TEACHING TODAY WI™
WISCONSIN'S K–12 EDUCATION CONNECTION
Spring 2016, Volume 2

# Makerspaces in Portage Schools

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*Eileen Marshall, Library Media Specialist K–5*
*Holly Kobza, Tech Coach, TAG coordinator*

*Editor's note — Robin Kvalo has been selected as the 2016 Secondary Principal of the Year! Congratulations Robin!*

We are excited about Makerspaces in Portage. WEMTA introduced us to them. We've read articles, attended workshops and took a Makerspace class. While we were excited about the concept, we weren't sure what they'd look like at the elementary level, let alone the high school.

This fall, elementary principals provided old materials in the science closet to do with what they wanted. At John Muir, our largest elementary school, the library serves as a staging area for second graders for the 20 minutes before they go into the classroom for the day. Our tech coach and elementary library media specialist decided that would be the perfect place to start. They planned a new activity for the students each week. They made it a point to rotate the activities, covering science and math, technology, literacy, and crafts. They started the first week with a box of cleaned out used k-cups and told the students to build something. They have learned to drive spheros, how to connect wires to make a light bulb light up, and how to work as a team to create symmetrical patterns. They have made Oobleck, fossils, baskets and holiday gifts. They have built with all sorts of objects, and used ipads to make pictures 3D and interactive. It has been a huge success.

For activities, students have guiding questions for the students to answer. Every other Friday, students talk about the last couple of weeks. They discuss what was difficult, what was easy, what surprised them, what they liked or didn't like about what they were making. The students are thinking about their learning. Elementary is living and learning 21st Century skills.

For the principal of Portage High School, the term Makerspace came into her world when she brought I an Innovative Educator Consultant, to Portage High School for staff development workshops. Initially she wasn't sure where they'd fit in a high school. However, after attending the Makerspace workshop "Make Room for Makerspaces" in December, she was hooked. In 2011–12, PHS had already converted their traditional library into an iCenter, where print and technology came together in a 21st Century Learning space. This was the perfect location to launch several Makerspaces at PHS. Launch day was Digital Learning Day.

**Continued on Page 4**

# Phillip's Prosthetic Foot Duckumentary

*By Jason Jischke*
*Technology & Engineering*
*South Park & Webster Stanley*
*Oshkosh Area School District*

It all began on February 25, 2016. I received the following email:

*Hi Jason:*

*I am a former Oshkosh teacher (Washington School) and I just read your story about the 3D printer on the Oshkosh4Education Facebook page. We have a situation that I'm wondering if you might be able to assist with. My sister just acquired a young duck from someone who was very irresponsible. The duck got frostbite on his feet and his feet fell off. She has him in her house in a pen but he has no feet so he will never be able to have a normal life outside. Would a 3D printer be able to make feet for him so that he would be able to walk better? Would you be willing to talk to her? It would be so awesome if he could have a normal life. Her name is Vicki Rabe Harrison. She is an animal lover and has goats, chickens, whatever, and they're all rescues. I would love to hear from you and hope you can help with this.*

*Sincerely,*
*Paula Bennett*

I received a follow-up email on March 16, 2016:

*Hi Jason*

*I wrote you before about the possibility of having feet made for a duck who lost his feet due to frostbite. This could be an awesome opportunity to get the kids involved, my sister could bring the duck to school, the kids could help research and design the feet and it would be a wonderful opportunity to use the printer in the community. I'd love to hear from you.*

*(P.S.: John Toson is a very good friend of ours and he said he'd talk to you about this.) Thanks for your time.*

*Paula Bennett*

I responded:

*Thanks for reaching out to me. I thought I had responded a while back, I apologize if you did not receive it. I do think this sounds like a great project idea, however I feel it is definitely above my student's expertise and probably mine as well. I will forward this message onto our high school department heads which may have a teacher/class/or student that would be able to take on this task. Good luck!*

*Jason Jischke*

On March 17th I received the following email:

*Jason:*

*My sister has sent two links on 3d printing where they have made feet for ducks. Could you look at it and see what you could do? Her contact number is below.*

*Thanks, Paula Bennett*

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## teachingtodaywi.wordpress.com

### Giving Students Space to Learn

"Giving Students Space to Learn", the theme for the Dream Flight USA STEM Shuttle, is in a sense a description of what the shuttle program is all about. The 45-foot-long converted motor coach, designed on the outside to spur the imaginations of space travel, is in reality a mobile classroom. The mission of the Dream Flight USA Foundation is simple: To motivate students to learn.

### Quill.com Back-to-School Supplies Grant

The Meemic Foundation for the Future of Education has partnered with Quill.com to offer Foundation Club members the chance to win a grant of up to $100 in back-to-school supplies ordered from Quill.com. The application is three simple questions, and winners will be notified by Aug. 1 – just in time to stock up for the new school year.

### How to Incorporate Digital Tools into Sub Planning

Educators should use technology to ease planning and class time for a substitute teacher, Illinois fourth-grade teacher Lindsey Petlak writes in this blog post. Petlak suggests placing student activities in Google Docs and sub plans, instructional resources and tools on the class website.

### How the 5-paragraph Essay Can Help Students Develop Writing Skills

Middle-grades students are expected to write more text these days as they are challenged to think critically and analytically, history teachers Jody Passanisi and Shara

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For PHS's Library Media Specialist, Makerspaces had been a topic of conversation among library peers for at least a year and she admits that at middle level and elementary level they made more sense to her because she sees those students "at play" on a regular basis, in fact "play/recess" is so important at those levels it is built into their daily routine. At the high school level it seemed a harder fit as the focus is academics, career planning or job skills. Then she came across an article by Diana Rendina, titled "Advocating for Makerspaces in Libraries" (Knowledge Quest, July 29, 2015) who pointed out the amount of research available about how BOTH children and our young adults LEARN THROUGH PLAY and that brought it home for me. To quote from her article "what often looks like "just play" to adults is actually a reflection of much deeper learning." Providing that space to students in a place that already provides a variety of resources for everyone to access is a natural fit.

PHS began with their "Google Gals" team: Library Media Specialist, Technology Director, Technology Coach and PHS Principal brainstorming various Makerspaces they had researched. The team settled on eight (8) stations for the launch: Osmo, 3D Pen, Google Cardboard, Lego wall, adult coloring books, puzzles, drones, and Makey Makey.

The Plan - Launch the spaces to students during Digital Learning Week, different stations each day. They had the PHS iTeam (technology team of students who reside in the iCenter each period to troubleshoot technology issues) learn each Makerspace and become an "expert" in a Makerspace to present to other PHS students. Everyone brainstormed challenges for each station. Twitter, Facebook, the high school website and morning announcements were used to give hints to students about what was coming that week.

The week after the launch all of our science classes were scheduled into the iCenter to experience each Makerspace. It was felt science teachers naturally understood Makerspaces and could help students see how Makerspaces fostered creativity, collaboration, communication, critical thinking, problem solving, design and redesign, and innovation. They were learning through failure. They were learning through experimentation. We had tied the 4C's and 21st Century skills into one place.

Once students had experienced the Makerspaces, it was time for staff to enjoy the fun and critical thinking required. The staff meeting included an overview of why it started in the iCenter because that location it is often considered the central location for inquiry, information, and research. Now the iCenter had hands-on experiences for discovery. As departments experienced each Makerspace, they discussed and recorded ideas they had for makerspaces in their courses. They also discovered, many already had "Makerspaces", they just didn't name them as such. Most of all, they realized that through play there is learning!

What's next? Teachers are looking at their curriculum and ways to implement a Makerspace environment in their rooms/departments. Teachers are talking about creating Adult Makerspaces for one another and the community. Last month a welding Makerspace was in the Tech Ed department. Students are suggesting Makerspaces they'd like to see. We are setting aside resources for Makerspaces next year. It is exciting to see energy and enthusiasm from students when they are trying to solve a problem. All are finding excitement in learning this way. The fear of failure is okay. There is a willingness to try again. Makerspaces may re-engage some of our students at school while they learn life skills that are necessary for success in the 21st century.

Makerspaces has brought excitement to our staff and students. Teachers are now thinking beyond the traditional educational practices and are looking at new and innovative ways to incorporate creativity, collaboration, and problem solving into their classes.

**www.portage.k12.wi.us**
**(608) 742-4879**

# Phillip's Prosthetic Foot Duckumentary Continued from Page 1

The 3D-printed feet created for Philip the duck who lost his feet to frostbite.

www.facebook.com/ButtercupTheDuck
www.cbsnews.com/news/3d-printed-foot-brings-back-ducks-waddle/

After viewing the CBS News Footage for Buttercup, my heart softened and I decided to try to design a "Prosthetic Duck Foot Prototype."

At this point, I decided to share the story with my 7th grade students which were currently printing their first 3D Print. Ironically, immediately after telling my story to them, I received the following email:

*Philip needs to be put down. He is getting worse and several rescue people I have talked to say he can't walk in his stubs because of the weight he will always have pressure sores. Legs are getting weak from not walking and loosing feathers because he is inside without enough light. It is best for him. We can't wait for some class to decide what they can do. He has no quality. Sorry, I know you have worked hard on this. The last feet printed cost $5000 because it took engineers to develop them. Not much to print.*

My heart, along with my students' hearts fell. I immediately called Vicki and told her that I was currently printing a foot prototype. The actual time of the call was 1:15pm. She began to cry, called me a "savior", and informed me that she had an appointment at 3pm, that day to put the duck down. She agreed to hold off now that she knew I was working on the prototype. I met Vicki and Phillip that night to show her the prototype and take measurements of his leg.

After taking the measurements of Phillip's leg, I redesigned the foot to look a bit more "duck-like." I met with Vicki and Phillip on March 22 to see if the foot fit. We were all happily surprised that it did!

I spoke with a colleague that has 2 prosthetic legs to gather information. His response was:

*—Making progress!!*

*—Is there a joint at the top of the artificial foot or is there just one knee higher? Perhaps going higher up would work better?*

*—No joint, there is a knee above . . . do you think I should cover the knee? Thanks for the input.*

*—No but I would make it go higher closer to the knee joint. That's what they did with me saying it puts less stress on the leg I guess? Maybe that does or doesn't transfer to ducks?*

I went into re-design mode on March 23, 2016 to make both feet seeing Phillip's left leg is larger than his right. I also engraved the bottom and labeled the left leg, 'L', and right leg 'R'. Printing time for both feet is 4 hours and 2 minutes. The estimated amount to filament used to produce both feet is 11.88 meters.

A non-skid sole was adhered to the bottom and two cotton balls were put inside the shaft to add comfort. The next problem to overcome is a way to keep the leg on. After talking to my colleague, he told me that he has a neoprene liner and his prosthetics stay on by suction. Not sure where I can find a neoprene liner for a duck luck so back to brainstorming I went. I spoke with several people to gather their insight. We decided to try a rubber-type material such as a balloon on Phillip's legs, prior to putting on the feet. The goal is to try attaching both feet tonight so he can have all of 'Spring Break' to learn how to use his new feet.

The feet were made out of hard plastic and the leg portion was straight up and down. After seeing Phillip walk with the prosthetic prototypes, it was determined that the leg portion needed to be angled. I was planning on making an ankle joint to create the angle, however after collaborating to another technology educator about this, he suggested that I use flexible filament instead, which would eliminate the need for the angle joint and should make it more comfortable as well.

I researched flexible filament on the Internet and found a product called Ninjaflex. I contacted the company, told them the story, and asked them if they were willing to donate a spool of Ninjaflex. I was elated to hear that they were. They were also willing to provide technical support to help me modify the settings of my Dremel Idea Builder to print the flexible filament. WBAY Channel 2 contacted me, as a follow-up to a story that was done on me presenting 3D printing at the state technology conference a few weeks prior. I explained the story of Phillip to them. They were very interested in covering the story once the flexible feet were complete.

After a week of trial and error printing the Ninjaflex, it began printing successfully. However, I was shocked to learn that the estimated print time was 36 hours, much longer that the ridged plastic! WBAY Channel 2 came and did a story on the prosthetic process along with introducing Phillip to the community.

The next day they returned to film Phillip's first steps. We had success! Since then the story has gone viral due to the story being showed on national news stations which resulted in ABC World News contacting me and doing a Skype interview. Following that I was contacted by the BBC and had a live radio interview! Social media also took off with over 80,000 views YouTube and Facebook and over 500,000 views on Mashable! It has truly been an amazing adventure, something I would have never anticipated, or expected. I am just so happy that the feet fit and Phillip has a "Second Walk at Life!"

See video at:

**mashable.com/2016/04/19/duck-gets-3d-printed-feet**

**www.oshkosh.k12.wi.us**
**(920) 424-0395**

# Natalie Abbott Selected as Wisconsin's 2016 Young Entrepreneur of the Year

Chippewa Falls native Natalie Abbott has been awarded the "2016 Young Entrepreneur of the Year" for her honey company that she started at age 10 for a 4-H project. She was recognized at JA's Wisconsin Business Hall of Fame Induction Ceremony on April 21.

The recipient of the Young Entrepreneur award, presented by EY, is selected from a joint committee from JA and DPI who evaluate each candidate on the following criteria: business success, growth potential, social involvement, ability to overcome challenges, strategic direction, innovation, personal integrity and leadership.

"Preparing our students for success in college and career requires the development of skills like entrepreneurship, critical thinking, and creativity," said the State Superintendent. "This year's Junior Achievement Young Entrepreneur of the Year, Natalie Abbott, demonstrated the value of all of those attributes. Natalie is a great example of the talent we have in Wisconsin schools and I wish her the best of luck in her future endeavors."

Abbott's ability to recognize the needs and wants of honey consumers set her above the other applicants for "2016 Young Entrepreneur of the Year." The West Hill Honey Company is a home-based beekeeping company that provides raw, local honey harvested from Abbott's own bee hives.

Abbott really expanded her business in the summer of 2012, when she launched a kick starter project to fund her purchase of an uncapper, extractor and bottling tank to fully convert a room in her house to a dedicated honey room.

Abbot's extensive knowledge of honeybees and beekeeping provides her with an edge. She is able to educate her constituents and answer their questions. Her main focus of sales is at craft fairs, speaking at local 4-H clubs, and providing salons and boutique shops with her lip balm. Many of her customers are repeat customers, and call to see if there is honey available. Abbott enjoys all aspects of beekeeping, and is anxious to expand her business of harvesting honey and beeswax. Currently, she puts her profits from honey sales back into new equipment for her company.


Like any young company, The West Hill Honey Company faces challenges — such as a bear destroying over three-fourths of her beehives last year. However, Abbott has been given five beehives this year, from someone with the WI Honey Producers Association, because she was the youngest member of the group. As a sophomore at Chippewa Falls High School, Abbott hopes to build back up to 20 beehives this year, and continue to expand her honey sales and her work with local craft fairs, salons, and to also make lotions.

**cfsd.chipfalls.k12.wi.us**
**(715) 726-2417**

# Winnequah Children's Garden Growing Strong

*By Jessica Klabough, Amazing Garden Parent*
*Winnequah Elementary School*
*Monona Grove School District*

Winnequah Children's Garden, located at Winnequah Elementary School in Monona, Wisconsin began, as most great ideas do, as a tiny seed of inspiration. A dedicated group of Winnequah parents took their idea to the school and to the school board to begin the process of imagining what the patch of green on the East side of the school could become. Armed with vision, creative backing and an eye towards sustainability, the team worked collaboratively with the school board and the city of Monona to meet all the official requirements prior to garden launch.

The garden was granted approval in early May of 2011 and the initial structure was built very quickly – by parents and volunteers – just in time to take a test run for the 2011 growing season. When the ball started rolling, it quickly gathered steam in the form of a complete community effort. The local pizza shop provided discounts to feed hungry volunteers and a local landscaping company donated crushed limestone for the walkways. A grocery chain awarded the garden two grants (one from the local Madison location and one from their national foundation). A healthcare organization, signed on early as a sponsor and the Monona Library and Monona Parks and Recreation have been consistent partners in celebrating community and co-sponsoring events. Winnequah Children's Garden was made possible, and continues to thrive, because of the community that supports it.

The opportunities for learning and growth that can happen in the garden grow each year, just as the garden itself. Of course, at the simplest and most rewarding level, the garden is a place for kids, families and classrooms of children to gather, learn and play. In addition to the springtime planting and monitoring of plant progress, the garden has become a favorite spot to take lessons al fresco. There are 'buddy' classrooms comprised of two classrooms (eg.1st and 3rd grade); a favorite activity is coming outside to observe the garden throughout the school year and its various seasons. Summer school classes bring Math into the garden by charting and graphing growth measurement patterns. When the 5th grade students study the Oregon Trail unit, the butterfly garden provides a living laboratory of plants that pioneers likely saw on their trek west. Winnequah also recruits a group of 5th grade students each year to dig even deeper into garden stewardship through work days and outreach to other grades for planting activities. Even in the deep quiet of a Wisconsin winter, the Children's Garden is host to feathered visitors; for the last couple of years students have crafted bird feeders to hang in the garden through the coldest winter months.

One of the challenges for a school garden

**Continued on Page 17**

# A Growing Future at McKinley Academy Charter School

*Gina Wagner*
*McKinley Academy Charter School*
*Manitowoc Public School District*

Students at McKinley Academy Charter School in Manitowoc, WI are rolling up their sleeves and digging in the dirt. The students are part of a group called STEER (Success through Empowering Experiences and Rigor). Teachers, Gina Wagner and Bonnie Luckow, developed the group out of the desire to provide meaningful and educational life experiences in order for the students to develop communication, organizational, social, and problem-solving skills while giving back to the community. The STEER group spear-heads and manages community projects throughout the year.

The students have recently completed the construction of a greenhouse for their school and are busy designing a plan that will maximize the 8' X 12' space. Of course, the completion of the greenhouse did not happen without some community support, including Tom Kellner, from a small, family owned CSA Farm in Denmark and McKinley Academy's friendly custodian Dale Stuckman. In addition, students have also had some "green" coaching from local AmeriCorps Farm to School Coordinators and Coalition Coordinator, Cath Pape, who not only donated seeds but have been very generous with time and travel opportunities.

Before the construction, students had the opportunity to tour Growing Power in Milwaukee to gather some ideas on how to creatively use small space spaces. In January, some students attended a local food summit in Sheboygan where they had the opportunity to network with people that were extremely passionate about home grown food, good soil and sustainable living. Students also toured hydroponics and aquaponics facilities in the area in hopes to include a small system of their own in the greenhouse. Dayna Kennedy from a retreat center in Denmark with wonderful gardens, has been the "go-to" gal for our planting and transplanting questions.

McKinley students are also hosting hundreds of house guests (worms) in their classroom after they learned about vermiculture from Bill Jakobson. Vermiculture is the process of using worms to decompose organic food waste, turning the waste into a nutrient-rich material capable of supplying necessary nutrients to help sustain plant growth. Students use this beautiful soil, courtesy of their worm houseguests, for their vegetables and flowers.

What is really exciting about the greenhouse operation is to see all of the different interests of the students. After some research, Collin is especially excited about growing mushrooms. He said "It's really cool because the mushrooms generally regrow themselves. They grow through Mycelium, and to make Mycelium, you just need one mushroom. That one mushroom can make like 30 mushrooms." Aaron and Lucas are most interested in implementing an aquaponics system in the greenhouse. Most of the systems that they saw used Tilapia or Perch, however due to the space restrictions, they are looking at using Goldfish. Delaney is very interested in leafy greens. In fact, this year's goal is to harvest enough greens to provide a salad bowl lunch for everyone in the school.

This year is going to be an ongoing experiment for the greenhouse, to see what grows

well. This summer, Gina Wagner plans to attend a garden-based learning workshop in Madison, WI in hopes to learn more ways to engage students in the greenhouse. "Probably one of my favorite things about the greenhouse is watching the students' enthusiasm about growing their own vegetables and eating them!" said Wagner. "I just love the idea of getting our students so excited about a sustainable and healthy lifestyle. I am hopeful that many of the students will continue to plant vegetables and flowers long after they graduate from high school."

**mckinley.manitowocpublic-schools.org**
**(920) 686-4700**

# Plymouth Students Growing Their Futures

*Jamie Piontkowski*
*Coordinator of Community Communications*
*Plymouth School District*

Thanks to the new Food Science & Agriculture Center, students at Plymouth High School are gaining experience with a variety of growing systems.

The Plymouth School District constructed the $1 million facility, which opened in the fall of 2015, to better provide students and community members with skills needed by key local industries.

The 5,100-square-foot building, a 30-by-90-foot greenhouse attached to a 30-by-80-foot classroom, is much more than just a bigger greenhouse. The new center features a modern learning environment with enhanced tools and resources, including:

- Hydroponics, where plants are grown in water without soil
- Aquaponics, a mutually beneficial growing system with fish and plants
- Refractometers, which measure sugar levels in vegetables to determine peak harvest time for best flavor

The center will be used as a research facility, where students will have the opportunity to explore lighting needs and the proper balance between UV and fluorescent light, for example, and to scout for pests and disease. They will be involved with the installation, maintenance and testing of various growing systems.

The building has been designed to be flexible so that it can be adapted to emerging food technologies. PHS students will have the chance to help design and engineer future systems.

## Benefits for the student body

The center provides more opportunities for all students – whether they are bound for a four-year college, technical college or the workplace. The facility benefits nearly three-quarters of the PHS student body, as it supports curriculum in seven academic areas: food science, culinary arts, agriculture, science, engineering, health and business.

Agriculture students will be able to collaborate with food science students to develop new products and healthy recipes from food grown in the center, which in turn can be used by the PHS chef and kitchen to show students how their research and development can be integrated into a large-scale food service operation.

The first crops — 11 pounds of Bibb lettuce, microgreens and arugula grown in just 34 days — were harvested by the Greenhouse Management class in November and served in the school cafeteria.

Since then, students have grown sage, cilantro, basil, chives, arugula, Bibb lettuce and Rex lettuce, plus a batch of poinsettias ready in time for winter break. Students now are growing flowers and herbs for the annual Panther Plant & Flower Sale in May.

In addition to giving students experience with all facets of growing plants, the center is a research facility. Students have been involved with the engineering, installation, maintenance and testing of various growing systems.

Some of the research undertaken by students thus far:

- Working with a local company, the Sustainable Food Production class is testing algae-resistant foam rafts for plants. Bibb lettuce that was started on the rafts grew well and eventually was moved into an aquaculture system.
- Botany students tested the water-holding capacity of various soil-less media that can be used hydroponically.
- Greenhouse Management classes set up a Nutrient Film Technique hydroponic system, which consists of a series of white plastic trays that hold plants, and are testing the impacts of a growing medium called Perlite as well as the effectiveness of different forms of filters.
- The Biotechnical Engineering class established tanks to raise prawns as part of an aquaponics system.

Early in the second semester, the center was operating five Water Culture Systems, two nutrient film technique systems, one aeroponic system, a Dutch Bucket System, and a Fodder System that includes several tiers for efficient production.

## To benefit the community as well

While the primary reason for the center is the education of PHS students, the facility also is used for continuing education classes offered through Community Education & Recreation outside of the school day. The district plans for collaboration with many community organizations.

The center also allows for business partnerships with top local employers in food-related industries. These partnerships will lead to a better prepared workforce and give students a better understanding of the diverse career pathways within the field.

A Warm Winter Night in the Greenhouse to share the new Food Science & Agriculture Center with families and other community members was held in late February. "We were overwhelmed with the positive interest after the grand opening and fall open house, and that prompted us to consider having another community event sooner rather than later," said PHS Principal Jennifer Rauscher. "We thought people might be ready for warmth and greenery by February, and the Food Science & Agriculture Center certainly offers both. People who joined us in the fall were excited to see the progress since then, and new visitors are always welcome to come and learn."

## Learn more:

- Visit the district website at www.plymouth.k12.wi.us/food.html to learn more about the Food Science & Agriculture Center.
- Visit the Food Science & Agriculture Center website at http://plymouthfsac.weebly.com.
- Follow Tweets from the Food Science & Agriculture Center at https://twitter.com/PlymouthFSAC.

**www.plymouth.k12.wi.us**
**(920) 892-2661**

# Vertical Hydroponic Farm Enhances Ag Program and School Lunch

*By Marie Collins, CTE Coordinator*
*Lake Geneva Schools*

Things are growing taller for the Badger High School FFA since 2012 when we received a $10,000 Monsanto grant to install Vertical Farming Hydroponic Systems in one of two greenhouses. In late November of 2012, construction began of a two component system including Hydro-Stackers and the Danish Bucket Growing System, which now supply both lettuce and tomatoes to the school lunch program.

The 25 stack Hydro-Stacker system contains 24 growing chambers each. "This means the Hydro-Stacker is capable of growing 600 heads of lettuce in a 15' x 40' area every 45–50 days," explains Larry Plapp, instructor. "After harvest, the student lunch program integrates the lettuce into the salad bar and sandwich lines." As of mid-April, 45 lbs. of lettuce have been harvested for the school lunch program this year.

In the bucket system, two cherry or slicing tomato plants are planted per bucket. With 24 buckets, over 22 pounds of tomatoes have been provided to the lunch program since February. The tomatoes have a slower growing cycle and take more growing time before they produce fruit than lettuce which grows rapidly. A trellis and pulley system is utilized with the bucket system so that all tomato plants will grow upright, taking up less space and making harvesting easier with ripe fruit typically between waist and eye height. Special hydroponic greenhouse type tomatoes are used for this system.

Since implementation of the systems, Plapp has worked had to tweak timing to spread out the harvesting of lettuce and tomatoes, and special lighting takes the place of sunshine in the winter to promote growth for the tomatoes and lettuce. This ensures a continuous local, fresh supply of tomatoes and greens for our school cafeteria all year round.

From an educational standpoint, there is a lot to learn from vertical farming in regards to urban farming and green and healthy living. Plapp and his co-teacher Candice Franks have integrated many principles into classes like Agology and Greenhouse Management, the two classes this year responsible for the year-long vertical farm maintenance. Here are just a few quick facts:

## Vertical Farming

- Increases productivity—10X more per square foot in greenhouse vs. traditional vegetable growing, and 100X more per square foot for traditional farming;
- Enables year-round production;
- Strengthens local economy by providing restaurants and other establishments with fresh, locally sourced produce;
- Reduces the need for chemical pesticides;
- Reduces water pollution;
- Uses less water—5 times less per sq. ft.;
- Reduces fossil fuel use;
- Minimizes wastewater;
- Re-purposes existing structures.

In addition to the classroom opportunities provided by the vertical farm, the project is utilized by the Plant Science Interns who receive credit for management of planting and harvesting. These students take care of the plants, cut and weigh the produce and get it ready for the lunch program, in addition to taking care of the hydroponic systems.

One of the interns, junior Jesse Anderson, will pursue a career in vertical farming upon graduation. Anderson will attend Gateway Technical College where he will enter with more than half of the credits he needs for an associate's degree in horticulture, earned through transcripted credit at Badger and Youth Options. Jesse got hooked on vertical farming as a freshman. "I saw the hydroponic systems in the greenhouse and thought they were really cool," he said. He's wanted to be a vertical farmer ever since.

With a growing population, and growing demand for locally sourced produce, teaching concepts like vertical farming in high school not only promotes agriculture education, but also provides relevant career education to students pursuing agriculture careers. "It's really practical," Jesse said. "There is a big market for it and it's going to get bigger."

Badger's agriscience instructors have both been received national honors, and with innovative programs like vertical farming, the students here have benefitted from their dedication to enhancing agriculture education not just here, but in the state and nation, as well.

**www.badger.k12.wi.us**
**(262) 348-1000**

# High-Tech Hives at Northland Pines

*By Todd Wilfer*
*8th Grade Science Teacher*
*Northland Pines School District*

In the spring of 2014, two honey bee hives were established on school grounds behind the middle school. As part of the 8th grade science curriculum, students regularly visited the hives for observations and cared for the bees throughout the year. In the spring of 2015, the project expanded to five hives allowing each 8th grade science class to have their own hive. The summer of 2015 allowed the bees to produce a surplus of honey. In the fall, students harvested and bottled 109 pounds of honey.

Since the beginning of this project 8th grade students have learned much about bee biology, hive components, seasonal bee activity, pollen collection, honey production, and colony population dynamics. This knowledge has allowed 8th grade students to develop lesson plans and teach elementary students about bees and the hive, generating excitement in these younger students. A new addition to these lessons will be an observation hive allowing bees to be brought into the classroom. Additionally, to offer elementary students the opportunity to visit the hives, 3rd/4th Grade teacher, Mrs. Simac, wrote a grant to secure funding for child-size protective bee suits. Elementary students are now able to visit the hives and see the bees in action.

Furthermore, the project was recently awarded a grant. This will allow for the installation of an Arnia remote hive monitoring system in the bee yard. Several probes will collect data from within each hive on the internal temperature, brood temperature, humidity and hive acoustics (flight noise/hive activity) as well as the weight of each hive and weather conditions in the bee yard. All data will be linked to the Internet allowing for easy access from any Internet enabled device. The data collected will allow students to have a unique insight into hive conditions and honey bee behavior.

This system will allow for a host of student-led investigations on the hives. Students will be able to compare different data sets within a single hive or compare data from several different hives. Analysis of this data will allow students to determine if their investigations positively or negatively impacted the bees allowing us to maintain stronger, healthier and more productive colonies.

In addition, we purchased an Internet-based record keeping program called HiveTracks. During routine hive visits and inspections, students will use hand-held devices to record observations pertaining to many facets of hive health and productivity. Data is stored in the cloud allowing for easy access. The HiveTracks platform will allow us to keep organized records of every hive visit and ensure we implement best management practices required for the success of each hive.

**Continued on Page 10**

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# Aquaponics in Milwaukee Public Schools

*Rochelle Sandrin*
*Science Curriculum Specialist*
*Milwaukee Public Schools*

Aquaponics is a system of aquaculture, where the waste produced by farmed fish, or other aquatic animals, supplies nutrients for plants grown hydroponically (in water), which in turn purify the water. Aquaponics is one method by which you can grow both fish and plants in areas with limited space and limited access to water. In a city like Milwaukee which has a limited growing season, you can grow indoors all year round.

Matt Ray, a teacher at Fernwood Montessori, has included his students in an aquaponics program for nine years. In Mr. Ray's classroom, the students are leaders in their education as they manage all aspects of the aquaponics system. Students are responsible for day to day operations of the greenhouse, harvesting plants, and preparing plants for sale to local restaurants. The students not only learn about the science behind growing plants and fish in an aquaponics system; they also learn the economics of running a small business. Students even take the lead in writing grants for continued support of the program. According to Mr. Ray, aquaponics is a versatile tool for covering global issues in his "Sustainability Course". Food, fresh water, health, housing, waste, transportation, and Energy are all integral to aquaponics. Even after almost a decade of student engagement, the Fernwood Greenhouse still reveals new directions to explore."

Through grants, Milwaukee Public Schools (MPS) has been able to build an aquaponics program across the district, with large scale aquaponics systems currently operating in 12 schools, and several schools operating smaller systems in individual classrooms. The grant allowed for the district to create a high school aquaponics and sustainability course with both curriculum and operational support.

Student interest continues to drive the expansion of this program. The aquaponics course for high schools is designed to be a student-led, through an inquiry and project based approach to science learning. The teachers in these courses are able to act as facilitators as student engagement and interest drive the path toward the learning that takes place. At two other MPS schools, Alliance and Bradley Tech, the teachers have created an environment where students who have struggled in traditional science courses are able to flourish and share their learning and knowledge with others. Students are responsible for all aspects of system care and maintenance, and when problems arise with pests or system hardware, students are expected to problem-solve and get the system back on track. In these classrooms, students are eager to share what they know and enjoy interaction with those who want to learn more about aquaponics. The students show great pride in their work, and frequently share that aquaponics is their favorite class!

As an educator, an aquaponics system has endless applications across content areas. Beyond the biological science and economics of aquaponics, there are strong connections to physics, chemistry, earth science, social and food justice, understanding of communities and where food comes from, history, writing, carpentry, welding, and engineering to name a few. The aquaponics system is typically a focal point for the school, and brings teachers and students from around the building in to learn more about this exciting approach to learning. While implementing an aquaponics program takes a lot of work, the reward of working with students who are engaged and excited about science learning makes it well worthwhile!

**mps.milwaukee.k12.wi.us**
**(414) 475-8393**

# High-Tech Hives Continued from Page 8

The Adopt-a-Bee program continues to be major component of the project. Individuals can sponsor a bee for $15. In return, sponsors receive correspondence letters, pictures, and emails from students throughout the year informing them on the status of the bees in the hive, as well as, honey and student-made beeswax lip balm. New bee sponsors are always welcome.

Recently, there was a honey bottle label competition held. 7th grade students in Mrs. Niehaus's Art class created several labels and votes were cast by middle school students, staff and by Adopt-a Bee sponsors. Congratulations to his year's winner, 7th grade student, McKenzie Mayo! Her label will represent the program and be on every honey bottle filled in 2016.

Community support for this program has been tremendous. Thank you! There have been many request from bee sponsors and community members indicating they would like to visit the hives and see the bees. Starting in mid-June this will be possible. With the many protective suits we have we can take adults and children of all sizes to visit the hives. For more information on these hive visitation dates, please visit the NPSD home web page. If there any questions regarding this project, or if you would like more information, please contact Todd Wilfer at 715.479.6479 ext. 4229 or by email at twilfer@npsd.k12.wi.us.

**www.npsd.k12.wi.us**
**(715) 479-6487**


Runner's knee is the term doctors use for a number of specific conditions affecting the knee, such as patellofemoral pain syndrome and chondromalacia of the patella, to name just two. It's the most common overuse injury among runners, but it can also strike other athletes who do activities that require a lot of knee bending, such as biking, jumping, or skiing.

Runner's knee happens when the kneecap (patella) tracks incorrectly over a groove in the thighbone (femur) known as the femoral groove when you bend and straighten your knee. In healthy knees, the patella rests in the femoral groove and slides easily up and down when you use your knee. But when the patella is out of place, it can irritate the femoral groove and wear away the cartilage beneath the patella, leading to knee pain.

The most common symptom of runner's knee is tenderness or pain behind or on the sides of the patella, usually toward the center or back of the knee where the thighbone and kneecap meet. In addition, the knee might be swollen.

The pain will generally feel worse when bending the knee — when walking, kneeling, squatting, or running, for example. Walking or running downhill or even down a flight of steps also can lead to pain if someone has runner's knee. So can sitting for a long period of time with your knee bent, such as in a movie theater.

In some cases, someone with runner's knee may notice a popping or cracking sensation in the knee, as well as a feeling that the knee may be giving out.

If it goes untreated for a long period of time, runner's knee can damage the cartilage of the knee and hasten the development of arthritis.

The good news about runner's knee is that you can take precautions to protect yourself against it. If you're going to be doing an activity that puts a lot of stress on your knees, follow these tips:

- Warm up and stretch before running or doing any other knee-intensive activity, and be sure to stretch again after you're done. Keeping your leg muscles strong and flexible will allow them to support the knee better and make it less likely to be irritated during exercise.
- Keep yourself in good shape. The heavier you are, the more weight your knees will have to bear with every step you take. By keeping your weight in check, you can minimize the stress on your knees and decrease the likelihood of pain.
- Use proper running gear. Buy a good pair of running shoes that fit your feet and offer plenty of support, and replace them with a new pair when they show signs of wear or the soles start to lose their shape. If you have flat feet, consider getting shoe inserts or custom-made orthotics.
- Try to run on soft, flat surfaces. Concrete and asphalt surfaces create extra stress on your knees. If possible, try to run on grass, dirt, or a synthetic track with a softer surface. Running downhill in a straight line can also cause pain in your knees. Walk down hills or run down them in a zigzag pattern.
- Increase the intensity of your workouts slowly. Build up to the distance you want to run over a period of time. If you're used to only running a mile or so, don't try to go out and suddenly run 5 miles. Work up to it with a series of intermediate steps.

Treatment for runner's knee depends on the specific problem that is causing the pain. Fortunately, runner's knee rarely requires surgery, and most cases heal in time.



*This is from a larger article. To read it in full see kidshealth.org/en/teens/runners-knee.html*

# Summer **inspiration** at Maria

# National Board Certified Teacher Jan Albert

*Melissa Badger*
*Communications Coordinator*
*School District of Beloit*

*The lessons learned through National Board Certification are directly transferrable to the classroom, according to Fruzen Intermediate School Fifth Grade teacher Jan Albert. Albert has just been added to the growing roster of school district teachers earning this distinction.*

If there were a vocabulary list of important words relating to the lessons learned in gaining National Board Certification, it would certainly include self-reflection, introspection and giving all that is learned to benefit students.

As with any important educational accomplishment National Board Certification is challenging and thereby rewarding, according to Albert.

National Board for Certification is the profession's means of identifying and recognizing teachers who meet criteria of excellence – essentially teacher established standards for teachers to meet. And a challenging process it is says Ross, who recently received certification out of a not uncommon second attempt.

"The thing I remember most when beginning the National Board process was Cyntha Slavish and how grateful I was that she would be helping me and the whole group of us who decided to take this journey," says Albert, who like most teachers seeking the honor applied more than once.

"The second thing I remember most was how much I hated entry Number 4. Entry Number 4 is about your documented accomplishments. You have to look at yourself as a teacher, as a partner with parents and families and as a member of the learning community and document things you have accomplished over the past five years that go above and beyond what teachers do in the course of their work. I think all teachers go above and beyond every day, and it felt like bragging to me. It was very uncomfortable and, for my first year at attempting to gain certification, it was one of my lowest scoring entries. This time, I looked at entry Number 4 more closely and realized that it was not about bragging, it was about reflecting. Ultimately, it ended up being one of my highest scoring entries, and the tipping point that helped me earn certification.

"The best part of this journey is the self-reflection that I had to do," Albert continued. "I really believe I am a better teacher because of this process. Watching yourself in video is hard to do, at least it is for me, but it is a valuable tool to help you really see yourself as you are. I found some things I liked, and I found some things I didn't, and made changes accordingly. As much as I dislike doing it, I think it is a practice I will continue to use. I have learned so much, and I still have so much to learn.

"This journey took me two years to complete, and I am still kind of in a state of shock that I made it. I know I couldn't have done it alone, and I am grateful to many people for helping me get there. My husband and daughters are my strongest cheerleaders. The group of fellow teachers I worked with was also extremely supportive to me, and I hope I was to them. I thank them all for everything they did. This is not a journey that I could have done alone. I feel very lucky and very blessed.

"I began teaching in Beloit in January of 2004 as an 8th grade science and social studies teacher, then moved to Morgan after one-and-a-half years to teach 4th, then 5th grade. I am now at Fruzen as a looping teacher for grades 4 and 5. Other than subbing, my entire teaching career has been in Beloit," says Albert.

"I went into teaching because I hoped I could make a positive difference in children's lives, and even the lives of their families. The best times are when a student's family and I become partners in learning. That's when good things really start happening."

"The National Board Process was a way for me to continue learning and growing as a teacher and as a person. Through the process there is a lot of reflection, which is something that often gets puts aside because of all of the other outside demands of teachers. That reflection helped me and still continues to help me see what things are working in my classroom, and also find where I can improve. It's a continual, ever-changing process. It's a tough process with a lot of stress, but in the end it's been worth it.



# Congratulations to all of Wisconsin's 2015 National Board Certified Teachers!

Thirty-seven teachers from 24 public school districts and two private schools throughout the state achieved certification through the National Board for Professional Teaching Standards, joining 1,826 nationwide who newly earned the National Board Certified Teacher (NBCT) credential in 2015.

Statewide 972 teachers in Wisconsin's schools are certified by the National Board for Professional Teaching Standards. They are among more than 112,000 board certified teachers nationwide. Certification consists of four components: written assessment of content knowledge, reflection on student work samples, video and analysis of teaching practice, and documented impact and accomplishments as a teaching professional. The voluntary process can be completed over one to three years.

**Saint Croix Falls School District**
**Suzanne Imhoff** of Frederic
Saint Croix Falls High School
Early Adolescence through Young Adulthood/Art

**Siren School District**
**Jill Tinman,** Siren Elementary School
Middle Childhood/Generalist

**Stevens Point Area Public School District**
**Valerie Fetting** of Kronenwetter
Stevens Point Area High School
Early Childhood through Young Adulthood/ School Counseling

**Superior School District**
**Sarah Bianchet** of Duluth, MN
Superior Middle School
Early Adolescence/Mathematics

**Melanie Swanson** of South Range
Northern Lights Elementary School
Early Childhood through Young Adulthood/Library Media

**Private Schools**
**Kimberly Nernberger** of Butler
Indian Community School of Milwaukee, Franklin
Early and Middle Childhood/Art

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# The 2016 Wisconsin Elementary Principal of the Year!

*Sparta Area School District*

The 2016 Wisconsin Elementary Principal of the Year serves two schools in the Sparta Area School District.

Principal Melissa Herek learned of the recognition April 4 during the Lawrence-Lawson morning meeting. Students and staff from her other school, Cataract Elementary, were also in attendance.

"It is such an honor to represent Wisconsin education as the 2016 Elementary Principal of the Year," Herek said. "I accept this recognition on behalf of my students, staff, mentors, colleagues and family. I am truly blessed."

Herek was eligible for the award after receiving the Herb Kohl Foundation Leadership Award in the first year school principals were honored. This new Kohl Foundation award recognizes school principals who set high standards for instruction, achievement, and character and for creating a climate to best serve students, families, staff, and community. Herek is now eligible for the National Elementary Principal of the Year.

"Ms. Herek is an outstanding leader and very deserving of recognition in this first group of honorees representing all of Wisconsin. Her award calls attention to the excellent work that is being done throughout our District by principals, teachers, and all those that work to make our schools great," Sparta Area School District Superintendent John Hendricks said.

Herek has been a principal in the Sparta Area School district since the 2010-11 school year. In addition to serving as the principal at Cataract and Lawrence-Lawson, she has also served as an assistant principal at Sparta High School while employed in Sparta schools. Under her leadership, Lawrence-Lawson has been recognized by the Wisconsin Department of Public Instruction as Wisconsin School of Recognition and Title I Spotlight School; and as a PBIS School of Distinction and Wisconsin RtI Center School of Merit.

She has been a WSRA and Title 1 Association Administrator of the Year and Midwest Reading Council Administrator of the Year.

"One of the most important attributes Mrs. Herek provides the staff is her view of herself as an instructional coach first and foremost. She has such a belief and confidence in her staff that many of the duties a 'typical principal' may spend their time on are spread out to leaders throughout the building. This frees up time in her schedule to guide and support teachers in the classrooms. If teachers need help with teaching a certain academic area, or are in need of classroom management assistance, Mrs. Herek is the first one to offer professional resources, professional development, and support in the classroom to help," said Jenny Banse, Lawrence-Lawson RtI/PBIS Learning Coach.

Herek received her Bachelor of Science degree from the University of Wisconsin-Stout; Masters in Education degree from Viterbo University; Reading Specialist License from Viterbo University; Educational Leadership License from Viterbo University; and Director of Instruction from Viterbo University. In addition to the Sparta Area School District, she has served as an Adjunct Reading Teacher at Viterbo University; Elementary Principal, Gifted and Talented Coordinator, Title 1 Coordinator, and Homeless Liaison for the Mauston School District; and a Principal and Literacy Teacher, K-12 District Reading Specialist, Reading First Coordinator, Third Grade Teacher, and Kindergarten Teacher for the Reedsburg School District.

Herek lives in Elroy, Wis., with her husband and their two daughters.

"The School District of Reedsburg is near and dear to me as I spent the first 12 years of my educational career there," Herek said. "The District provided me with a solid foundation of best practices in education and their innovative systems supported my vision of what excellence in education is to be."





# We All Matter

*By Katy Macek*
*Port Washington High School*

In high school, it can be difficult to see the world outside of school, but the Community Mentor Program at Port Washington High School tries to help broaden student's horizons.

And that's exactly what it did for Olivia Biertzer, a sophomore at PWHS who joined the program late in the fall semester of her freshman year.

"You know how you think you have your 'group,' certain people you can talk to? But it's just them," she said. "(The program) definitely opens your eyes . . . It's nice to know I can connect with other people outside of my group. I think that's a good life skill."

The Community Mentor Program is a partnership with the high school, the Port Washington and Saukville police departments and the Ozaukee County Administrative Office, Principal Eric Burke said.

It started two years ago, and partners 3 to 4 students with a mentor who works for either the City of Port Washington, Ozaukee County or village of Saukville.

The six groups – all male or all female – meet once a week throughout each semester, and they try to keep the same groups into the spring.

"It helps those kids that struggle, for whatever reason, to be in school and to fit in," Burke said. "They get to feel a part of the school, and that's probably the most important thing."

The students are recruited to be in the program, and while it's optional, he said he encourages them to stick past the awkward first meeting, because he's seen so many students benefit.

Mentors are given guidelines to follow and a theme for each week, along with a story the students are asked to read and reflect on.

The hope, Burke said, is for that to be a starting point.

"The way it works best is they'll spend time with the story, but then, they end up discussing it; sometimes it goes off into other conversations," he said.

In two years, he estimated about a couple hundred kids have participated, and only a handful have turned it down without giving it a try.

Of the students that do participate, he said the truancy rate has greatly reduced.

Sophomore Leishiona Dougherty started last spring semester, and said she was doubtful at first because she didn't know some of the girls in her group and felt uncomfortable opening up to them.

"You've got to get over that whole, 'I don't want to talk to these people,' thing," she said. "I was like, 'maybe I need to open my eyes a little more and see the world how it is.' Not even just with the people, but the things you do, like being happy and staying positive instead of letting the drama control your life."

While it was indeed awkward at first, she said getting to know the other girls' stories broadened her group of friends and increased her confidence as a student.

After the official meetings, Dougherty said her group decided they wanted to keep meeting until Christmas.

She even planned the lesson plan for the last meeting.

Will Schanen, a senior, said he's enjoyed making friends with students he wouldn't normally be exposed to because of different interests, one of the many skills from the program he'll take with him after he graduates.

"The first week's always weird, but people connected, and it's really cool to see how it developed," he said. "With going away to college next year and meeting new people, I've learned to be open to everyone. Don't close doors right away."

All three students plan to continue the program their spring semester, and Biertzer said she'll "continue to come as long as (Mr. Burke) keeps inviting me back."

**www.pwssd.k12.wi.us**
**(262) 268-5500**



# Winnequah Children's Garden

**Continued from Page 6**

is that the growing season corresponds almost entirely with the students' summer break. The Winnequah garden offers an 'Adopt the Garden' summer sign up. Winnequah families are invited to take ownership of the garden for a week over the summer. During that time, the family takes over watering, weeding and general garden duties. The reward for their diligent effort is all the produce they can pick! When summer days stretch languid and hot and bumper crops are in full swing, all the extra produce is harvested for the local food pantry. Yet another way Winnequah has found to connect families to the garden is to pick produce ahead of fall conferences and host a Winnequah Farmer's Market stand with school-grown produce free for the taking.

Winnequah's own Robin Jones (1st grade teacher) was awarded a grant through an insurance company that has provided the garden with some lovely new additions, including a learning circle filled with Aldo Leopold benches, built by parent volunteers. Winnequah's teachers love the garden and are eager to involve their classrooms in planting days, seed starting and work days of any kind. 5th grade educators, Kym Davick and Barb Nyenhuis, have pulled the 5th grade Garden Group into the school's Leadership League, which seeks opportunities for children to practice and grow their leadership skills. Principal Ann Schroeder has been an energetic supporter of the garden from the very first.

The garden community (parent board members/volunteers, teachers and staff and, most important of all, students!) is looking forward to launching the 6th growing season. The 5th grade Garden Group is busy reading garden friendly books to Kindergarten and 1st grade classrooms, while other classrooms start seeds in sunny windowsills. Garden seedlings have been ordered and initial planting maps drawn. The students' sense of appreciation for the gift of having a garden outside their school doors is pretty keen. On a recent workday hosted by the 5th grade Garden Group, one of the students had this to say about the garden – "I appreciate this opportunity and I realize that its unique to have a garden like this."

Love like that helps a school garden continue to grow.

**www.mononagrove.org/we**
**(608) 221-7660**

# Community Service at SOAR Middle School

*By Jacob Klopp*
*SOAR Middle School student*
*Northland Pines School District*

At SOAR, community service is a big part of how we prepare for the future and college years. You may all know that community service looks great on a college application and resume, and I think that is one of the reasons we include community service into our school activities. I also believe the SOAR advisors do this to help us understand how a little help can go a long way in a community.

SOAR Middle School requires twenty hours of community service a semester per student, and over the summer, there is an additional fifteen hours of service required. This totals fifty-five hours of community service a year. But, when you add up all fifty-five students' total hours from just the first semester you get 1100 hours! That's not even counting the people who completed extra hours. We also volunteered at over fifty different places!

Community service means a lot to me. It means that I can help someone or someplace in my community by just walking over to an event and asking, "Is there any way I can help you?" You see commercials on TV saying, "You can make a difference in the world" and it's true. You may not want to fly over to another country to join the Peace Corps, but you can make a difference in your own town!

When you begin a shift of service at some sort of attraction it honestly is incredibly boring. You might be missing out on friends after someone dragged you into service. You may feel tired and sick of what you're doing, but the people that you are doing it for are so grateful for what you're doing. They might be grateful because they would have been overrun and you swooped in and saved the day, or they couldn't have paid employees to do the jobs for them. Once you're done with your job you will feel good, and the feeling you achieve is far more rewarding than whatever your friends are doing.

Once you have helped someone they will want to do something nice for someone else to achieve that same feeling you've gotten. Then, when they've been helped they will try to help someone else and so on. Eventually, everybody gets caught in this wonderful chain and the world becomes a better place. That is the impact one person can make in their area by doing just a single act of kindness. The more people that do community service the bigger the chain expands.

You can help too! I have gone to places like churches, races, schools, and fairs. Any places like these are acceptable and events aren't the only places you can help. If you see an elderly person struggling to bring in the trash cans, you can assist them, or you may see an un-shoveled driveway, so you can shovel it for them. No matter where you are someone could use help and you could be the one to help. So, make a difference in your community, make a difference in others' lives, through community service.



# Thunderstorm Season is Here

*Meemic Insurance*

Spring storms can bring much-needed rain to farms and gardens, but they can also bring trouble. High winds and tornadoes can cause thousands of dollars in damage.

*Here are a few tips to prevent storm damage:*

**Reinforce the garage:** Residential tornado damage often starts when wind enters through the garage, so you should make sure your garage doors are reinforced. A qualified contractor can determine if the garage door system is able to resist high-speed winds and, if necessary, replace it with a stronger system.

**Install impact resistant doors and windows:** If you are replacing windows or patio doors, or building a new home, consider installing impact-resistant windows and doors made of laminated glass, plastic glazing or a combination of plastic and glass.

**Seal it up:** Seal gaps in walls and around doors, windows, pipes and utility boxes with waterproof caulk of foam sealant to prevent wind-driven water from leaking into the house during heavy rain.

**Remove clutter from the yard:** Keeping your yard free of debris can also help to minimize storm damage. Prune weak branches and remove trees that could fall on your house. If you use gravel or rock landscaping material, consider replacing it with mulch.

## After the storm

Here are some additional steps that will protect your property from further damage and make the process easier should you need to file a claim:

- Cover broken windows and holes to keep rain out.
- Do not go onto your roof to assess damage as this may be unsafe.
- If you need the services of a roofer, be sure they are licensed and carry general liability insurance.
- Keep refrigerator and freezer doors closed in order to keep food frozen for up to two days.
- If affected by flood, turn off circuit breakers for wet areas of your home, but only when access to the power distribution panel is safe from electrical shock. Be sure to maintain power to any sump pump or system that is designed to remove sub-surface water.
- Remove as much excess water as possible by mopping and blotting.
- Place aluminum foil or wood blocks between furniture legs and wet carpeting.
- Move any paintings, art objects, computers, documents (or any other items that are valuable or sensitive to moisture) to a safe, dry place.
- Take photos or video of damaged areas if repairs must be completed immediately.
- Keep detailed receipts of any expenses related to safeguarding your property.
- Do not dispose of any damaged property until approval is given from your claims representative.
- Do not make permanent repairs unless advised or authorized by your claims representative.
- Beware of disreputable contractors who take advantage of people following a storm.
- Use only licensed and bonded contractors.
- Keep your cell phone fully charged in case of a power outage.

Visit Meemic's Safety & Information Center at www.Meemic.com/Safety for more information on a variety of safety topics.

## Quill.com Back-to-School Supplies Grant

The Meemic Foundation for the Future of Education has partnered with Quill.com to offer Foundation Club members the chance to win a grant of up to $100 in back-to-school supplies ordered from Quill.com. The application is three simple questions, and winners will be notified by Aug. 1 – just in time to stock up for the new school year.

**Deadline is June 30.**

Get full details and rules at:

**www.MeemicFoundation.org/BackToSchool.**

*"If you don't know history, then you don't know anything. You are a leaf that doesn't know it is part of a tree."*
*—Michael Crichton*

# Good Stewards of the Shore

*School District of Sheboygan Falls*

From now on, whenever this year's eighth graders at Sheboygan Falls Middle School visit a local beach, they will be able to watch the future they planted take root, stem by stem.

During a half-day field trip to Deland Park Beach, 128 students -- the entire eighth grade class -- joined experts from the Alliance for the Great Lakes for a Coastal Restoration Stewardship Day. They learned about preserving water quality, preventing erosion and keeping the beach clean through a series of hands-on activities, explained Sheboygan Falls Middle School science teacher Tammy Huenink, who coordinated the event.

"It was pretty awesome to see that many kids doing a stewardship project," Huenink said. "In a few years, they can see the dunes forming there and say, 'We were a part of that.'"

Brooke, who took part in the project, is already looking forward to a return trip.

"I can't wait to go to the beach in the next few years to see the progress," she said.

The Alliance for the Great Lakes is a non-profit organization that has worked for 40 years to conserve and restore the Great Lakes, the world's largest surface freshwater resource, using policy, education and citizen involvement. The group holds a variety of programs including an annual Adopt-A-Beach effort that involves about 10,000 participants throughout the Great Lakes area.

The group has also created Great Lakes In My World, a curriculum for students in kindergarten through twelfth grade that includes a variety of lessons and activities teachers can use to educate students about the issues facing the Great Lakes and ways they can help. Huenink has worked with the Alliance and has been trained to teach other teachers how to use the curriculum in their classrooms.

When Huenink was approached by Alliance staff about doing a project at Deland Park, she welcomed the idea of giving students a chance to take their learning outside the classroom walls. Participating in the project will allow them to make more connections when they work on a unit about the Great Lakes later in the year, she said.

At the beach, students split into groups and rotated among four stations. At one, they learned about monitoring water quality and got to help wade into the water and gather samples. At another station, they learned about the importance of keeping the beach clean and helped collect trash. At the other two stations, they learned about identifying native and invasive plant species and preventing erosion by planting native grasses on the beach.

Sheboygan Falls teachers helped Alliance staff lead the activities.

Students gave the project rave reviews.

"I thought it was cool we got to take our learning outside in a real life situation." Madison said.

"I thought it was fun, we got to test the water quality," added Aaron.

Parents were impressed, too.

"My son told me all about it. We talked about how he will visit the beach some day long in the future and see the work he did in 8th grade, "parent Katie Miller said.

Huenink said many students got a kick out of putting on waders and walking into the lake to help collect water samples.

Others were amazed at how hard it was to plant the grasses in the sand so they would take root.

"I learned that planting is hard on the beach," Mary said.

Despite their best efforts, students planted 5,000 plants -- half of the Alliance's goal of 10,000 plants.

The students also collected a lot of garbage. Huenink said one group alone picked up 13 pounds of trash.

Huenink believes one of the most important lessons of the project was showing students that no matter how overwhelming the issues of conservation can be, any individual effort can help.

'They say, 'I'm a middle school student, I can't make a difference,'" she said. "Well, yes you can."

And they did.

**sheboyganfalls.k12.wi.us**
**(920) 467-7893**

# Ozaukee Students Have Found Sandi

*By Melissa Harms, Director of Bands*
*Northern Ozaukee School District*

Melissa Harms, the Band Director at Northern Ozaukee School District, started class one day with a story of stray, abused, and abandoned dogs and puppies that are slowly making their way up to Wisconsin from DeKalb County, Alabama: "I had a friend ask me if I wanted to help volunteer on intake day: where a transport of dogs and puppies came in from DeKalb County, Alabama to be united with their forever family or go into foster until their forever family would come along. I decided to go and the experience changed me."

Sandi Paws Rescue is a dog rescue, based in Fond du Lac, committed to protecting the quality of life and improving the well-being of abused, neglected and unwanted dogs through prevention, education, intervention, placement and lifelong care.

"After I told stories of some of the dogs, students kept asking questions, 'When do the dogs come? What kinds of dogs do they have? Can we help in any way? Are there pictures of the dogs?' I showed them the website and it's been nothing but excitement ever since," Harms said.

Every three weeks, Sandi Paws Rescue brings up as many dogs and puppies as they can to help make more room available to the fosters in Alabama. More fosters available in Alabama means less dogs in the kill shelter that they pull from. It's not only a win for the dogs, but for people looking for a new member to add to their family.

This past Saturday, six Ozaukee Middle School students made their way to Fond du Lac to help with the intake process. They walked the dogs, played with dogs, cuddled with the puppies, and made sure that the dogs felt loved after their long trip.

"I really enjoyed taking the dogs for walks, especially Melba," said 7th grader Sydney Stadler.

MacKenna Schueller, an 8th grader, said that, "It's a great organization and I'm happy to be spreading the word here at school and in the community."

Sandi Paws Rescue is always looking for adopters, fosters, volunteers, and donations. If interested, please go to their website at sandipawsrescue.wix.com.

"I always tell my students that you never know when a great opportunity to help will appear," Harms said. "When it does, you need to be ready. I have a feeling I might be taking a busload of kids down one of these weekends to help support a great cause. And one has to admit, playing with puppies isn't so bad either."

**www.nosd.edu/pages/Northern_Ozaukee**
**(262) 692-2489**

# With Abandon

*Rick Blasing, School Counselor*
*School District of LaCrosse*

I had to smile. I was stopped at a red light on my morning drive to work on an early fall day, when off to my left I noticed a rapid movement. There he was, flying down the sidewalk on his bike, on his way to school.

He appeared to be middle-school age and was, most typically, underdressed for the weather. His t-shirt flapping in the breeze, he was standing on his petals as he rode - pivoting from side to side as he navigated through the imperfections of the concrete.

There was evident an expression of glee on his face as he enjoyed his morning commute. The wind in his face, he rode with abandon.

The image of this young man enjoying his ride took me back to my own childhood. I really did enjoy going to school. Not that I loved every subject, mind you, but I always sensed that my teachers cared about me. I may have pushed the envelope with them from time to time, but I learned very quickly that I should never let it go so far that there would be a call made to my home. My parents supported the school without question, and the consequences of my misbehavior was magnified at home, let me assure you.

We lived on a farm, a forty minute bus ride from school. I remember well the wonderful feeling of arriving home and the routine that would follow: I would hug our farm dogs, devour some snack, then hop on my bike for a cruise down our long gravel driveway. I loved that feeling of freedom – that rush of the wind all around me.

Seeing this young man on his bike, and recalling my own childhood, it was clear to me that he was not only relishing his ride, but that he was going to a place that he enjoyed, a place that he really looked forward to – his school.

Sometimes as the years pass, we tend to lose some of those things that exhilarate us; we put on a shelf those emotions that allow us to yell out with joy or laugh until tears roll down our cheeks. Often, as the pressures and responsibilities of life descend around us, we can lose the spontaneous ability to free our thoughts, perhaps losing our sense of wonder to one of survival or obligation.

Without question, there is an increasing pressure on our youth, a changing society with many families in disarray. To that end, many young people are being denied what should be the carefree years of life. There is a higher percentage of children living in a world of poverty, more facing the uncertainty of their next meal.

There is also an assault on the innocence of our youth; that the great technology of the age can also be used to exploit their natural sense of curiosity - seizing young attention spans with addictive games or social media.

Whatever the cause or reason, we need to refuse to surrender - on behalf of our children and our students - the freedom to occasionally live in the moment, to experience pure joy and happiness.

They need to sense a real connection between their home and the school, that their parents or guardians support the educational process. And that their homes feel equally supported by their local schools. That our children continue to love going to school, feeling encouraged and empowered, at every turn. That every student should be able to see a promising and fulfilling future for themselves; a productive, rewarding life full of accomplishment and service to others.

It is quite evident when home and school work together. We can see it in the faces of our precious young people, that sense of wonder in their eyes - even when they are on their way to school to experience another eventful day. If we give them what tools they need, they will be ready to reach for the stars and run towards their goals and dreams in life, with abandon.

*Published in the LaCrosse Tribune, March 13, 2016*

**www.lacrosseschools.org**
**(608) 789-7600**

# Kids Deserve a Break from Cancer

***Angel On My Shoulder* is dedicated to bringing light and laughter to kids and teens surrounded by the cloud of cancer.**

Founded in 1995, *Angel On My Shoulder* is a registered 501 (c) (3) non-profit cancer support foundation that sponsors **COST-FREE** winter and summer weekend camps for kids and teens with a sibling, parent, or grandparent living with cancer or lost to cancer. These camps are tailored for specific age groups with plenty of activities and adventures to create fun, friendship and laughter. We also offer a camp for kids who have cancer or have recovered from it, and their parents and siblings.

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*(summer)*

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*(winter)*

Angel Adventures EXTREME
*Ages 16-18*
*(summer)*

***CAMP for kids suffering from cancer and their families:***

CAMP HOZHONI
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*(winter & summer)*

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For more information on camp dates, registration and other programs held throughout the year, please contact us!

**1-800-860-3431 • info@angelonmyshoulder.com • angelonmyshoulder.org**

# Fox River Academy Students Flourish in Nature's Classroom

*Kelly Koller, Fox River Academy*
*Appleton Area School District*

Hidden amid the pulse and flurry of modern life every city, village and countryside offers monuments, both natural and human-made, that weave together the rich fabric of history from thousands of years ago until today. For the students of Fox River Academy, that natural landmark is The Ravine. A refuge from the bustling downtown City of Appleton and an important sanctuary for wildlife in the sprawling development of the Fox Cities, The Ravine is home to what our students estimate is well over 500 species, and the occasional couple out for a peaceful walk.

Since 2011, Fox River Academy students have worked with the City of Appleton to help restore The Ravine by removing invasive species, improving habitat areas, developing a trail and removing garbage.

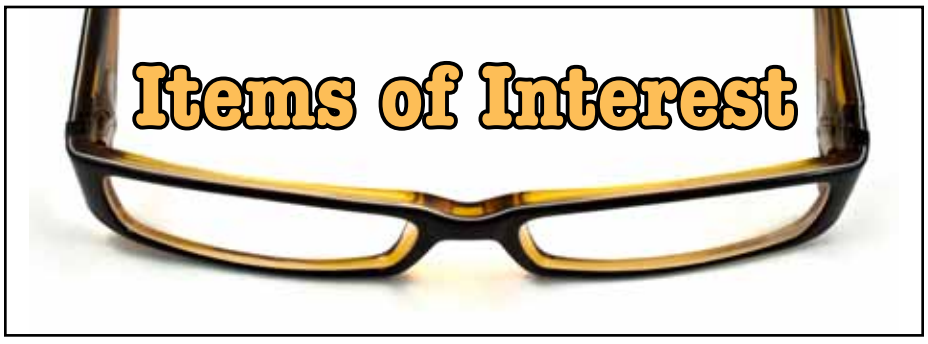
In the early 1900's Appleton, Wisconsin was known as the City of Ravines, though one would never know that by today's landscape; This is part of what makes The Pierce Park Ravine so special. Thousands of years ago as the glaciers receded in Wisconsin about 20 ravines were created from erosion in what would later become the Appleton area. Through urban development ravines were filled in and some, like the Pierce Park Ravine, used for garbage dumps. Today, only a handful of ravine remnants remain and the Pierce Park Ravine is a 5 acre mostly forested parcel between Pierce Park and Lutz Park.

Over the past five years, some of the projects students have done in The Ravine include creating habitat for cliff swallows and bats, establishing a native prairie area for pollinators, tirelessly removing burdock, identifying plant and tree species, animal tracking, mapping and orienteering activities and in general using the area as a lab for every subject.

The Ravine is a five minute walk from our Fox River Academy and a priceless resource. The firsthand experiences students have in this wildlife area enrich learning in both the head and the heart. Experiencing wildlife in addition to typical reading and classroom activities creates opportunities for unexpected discoveries, new questions, adventure, inspiration, and new connections. I can't imagine teaching without having the outdoors as a classroom. Technology is important in education but it is imperative to remember that we have a giant interactive classroom called the outdoors and there's no app for that.

In addition to the academic benefits, an outdoor classroom educates the heart of students in a subtle but perhaps even more meaningful way. When students experience the interdependence of organisms in nature they not only understand the concept of respect and diversity, they practice it more readily. They have a mindset of ecocentrism vs egocentrism. They have a better ability to step back and see the big picture of how humans interact with and depend on nature and resources. They think of the community as a whole vs one component or perspective. Students of today need all of these skills and perspectives in their futures and the best part is as long as the opportunity is available close by the best classroom is free and right outside our doors.

**www.aasd.k12.wi.us**
**(920) 832-6161**




## Contests/Competitions

### Engineering for You Video Contest

The National Academy of Engineering (NAE) Engineering for You Video Contest challenges students to create a video focused on mega engineering. Most of humankind's biggest endeavors depend on engineering to create solutions the span disciplines, geographies, and cultural boundaries. Some of these mega engineering projects have already been accomplished, while others have yet to even be imagined.

The Best Video Overall is awarded $25,000, and the People's Choice Award video is awarded $5,000.

Video submissions are due May 31, 2016.

**Website:** www.nae.edu/e4u3/

### Google Science Fair Competition

The Google Science Fair is a global science and engineering competition open to students ages 13–18. Students may enter as individuals or in teams. There is no entry fee. Finalists will compete for internships, scholarships and prizes in front of an international judging panel of scientists and engineers.

The grand prize includes $50,000 in scholarship funding. There are also prizes for the top finalists and category awards.

**Deadline:** Submissions due May 18, 2016.

**Website:** www.googlesciencefair.com/en/

### Ocean Awareness Student Contest

Middle and high school students are invited to participate in the 2016 Ocean Awareness Student Contest. This year's theme is "Making Meaning out of Ocean Pollution," and it challenges you to research, explore, interpret, and say something meaningful about the connections between human activities and the health of our oceans.

This year, students are challenged to focus on ONE type of ocean pollution and "make meaning" of it through art, poetry, prose, or film.

Individual and group submissions are eligible. Cash prizes for the winners, teachers, and their schools range from $100 to $1,500.

**Deadline:** Submissions due June 13, 2016.

**Website:** www.fromthebowseat.org/contest.php

### Parent Group of the Year

Enter the Parent Group of the Year competition to showcase all your hard work, increase awareness about your group, and win great prizes! There are so many great stories to tell—why not share yours? Brag about an event, activity, or what you do best.

The contest is open to all elementary and middle school (K–8) parent groups: PTO, PTA, HSA, PTC, etc. Parent groups at other schools such as high schools may still enter, but should be aware that the main audience of PTO Today is K–8 parent groups.

Choose from seven categories, including Outstanding Major Project or Program and Outstanding Community Service Project, and you'll automatically be considered for Judges' Choice and the $3,000 grand prize of National Parent Group of the Year. Category winners will each receive $500.

**Deadline:** Entries due June 1, 2016.

**Website:** www.ptotoday.com/pgy/

### Presidential Awards for Excellence in Science, Mathematics, and Engineering Mentoring

The Presidential Awards for Excellence in Science, Mathematics, and Engineering Mentoring recognizes citizens and organizations that have demonstrated excellence in mentoring individuals from underrepresented groups in STEM (science, technology, engineering, and math) education and career paths.

Up to 16 awards may be made. Each awardee will receive $10,000 and a commemorative Presidential certificate. Awardees are also invited to participate in an awards ceremony in Washington, D.C. which includes meetings with STEM education, research, and policy leaders.

**Deadline:** Nominations due June 17, 2016.

**Website:** www.nsf.gov/funding/pgm_summ.jsp?pims_id=5473

### Brower Youth Awards for Environmental Leadership

Earth Island Institute established the Brower Youth Awards (BYA) to honor founder and legendary activist David R. Brower. Each year, the BYAs recognize six young people ages 13–22 living in North America who have shown outstanding leadership on a project or campaign with positive environmental and social impact.

Each recipient will receive a $3,000 cash prize, a professionally produced short film about their work, and flight and lodging accommodations for a week-long trip to the San Francisco Bay area.

**Deadline:** Apply by May 16, 2016.

**Website:** www.broweryouthawards.org/apply/#application

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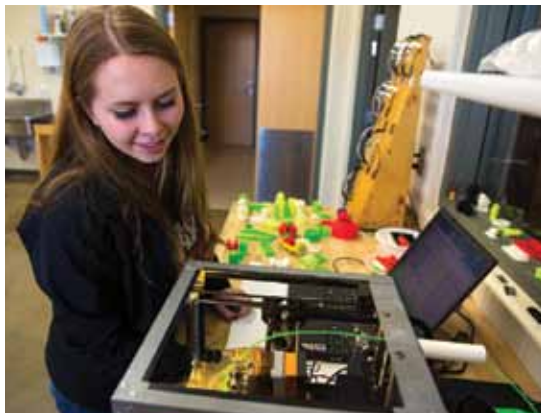


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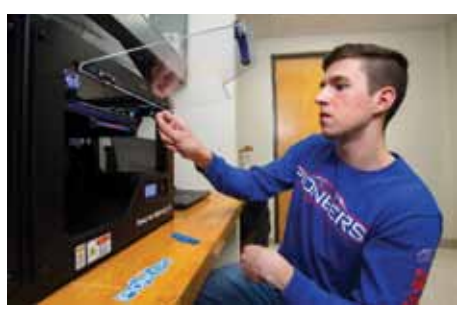


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