens and delivering them to teachers in the school.

“Many students also asked to take home their plant,” Cook said. “They were excited to share their knowledge with their families in hopes to start family gardens.”

At the end of the service-learning project, the students reflected on their successes and challenges.

“We discussed how we were able to start with a few plants in our school and have enough plants to

grow produce for our team of 100 and supply produce for teachers around the building,” Cook said. “We also talked about how we can be the change that our community needs and it just takes one person at a time to start a new trend or concept to help.”

The hands-on project incorporated science, mathematics and language arts. The students began by reading articles that explained the problem with some cities running out of space for families to grow their own food. Students then researched hydroponics, including the types of plants that could be planted and things to expect while taking care of plants.

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## From the Blog

[teachingtodayMN.wordpress.com](http://teachingtodayMN.wordpress.com)

### U.S. Department of Education Green Ribbon Schools Applications

The Minnesota Department of Education (MDE), in cooperation with the Minnesota Office of Higher Education, nominates candidates based on an application process. The timeline includes the availability of the application in early September, submission deadline of January 2019, and announcement of the award in May or June.

### A Workshop for High School Teachers

*Climate Crisis: Implementing Solutions*  
 Saturday December 1, 2018

The purpose of this workshop is to disseminate this free-to-use material and thereby encourage high school teachers and academic administrators statewide to implement these courses at their own schools, colleges and universities.

## Champlin-Brooklyn Park Academy Math Garden Continued from Page 1

takes place almost as soon as school starts the fall before, from cleaning the garden in the fall, to tending to it in the spring to prepare for planting, work and lessons occur long before students even know the kinds of flowers they'll be planting in the spring.

"The kids — they work so hard," Sloneker said. "They're getting shovels and they're cleaning and picking up after themselves and developing the skills to get a job done. That's on top of the (math and environmental science lessons). It's great to see."

Sloneker has been doing the garden for a few years. It was originally something Karen DeLaForest did at the school with the transition math class before moving to teach math at Oak View Middle School in Andover. "It was such a wonderful and unique idea, I had to keep it going," Sloneker said.

Transition math is a course for fifth graders who learn a condensed fifth-grade curriculum and move on to sixth-grade math standards during the same school year. "They're skipping ahead a little," Sloneker said.

And the kids use those math skills to pull off the garden. There are math concepts like geometry square-footage, the diameter of circles, and percentages, and that's coupled with data analysis and learning about budgets

(flowers cost money), and that's in addition to the gardening skills the students learn through the Junior Master Gardener program at the school. "It's intense and big," Sloneker said.

The flowers that the kids pick to be voted on change every year, and Sloneker leaves it up to them. The flowers just need to be annuals and need to fit certain specifications, like sunlight and soil needs.

"They really just take it on themselves," she said. "I give them all a Burpee Seed Catalog and they pick the flowers that are included in the school survey."

The only downside is that the garden doesn't really blossom into its full beauty until long after students are out of school for the summer. By then the fifth-graders who planted it are on their way to being sixth graders at Jackson Middle School.

"They don't get to see it in its full fruition," she said. "Unless they come for a visit to see it. But it's great. Everyone should come out and see it."

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## The Tomatosphere Project at Stevenson Elementary Continued from Page 1

"I believe that any time you give students hands on learning where they get to touch, explore, investigate and inquire, the learning really takes hold," she said. "We try to incorporate student-led inquiry into all subject areas to create rich learning environments that students are passionate about."

Prior to the Tomatosphere project, first grade students learned about space exploration. Kalal said students enjoyed learning about how astronauts eat in space and how many foods are dehydrated and rehydrated before eaten. Topics students learned included: the cost of sending food and supplies up in space; the length of time that fresh food items last; how long astronauts are on missions; and how being in space affects human health.

The Tomatosphere project started in Stevenson 1st grade classrooms in early May. The 1st graders were observing, com-



paring, and recording information about the rate of growth of the tomato plants. The study continued through the 6-week Outdoor Adventures summer school class that is open to all district elementary school students.

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# Gatewood Students Win the Innovative Garden of the Year Award

*This is the second year in a row the Gatewood garden has taken the top honor at the Minnesota Schoolyard Garden Conference.*



*Hopkins Public Schools*

What do you do when your garden is too cold to cultivate in the winter? You warm it up, of course. That is exactly what Gatewood Kids & Company students learned while building a solar panel.

The students and their Kids & Company supervisor, Kara Wattunen, submitted their functioning solar recycled panel design to the Innovative Problem Solving Showcase and took home the top award – the Innovative Garden of the Year. They were presented with the honor at the Minnesota Schoolyard Garden Conference, which was held at the Landscape Arboretum in Chaska, Minn. on March 3.

The idea to build a solar panel came from something simple: looking outside. Kara Wattunen, Gatewood Kids & Company supervisor and outdoor enthusiast, challenges her students to be problem solvers. When they began to think of ways to grow their love of gardening well into the winter months, they wanted

to go solar.

“We started to think of ways of how to warm up the garden outside all year long,” Wattunen said. “We had built ‘trash bag green houses’ last year out of PVC pipes and school trash bags. So working with the ideas of the past, we knew we had to create a heating element.”

But a traditional heater near trash bags, Wattunen said, wouldn’t be very safe. Students had to think outside of the box, and an idea from one of her fourth-grade students to build a solar panel was the perfect solution. It had to be budget friendly and resource friendly. Wattunen said her students researched materials, looked up how others created simple solar panels, and put together a plan.

“We began to look for a storm door to use as the front glass,” she said. “We knew we also needed a small bit of insulation, as well as a lot of cans. After finding a door and having families bring in their recycling, we had enough recycled materials to go forward and construct



the panel.”

The cost was minimal, as the only item Wattunen needed to purchase was a few two-by-four pieces of plywood. To create the heat collection element, students created tower structures out of the cans and spray painted them black to absorb heat. The box was constructed using plywood and the storm door was sealed to the wood. Once enough towers were built, they were assembled in the box.

“We also drilled a hole in the top of the box,” Wattunen said. “This is where we are attaching a hose, so that when the box fills with heat, it will rise and only escape through the hose, which will be inserted into our ‘trash bag greenhouses.’”

This STEM-focused project is teaching students about green technology and showing them how easy it can be to reduce their own carbon footprints.

“In our room, this is just another fun project that happens to be geared at sustainability,” Wattunen said. “It shows them that

there can be many different avenues to help the environment in addition to just going and picking up garbage. They see the same everyday items and realize that each thing in life has much more than just a one-time use.”

This is the second year in a row that Gatewood has earned the top award. Last year, their recycled hydroponic garden also won in the same category.



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# Blooming Heights Grows with Successful College Internship Program



## Columbia Heights Public Schools

Programming offered as a part of the Blooming Heights Edible Schoolyard & Outdoor Classroom expanded beyond the classroom this past summer when it welcomed two college interns.

Katrina Mraz and Marlee Yost-Wolff served as this year's interns splitting their time between regular Blooming Heights programming and special projects.

"The Blooming Heights college internship is designed to provide interns with experiences working in urban agriculture education and give them a chance to shape Blooming Heights programs with their own unique ideas and experiences," said Agriculture Specialist Maya Lemon who oversees the two college interns.

Mraz was initially drawn to the program by the opportunity to work with and teach a diverse range of students about topics such as nutrition and the environment. "This program has brought me a love for teaching because I get to see how excited the students are to learn and work in the garden," she said. "Many students wouldn't try the dishes we cook in any other setting. However, being part of the process from harvesting to cooking the fruits and vegetables opens their minds to trying these healthy dishes."

Yost-Wolff cited deeper understanding as a favorite part of her experience. "I've enjoyed gaining a better understanding of our food systems through research, garden work and observing my coworkers teach -- I learned so much from them," said Yost-Wolff. "I feel more confident preparing outdoor education lessons, communicating with students of different ages, and working in [a] garden."

"It has been such a privilege to work for this program and help foster curiosity for healthy eating and our environment," said Mraz.

"Our hope is that our interns leave this experience with a deeper understanding of the value of school garden programs and the experience to do this kind of work in the future. Interns will leave behind improved curriculum and infrastructure," said Lemon, who noted they hope to continue to offer summer college internships in the coming years.

## About the Blooming Heights Edible Schoolyard & Outdoor Classroom

Since its inception, the Blooming Heights Edible Schoolyard & Outdoor Classroom has offered unique programming within Columbia Heights Public Schools. Over the past two years, staff has worked diligently with the guidance of students, teachers, administrators and community members to craft a mission statement for Blooming Heights that will reflect and guide the strengths of this program.

The intentionality of the Blooming Heights mission and guiding principles have allowed the program to refine its assessments to align with these values and to measure program outcomes more deliberately. Blooming Heights stands out as an example of the kind of innovative programming made possible with the support of administrators, teachers, families, students and School Board members.

"The Blooming Heights mission and guiding principles strive to embody the last eight years of work and to plant seeds to grow future projects and leaders within Columbia Heights Public Schools and beyond," said Lemon.

### Mission

Blooming Heights is a Columbia Heights Public Schools program that uses school garden and nutrition programming to facilitate equitable experiences that engage all the senses, while building the skills and knowledge necessary for cultivating a healthy life and planet.

### Guiding Principles

- We are committed to hands-on teaching and learning that highlights beauty, wonder and joy, and encourages positive risk taking.
- We facilitate interactions with the natural world that value both individuality and mutuality.
- We provide professional development and support to educators involved in experiential education.
- We conduct practice-based nutrition curriculum built on the belief that healthy food should taste good and connect eaters to the earth.

- We teach garden skills and knowledge as a lifelong means for self-advocacy and independence.
- We seek to center marginalized voices and to elevate leadership from all members of our community.
- We provide opportunities for personal and cultural connection with the land.
- We believe learning should feel relevant and urgent, inspiring questioning and curiosity.
- We offer multi-age and multi-discipline learning experiences that utilize techniques such as Social Emotional Learning and mindfulness as well as academic content.

### What Do We Grow?

We have both ground level garden beds and a number of raised beds for vegetables, fruits, flowers and herbs. In addition to the wide variety of annual vegetables (we had over 100 unique varieties in 2013) we also grow many perennial fruits: raspberries, blueberries, strawberries, hardy kiwi, junberries, honeyberries, gooseberries and currants (a student favorite!). There is a small orchard with apple, pear, cherry and plums trees, as well as a pergola with hardy grapevines.

### Who Uses The Garden?

Programming at Blooming Heights includes learners from all ages from the Early

Childhood Family Education program to students in grades K–12 and extending into adult enrichment classes. Students in our district start seeds in early spring using grow labs in their classrooms and transplant the seedlings outdoors before the end of the school year.

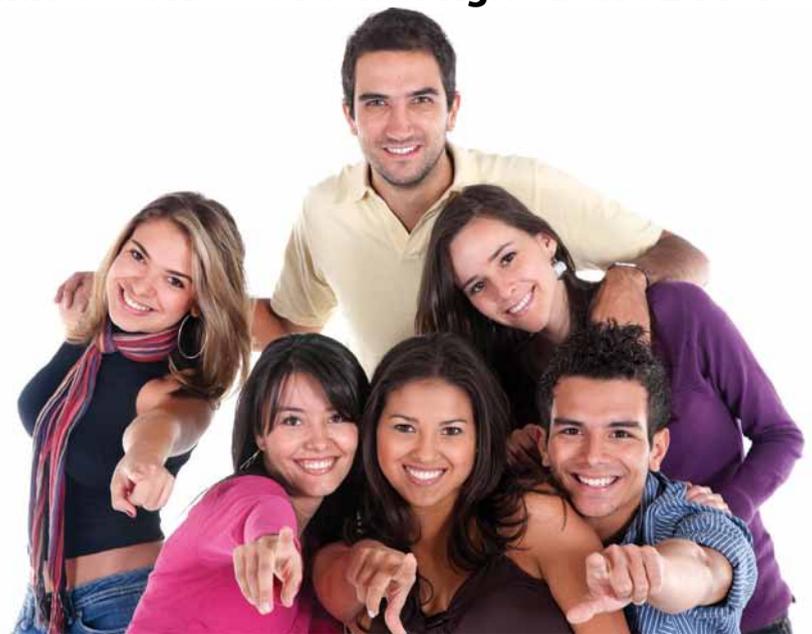
Student involvement is integral to the upkeep of the garden and they help with all planting, weeding, watering, and harvesting. During the summer, K–6th grade students in Adventure Club take most of the responsibility for tending the garden. In addition to planting, watering and weeding, they harvest fruits and vegetables for weekly cooking lessons and run a produce stand at a nearby farmer's market. Any produce that is not used for cooking or sold at the farmer's market is preserved for use by the Family and Consumer Science (FACS) classes during the school year or donated to the local food shelf.

For more information on Blooming Heights, including the internship program and volunteer opportunities, contact Lemon at [LemonM@colheights.k12.mn.us](mailto:LemonM@colheights.k12.mn.us) or 763.528.4508.

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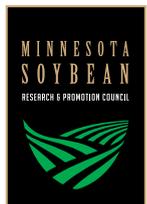
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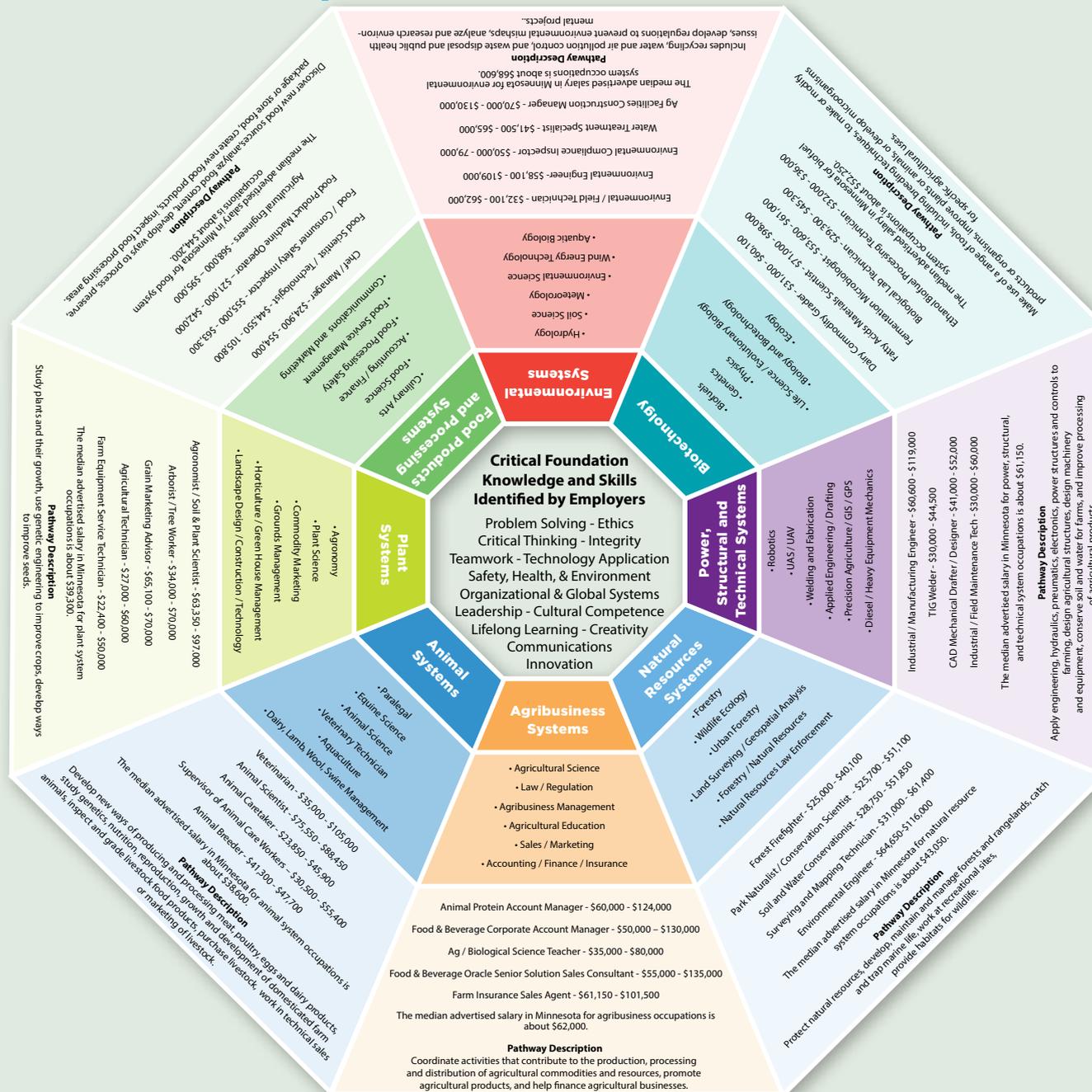


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## ACTE Announces Minnesota Agricultural Teacher as National Award Finalist

The Association for Career and Technical Education (ACTE) has announced Katie Crowley, Agricultural Education Teacher at the Academy for Science and Agriculture in Vadnais Heights, Minnesota, as the 2018



ACTE Region III New Teacher of the Year. This award recognizes new CTE teachers who have made significant contributions toward innovative and unique career and technical education programs and shown a professional commitment early in their careers.

In her fifth year as an agricultural education teacher at the Academy for Sciences and Agriculture (AFSA) in Vadnais Heights, Minnesota, Crowley teaches sequential courses in agriculture for students in grades seven through twelve. Utilizing the national agriculture, food and natural resources (AFNR) standards and consulting the Minnesota reading and science standards,

Crowley has developed engaging curriculum that encompasses a wide variety of learning activities.

Every student enrolled in Crowley's classes are required to complete a supervised agriculture experience (SAE), which counts for 20 percent of their final grade. To measure success and performance, she has developed scoring rubrics and project descriptions to guide and enhance student achievement, where students' experiences range from apiary to woodworking.

Crowley and her agricultural science colleagues mentor AFSA students—navigating them through the scientific and presentation process to support and promote learning—as they are required to complete an agriscience fair project every year.

Crowley is one of 5 finalists for the 2019 national title. The national winner will be announced at the ACTE Awards Banquet, a dinner and award presentation recognizing the best CTE educators in the country. The event will take place on Wednesday evening, November 28, during ACTE's CareerTech VISION 2018 in San Antonio, TX.

Source - *The Association for Career and Technical Education (ACTE) press release*

## About The Academy for Sciences & Agriculture



*Becky Meyer, Executive Director  
AFSA High School*

The Academy for Sciences & Agriculture was founded as a public charter school in 2001 by the Minnesota Agricultural Education Leadership Council (MAELC).

AFSA's mission is to engage all students in academically rigorous, student-

centered learning experiences and leadership opportunities within a science and agricultural context. All students in grades 7–12 are members of the local, state and national FFA Organization and all students are required to take Agricultural Education classes each year. To that end, AFSA specializes in courses

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# GREEN CONTESTS & GRANTS



## ecoTech Grants

The Captain Planet Foundation (CPF) is offering grants to support inquiry-based projects in science, technology, engineering, and mathematics (STEM) fields that leverage technology or use nature-based designs to address environmental problems in local communities. Ideal projects are youth-led, project-based, and integrate technology to address an environmental problem that results in real, demonstrable environmental outcomes. The foundation does not provide funding for applications that simply add iPads, tablets, or other smart devices to a project. Preference is given to requests that have secured matching or in-kind funding.

Grants up to \$2,500 are awarded.

**Deadline:** Applications are accepted July 16 through January 15 and January 16 through July 15, annually.

**Website:** [captainplanetfoundation.org/grants/ecotech](http://captainplanetfoundation.org/grants/ecotech)

## eco-Solution Grants

The Captain Planet Foundation (CPF) awards ecoSolution Grants to support solution-oriented, youth-led projects that result in real environmental outcomes. Projects must be

solution-oriented, project-based, performed by youth, and have real environmental outcomes. Eligible applicants include nonprofit organizations and schools with an annual operating budget of less than \$3 million. Grants support the purchase of materials and other expenses required to implement the project. Preference is given to projects that have secured matching or in-kind funding. Applications must be submitted online.

Awards range from \$500 to \$2,500.

**Deadline:** Applications are accepted January 16 through July 15 and July 16 through January 15, annually.

**Website:** [captainplanetfoundation.org/grants/ecosolution](http://captainplanetfoundation.org/grants/ecosolution)

## U.S. Department of Education Green Ribbon Schools Applications

The Green Ribbon Schools Award from the U.S. Department of Education honors schools, districts and higher education institutions that save energy and reduce operating costs, create environmentally friendly learning spaces, promote student health, and incorporate environmental sustainability into the curriculum. Awardees receive a plaque for the school, local recognition, and an invitation to the national ceremony in Washington, D.C.

The Minnesota Department of Education (MDE), in cooperation with the Minnesota Office of Higher Education, nominates candidates based on an application process. The timeline includes the availability of the application in early September, submission deadline of January 2019, and announcement of the award in May or June. For further information, contact John C. Olson [mde.academic-standards@state.mn.us](mailto:mde.academic-standards@state.mn.us) 651-582-8673

**Website:** [education.mn.gov/MDE/dse/stds/sci/grn/](http://education.mn.gov/MDE/dse/stds/sci/grn/)

## World of 7 Billion Video Contest

Back by popular demand, the World of 7 Billion student video contest helps you bring technology and creativity into your middle and high school classes. The contest challenges students to create a short video connecting world population growth to one of three global challenges: preserving biodiversity, sustainable resource use, or human rights. Students can win cash prizes (featuring 80+ new prizes this year!), and participating teachers will receive free curriculum resources.

**Deadline:** February 28th, 2019.

**Website:** [www.worldof7billion.org](http://www.worldof7billion.org)

## Goddard Prize for Environmental Conservancy

The New Leaders Initiative, a program dedicated to identifying, supporting and sustaining young environmental leaders is honored to administer the Goddard Prize for Environmental Conservancy. The Goddard Prize will be awarded multiple times a year to enterprising young people who are pursuing environmental projects, and who are looking for funding to bring their ideas to the next level.

**Deadline:** Applications accepted on a rolling basis.

**Website:** [tinyurl.com/ydec7nu8](http://tinyurl.com/ydec7nu8)

## YSA Everyday Young Hero Award & Grant

Everyday Young Heroes are young people, ages 5-25, who are improving their communities through service to others and making significant progress in achieving the UN's Sustainable Development Goals. Each week, the YSA Team selects one young person to receive this honor.

The young person and their nominator are notified via email upon being selected as an Everyday Young Hero. The Hero receives a congratulatory letter, a certificate of recognition, and is highlighted in YSA's newsletter and on social media, raising the profile of his or her good work.

This year, thanks to generous support from Newman's Own Foundation, YSA will also select 12 winners — one per month — to receive \$250 grants to continue and expand their project.

**Deadline:** Nominations are accepted on an ongoing basis.

**Website:** [ysa.org/awards/eyh](http://ysa.org/awards/eyh)

## John Muir Youth Award

The John Muir Youth Award aims to encourage people to not just learn about, but to become involved in conservation and the protection of wilderness and biological diversity. It accomplishes this aim through a five-step discovery process to explore, enjoy, study and celebrate wild landscapes and wildlife.

The John Muir Youth Award program is non-competitive, educational, and fun! Every student successfully concluding the criteria for the award, as approved by their teachers or other youth leaders and the Sierra Club John Muir Education Committee, will be sent a certificate recognizing their accomplishment from the Sierra Club. The real reward, however, is the opportunity to learn more about wilderness and a "wilderness hero" who still captures the hearts of millions of people in America and around the world!

**Website:** [vault.sierraclub.org/john\\_muir\\_exhibit/default.aspx](http://vault.sierraclub.org/john_muir_exhibit/default.aspx)

## About The Academy for Sciences & Agriculture Continued from Page 8

offered in the areas of Plant Science, Food Science, Animal Science, Environmental Science, Leadership, and courses in Power, Structure, and Technical Programs such as Engineering and Metals and Welding. AFSA Ag instructors also teach two 4 credit college courses: Animal Science and Plant Propagation.

Students are exposed to a wide variety of content areas and unique experiences with hands on and practical learning applications such as Supervised Agricultural Experience Programs which afford all students the motivation to conduct a learning activity that is relevant to their goals. This differentiated approach allows any student to be innovative, progressively thinking, and invested in their learning experience. As an example, AFSA's rooftop boasts about a dozen raised planters, all built by the Construction classes, and the school's landscaping is done by the Landscaping class. Floriculture class makes

the boutonnieres and centerpieces for special events.

One of the great things about AFSA is the state-of-the-art 2000 square foot greenhouse that is located on the school grounds. Like many FFA programs and school greenhouses, AFSA holds an Annual plant sale every spring around Mother's Day Weekend. Plants sown and grown by students are sold to the public as a fundraiser for the AFSA FFA Chapter. What is very unique about AFSA's greenhouse is the custom-built hydroponic vegetable production system that it houses.

AFSA's Greenhouse has two separate hydroponic systems; one system is for growing lettuce and other is for growing cucumbers, green beans, and tomatoes. The hydroponic system can produce over 750 heads of lettuce and up to 54 cucumber, green bean, and tomato plants at a time. All of the produce is sold to the school lunch program. There is a lot of buy-in from AFSA students

with the hydroponic system, because students are able to grow, harvest, and consume the produce from it. AFSA's greenhouse acts as a learning laboratory, where suburban students are able to study hydroponic food production.

Our signature event is the National FFA Science Fair. All students in grades 5-12 are required to complete an original science fair project each year. The high school hosts two judging events, where up to 40 judges from local businesses, community organizations and universities volunteer to work with the students. Over 250 projects are judged, each project meets with three different judges, and an average score is calculated. Students who score in the top of their categories move on to state competition.

Our local FFA Alumni coordinates a Potato Hug which, not only serves as a fundraiser, but it is primarily a chance for students to sell wares that they have pro-

duced during their Supervised Agricultural Experience program (SAE) and truly experience being an entrepreneur. Students work on various projects including beekeeping, woodworking, home baked foods, and other DIY projects.

Over one third of AFSA graduates go one to post-secondary training in an agriculture related field. AFSA's purpose is to provide agricultural literacy for urban and suburban students, letting them know about careers they may not have learned about at any other school in the metro area. AFSA's students are prepared to move into training and careers in the science, business and technology of agriculture.

[www.afsahighschool.com](http://www.afsahighschool.com)  
(651) 209-3910



# Environmental Club Spends Summer Working to Bring Solar Power to Edina High School



Members of Edina High School's Project Earth club gather for a fundraiser July 15. The club is raising money for a solar panel array that they want to install at the high school.

*Andrew Wig, Sun Current*

Edina High School's Project Earth club has embarked on a fundraising campaign aimed at capturing the power of the sun for Edina High School.

The environmental club had its first major fundraising event for the project at a member's home July 15, with an ultimate goal of raising \$17,000 to \$20,000 for a 12-panel array that would be mounted on a pole near the high school parking lot, according to Club President Natalie Swanson, who will be a senior when school is back in session.

The idea was hatched last fall as a club project.

"We kind of latched onto it, and we've been really excited about it ever since," Swanson said.

The club acknowledges one 12-panel solar array won't make a big impact in the

school's electricity budget, but the project's main focus is to teach.

"It's more of an education piece, definitely," club member CC Orth said.

The array could be used as a teaching device in science, math and engineering classes, Swanson noted. She added that the panels will be visible from the classroom of Project Lead the Way, a hands-on engineering class at the high school.

But beyond the school, Project Earth sees the panels as an educational tool for the community at large.

The goal, Swanson said, is to get people interested in clean energy, "and how we can change the way we think about the energy we use."

In particular, the club hopes the solar panels will open residents' eyes to the potential of renewable energy in their own homes. That doesn't have to mean installing equip-

ment, club members point out.

Options include collective community solar programs in which multiple households receive solar power from a single source. Another shared program available to Edina residents is Windsource, in which customers sign up to derive some or all of their energy from renewables.

To be mounted on a rotating axis, the array planned by Project Earth uses light-sensing technology to follow the sun throughout the day, producing up to 40 percent more power than a fixed array, according to the club.

To help bring that technology to Edina High School, Orth contacted local businesses to solicit donations for the silent auction at the July 15 fundraiser. In general, she says, the responses she gets are positive.

"Usually they think it's pretty cool," she said.

But the realities of cold-calling remain. "Sometimes they don't answer."

With the fundraising goal still in the distance, the club is telling donors that the solar array isn't yet a sure thing, but that their money will fund other Project Earth

endeavors if the panels don't ultimately get installed.

"We have a lot of other projects that could incorporate renewable energy or other sustainability initiatives," Swanson said.

Project Earth is taking donations at bit.ly/donateprojectearth.

While the project isn't yet a slam dunk, Swanson brings a sunny outlook to the endeavor, a mindset that is the reason she joined Project Earth in the first place.

"I think it came from a place of optimism," she said, "because I'm optimistic we can use our voices to make a difference and create a more sustainable future."

She continued, "This is the thing that I think young people in Edina should be trying to make a difference about."

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[www.edinaschools.org](http://www.edinaschools.org)

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# North Park Elementary School Awarded a Green Ribbon

## Blooming to Great Heights in Every Pillar



### Columbia Heights Public School District

North Park Elementary School, in the Columbia Heights Public School District, has been on an environmental stewardship journey to reduce its environmental impact and operational costs for many years. Its dedicated staff and students have committed to creating a learning environment that reduces impact on the environment, improves student and staff health, and provides effective environmental and sustainability education.

Approximately 20 years ago, North Park's green journey began when the building organized all school paper recycling in each classroom and office area. North Park's mission to help the environment went a step further when the school district joined a program called Schools for Energy Efficiency

(SEE). North Park led the district in reducing their operation cost of energy by educating staff and students on ways to reduce energy usage. North Park Elementary reduced its energy use by nearly 10 percent, and was recognized in the top 25 percent in the nation for efficient operations with an ENERGY STAR rating of 92. While participating with SEE, the school installed light motion sensors to ensure that lights would automatically turn off when there is no motion detected within a 10-minute period.

North Park's awareness and commitment to the environment continues to grow each year. To complement the North Park school recycling program and energy conservation efforts, the school implemented a cafeteria composting program in 2012. Along with all food scraps, students and staff also compost

paper towels from the restrooms. Due to the success of this environmental program, North Park received an award from Anoka County Board of Commissioners for an innovative recycling and composting program that has reduced overall landfill waste by over 90 percent.

In 2013, North Park's third grade project-based learning approach helped students develop plans to transform an idle weed-infested courtyard into an engaging all school edible garden. Within a year, a team of dedicated staff members wrote several grants and created a 1,800 square-foot garden active learning space over the summer. North Park's courtyard garden beds are made from composite recycled plastic. The soil brought in is organic, and the landscape fabric (weed block) under the wood chips is made from post-consumer plastic bottles.

Each grade level, as well as the developmental cognitive disabilities program, has its own raised bed. Throughout the garden, there are educational signs, several flip benches that quickly can be converted into tables, and a corner garden composting area. The garden also has a bench made from 1,000 plastic milk containers next to a wildflower pollination area.

Along with the courtyard garden, North Park students and staff have access to the district's Blooming Heights edible schoolyard and outdoor classroom. Columbia Heights Public Schools has a full-time agricultural specialist who provides instruction and resources to promote academic achievement and healthy nutrition for all students. The agricultural specialist also visits North Park on a regular basis to work with all students in the courtyard garden and in the classroom, with lessons focusing on nutrition, sustainable gardening, and the environment.

Organic matter created by worms in the school science lab is brought to the courtyard garden to enrich the soil. North Park also collects its gray water. Uncontaminated water from experiments, aquariums, crayfish bins, et cetera, is poured down a science lab table with a sink and collected in eight liter containers. This water is used to water indoor plants. These plants provide aesthetic beauty throughout the school and help provide cleaner air for students and staff. In addition, the Tower Garden, a vertical, aeroponic growing system, allows students to grow up to 28 vegetables, herbs, fruits, and flowers in less than three square feet. Throughout the school year, students can grow and eat produce right in the science lab.

Also in use in the science lab is an aquaponics aquarium that combines raising aquatic animals (fish) with hydroponics (cultivating plants in water). The natural fish waste fertilizes the plants, and the plants clean the water.



This is a perfect tool to teach closed systems and an excellent example of sustainable farming techniques. In addition, for all science units that require batteries, the lab only uses rechargeable batteries, eliminating waste and saving the school money.

Through several districtwide health improvement partnership grants from the state, students are served a fruit or vegetable snack three times a week, and enjoy a daily salad bar. The grant has also facilitated a Yoga Calm initiative, which has assisted many teachers in successfully redirecting student energy and helping students to gain a stronger ability to focus and demonstrate self-control.

Finally, the most recent addition to North Park has been one of the most exciting. The school now features a 60 kilowatt solar array system on its roof. One year of production is the equivalent of the offset of carbon dioxide emissions from burning 56,250 pounds of coal. During science classes, students often will climb to the top of the steep hill behind the school to look down on the solar panels, and discuss with their teacher the impressive power of the photovoltaic arrays harnessing the sun's energy.

North Park is committed to continuing its environmental stewardship journey and to creating a learning environment that improves student and staff health as well as provides effective environmental and sustainability education.

Source – The U.S. Department of Education



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Sources: U.S. Environmental Protection Agency (EPA), Harvard School of Public Health and National Institute of Environmental Health Sciences



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# River's Edge Academy Awarded a 2018 Green Ribbon

## *Boundless Experiential and Environmental Education Through Partnerships*



River's Edge Academy (REA) is an environmental charter high school in the Westside neighborhood of St. Paul, Minn. REA challenges students to discover their greatness by learning through experience in a small, supportive community. The school takes pride in its low student-to-staff ratio: REA caps enrollment at 80 students and has 16 full-time staff members. Fifty percent of students receive free or reduced-price lunch. REA demonstrates its commitment to environmental learning through conscientious use of the facility and ongoing reductions in resource use, as well as unique courses that incorporate environmental learning, the outdoors, and integrated health curriculum.

At REA, students and staff work together to use resources wisely and reduce environmental impact wherever possible. This is achieved through comprehensive monitoring of energy and water use on the B3 Benchmarking platform and ENERGY STAR Portfolio Manager, where the school is certified with a score of 82. REA has reduced electricity usage by installing more efficient light fixtures, installing motion sensor light switches, and by using LED task lighting in classrooms when possible. REA uses the Windsource program to receive 100 percent of its purchased energy from wind power. The school has programmed thermostats to turn down during off-peak times, put up insulating film on windows, and reduced the temperature of its water heater by 20°F.

The school has aerators on all faucets, and reports all leaks to the building owner within 24 hours to reduce the amount of water wasted. The school has cut the amount of waste sent to the landfill by initiating a compost collection and a thorough recycling program, working with Ramsey County to improve waste bin placement, signage, and

educational outreach. REA maintains these facility-wide environmental initiatives with the help of staff professional development and by posting student designed conservation signage around the school.

River's Edge provides reusable service ware for all meals. Students remove waste from the building and, before throwing it in the dumpster, they weigh each source of waste. This tangibly demonstrates increases and reductions in waste each day. REA works closely with its waste hauler, Republic, to recycle as many items as possible, including often-restricted items like plastic bags, shredded paper, and batteries. REA prioritizes building partnerships with organizations that have strong commitments to reducing waste. The school works with Patagonia to take in clothing that is slightly damaged or used beyond resale, and give this gear to students in need. If a computer is used beyond repair REA donates it to PCs for People

Beyond the facility, REA encourages the use of public transportation by being in close proximity to the downtown transit hub, to and from which it provides a free shuttle. REA aims to make it easy for students to bike to school with a free bike share program and classes that teach bike safety.

River's Edge is committed to providing students with comprehensive health education, as well as a healthy environment in which to learn and work. In 2018, REA worked with the Minnesota Department of Health to monitor indoor air quality at the school. REA measured under all recommended allowable levels for common air contaminants and pollutants and met all standards for quality indoor environments.

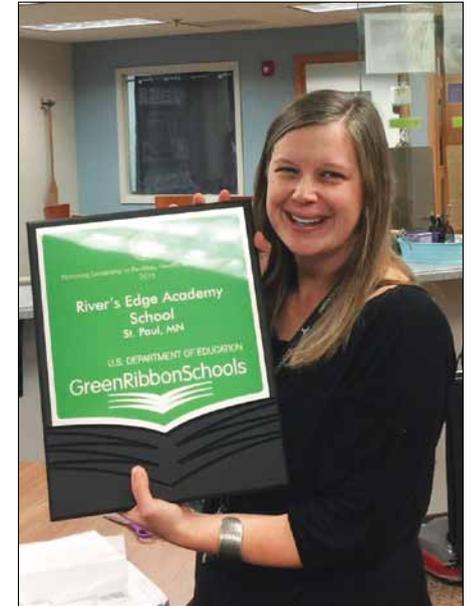
River's Edge is in an ideal location to make use of the outdoors as an educational and

recreational resource. REA's outdoor classroom includes a vegetable garden and chicken coop, and the school is located across the street from the Mississippi River and Harriet Island Park. REA works with partners like Voyageur Outward Bound School, Neighborhood House, Clinic 555, Family Tree Clinic, Face to Face, Planned Parenthood, and other local individuals to bring an array of physical, mental, and sexual health education options to students throughout the year.

One aspect that draws students to REA is a focus on experiential education, which includes a strong emphasis on environmental learning. A flagship REA program is a four-day, three-night hiking trip on the Superior Hiking Trail with Voyageur Outward Bound School. Students also partake in intensive courses twice a year, during which they are immersed in one class for two weeks. Many of these courses have an environmental theme, like fishing, boat building, gardening, and winter survival lessons. During one week each year, all content teachers work together to teach an interdisciplinary environmental unit—either about climate change or the Mississippi River—within and across their classes. For students, the purpose of all of these experiences is not only to gain a greater appreciation for the environment, but to also develop a strong sense of community, character, and leadership.

The school considers student-led environmental initiatives to be most effective. REA's GreenCorps leads students in initiating behavioral change at school through signage and student patrollers who encourage conservation. The outdoor classroom is furnished with student-built contributions, including a chicken coop, Adirondack chairs, gardens, and a Journey North citizen science tulip test garden. Through the Friends of the Mississippi River, REA adopted and cleans a mile of riverbank.

Through a partnership with Outward Bound, students attend an annual, one-week 10- to 20-mile hiking trip. They also partici-



pate in a week of urban expeditions, biking, rock climbing, canoeing, and a walking scavenger hunt. Students participate in winter activities at Harriet Island Park like sledding, snowshoeing, and winter survival lessons.

At the beginning of the year, each Crew (homeroom class) selects a service project site that they serve once a month throughout the year. These projects include a variety of sites, such as Youth Farm, Conservation Corps of Minnesota and Iowa, Friends of the Mississippi River, and Dodge Nature Center. Students represent REA at the local farmers' market on the west side of St. Paul, where they sell homemade products (bread, lip balm, bug repellent), as well as produce from the student-led garden and from other service projects.

Source – *The U.S. Department of Education*

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# Moreland Arts and Health Sciences Magnet School Awarded a Green Ribbon

## Solar Pride InSciEd a Sustainable District

School District 197

West St. Paul-Mendota Heights-Eagan Area Schools (District 197) is pleased to announce that Moreland Arts and Health Sciences Magnet Elementary School has been named a United States Department of Education Green Ribbon School for 2018.

Moreland Arts and Health Sciences Magnet School serves more than 383 students from the communities of Eagan, St. Paul, South St. Paul, West St. Paul and Mendota Heights, Minn. Moreland is fortunate to have a vibrant school community committed to cultivating creativity, healthy living, and achievement through active learning.

Last spring, Moreland flipped the switch on rooftop solar arrays estimated to save the school district nearly \$150,000 in electricity costs over the next 25 years. The project is expected to offset nearly 72,000 pounds of carbon dioxide emissions annually. The school district had zero upfront costs to install the solar array, and will pay lower electricity rates over the next 30 years or more. This solar project is in line with the entire district's aims to promote energy savings and reduce greenhouse gases, using low- or no-cost strategies. Moreland is excited to be the first school in

the district to have rooftop solar panels and is exploring ways to use the solar dashboard in the classroom. The dashboard displays daily solar energy production and avoided carbon dioxide emissions.

Moreland is committed to operating its building efficiently, and fully supports all of the initiatives of LIVEGREEN. LIVEGREEN is the district's own sustainability program, which promotes energy saving and recycling initiatives throughout all schools and offices. Moreland has a LIVEGREEN club consisting of third and fourth grade students and a teacher. The team helps implement low- or no-cost strategies to reduce energy use and promote recycling and composting, and focuses on conserving resources. LIVEGREEN goes beyond a standard energy reduction program by incorporating right-sizing waste streams, recycling, composting, green cleaners, diesel emissions reduction, paper reduction, behavioral changes, and engineering controls into its initiatives. Through conservation efforts, Moreland has avoided spending some \$4,100 in energy costs since 2008, even with 28 percent more students.

Last spring, led by its LIVEGREEN program and with assistance from University of Minnesota Extension master gardeners, a



pollinator-friendly plan was put into action. As a pollinator-friendly community, District 197 will minimize the use of insecticides and pesticides maintain existing and create new pollinator habitats, establish lawn mowing schedules that protect pollinators and promote pollination, and use native plants to support pollinators in landscaping, when possible. Lawn signs in designated areas explain to the community the pollinator-friendly practices. "Does the grass look longer? Our mowing schedule has been adjusted to protect and promote pollination. Welcome Pollinators!"

The school has replaced older full-size diesel powered special education buses with newer type 3 gas buses to reduce emissions and improve fuel mileage. Moreland also has partnered with Donaldson Corp to install doc mufflers and engine breather kits on all buses 2003 and older. The school requires positive bus registration from all students, which cuts down on unnecessary routing and saves fuel. Last year, Moreland added nine more propane-powered buses to bring the cleaner energy fleet to 10. Propane-powered buses reduce emissions and improve reliability during cold months.

Since 2009, Moreland has had single-stream recycling schoolwide and organics collection for lunchroom waste. To help students get it right at the bin, there are labels on every single bin. LIVEGREEN club events are scheduled throughout the school year, and include MOVEGREEN, Lower the Lights, LIVEGREEN Week, Earth Day, and a compost sale in the spring. LIVEGREEN is always looking for smart, green, and efficient practices to incorporate into the school. The LIVEGREEN club promotes recycling and composting, water waste reduction and energy conservation.

Two water bottle filling stations were installed at Moreland last year. These hydration stations deliver a clean water bottle fill

and enhance sustainability by minimizing dependency on disposable plastic water bottles. Teachers and staff also have easy access to a purified water system to fill water bottles.

Thanks to a generous grant from C. H. Robinson Worldwide, Inc. and the Let's Move Salad Bars to Schools initiative, Moreland operates a salad bar that features a variety of fruit, vegetable, whole grain, legume, and low-fat dairy options during breakfast and lunch.

All Moreland students participate in InSciEd Out curriculum modules throughout the year. The InSciEd Out program is a partnership with the University of Minnesota. Through the training they receive, teachers deliver hands-on science curriculum that excites students while meeting education standards. Teachers design and develop engaging curriculum and teaching techniques using real-life science experiments to drive student led research, inquiry, and engagement. Students learn how to ask questions and discover their own answers to prepare them for a science- and tech-focused world. Through the InSciEd Out curriculum, students create and share a poster highlighting the work and findings.

Moreland is the fifth school in District 197 to be named a Green Ribbon School, joining Pilot Knob STEM Magnet (2017), Henry Sibley High School (2016), Garlough Environmental Magnet (2012) and Heritage Environmental-STEM Magnet (2013). In addition, District 197 was named a Green Ribbon Schools District Sustainability awardee in 2015.

Source – The U.S. Department of Education and ISD 197

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# Jackson Middle School's Sarah Garrett Earns National Recognition from the U.S. Environmental Protection Agency



Anoka-Hennepin School District

Sarah Garrett, now in her 11th year as a science teacher at Jackson Middle School- A Specialty School for Math and Science (JMS), was recently honored by the U.S. Environmental Protection Agency (EPA) for her efforts in bringing environmental education into her classroom through hands-on, experiential approaches.

Garrett received honorable mention honors for the Presidential Innovation Award for Environmental Educators (PIAA) for EPA Region 5. The EPA recognizes teachers for activities including developing successful preschool, elementary, middle and high school environmental and outdoor education courses through various

methods throughout the school year.

"It was a heartfelt moment for me to be thought of by a colleague to submit my curriculum for this award," Garrett said. "I put in a lot of work towards this project and was honored to be chosen as the winner for Region 5."

Garrett uses a hands-on approach in the classroom with a focus on citizen science and experiential education concepts to make learning about the environment fun and relevant. She implemented a project in which students write investigable questions while learning the importance of pollinators and birds in the local ecosystem, as well as the water cycle and water quality issues.

"I think the hands-on approach makes it more memorable for students," Garrett said. "If I can have a student that I taught in eighth grade come back their senior year and talk about the memories made during lab, or trips, or have a student come back and tell me these projects helped them on a career path, I know that I am providing more useful experiences than just having them pass a test."

Her classes have had the opportunity to participate in several field trips each year, including visits to the Cedar Creek Ecosystem Science Reserve to learn about the history of the ecosystem and biodiversity while also working on tree identification skills. At the end of the school year,

students in her class select an organism of their choice and return to Cedar Creek to study it in collaboration with graduate students from the University of Minnesota.

"This piece of the project really opens up the students' eyes to what being a scientist really is," Garrett added when asked of the impact made on students getting to work with graduate students. "When they can go out and work with graduate students in the field, they see them as individuals just like themselves, not the scientists you learn about in a textbook. That helps them validate who they are and they can relate to those students in a way that you can't experience if I were to just bring speakers into the classroom."

Students in Garrett's class have also had the opportunity to participate in valuable experiential learning opportunities, including touring the Minneapolis Drinking Water Treatment plant and the Elk River Wastewater Treatment plant to study the urban water cycle.

Garrett has also been influential in creating her school's environmental culture by promoting conservation concepts at JMS.

"The biggest student-led implementation of environmental issues always comes at the end of the school year where students conduct service projects and learn about water quality, ecosystems and climate change."

Other projects JMS students have been

instrumental in is the development of bat houses at a nearby park so bats have a place to go, which also benefits the community, as bats are attracted to the designated area away from people's homes.

Another group of students was passionate about obtaining drinking fountains that fill reusable water containers to help reduce plastic waste. Students helped raise money for the purchase and installation of water stations that fill reusable containers that are still used today at JMS, according to Garrett.

Students have also grouped together to build a butterfly garden at JMS which is used every year in class to study plants and insects. Garrett added that two years ago, JMS students constructed a rain garden that takes parking lot runoff water and treats it naturally before going into natural waterways. With natural plants, this area has also become a popular spot for insects and birds on school grounds.

The EPA honored the award-winning educators and honorable mention recipients at a series of events in Washington, D.C. on Friday, Sept. 21.

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## Careers in Sustainability

### Electrical Engineering Technician

As power utilities transition to the use of more clean energy technologies, many technical professionals are getting the chance to contribute toward the green revolution. A lot of electrical engineering technicians now get to help design, install, test, and maintain renewable energy equipment for utilities and green manufacturers.

### Sustainability Specialist or Coordinator

In these roles, professionals often carry out or coordinate the general plans of sustainability managers. But in many cases, they get to design green campaigns and propose and manage plans of their own as they relate to reducing an organization's consumption of energy and resources or securing funding for various sustainability projects.

### Environmental Engineer

This type of engineering is all about coming up with solutions to problems that are related to air pollution, water contamination, waste disposal, soil degradation, and other environmental issues. For example, some environmental engineers have devised solutions like closed-loop sewage systems,

methane-capture systems in landfills, and improved recycling methods.

### Environmental Engineering Technician

Professionals in this role are typically involved in carrying out the plans that have been developed by environmental engineers. As part of their work, many of them collect environmental samples in order to test pollution levels. And some of them operate special equipment for cleaning up polluted settings or preventing pollution from occurring in the first place.

### Conservation Scientist

As someone who specializes in environmental science, you could play an important role in preserving, protecting, restoring, and managing natural resources. Your studies and observations could help companies or communities maintain adequate supplies of water, minerals, trees, and other resources for both current and future needs.

### Green Construction Manager

Knowing how to construct buildings with sustainable materials—and in a way that minimizes harm to the environment—is becoming an increasingly vital skill set. By specializing in this area of construction management, you could make a bigger difference than you might realize.

### Sustainability-Conscious Financial Advisor

Environmentally responsible investing enables people to put their money where their hearts are. But it can be challenging to navigate the financial world without the help of a knowledgeable advisor, especially when it comes to sustainable investment options. That's why financial advisors who specialize in green investments are often in high demand.

### Green Landscape Designer

Water conservation is a major issue in most regions, and it's growing more and more important every year. But many properties have landscapes that require huge quantities of water, which makes them unsustainable. So green landscape designers are needed to show communities and property owners that it's possible to have beautiful landscaping without water-hogging grass lawns or overly thirsty plants. In fact, xeriscaping (i.e., drought-tolerant landscaping) is becoming increasingly popular in a lot of regions.

### Atmospheric Scientist

As human-caused global warming continues to accelerate, climate and meteorological scientists are needed more than ever to

help study the problem and predict its impacts. Extreme weather represents only one of many aspects that need to be studied on an ongoing basis.

### Environmental Lawyer

It's an unfortunate reality: Some corporations and governments choose to ignore environmental regulations or try to hide the harm that their decisions have caused to people, animals, and the natural world. As a result, lawyers who specialize in ecological issues can assist in holding companies and leaders accountable for their irresponsible and damaging actions.

### Green Entrepreneur

Do you enjoy the excitement of taking risks and advocating for new and better solutions? By starting your own green business, you can help create a more sustainable world by selling services or products—such as locally grown organic food, as just one example—that solve environmental problems or that don't cause harm to the ecological systems we depend on. Salaries for green entrepreneurs vary greatly, but it's possible to make a terrific living.

# In Fridley, Students Learn How to be Good Neighbors to the Mississippi River

Emma Keiski, *Communications Intern  
Mississippi Watershed Management  
Organization*

Early this summer, a small army of students at Stevenson Elementary School mobilized to fill the school's new raingarden with plants. We captured the event in a time-lapse video; as you can see below, it was no small operation. In the course of a single day, more than 600 of the Fridley school's first- through sixth-graders planted 1,300 native plants (along with 200 hostas donated by staff and parents).

The event marked the school's annual "Day of Action" — part of its larger vision to encourage environmental stewardship at an early age through inquiry-based learning. It also culminated a months-long learning curriculum for the students, and a successful behind-the-scenes collaboration between several local partners.

Beginning last fall, Stevenson partnered with environmental educator Heidi Ferris to create a series of learning modules. The lessons asked students at all grade levels to consider what it means to be a good neighbor to our local waters. Over the spring semester, kindergartners learned about plants, first-graders explored the life cycle of pollinators, and fourth-graders learned about the water cycle. The MWMO awarded a Mini Grant for the project to help fund both the raingarden design and the educational lessons.

Stevenson has made great strides toward being a good neighbor to the Mississippi River, which flows less than 200 yards from the school's athletic field. In 2014, an MWMO-funded restoration project repaired an eroded ravine that was spilling sediment and other pollutants into the river's backwaters. When the school rebuilt its parking lot last year, it constructed a large raingarden to capture and treat its storm water runoff on site. Stevenson saw an opportunity to use the raingarden planting as a hands-on learning opportunity for the students.

This spring, while Ferris and the school conducted the lessons, the MWMO coordinated with the City of Fridley to make sure the raingarden was in working order for the planting. Staff from the MWMO's monitoring team used a device called an infiltrometer to test how quickly the raingarden could absorb water. They discovered that part of the raingarden was not performing to specifications — apparently the result of sand and silt that had accumulated during the course of the winter. To fix the problem, Fridley city staff removed several truckloads of excess material that was clogging the raingarden and preventing water from draining into the soil.

On the day of the raingarden planting, MWMO staff gave a short presentation to the students about how the raingarden would help filter pollutants from storm water runoff before it entered the river. We found the students well-



prepared. Thanks to the Growing Green Hearts curriculum, even the youngest participants were able to explain how water flows through local storm drains directly to the river.

After the presentation, the students rotated through a series of stations, making seed bombs, playing yard games that simulated pollination, and finally planting the raingarden. Six hundred students and 30 adult staff members and volunteers participated in the planting. Students reveled in the opportunity to get out of the classroom and get their hands dirty.

This raingarden also functions as the center of a turn-around to manage traffic as parents drop

off their children. The school plans to install interpretive signage detailing how the raingarden works, thus providing a daily reminder for Stevenson families of the school's commitment to inquiry-based learning, collaboration, and protecting the Mississippi River from pollution.

*Reprinted with permission from Mississippi Watershed Management Organization*

[www.fridley.k12.mn.us](http://www.fridley.k12.mn.us)  
(763) 502-5307



## A Workshop for High School Teachers

# Climate Crisis: Implementing Solutions

Saturday December 1, 2018

University of Minnesota, Minneapolis Campus



### Description:

At the University of Minnesota, we have developed a freshman-level course on "Climate Crisis: Implementing Solutions" along with an associated laboratory-course. The experiments in the laboratory course are developed with an eye towards keeping the cost of the experimental setups as low as possible. These two courses are described at [z.umn.edu/ee1701](http://z.umn.edu/ee1701). Together, they satisfy the requirement of Physical Sciences core which is highly valuable to students and therefore these courses have large student enrollments.

These courses can be taken without the prerequisite of high school physics. Therefore, they can be easily integrated into high school curriculum. If taught through the dual-credit concurrent-enrollment program, these courses satisfy the high school graduation requirements as well as transferring to UMN.

The purpose of this workshop is to disseminate this free-to-use material and thereby encourage high school teachers and academic administrators statewide to implement these courses at their own schools, colleges and universities.

### Workshop topics:

- Content of freshman courses EE1701/1703
- Teacher qualifications for offering these courses
- Hands-on experience of laboratory experiments

**Registration:** It is through [z.umn.edu/climateDec2018](http://z.umn.edu/climateDec2018) and the registration fee is only \$25/person; the registration deadline is November 23, 2018.

**Travel reimbursement** is available up to \$150 for teachers travelling more than 50 miles to this workshop.

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## Ham Lake Teacher Named Honoree in Outstanding Educator Program



Ruth Thom, a teacher at DaVinci Academy of Arts and Science, a public charter school in Ham Lake was surprised April 19 with news that she is a recipient of a 2018 WEM Outstanding Educator Award as an Academic Challenge Coach, an honor that is accompanied by a \$15,000 award.

Thom is being honored with an Academic

Challenge Coach Award, which recognizes teachers who are exemplary coaches of student teams that participate and compete in academic challenges approved by the Minnesota Academic League Council.

Thom has been teaching and coaching for 21 years and currently teaches advanced academics to elementary students at DaVinci Academy. In addition to teaching, Thom coaches Math Masters. Thom feels it is her job to challenge students with work that is beyond their comfort level, and to teach them the value of persistence in the face of difficulty. Math Masters is one opportunity for doing this. She recognizes the importance for gifted and talented students to face with problems that require effort and mental stimulation. Math Masters problems provide depth and complexity by demanding that students not only compute equations, but also analyze, synthesize, and evaluate information. These are the higher level thinking skills that will benefit students the rest of their lives.

"Prior to Ruth coming to DaVinci

Academy, we had a very skeletal program for advanced academics," shared academic director Terry Moffatt. "She has helped develop a comprehensive formal identification process, a pull-out program with expanded curriculum for students in grades 3-5 in reading and math, as well as creating an increased awareness by all staff about teaching gifted and talented students."

In addition to teaching and coaching, Thom has designed, developed, and coordinated district-wide gifted and talented programs and services for three different Minnesota school districts, and trained numerous teachers in identifying and meeting the needs of GT students.

"Through her work in advanced academics in our school, she can help children think critically while solving challenging problems," said a colleague. "She teaches them to continue trying to solve a challenge and to not give up when the solution is hard to find."

Educators are first nominated for the WEM Outstanding Educator Awards Program

by students, parents, colleagues or community members. Those who accept the nomination provide additional information for consideration by Synergy & Leadership Exchange and a blue ribbon selection panel, which reviews and ranks the nominees.

Synergy & Leadership Exchange is a non-profit organization dedicated to fostering collaboration to advance the development of ethical citizens, providing educational resources, and celebrating achievement and best practices in Minnesota schools, businesses and communities. For more information on the WEM Outstanding Educator Awards Program and Synergy & Leadership Exchange, visit: [www.synergyexchange.org](http://www.synergyexchange.org).

[davincicharterschool.org](http://davincicharterschool.org)  
(763) 754-6577

## Mapleton Educator Named Recipient of \$15,000 Award for Excellence



Melanie Urban, a teacher at Maple River High School in Maple River Public Schools, was surprised April 18 with the news that she is a recipient of a 2018 WEM Outstanding Educator Award for Ethics in Education, an honor that is accompanied by a \$15,000 award.

Urban is one of six educators being honored by the WEM Foundation and Synergy & Leadership Exchange for outstanding accomplishments and contributions to student learning. She is one of two recipients of the WEM Foundation's statewide Ethics in Education Award, which recognizes educators who embody ethical behavior and promote ethical development for students through classroom or school activities, policies or curriculum.

Urban has been teaching for 10 years and currently teaches high school social studies, government and economics at Maple River High School. While teaching the fundamentals are essential, Urban also wants to help students transition from high school government class knowledge to active participation in the American democracy. One of the ways

she helps students with this transition is by using an activity she created called the "Who Serves Me" project. Each student researches their legislators including stances that these politicians have on a variety of issues. Students are challenged to investigate how these specific issues impact their lives. Urban feels this activity provides students with the tools that they need to become an engaged citizen.

"Having met someone who truly believes and encourages me to be more than my mistakes in life made it that much easier to believe in myself," shared a student. "Mrs. Urban instilled in me the ability to believe I am more than what the negativity of life has to offer. Students are supposed to give teachers the apples, but it was really her who did the giving."

Outside of the classroom, Urban is the Student Council advisor, volleyball coach, senior class advisor, 6-12 PLC leader, and the student election judge training coordinator. "She is dedicated to not only educating in her classroom, but also educating and supporting students outside her classroom to become well-rounded citizens," said Laura Phillips, Dean of Students.

Educators are first nominated for the WEM Outstanding Educator Awards Program by students, parents, colleagues or community members. Those who accept the nomination provide additional information for consideration by Synergy & Leadership Exchange and a blue ribbon selection panel, which reviews and ranks the nominees.

Synergy & Leadership Exchange is a non-profit organization dedicated to fostering collaboration to advance the development of ethical citizens, providing educational resources, and celebrating achievement and best practices in Minnesota schools, businesses

and communities. For more information on the WEM Outstanding Educator Awards Program and Synergy & Leadership Exchange, visit: [www.synergyexchange.org](http://www.synergyexchange.org).

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## Maplewood Educator Named Recipient of \$15,000 Award for Excellence



Susanne Collins, a teacher from Edgerton Elementary in the Roseville Area School District, was surprised March 23 with the news that she is a recipient of a 2018 WEM Outstanding Educator Award for Teacher Achievement, an honor that is accompanied by a \$15,000 award.

Collins is one of six educators being honored by the WEM Foundation and Synergy & Leadership Exchange for outstanding accomplishments and contributions to student learning. She is one of two recipients of the Teacher Achievement Award, which recognizes exemplary teachers who support, inspire and assist students to attain greater learning as evidenced by

student achievement.

Collins has been teaching for 19 years and currently teaches sixth grade at Edgerton Elementary. Collins is a goal oriented educator. One of her major goals is to eliminate the achievement gap. She feels in order to do this, there must first be a change in the opportunity gap. She has spent endless hours writing grants as a way to obtain more technology for students. She uses technology to not only enhance curriculum but to expose students to computer science and coding. She wants to develop skills in her students that can grow and benefit them in the future.

“Every year Susanne’s students come in with a broad range of abilities and life experiences,” shares a colleague. “No matter how expansive the range is she differentiates her instruction to fit the needs of everyone in her room. She not only supports the students academically but also personally. She is constantly striving to make our school better and to give our students opportunities they otherwise would never have the chance to experience.”

Another initiative in Collins’ classroom is a weekly allowance of Collins Cash. Students have opportunities to go above and beyond expectations and earn

more Collins Cash by reading, blogging, and completing extra credit assignments. Students have to decide how they are going to spend the Collins Cash. They may use it to buy a snack or save their money for the Winter Break Auction to purchase presents for family members. They may also use the money to purchase free assignments or extra privileges in the classroom. Through opportunities presented to them through Collins Cash, they learn how to go above expectations and budget their money.

“Mrs. Collins is known for building positive relationships with our students who struggle behaviorally,” said Principal Melissa Sonnek. “They say that some students ask for love in the most unlovable ways yet she responds to students consistently with love. She works hard to connect with them, finding out their interests, and nurtures their hopes and dreams. She creates rapport and strong relationships.”

Educators are first nominated for the WEM Outstanding Educator Awards Program by students, parents, colleagues or community members. Those who accept the nomination provide additional information for consideration by Synergy & Leadership Exchange and a blue ribbon selection panel, which reviews and ranks the nominees.

Synergy & Leadership Exchange (Synergy) is a non-profit organization dedicated to fostering collaboration to advance the development of ethical citizens, providing educational resources, and celebrating achievement and best practices in Minnesota schools, businesses and communities. For more information on the WEM Outstanding Educator Awards Program and Synergy & Leadership Exchange, visit: [www.synergyexchange.org](http://www.synergyexchange.org).

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## U.S. Department of Education Recognizes Eight Minnesota Schools as 2018 National Blue Ribbon Schools



The U.S. Department of Education recognized eight Minnesota schools as National Blue Ribbon Schools for 2018, based on their overall academic excellence or progress in closing achievement gaps among student groups.

Schools are honored in one of two performance categories, based on all student scores, student group scores and graduation rates:

- Exemplary High Performing Schools are among the state's highest-performing schools as measured by state assessments.
- Exemplary Achievement Gap Closing Schools are among the state's highest-performing schools in closing achievement gaps between a school's student groups and all students over the past five years.

The recognized schools from Minnesota are:

- **Buffalo Lake-Hector-Stewart Elementary School**, Buffalo Lake-Hector-Stewart Schools
- **Canby Elementary School**, Canby Public Schools
- **Fertile-Beltrami Elementary School**, Fertile-Beltrami School District
- **Maple River East Elementary School**, Maple River Schools
- **Red Rock Central Secondary School**, Red Rock Central Public School District
- **School of Engineering and Arts**, Robbinsdale Area Schools
- **Vandyke Elementary School**, Greenway Public Schools
- **Wayzata Central Middle School**, Wayzata Public Schools

Now in its 36th year, the National Blue Ribbon Schools Program has recognized more than 8,800 schools in the country. On November 7 and 8, the U.S. Department of Education will celebrate with all honorees at an awards ceremony in Washington, D.C.

## Buffalo Lake-Hector-Stewart Elementary School is a 2018 Blue Ribbon School

*Buffalo Lake-Hector-Stewart Schools*

At Buffalo Lake-Hector-Stewart (BLHS) Public Schools, our belief is to center on student achievement.

BLHS Public School's mission is to focus on being a community partnership in learning, challenge all students to strive for excellence by utilizing effective methods, resources, and application experiences, and emphasize on individual student achievement to enable each to become productive members of an ever changing society.

BLHS encompasses three rural communities: Buffalo Lake (Pop. 740), Hector (Pop. 1051), Stewart (Pop. 525) and surrounding rural area. The main business of the area is farming, primarily sugar beets, corn, and soybeans. Most families are two-income earners, with the median yearly salary being at \$27,000. These communities are governed by an administrator-led council, with all members being voted upon by the public in their respective towns. The



communities of BLHS are proud of their Scandinavian heritage and their strong work ethic.

BLHS elementary was recognized as a Minnesota Reward School in 2014-15 and 2015-16. This designation is awarded to the top 15% of schools in Minnesota. The vision at BLHS elementary is to continue to build on our successes and to innovate our methods to achieve additional achievement increases of

**Continued on Page 21**

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## Canby Elementary School is a 2018 Blue Ribbon School

### Canby Public Schools

Canby Elementary is located in the southwest part of Minnesota approximately 30 miles from Marshall MN. Canby is primarily an agricultural community with approximately 1900 residents. Canby Elementary has 294 students that is being served at this time in grades K-6. Canby Elementary also serves 54 students enrolled in its Little Lancer Preschool program. Canby Elementary pulls students in from surrounding communities from Minnesota and South Dakota.

Canby Elementary has received the status of a Reward school in Minnesota for five years in a row until 2017 when the award was not given out as a transition year. Canby Elementary consistently scores 10%- 20% higher than the state average on the Minnesota Comprehensive Assessments (MCA) given in April. Canby Elementary has also decreased the achievement gap in Math by 50% which was Minnesota's goal by 2017. That responsibility has been carried by a dedicated teaching staff, students, parents, other members of the community, and administrative staff. Canby Elementary has an energetic staff that the students are excited and comfortable interacting with each other.

Canby Elementary has run a very successful preschool program which has just expanded to offer more choices. Currently the offerings include the two half-day program, three full-day program, and four full-day program. These offerings gives our parents' choice in programming and the amount of days suited for their student.

Canby Elementary has also been running all day every day kindergarten for over twenty years. Canby Elementary is on a curriculum review cycle in which we look at the state standards that are in place and compare them to each grade levels' curriculum maps. Our teachers are then able to align the standards in the classroom.

Canby Elementary is able to challenge and give extra supports to students in a variety of ways. Canby Elementary uses the Accelerated Reader and Accelerated Math program. By using this program, our students are challenged by working in libraries above his/her grade level. At the same time, our teachers can differentiate teaching by allowing students to work in other libraries. Canby Elementary runs a schoolwide Title I program. Therefore, Canby Elementary has a fully implemented Response to Intervention program (RTI) in grades Kindergarten through sixth grade in math and reading. Paraprofessionals are also used to help students reach their full potential by giving extra supports when needed. There is also a homework room offered to students after school that is staffed by paraprofessionals who work in the classroom. Physical education is offered everyday all year long for the students to have time to get proper exercise techniques. Art and music classes allows for our students to grow in all ways and not just in math and reading. Canby Elementary has a full time mental health professional at the school to help students that are struggling in life. She helps guide students to solutions and aids in working through those problems. She is also in the class-



Canby Elementary doing a DEAR reading. (Drop Everything And READ)

room guiding students on peer interactions and appropriate behavior. Teachers are assigned to different leadership committees ranging from curriculum areas to special event committees. Through participating on the curriculum committees the staff understands the importance of the curriculum that is chosen and take ownership in it. The faculty is also involved in Professional Learning Communities (PLC) to learn from other teachers and to share ideas to the staff about his/her classroom.

Canby Elementary looks at the students' test data from the year before and throughout the current year. We involve the students in goal

setting in order to push students to perform at their very best. We have created a culture in our school that everyone strives to exceed in every subject. Our staff and students have showed consistency in academic performance for the past several years. Our community is extremely proud of our school and it shows by the continued support from the community.

[www.canbymn.org](http://www.canbymn.org)  
(507) 223-2001

## Buffalo Lake-Hector-Stewart Elementary School is a 2018 Blue Ribbon School

### Continued from Page 20

5% in math and 5% in reading on state-wide proficiency tests. BLHS does this by evaluating, reflecting, and adapting best practices and professional collaboration, while searching for better student-centered outcomes.

Many other elementary staffs come to observe and connect professionally at BLHS. We are often imitated in what we do in relation to our PLC's, committees, and attention to detail and purpose in honing in on student outcomes. These practices did not come easily and are challenged every day by our 50% free and reduced student population, as well as our 20% Special Education population. Due to BLHS's rural setting, we also experience declining enrollment, resulting in less funding from the state, placing more reliance on local funding and grants. Fortunately, our school district's stakeholders have supported three operating levies over the past 5 years, allowing our students to enjoy a 17:1 student to teacher ratio, updated structures, and cutting-edge technology and curricula.

Notable accomplishments to date include:

Re-focused Professional Learning Communities (PLC's) and defined meeting times and outlines, which focus on purpose and achieve-

ment of our students. In these sessions, teachers and staff are challenged to reflect on their teaching methods and processes to identify best practices to create positive learning environments for achievement and to close achievement gaps of our three main subgroups: Special Education, English Language Learners, and Free/Reduced Lunch populations. All decisions are based on daily, classroom assessments, and normalized, district-wide testing. Based on this data, teachers have the flexibility to customize their teaching to better suit the needs of their students.

An updated, district developed mentor program allows for new teachers and staff to the district to learn our systems and curricula, understand our expectations, and to give positive pathways and feedback to support them to becoming master teachers. Our staff had been fairly veteran and BLHS experienced a number of retirements in a short period of time. To keep moving forward on our improvements and accomplishments, BLHS wanted to ensure success, methods, and curricula were duplicated and properly communicated with new incoming teachers and staff. Our locally developed mentor program allows us to do this by compiling many different sources and theories and

then adapt these to the expectations, beliefs, and vision of BLHS.

BLHS implemented Multi-tiered Systems of Support (MTSS) to address individual student needs and close achievement gaps. Twice a month, our Student Assessment Team and Child Study Groups meet to investigate and implement intervention strategies to assist our students in better achievement. This process has allowed teachers to take ownership in the teaching and learning process and develop methods to better meet the needs of our students PreK-5. An additional benefit is that it catches students that might be considered "at risk" of falling behind prior to the slide in achievement. Additionally, BLHS will be opening a learning center/daycare in the summer of 2018. This facility will house children in a daycare/learning center environment from ages 6 weeks through PreK. This facility will further enhance our MTSS processes and allow for better pathways to learning for our students. Since we are a Title I school, these funds can be utilized by teachers and paraprofessionals in providing the interventions and enrichments with the aforementioned tools in assisting BLHS close its achievement gaps and with a steady increase in overall test proficiency.

In maintaining a safe learning environment, BLHS has installed controlled entry systems based on voice and visual recognition, cameras in every hallway, and elevated personnel presence in the halls and buses. BLHS has a full-time social worker on staff who teaches weekly lessons on character and self-learning skills. Bullying prevention and identification lessons are taught during these times.

Lastly, devotion to low student:teacher ratios. Currently, BLHS provides a 17:1 student to teacher ratio. We departmentalize our upper elementary to allow for better teacher and student mastery. Additionally, our Special Education teachers co-teach with the regular classroom instructor when warranted.

In summary, BLHS elementary should be a National Blue Ribbon School because of its innovation, planning, and follow through, which drives the school's clarity of purpose in student-centered decisions and achievement.

[www.blhsd.org](http://www.blhsd.org)  
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## Five Schools Validated as 2018–2019 Minnesota Schools of Excellence



Five Elementary Schools have been validated as Minnesota Schools of Excellence by the Minnesota Elementary School Principals' Association (MESPA). This prestigious honor was awarded to the schools for their commitment to 21st century teaching and learning.

"Through the Minnesota School of Excellence program, grounded in national research on high-performing schools, MESPA has created the premier opportunity in the

state for validating greatness in a school community," said Jon Millerhagen, MESPA executive director. "This school improvement program examines the entire school community through six national standards, ensuring there is a holistic approach to creating a plan for future achievement and celebrating the unique accomplishments of each School of Excellence."

Sam Richardson, chair of the School of Excellence Committee, said, "It takes hard work from a committed team to thoroughly assess areas of strength and at the same time plan for continual growth. The SOE process provides an opportunity for the entire school community to reflect on the collaborative work being done and to celebrate these accomplishments. Schools that receive validation have had important data-driven conversations about what a high-quality 21st century learning experience should be for all students and have plans to make that learning experience a reality. Honoring the important work of dedicated staff, eager students, and supportive communities is an essential component of becoming a School of Excellence."

### Eastview Elementary Validated as a 2018–2019 Minnesota School of Excellence



Eastview Elementary School has been validated as a Minnesota School of Excellence (SOE) by the Minnesota Elementary School Principals' Association (MESPA). This prestigious honor was awarded to Eastview Elementary School for its commitment to 21st century teaching and learning.

Eastview Elementary is part of Lakeville Area Public Schools and serves 662 students in grades K-5. Eastview's mission statement is: "Working Together, Learning Forever."

"Eastview Elementary School's motto of 'Working together; Learning Forever' guides the work of this strong school community," said Taber Akin, principal of Eastview Elementary. "As a school community, we strive

for student success, and increased academic achievement through innovative and engaging learning opportunities and strong partnerships, and we embrace growth."

"The MESPA School of Excellence process highlighted that everyone in the school community is expected to be a continuous learner, and there is shared responsibility for implementation and accountability," Principal Akin said. "The process clearly identified that staff and students have high expectations for their learning and performance. Our community collaborates to ensure the use of current technology to access information, communicate, learn, and produce work. Through the highly engaging procedure we learned that our

### Five Schools Achieved Recognition As 2018–2019 Minnesota Schools of Excellence:

- **Eastview Elementary**, Lakeville Area Public Schools, Principal Taber Akin
- **Floodwood School**, Floodwood School District, Principal Dr. Rae Villebrun
- **Hawley Elementary**, Hawley Public Schools, Principal Chris Ellingson
- **New York Mills Elementary**, New York Mills Public Schools, Principal Judith Brockway
- **Vandyke Elementary**, Greenway Public Schools, Principal Susan Hoef

### Minnesota School of Excellence Program Mission and History

The Minnesota School of Excellence Program promotes excellence through a rigorous evaluation process that showcases dynamic schools of the 21st century. Established by the Minnesota Elementary School Principals' Association (MESPA), the program is recognized by the Minnesota Department of Education, as well as the National Association of Elementary School Principals, and was nominated for the Brock International Prize in Education—which "recognizes particular innovations and achievements in the field of education."

The Minnesota School of Excellence Program was established in 1986, combining the findings of current research on

effective schooling with the practical on-site experience of working principals and education staff. It offers a comprehensive school improvement process that results in student learning growth. This school improvement process focuses on six national standards and involves a systematic self-study, development of a school improvement plan, and implementation of the plan based on demonstrated results. Since the program's inception, 202 schools have earned Minnesota School of Excellence validation. The validation remains effective for seven years, at which point schools may choose to reapply for validation.

entire school community is regularly engaged in data gathering, analysis, and that data is viewed as fundamental in guiding and creating systematic interventions to improve student, adult, and school performance. The principal, teachers, and involved volunteers regularly engage with stakeholders to expand relationships to ensure success for each student. They are visible participants in community efforts identifying, advocating for, and securing supports for all students and families."

One strength Eastview Elementary identified through the SOE process was a commitment to learning about diversity and a strong sense of community. Eighty percent of community members surveyed rated Eastview above-average to outstanding on the question, "The entire school community actively works to sustain a culture that values diverse people, ideas, perspectives, and experiences." Eighty-six percent agreed that "the principal and teachers continuously seek to engage all parents as equal partners in supporting student learning and growth."

"Our open communication with parents allows us to incorporate their voices in our School-Wide Continuous Improvement Plan," Principal Akin said. "An Eastview student designed an opportunity [for a school-wide Cultural Day] that would be inclusive and recognize and celebrate our school diversity. She presented her idea to the Eastview Leadership Team. With the collaborative support of the leadership team and families, we hosted

our first annual school-wide Cultural Day in November. Through the SOE process we understand that we can do more collaboration to expand our knowledge and support of our underrepresented populations."

Eastview also has a continued focus on culturally responsive teaching, regularly examining their own backgrounds and biases. They engage in this work through collaborative team conversations as part of ongoing work as a Professional Learning Community, work in book studies on best practices in literacy, and more.

Other strengths of Eastview Elementary identified by the SOE process included promoting high levels of learning and a commitment to technology. Technology is integrated in classrooms through the work of teachers as well as a digital learning specialist.

"The MESPA School of Excellence process has benefited Eastview by providing several different lenses to look at our progress, identify strengths, and highlight areas for growth," Principal Akin said. "Eastview is an outstanding school and the MESPA School of Excellence process provides formal recognition and celebration of the hard work of this wonderful school community."

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[ed/mnsu.edu/programs](http://ed/mnsu.edu/programs)*

**We've been educating  
teachers for 150 years.**



MINNESOTA STATE  
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MANKATO





# Graduate Programs in Education at Carthage College

Our curriculum is designed and delivered by educators who understand the current needs and trends in education, and we are dedicated to providing the programs needed to advance your career, gain licensure, or refresh your skills.

**PROGRAMS OFFERED:**

Master of Education • Accelerated Certification for Teachers  
ESL Graduate Add-on License • Bilingual Add-on License

Enrollment deadline  
for Spring is **Feb. 7.**

Learn more at an Information Session  
Jan. 13, 9 a.m.

**CARTHAGE.EDU/GRAD**

## THE VALUE OF A COLLEGE EDUCATION

**\$14,100**

Additional earnings per year with  
graduate degree versus bachelor's degree

FROM A  
YEAR TO A  
LIFETIME

**\$445k**

Additional earnings over a lifetime with  
master's degree versus bachelor's degree

**\$38,000**  
ASSOCIATE  
DEGREE

**\$50,000**  
BACHELOR'S  
DEGREE

**\$64,100**  
MASTER'S  
DEGREE

**ANNUAL EARNINGS FOR DEGREE HOLDERS**