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Census 2022

COMMUNITY-BASED OUTDOOR
& ENVIRONMENTAL LEARNING

HARVEST FEST CASE STUDY

Stratton School, Franklin County

An exemplar of Community Relationships

"Harvest Fest is another way to have our doors open to the community and to have those connections. Anytime you can get community members or family members into a school in a positive setting, it's good because it's an encouraging environment that the families feel, and the kids feel. I think it's deepening the relationship between the school and the community."

—Anne Flight, Art Teacher

Inside of the growing dome various food is grown such as the tomatoes pictured.

PROJECT BACKGROUND

In 2015, the school board at Stratton School approached the teachers and asked if anybody was interested in starting raised bed gardens in the front of the school. Katie Wuori, the 6th grade teacher, and Tabitha Emery, the 1st grade teacher at the time and now principal, happily agreed. A member of the school board, Dave Richards, and Millie Howard, the Volunteer Coordinator at the time, then wrote a grant proposal for Let's Go 5-0-2-1-0 through Maine Health which they received. Getting everything started was a team effort, with fifth graders digging up the topsoil and grass, community volunteers setting up the beds over the weekend, and first graders planting the seeds. For the first couple of years, it was just Wuori and Emery, but more and more teachers became interested, which prompted them to write another grant for nine additional raised beds, all of which they made organic. In 2017, they were looking for a way to celebrate their gardens and vegetables with the community, so they decided to hold the first-ever Harvest Fest. Since then, they have hosted the community celebration and dinner every year in the Fall. This event has grown in popularity each year, with attendance currently reaching about 150 people. Flight notes how most years when it is time for Harvest Fest to start, the line to get in the school is out the door. To accommodate the high level of interest and success of the program, Stratton continues to grow its resources and even installed a growing dome from Growing Spaces in Colorado to extend their growing season and the ability to produce more food.

THE PROGRAM

On the night of Harvest Fest, the school is buzzing as everyone completes last minute tasks to prepare a meal for their beloved community. Flower bouquets are on each table from various personal gardens of attendees. There is a strong emphasis on local, Maine-sourced ingredients at Stratton School and they try their best for all the food at Harvest Fest to be local. In order to do this, they commonly modify recipes, such as replacing sugar with maple syrup. Since they currently serve around 150 people on the night of Harvest Fest, their gardens aren't quite big enough to grow everything at the school. To supplement their own supply of food, they reach out to the community and ask for donations of vegetables. Many individuals and farms in the area donate food and other items. For example, when the main dish in 2017 was lasagna, Maine Grains donated flour to make homemade noodles. They also make their own butter each year using milk from Oakhurst, which the kids love doing. The kindergarten students even have a song specifically for doing this, which provides an opportunity for movement and engaging different parts of their brains to facilitate learning. There are always many salads at Harvest Fest that feature the fresh vegetables they grew, which is a source of great pride for the students. When students are sharing the meal with their family, they often get excited to show them what dishes they made and explain where the food came from.

The students are responsible for every step of the process that goes into holding Harvest Fest. This includes planting everything in the garden in the spring, maintaining the garden, harvesting, prepping food, and serving it. This helps the students to thoroughly understand where their food comes from and to be able to give back to their community. Students regularly take cooking lessons throughout the school year in order to help them get comfortable preparing

their own food. They also do many taste tests, such as comparing carrots they grew themselves to carrots from the grocery store. The school also uses the students' close involvement with the food and what they like to help drive decisions about what to plant. If they know students really love a particular food, they try to incorporate it into school lunches more. Anne Flight, the art teacher, facilitates various projects that are another way for the students to contribute to the event. The students create labels in front of each of the dishes, a welcome sign right when you walk into the building, and a mural hanging in the cafeteria.

Stratton has a full-time garden coordinator who teachers are able to sit down with and discuss upcoming topics and lessons where it might be helpful to incorporate an activity in the garden. For example, if a teacher is focusing on geometry, they might organize an activity in the garden around graphing and figuring out area and space and how to split up the garden. Greater Franklin Food Council (GFFC) also sponsored Wuori and three other colleagues, Selina Warren from Kingfield Elementary School, Sarah Reynolds from Cascade Brook School, and Laura Hoeft from GFFC, in developing a curriculum called Growing Gardeners that is designed for PreK through eighth graders. The lessons start in the spring, the beginning of the gardening season, and go all through the rest of the year. Within this curriculum, there are pathways ranging from how to get started with no budget to push-in programming with an established garden and nutrition program. It contains standards-based cross-curricular lessons modeling how to garden and hit learning targets at the same time. There are strategies for teaching outside, games, STEM connections, and tried and true kid friendly recipes with nutrition information. Wuori says the goal of this curriculum is to give schools that are interested in incorporating gardening a starting point and take some of the work off their plate.





Growing dome at Stratton School from Growing Spaces in Colorado.

BENEFITS

Through Harvest Fest and the gardening programs at Stratton School, students gain a thorough understanding of where their food comes from and become comfortable preparing it. Flight notes that more and more students are eating vegetables and are excited about it. One year they were unable to have kale chips due to logistical reasons, and she remembers how disappointed the students were. The students also benefit greatly from regularly spending time in the garden at their school. When asked what they like about the school garden, a 2nd grader said, "I like the garden because it's a really nice place to be and it smells good and there's a lot of good vegetables to eat." A 4th grader noted, "I love nature and I love to help too, so it's a good combination because I get to see nature and I get to help the garden."

Harvest Fest also benefits the greater Stratton community. Wuori says during the COVID-19 pandemic, they tried to do takeout meals in place of the event, but they quickly learned that the community was not lining up for the food itself. Rather, they wanted the chance to sit down and have a family-style meal, be part of the community, and celebrate healthy living and all the hard work of their kids to bring the meal to the table.



SUPPORT & PARTNERSHIPS


Stratton is a small town but the community is extremely supportive, which has helped the project's success. Many people in the town have their own personal gardens, including Wuori, Flight, and Richards. These members of the community grew up eating fresh, local food instead of processed foods and it is important to them to share that lifestyle with the students at Stratton School.

The community is committed to Harvest Fest, donating food and other materials, fundraising, as well as volunteering their time throughout the year. One parent who is especially interested in the project even contributes their own expertise in fundraising to help. Other parents volunteer by taking care of the garden in the summertime, along with other community volunteers. Further, the dome and gardens need maintenance work done periodically, which volunteers complete. Stratton School is also located right next door to a lumber mill that gives them specific types or pieces of lumber upon request. Maine Agriculture in the Classroom has also sponsored different events such as having Bernie the Bug Man come and talk to students about pest management in and around gardens. Greater Franklin Food Council organized a group called Schools Integrating Nutrition and Gardening (SING), which Stratton School is a part of and now consists of ten different schools in Franklin County. Finally, they have received continual funding from Sugarloaf Community Trust.

Food offered at Harvest Fest, including carrot top pesto, whole wheat sourdough bread, buttermilk ranch dressing, and garden vegetable salad.

LESSONS LEARNED & NEXT STEPS

Harvest Fest would love to continue to find ways to expand the actual night of Harvest Fest and include more activities for families and students since it is one of the only times during the year that most families are gathered in the same place. Flight has also done Empty Bowl Fundraisers in the past, which involved making clay bowls in the art room and raffling off the bowls with the proceeds going to local food banks. She would love to include this on the actual night of Harvest Fest in the future, so families have the option to get their meal in a handmade pottery bowl and take it home with them all while contributing to a local charity.

Wuori and Flight are also focused on the sustainability of the project and ensuring that it will continue even without them. Wuori emphasizes that it is important to make sure your project fits with your community and the people in it to support its sustainability — and Stratton's commitment to agriculture and gardening make this project well-positioned to continue into the future. 

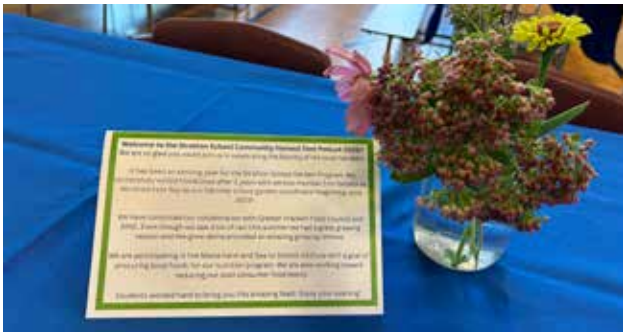


Students and staff huddling together to make a plan to welcome their community.

PRO TIP ►

“Go slow. Use your community. You can go to the transfer station and get pots and go to your local nursery and get a bag of soil and some seeds, and just throw them in a window in your classroom and see what happens. That’s where you start. Don’t think you have to do everything. And if things die, then it’s a great science experiment, because you can figure out why. Or if they lived, then that’s even better.”

—KATIE WUORI, Stratton School



Welcome message placed on all the tables during Harvest Fest.



For more information, please visit:
teachmeoutside.org



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COMMUNITY-BASED OUTDOOR
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WELLS RESERVE NATURE & SCIENCE WEEK CASE STUDY

Wells Reserve, York County

An exemplar of Culturally Responsive Programming

"If you're a science kid, it would be a dream summer for you. You would love everything, the hiking, the long walking, all the different experiments you get to do, you would love."

—TASCELLE ALLISON, an 11th-grade student,
on what she would tell her peers about the program

PROJECT BACKGROUND

In 2019, Tom Talarico, a science teacher who works with English Language Learner (ELL) students at Portland High School, visited Wells Reserve for a school field trip. The following year, Talarico continued to develop this relationship and attended a virtual teacher workshop with Wells Reserve facilitated by Education Director Suzanne Kahn and Program Coordinator Caryn Beiter. Wells Reserve wanted to diversify its audience; so in 2021, when it received funding through the Maine Community Foundation to fund camp registration fees for summer campers, Kahn naturally thought of Talarico and his students. She recognized it would be a good opportunity to bring them back to Wells Reserve for a summer experience, and Talarico was excited about the opportunity. For one week each summer since, a group of woman-identifying ELL students have attended Nature & Science Week. Wells Reserve prioritized this audience to encourage more women in science and to provide a summer opportunity for ELL students to practice speaking English with a group of their peers while spending time outdoors connecting with nature. Kirsten McWilliams, a Portland High School ELL teacher, notes that Portland Public Schools is exploring ways to extend education through the summer months, since there are an increasing number of families who don't have access to camps and other specialized summer programming. Further, there are also many New Mainers who are rushed to learn the English language, meet standards, and earn a diploma. In the words of McWilliams, "Any opportunity like Wells to get the students out in nature, on the Maine coast, learning English, engaged, and not isolated at home is amazing."



Students taking pictures of the great blue heron painting.



THE PROGRAM

During Nature & Science Week, students are immersed in exploring, getting comfortable with the outdoors, and learning the science behind the phenomena they see. When reflecting on the week, students mentioned a handful of highlights, such as learning about estuaries, zooplankton, and bird migration patterns while visiting the preserve's salt marshes and beaches. Three teachers from Portland High School, Talarico, McWilliams, and Ann Hall, have all been involved with the camp. Because many of the activities students participate in during the week are new and, at times, intimidating, having teachers from their own school helps the students feel more comfortable. One of the activities the students love is collecting different types of plants and animals that live off the edge of the dock in Wells Harbor. They are given descriptions of them and then look at them through micro cameras on their phones, sort them, and learn about them. McWilliams notes that in 2023, there were many sea stars which they had never really seen before – an especially exciting sighting because they are integral to maintaining a healthy and diverse ecosystem.

The environment at Nature & Science Week is intentionally designed to be conducive to learning English for the students. Wells Reserve relies on the expertise of the ELL teachers at Portland High School, and they incorporate well-established strategies to scaffold students' learning. They also structure the instruction during the week to help the students learn as many science, nature, and environment words as possible. Finally, they encourage students to use English in all four domains, meaning they hear, speak, read, and write the words they are learning. One of the ways they accomplish this is by having a word wall that contains vocabulary used throughout each day. At the end of the day, students journal about everything they learned, using more and more vocabulary as the week progresses.

◀ Freshman Marcelina Mbuko searches for both zooplankton and phytoplankton in the research lab after collecting water samples from the estuary.



Students learning how to kayak

BENEFITS

Teachers notice that the students benefit by developing friendships and connecting with their peers, having opportunities to practice speaking English, and gaining confidence from knowing they are part of a unique program supported by many people who are invested in their success. When asked about their favorite part of the program, Jese Francine, another 11th-grade student, remarked on how nice it was to spend the week with a group of women. Students also get to experience many outdoor activities they have never done before and get comfortable being outside. For example, many of the students have never been kayaking before, and although several were scared at first, being on the water gave them confidence and many ended up loving the experience. One student, Tascelle, even mentioned it as one of her favorite parts of the whole week.

Wells Reserve has received numerous thank you notes from students after attending Nature & Science Week, which speak to how much they enjoyed the experience. One student wrote, "By [providing this opportunity], you're not only allowing me but also other students to understand different science topics as it will help us in our upcoming science classes and inspire some of us to be part of the many women in fields of science." Another wrote, "One of the best weeks of my life. Thank you all from the bottom of my heart."

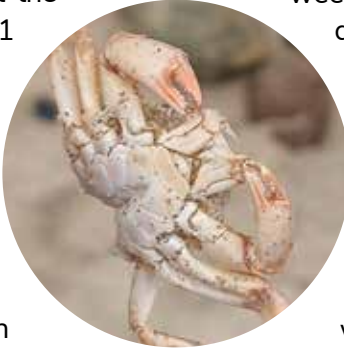
SUPPORT & PARTNERSHIPS

In addition to the strong partnership between Wells Reserve and Portland High School, Nature & Science Week also relies on support from multiple community partners. In their first three years, Monica Grabin from York County Audubon led a bird walk for the students, Carol Steingart from Coast Encounters brought a traveling touch tank to show students various marine life, and Amara Ifeji from the Maine Environmental Education Association visited the students to share her experience as a woman of color in STEM doing environmental work. She also sat with the students and provided space for them to ask her questions about college and any details about her journey. Additionally, Kahn makes an effort to strategically plan events to coincide with the week to get students involved in community events. For example, she scheduled an event with Eric Gold, a local community artist, during the 2023 Nature & Science Week. Students created sections that contributed to a painting made up of 100 individual squares that together formed an image of a great blue heron. Once the painting was assembled, the students were excited to see the final product and find their own individual squares. Nature & Science Week has also received financial support from various community organizations, such as the Maine Department of Education Outdoor Learning Initiative, Maine Summer Camps with support from L.L. Bean, Portland Public Schools, individual donations, and continued funds from the Maine Community Foundation.


LESSONS LEARNED & NEXT STEPS

The staff at Wells Reserve, including Kahn, Beiter, and Linda Littlefield Grenfell, Wells Reserve's Environmental Educator, have intentionally stayed open to improving the program and gathering feedback to learn about what is working or not working. For example, attendance at the first Nature & Science Week in 2021 was sporadic, and after asking the teachers who know the students best a variety of questions, they learned that many students needed to work a summer job to help provide for their families. To help make the program more accessible, Wells Reserve has given each student a stipend of 50 dollars per day ever since, which has significantly helped with attendance. They have also tried to be aware of students' familiarity with the content they are teaching and meet students where they are. For example, climate change and the impact of plastic on the environment are new ideas to many of the students in the program. Because of this, teachers first educate the students about these topics and then put them into practice during the week.

Another opportunity to make the program more responsive to students' needs and cultures came during meal times. During the first year of the program, the teachers noticed that the students were not eating their provided lunches and started bringing lunches from their homes. Wells



Reserve responded to this by giving McWilliams a budget to buy groceries and providing food that the students were used to and enjoyed. McWilliams even made an African chicken dish following a recipe that one of the students gave her. Because of the program's responsiveness to the students, food became an exciting part of the week. One day, students decided to make a dish they loved and bring it for lunch as a way to share their culture with others.

Going forward, Wells Reserve is focused on continuing to secure funding and supporting teachers who want to participate in Nature & Science Week. The project team would love to bring back students who participated in previous years to take on a leadership role and mentor the younger students. They are also continuing to find strategies to bring in scientists and guest speakers to share their research in an accessible way for participating students. 

PRO TIP ►

"Having these dedicated teachers is crucial. They do the promoting within their student body, they reach out to students they think would benefit or they think would enjoy it. Without them, we don't have that contact with the students directly."

—SUZANNE KAHN, Education Director
at Wells Reserve



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teachmeoutside.org

Maine's new state butterfly is a common sight from August to early November. An accidental pollinator, the Pink-edged Sulphur relies on blueberry bushes to shelter its eggs and young, so its presence helps to indicate the health of the ecosystem.



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SAVE OUR POLLINATORS CASE STUDY

Loranger Memorial School, York County

An exemplar of Climate Change Education

"I really think young people are our future and that they care. Many of them care about the world they're going to inherit...they're also really members of this community. I think they get that it's their future and that they're making an investment in it and learning skills that will be useful."

—CYNTHIA NYE, Gifted & Talented Teacher

PROJECT BACKGROUND

Two educators at Loranger Memorial School, Cynthia Nye, a middle school gifted and talented teacher, and Laura Seaver, a fifth grade teacher, had already done basic pollinator garden projects at their school when Theo Ciampa with Community Friendly Connection (CFC) read a story in The Portland Press Herald about the decreasing number of pollinators. Ciampa decided to take action and began planting pollinator gardens in the Old Orchard Beach community. Eventually she decided to get involved with schools in the community and reached out to Nye, which resulted in a partnership to help grow Loranger Memorial School's pollinator program. The project team received a grant through the Learning Ecosystems Northeast (LENE) network with support from the Gulf of Maine Research Institute (GMRI). The goal of the grant was to expand on the pollinator work already being done and use it as an avenue for incorporating lessons on climate change, since warmer temperatures impact the timing of blooms and the availability of food for pollinators. Once the project team received the grant, all of these pieces came together to help expand the pollinator project at Loranger Memorial School and to teach students about climate change while planting pollinator shrubs at the school.



THE PROGRAM

When the day came to plant the pollinator shrubs at the school, Ciampa and other members of CFC; Molly Auclair, the Connected Learning Ecosystem specialist from GMRI; and Sarah VanDenbergh, Project Manager for the LENE network were all there alongside Nye, Seaver, and their students. The students were excited to get their hands in the dirt and their engagement throughout the process was clear. They gave each of the plants a name as they planted them and later made signs to let other students at the school know where to avoid stepping to protect the plants. As Nye walked around, she heard students talking about how they had never planted anything before and saying that they were helping the earth. The pollinator shrubs they planted included blueberry bushes, which are an important part of Maine's ecosystem and economy, and their ability to produce fruit depends on pollination from bees. Throughout the project, students and educators discussed how climate change has a direct impact on bees and how they pollinate. When teaching young students about climate change, Nye notes that many people are concerned about worrying students. She has found a helpful approach, which is "to keep it local, keep it focused. And to always reassure kids that there are adults working on [climate change solutions]. There are people across the state, other students, lots of people thinking about this problem. And there are things we can do."

While planting and tending the blueberry plants, students explored the direct impact that climate change has on bees and how they pollinate through GMRI's module, "Bees, Blueberries, and Climate Change." This is a free resource that guides teachers on how to educate their students about the connections between Maine's blueberries, the bees that pollinate them, and changes in spring temperatures. GMRI builds standards into these lessons, which Nye and Seaver note can be adapted across elementary and middle school grade levels. To assess students on these lessons, Seaver had her students use their own photos of bees to make slides and identify the bee in each slide, using evidence to support their "argument." For their final project, students could either design their own project or create a "Wanted" poster for an invasive species, with the assessment focusing on their ability to communicate their information. Some of these student projects included building bee houses for the

◀ Photo by Cynthia Nye, LMS The Conservation Commission published student work in trail kiosks to help engage and inform the wider community.



Photo by Sarah VanDenbergh, GMRI Pollinator gardening projects engaged students in learning outside. Community gardeners stepped in to mentor students, many of whom had never planted before. The Public Works Department helped prepare the site.

school, using the app iNaturalist which allowed students to identify and share what bees there are at the school, and visiting students at the local elementary school to teach them about pollinators. Other students made “Wanted” posters for invasive species such as black swallow-wort, lionfish, and murder hornets.

BENEFITS

The students’ investment in the project was evident in many ways. As Nye noted, “community needs around climate change give students real reasons to read and write and look at data.” This came to life when a couple of the fifth graders learned that Maine didn’t have a state butterfly, another key pollinator, and decided they wanted to write to the Maine State Legislature. They got together with the class and investigated potential options to propose for the state butterfly and picked one together. Phillip deMaynadier from the Maine Department of Inland Fisheries and Wildlife helped the students learn that the butterfly they had picked was only found in a few places in Maine, but there were different species that have a larger statewide range. So, they finally came up with a proposal for the pink-edged sulphur butterfly and went in front of the legislature to testify for it. Through their efforts, Maine now has a state butterfly.


SUPPORT & PARTNERSHIPS

For this pollinator project, Nye and Seaver worked closely with two partners in the community: Community Friendly Connection and Gulf of Maine Research Institute. CFC is an organization that strives to bring the community together in Old Orchard Beach and Ciampa has been instrumental in helping with the pollinator gardens at Loranger Memorial School and in continuing to recruit volunteers to keep the project going. Keeping the plants watered during the summer months is always a challenge and requires support from multiple people. Sometimes the teachers drive to the school with jugs and water the plants themselves, while other times families agree to do the same. The project team’s strategy is to ask around and continue to recruit volunteers in order to be able to expand their reach to other areas of the community.

Nye and Seaver also work closely with GMRI and are part of the Southern Maine Connected Learning Ecosystem (CLE), one of a number of CLEs that are part of the Learning Ecosystems Northeast network. LENE, a NASA-funded project, is a network of education partners across the Northeast, connecting to build local learning communities committed to empowering the next generation of climate stewards. The LENE network is composed of regional peer communities, called CLEs, of formal and informal educators and learning experience designers across the Northeast focused on building climate and data literacy skills for youth through shared

learning and collaborative implementation of local, connected learning experiences for youth. Auclair describes these CLEs as “a great network of educators, who are focused on making local connections and just sharing and working through things that are hard in their education spaces. So I would say, reach out, find one near you, and join in.”

LESSONS LEARNED & NEXT STEPS

Since many of the students coming from Laura's fifth grade classroom will have already completed the pollinators unit, Nye is planning other projects related to ecosystem change and climate for her incoming sixth graders. These include GMRI projects focused on the hemlock woolly adelgid and emerald ash borer. Nye feels confident that as long as she has Seaver as a partner, their shared passion for nature and getting kids outside will help them be successful. She also knows that whenever they need help with something, they can go to Ciampa for support. 

ADDITIONAL RESOURCES ❖

GMRI's Bees, Blueberries,
and Climate Change Learning Module
<https://teach.gmri.org/curriculum/modules/35-bees-blueberries-and-climate-change/>

Learning Ecosystems Northeast
<https://www.learningecosystemsnortheast.org/>



Photo by Cynthia Nye, LMS In the classroom, GMRI's “Blueberries, Bees, and Climate Change” ecosystem investigation module engaged students in data analysis and modeling activities.

PRO TIP ►

“Find somebody who's going to support you with curriculum so you don't have to create all the curriculum. You can adapt or build on or just use. And find an organization in the community or a person who's really going to commit to helping with that adult support piece.”

—CYNTHIA NYE, Gifted & Talented Teacher



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Student with archaeologist Gabe Hryn timer.



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MIDDEN MINDERS CASE STUDY

Cobscook Institute, Washington County

An exemplar of Wabanaki Studies
and Environmental Learning

"I think part of cultural responsiveness is relationship building, particularly for white educators to recognize that it's implicit on us to take the lead to invite relationships, to be curious, and to ask questions."

—KARA MCCRIMMON, Cobscook Institute

PROJECT BACKGROUND

There are around two thousand shell heaps or middens on the Maine coast that hold vital information about Wabanaki history. This wealth of information can be discovered through careful excavation; however, there are not enough professional archaeologists in Maine to do so. Further, sea level rise is destroying these archaeological sites and disproportionately affecting the heritage of coastal Indigenous communities already marginalized. The Midden Minds project, which is a collaboration between Wabanaki Nations and archaeologists from various local universities, is a response to this. Midden Minds teaming up with Cobscook Institute was the beginning of the project's work with high school students. The collaboration started when Dr. Arthur Anderson, an archaeologist from University of New England, and Dr. Gabe Hryn timer, an archaeologist from University of New Brunswick, were staying at Cobscook Institute while leading a collegiate archaeology field program. Through their work at Cobscook, they developed a relationship with Kara McCrimmon, the Director of Cobscook Experiential Programs, and learned about the high school and the various student projects. For example, as part of the students' social studies curriculum, they regularly meet in the field with Passamaquoddy Tribal Historic Preservation Officer (THPO) Donald Soctomah, who has brought the students to sites of historic significance for the Wabanaki people in the region. Because of experiences like this, and the general emphasis on experiential learning, Hryn timer and Anderson thought the Midden Minds project would be a great fit for the students. Since 2019, they have been working with the students once a year to monitor local middens along Cobscook Bay and preserve the information they hold.



Student laying transect line.

THE PROGRAM

Cobscook Institute exists in the Passamaquoddy Homeland and was created to serve Passamaquoddy, American, and Canadian people. High school students at Cobscook Institute are trained in the midden monitoring protocols and apply those skills at a site that is along Cobscook Bay. Each time the students go out to monitor, they find the transect, which is a straight line in the landscape that allows for standardized measurements and observations. They then reestablish the transect, take measurements from it to the shoreline at very specific intervals, and plot their results in a graphic form. The students then compare year to year to see where the shoreline is when compared to the transect. Through this experience, students

engage in citizen science and learn field science skills, data collection, and interpretation over time. They are also learning about wave forces, erosion, climate instability, and how the strength of storms is increasing, in addition to cultural connections to Wabanaki history. Anderson, one of the archaeologists who works closely with the students, has a special interest in flintknapping, or creating tools and points out of stone, and has brought a selection of rocks and different tools for knapping and demonstrated the process for students. The students even get to try themselves, which has been a highlight of the program. Cobscook Institute has also made a point of bringing students to the Abbe Museum in Bar Harbor, the Hudson Museum at the University of Maine Orono, and visiting the campus at Orono to meet with staff there. These field trips help to situate middens in the larger Wabanaki story and to make the program even more meaningful for students.

BENEFITS

McCrimmon emphasizes that students genuinely enjoy participating in this project and that's a benefit "because if they like doing it, then they're engaged with it. And then they have a deeper investment in their learning process and what comes out of it." Students can do all four years of high school at Cobscook Institute and many of the students who have done the Midden Minders project before ask if they are doing it again. For some students who are part of the Passamaquoddy community, there is also a personal cultural connection to the middens.

When a new opportunity to participate in Midden Minders arises, students are enthusiastic about working with the archaeologists, learning flintknapping, and being out in the field. Their enthusiasm often gets new students who haven't participated in the project before excited as well. Although it is not an explicit goal, a bonus of this program is supporting students in exploring college and career options. Working closely with professors from University of New England and



Students monitoring the coast for middens.

University of New Brunswick helps students get to know professors in an approachable setting and see college as an option for them. Anderson also emphasizes that this is beneficial for the professors as well, “It’s great for us to interact with students that are about to come to college - we learn a lot.”

There are also great benefits for the community. As the archaeologists are working at Cobscook Institute, they share updates on what they are doing and what they are finding through community presentations. The midden that they have been working on contains at least two thousand years’ worth of history about the region, which they are documenting. They are collecting artifacts that are washed out of it and communicating their findings back to the community. As McCrimmon puts it, “It’s Passamaquoddy history and Wabanaki history and it’s also Maine history. They tell a human story. And so the benefit is understanding our human stories together.”

SUPPORT & PARTNERSHIPS

Midden Minds began with Dr. Alice Kelley and Dr. Bonnie Newsom from University of Maine working with Dr. Arthur Spiess of the Maine State Historic Preservation Commission. The goal of the project is to encourage citizen scientists to monitor and document the erosion of shell middens to preserve cultural heritage


through participation. Maine Sea Grant helped give Midden Minds a start by funding research and a facilitated meeting where they brought together interested parties, including a tribal representative, researchers, cultural resource managers, and local people for a two-day brainstorming meeting. This resulted in working with conservation groups and various individuals to set up monitoring sites on the coast.

A critical component of Midden Minds is working closely with the Wabanaki community. Newsom from the University of Maine is a member of the Penobscot Nation and an integral part of Midden Minds. Reaching out to Maine’s Indigenous community was greatly facilitated by Newsom’s many contacts with Wabanaki Nations. Midden Minds also routinely works with the support of the Tribal Historic Preservation Officers. These partnerships being mutually beneficial is critical to everyone involved in Midden Minds. As Kelley puts it, “Archaeology has always been very extractive. It’s always been taking things from Indigenous people, your stories, your artifacts, your culture, but not asking what can we do to help you?”

Cobscook Institute’s involvement with Midden Minds is a rich experience for the students in part because the scientists and historians work directly with the students. Archaeologists from various universities and THPOs all volunteer their time to contribute to this project and support its mission.

LESSONS LEARNED & NEXT STEPS

In the past, students have gone out and monitored only with the archaeologists. Cobscook Institute plans on getting students set up so their group can go out independently to monitor the midden two or three times a year instead of just once a year. Another component of this is training the students to lay their own transect line. McCrimmon also would like to evolve the program to where students go out in the field after a big storm to document the erosion effects. A significant strength of the program in terms of sustainability is that it doesn't take a lot of specialized equipment, making the project feasible without the commitment of additional resources.

In terms of the Midden Minders project as a whole, Kelley would like to involve even more Indigenous people, especially more young people. Having students monitor their ancestral sites would build connections with the past and preserve cultural heritage. A future goal is to work with THPOs to secure funding to allow students to participate in monitoring and hands-on learning at midden sites. The Midden Minders would like to expand collaboration with local community schools and welcome contact through middenminders@maine.edu. There are many middens all up and down the coast that are not getting attention. As McCrimmon puts it, "Midden Minders is already a structured program, so expressing interest and curiosity and reaching out is a great first step." 



A shard from the flaking process associated with making tools. Archaeologists are able to tell the difference between a beach stone and a flake that came from tool making.

PRO TIP ►

"Before you make any effort to monitor or visit a shell heap, contact the Midden Minders, the nearest Tribal Historic Preservation Office, or State archaeologist for guidance and appropriate protocols."

—BONNIE NEWSOM, University of Maine

ADDITIONAL RESOURCES ❖

Visit Wabanaki Nations websites, such as wabanakialliance.com or wabanakireach.org to learn more about contemporary communities.



For more information, please visit:
teachmeoutside.org



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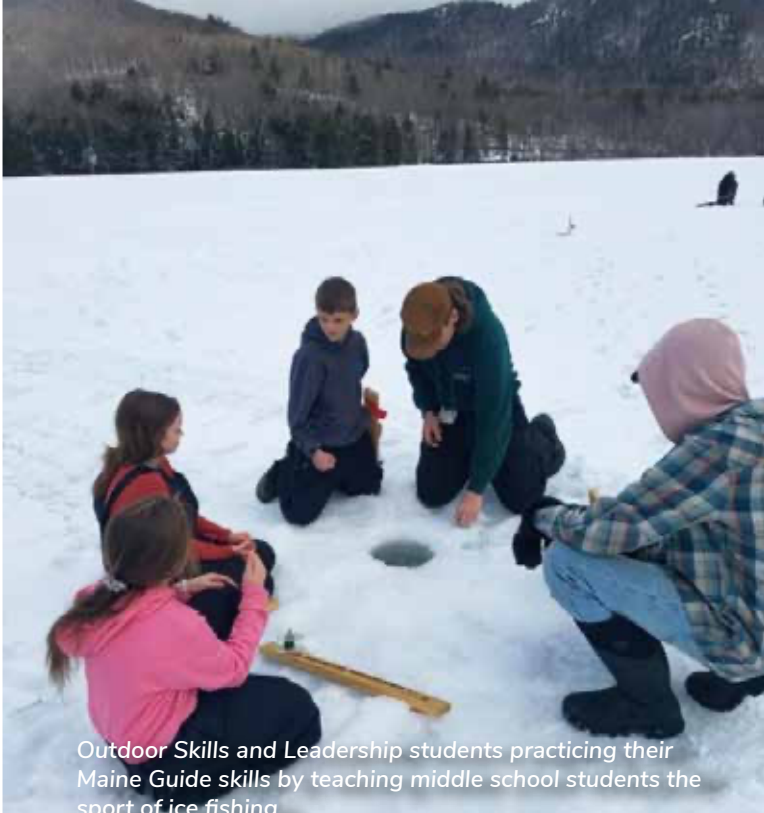
COMMUNITY-BASED OUTDOOR
& ENVIRONMENTAL LEARNING

OUTDOOR SKILLS AND LEADERSHIP PROGRAM CASE STUDY

Region 9 School of Applied Technology, Oxford County
An exemplar of Career and Technical Education

"This type of program is what students need. They need some outdoor time. If we're going to take time out and we're going to use it for outdoor-related activities, why not use those activities to build better humans and build future leaders? I can't see a better scenario than to use the outdoors as the fuel to build leaders."

—JEFF RAINEY, Building Construction/Outdoor Skills Instructor



Outdoor Skills and Leadership students practicing their Maine Guide skills by teaching middle school students the sport of ice fishing.

PROJECT BACKGROUND

Jon Longley is a Fire Chief/EMT and current Fire Science/Outdoor Skills Instructor at Region 9 School of Applied Technology in Mexico, Maine, with over 25 years of teaching experience. When Jeff Rainey, a Registered Maine Master Guide and current Building Construction/Outdoor Skills Instructor, joined Region 9, they formed a team and developed the Outdoor Skills and Leadership program, drawing on each other's knowledge and experience. A driving force behind developing the program was recognizing that many employment opportunities in their community in the western foothills of Maine are connected to being and working outside. Because of this, the program seeks to provide students in grades 10, 11, and 12 with insight and opportunity to make a living outdoors, preparing them for various outdoor jobs that are necessary to the well-being of Maine's communities. These potential careers include Maine Guide, Forest Ranger, Game Warden, and Environmental Educator. As part of the program, students can also earn important certifications such as First Aid, CPR/AED, Hunter Safety, Survival Skills, and Compass Reading.



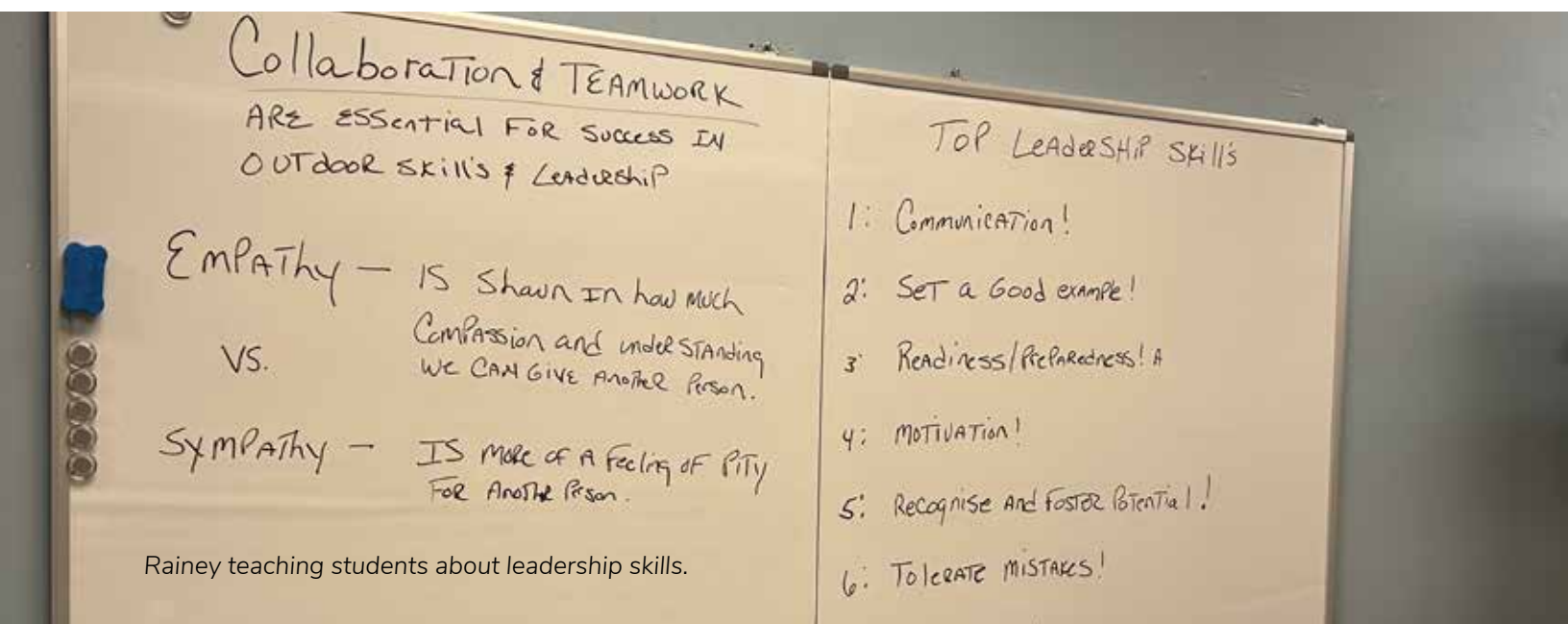
Outdoor Skills and Leadership student presenting his required daily journal while class was held on the ice.

THE PROGRAM

Many of the students in the program are interested in becoming a Maine Guide, so part of the program focuses on mastering the laws associated with guiding and preparing students to take the rigorous exam. During one particular class, Rainey had a long list of questions that students might be asked when they take their exam. The class went through the questions together, and when they weren't sure of an answer, Rainey paused to talk through it or demonstrate. Once they finished going through their questions for the day, he gave each student the materials they needed to practice tying a knot for fly fishing. He set a two-minute

timer and explained to the students that when they are a guide, the client's time is precious, and they need to be able to do things quickly. While working, one student got frustrated and said they quit, to which another student responded, "You can't quit. That's not what this class is about. Don't quit." After the students finished their knots, Rainey had somebody time him to demonstrate that it could be done. The class then gathered their fishing rods and headed outside to practice their fly fishing technique. While outside, another student again walked up to his classmate and helped him. Rainey explained that he knows the program works and that students are developing leadership skills when he sees them helping other students without any encouragement.

In the process of learning about outdoor skills and leadership, students develop many skills. They regularly present different information to their classmates to get comfortable with public speaking. They also read about various topics related to outdoor skills and leadership and complete writing assignments. For example, students were each assigned a top leadership skill and read about why that skill is important, wrote a summary, and presented it to the class. Rainey strongly believes in the power of yet, and uses it for grading by giving students who do not pass an assignment a "not yet" instead of a failing grade. This motivation strategy encourages students to keep trying and fosters a growth mindset, according to the work of Dr. Carol Dweck. Rainey finds this to be highly effective for his students.



Rainey teaching students about leadership skills.



Through generous grants Region 9 Outdoor Skills and Leadership class was able to purchase a side-by-side and an aluminum ice fishing shelter. These enhance students' ability to withstand extreme temperatures while learning important skills.

BENEFITS

The Outdoor Skills and Leadership program has a strong emphasis on leadership, which the students incorporate into their lives outside of class. Rainey recalls one example when somebody in their community had just experienced a great loss, and his students came together to help them. The students cut, split, and stacked ten cords of firewood with the help of Rainey as a way to show their support. This is exactly the type of leadership that the program emphasizes, believing that as long as the students walk away better people with skills and a community stewardship ethic that can translate to any area of their lives, the program has done its job. The Outdoor Skills and Leadership program staff has also received testimonials from parents expressing how their child's communication skills have improved along with reading and writing skills as a result of the program. Finally, former students often reach out to the program staff, excited to update them on where they are now in life, saying they wouldn't be there had it not been for this program.

SUPPORT & PARTNERSHIPS


Rainey's role as a Registered Maine Master Guide helps him develop and sustain connections with many different companies that provide equipment for the program, sometimes through donations and other times through offering significant discounts. L.L.Bean, Orvis, Douglas Outdoors,

Cabela's, and L.L. Cote have all supported the Outdoor Skills and Leadership program after learning about the mission and what they are trying to accomplish. In addition, Rainey, Longley, and Director Brenda Gammon all help with grant writing, which is essential to keeping their program running smoothly. Rainey notes that he has "a tremendous amount of support at this school, and that's huge. None of this would be even capable of happening if I didn't have Director Gammon. She just gets it. She wants you to succeed, and she'll do anything she can to help you get there." This administrative support is a critical component of the program's growth and success.

LESSONS LEARNED & NEXT STEPS

The Outdoor Skills and Leadership program knows how necessary funding is and plans to continue writing grants to ensure they have the equipment and resources they need. Rainey is also involved with SkillsUSA, a national nonprofit and student organization that establishes partnerships between industry and career and technical education teachers and students. He is currently setting up a competition event along with the five other outdoor skills and leadership instructors in Maine. Since there isn't yet a SkillsUSA outdoor-related program at the national level, they hope the rest of the country can eventually use their process to build their own programs preparing students for outdoor

jobs in the trades. In the future, Region 9 would like to be able to offer summer and winter camp experiences for elementary and middle school students. They would also like to expand on the already large number of certifications they offer and to continue to grow their partnerships. The ultimate goal is to develop an academy where freshmen all around the area can come spend some time and learn about the outdoors and see what the program is all about.

Finally, they recently received a large grant that includes developing a waterfront outdoor learning center to overcome the barrier they have faced in accessing locations on the water to train students. Once Rainey is done teaching at Region 9, he wants to hand over a working, operating outdoor skills and leadership class with a waterfront learning center that is set up with all of the products and equipment needed to succeed. Rainey would also love to encourage others to set up their own programs and offers an open invitation to local people and schools to visit Region 9 and see what they do there. He is optimistic that there is room for an outdoor program in every career and technical education school in Maine, and he is happy to show them how to set one up. 



Outdoor Skills and Leadership students learn the skill of setting up portable pop-up ice fishing shelters.

PRO TIP ►

"Focus on relationship building with your students. I find the better the bond that I have with them, the more they can sit in a relaxed sense of alertness, and the better they learn. I like to know my students, so two to three times a year I give them an assignment based on that. One assignment was to have my students write a poem about where they are from, to learn more about their family and what their life is like."

—JEFF RAINEY, Building Construction/Outdoor Skills Instructor



For more information, please visit:
teachmeoutside.org