

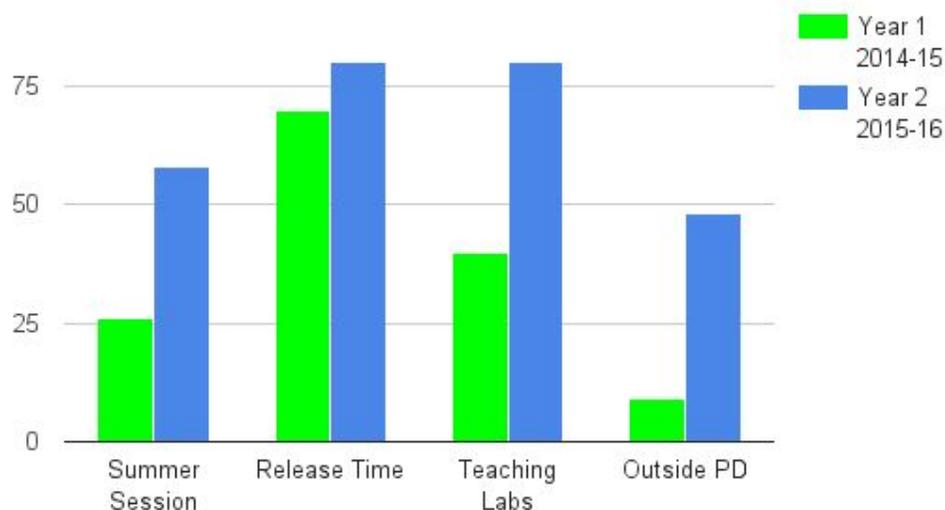
### Maritime Discovery Schools - Two Years in Review

As we enter into the full implementation phase of the Maritime Discovery Schools Initiative we are refining and growing our work, and focusing on long term sustainability . Over the past two years we have developed a pilot K-12 maritime and place-based curriculum, increased professional development and collaboration focused on place-based learning, offered a high school Maritime Academy program, created a farm to table scratch cooking model food service program, and developed over 70 community partnerships. As we move forward into the next phase of our initiative we will focus on strengthening our maritime career preparation program, sustaining partnerships, broadening the curriculum, and institutionalizing changes in the district.

#### **Curriculum Development and Professional Learning**

A significant portion of the work in the first two years of the initiative has been focused on developing pilot curriculum, alongside professional learning for our teachers to support the curriculum development and implementation. In May of 2016, we published on our website the complete pilot curriculum. We initially envisioned that we would phase in the curriculum by grade level and subject, but as we moved into the second year of the initiative we saw readiness for all teachers to undertake the curriculum development in their teaching areas. Curriculum development primarily took place during summer 2 or 3 day institutes during the summer of 2014 and 2016, or during 1 day sessions during the school year when teachers were released from their classrooms to work in collaborative groups.

**Teacher Participation in MDS Activities**



Each year of the initiative all teacher in the district participated in 10 trainings focused on the elements of project-based learning, pedagogy and teaching strategies that support project based learning, developing community partners, and integrating technology into projects. Each year teachers participated in teaching labs, which are a group observation of student thinking during a demonstrating teacher's lesson, followed by a debrief discussion with the group of teachers. The goal is to focus on how student thinking is emerging, and for each teacher to see how they can deepen student thinking through their own practice. Entering year two, the high school offered teachers the option to participate in a two day summer session focused on workshop model, and an additional training in October about project-based learning.



In the past two years we have supported opportunities for teachers to attend outside professional development. These have included the Teaching with Small Boats Conference which was held in Port Townsend, in part because of the MDS initiative and interest in learning more about our programs. As well as the Steinbeck Festival, and Aleutian Bidarka Building Workshop. Through district funding, teachers participated in the PEBC conference on thinking strategies, and a PEBC Math Workshop Model Session in

Port Townsend. In addition, a Blue Heron teacher applied, and was accepted, into the Steinbeck Institute summer professional development.

In the summer of 2016 we offered a 3-day Maritime Industry Immersion and Curriculum Development funded in part by WA Sea Grant. In these sessions teachers had an opportunity to spend time in a maritime industry worksite, learn more about the skills, knowledge, and disposition needed in the industry and then develop maritime and place-based projects with a focus on developing those same set of skills, knowledge, or disposition in students. The maritime industries including WA State Ferries, WA State Fish and Wildlife, Port Townsend Sail Loft, and Port Townsend Shipwrights. Teachers developed new curriculum that helped many teachers be prepared to meet our goal of 2 maritime or place-based project for the 2016-17 school year.

Our next steps for curriculum development and professional development are:

- Develop a minimum of three projects per grade level/subject area over the next two years.
  - Develop additional high school multi-disciplinary projects
  - Develop projects that incorporate upper level high school math
  - Integrate craftsmanship and design thinking more deeply in projects K-12
- Continue to develop collaboration amongst professional learning and grade level teams, including use of protocols, and self-directed teaching labs and teacher peer observations
- Refine evaluation methods and data collection for the initiative

## Partnerships

By year 2, teacher identified 70 different community partners that were a part of maritime and place-based learning projects. Our partners are finding that the MDS initiative gives them an avenue to partner with the schools, as well as some partners finding there is added value to their organization in fundraising efforts because of these partnerships. For example, the Port Townsend Marine Science Center (PTMSC), received a \$150,000 grant from the Institute of Museum and Library Services to partner with MDS in supporting professional learning, and sustaining partnerships, along with providing direct programming to the schools. Over the two years of the grant the PTMSC will support four education experts working with district staff and community partners to strengthen our work and further our learning.



In year three, the Fort Worden PDA, has become a formal partner, providing classroom space for district teachers and students to use during the school day. Classes can use the space as a launching place for outdoor learning, or as a retreat space for focused project work. This partnership supports the PDA's mission to provide a life-long learning center. The district is providing school bus transportation for classes to get to the Fort on a regular basis.

Our next steps for developing partnerships:

- Evaluate existing partnerships and develop mutually beneficial, sustainable, long term partnerships.
- Formalize partnerships through an MOU process as appropriate.
- Work collaboratively with key partners to continue committee participation in various aspects of district administration and curriculum development

## High School Maritime Academy

In year one, the Maritime Academy included a Marine Robotics and Engineering course and a two credit Maritime Studies course. In year two and three, we expanded our offerings to include Vessel Operations, Marine Trades and Boatbuilding, Maritime Manufacturing and Woodworking, and Marine Robotics and Engineering. In these courses students learned about water based operations, foundations of marine trades, manufacturing, design, programming, and fabrication. Students sailed, built and repaired boats, and manufactured underwater vehicles. In year three, students will be building their own skin on frame kayaks. Each course involves community



partners on a regular basis to help provide specialized instruction in the various fields.

In three of the courses students had a job experience through a partnership with Sound Experience and their vessel Adventuress. Students worked side by side with Adventuress crew and volunteers to restore and maintain the vessel. They also completed a Maritime Career assignment, students select a career of interest, interview a professional, and apply to a school program to support their career development pathway.

Our next steps for Maritime Academy development:

- Develop job experiences for all of our Maritime Academy students and expand this to a program for all Juniors at the high school.
- Develop a career speaker series for Maritime Academy students
- Evaluate our current Academy offerings, and determine if other course such as marine systems would be useful
- Propose a Skills Center pilot program for summer 2017, Vessel Operations
- Propose a set of Maritime Skills Center courses to be taught in Port Townsend
- Study the possibility of a January term schedule at the high school and middle school to allow the teaching of 40 hour certifications and skills needed for employment in the maritime industry

## Garden/Food and Cafeteria

As a part of the place-based learning initiative we set a goal to increase the local, fresh foods served in our cafeteria, and increase student participation in growing and preparing food. Over the past two years our school food service has transformed from a heat and serve operation to a scratch cooking full service kitchen. All meals are now prepared from scratch in house, incorporating many local and organic ingredients. In year one the high school garden was doubled in size, and in year two a high school garden coordinator was contracted. In year two, the high school health and culinary classes began to regularly work and learn in the high school garden. The culinary arts students worked with elementary students and taught them about healthy foods.

In year two food from the school garden at the high school began to be included on the menu, and now provide fresh greens, tomatoes, and potatoes, among other things, for menu items every month. Students in seventh grade learned about nutrition and made sample menu items, voting on a selecting the best, healthy nachos, which are now a regular part of the school lunch menu. In year two the school board adopted a new Wellness Policy in support of the changes in food service as well as other wellness practices. During year two, a new elementary school design was proposed and passed by a vote of 73%. The heart of the new school is creating indoor and outdoor learning spaces, as well as a large learning and food production garden.



In year three, kitchen permitting issues were resolved allowing for the high school kitchen to be used as a kitchen for preparing food, not just warming. Overcoming, obstacles such as these, allow us to serve breakfast at the high school until 10am since staff can stay there and prepare lunch while keeping the breakfast line open.

Food service staff have been able to attend a number of conferences and trainings, including one the Edible School Yard, in Berkeley, CA. These opportunities for professional development have helped our staff see opportunities for developing our menu and program, including excitement around meatless Monday.

Our next steps for Garden and Food Service development:

- Integrate nutrition and wellness learning into every grade level

## Teacher Leadership

Throughout the project we have been focused on developing teacher leadership, as a part of developing long lasting systems change. In year one and two we supported a group of teacher leaders to reflect on teaching practice and to help advise on the professional development across the district. In year two, we were able to use district funds to send 5 teachers to PEBC conferences to support deepening student thinking. In the first two years teachers have been ready to advise and learn about leadership, but have been tentative about taking the next steps towards developing as leaders of professional learning and facilitating groups of teachers.

Our next steps for teacher leadership development:

- Send teachers to trainings to develop their skills and have them return and lead professional development in the district. Possibilities:
  - Deeper Learning Conference, Spring, 2017
  - PBL World, Summer 2017
  - PEBC Institutes (Denver), Winter, Spring and Fall
  - Teaching with Small Boats Conference, Spring 2017
  - Critical Friends Group Training, Fall 2018
- Develop teacher leadership using the competencies of a teacher from NBPTS, a leadership buddy system, specific training, and peer support.

## Sustaining the Maritime Discovery Schools Initiative

As we move into the third year of the five year initiative we are looking towards the sustainability of the maritime and place-based learning focus of the Port Townsend School District beyond the five year grant and community supported funding. At the end of year 2, the school board adopted a new mission, vision, and core principles in support of the Maritime Discovery Schools initiative. This is a concrete step towards creating a lasting vision for maritime and place-based learning in the district. The mission and vision statements of the district are helping to shape the School District's 5-year strategic plan that is under development.

Our next steps towards sustainability:

- Develop a 5-10 year sustaining plan to continue the maritime and place-based focus of the district
- Develop a sustainable funding plan including grants and district resources to continue beyond the five year initiative.
- Integrate the district mission, vision, and core principles into the daily work and decision making across the school district.
- Developing a sustaining partnership with the NWMC, where the NWMC continues to play an integral role in advising curriculum development, as well as continuing as an educational programming partner, possibly with an expanded role through the Maritime Academy, Skills Center courses, and certification programs.

## Lessons Learned

As we review the past two years there have been a few major shifts in our thinking and approach to crafting the vision laid out in “Place-Based Education in the Maritime Community of Port Townsend Washington, Executive Summary” as well as other early planning documents. The pace and timing of the curriculum as a whole, as well as the configuration of the Maritime Academy have both shifted.



In our early thinking a phased approach to curriculum development seemed the most logical, and would allow for teachers to enter the process as they were ready. As we undertook the process of professional development for our staff related to place-based learning and the supportive practices of workshop model, cooperative learning, and backwards design, we realized that teachers needed to dive into the first experiences of developing maritime and place-based projects to apply their new learning and frameworks. Part of this shift was

helping teachers and administrators feel comfortable experimenting and be willing to try projects that might not be a 100% success. In year one, we allowed interested teachers to enter into project based learning in the subjects and courses where it was a best fit, or an area where the teacher had the most interest. In year two, our goal was for all teachers to develop a project, and as we enter year three we are asking each teacher to develop two projects. As teachers have developed projects they have learned about how to build lasting partnerships, and successful project outcomes. In year three we have given teachers permission to modify the projects they created in the first two years, or throw projects “overboard” that no longer seem to be a good fit, or do not meet the goals of their courses any more. This flexibility and willingness to experiment, reflect, and refine, has been key to getting more teacher comfortable with project-based learning. The small size of our district, with less than 100 teachers, has allowed this process to be flexible. As we move forward with our curriculum development our focus is on developing teacher instructional practices, alongside the skills and knowledge of designing authentic and standards aligned projects.

In addition, we have shifted our thinking on how to develop the High School Maritime Academy. Early on we looked at models such as the Ballard Maritime Academy, where students enter a comprehensive program and earn all required credits in the program. In our small rural district, we realized that we may not have enough students for a cohort to enter a free standing Maritime Academy. Through the first two years of development we saw the need for focusing our Academy on a core set of CTE course which would help prepare students for a variety of maritime industry jobs. In the development of this program we came to see that we could develop a strong set of introductory course, but for a student to be career ready upon the completion of high school there would need to be an additional set of certifications and training

that would also be required. That has lead us to exploring additional options for skills center courses or a certification program embedded in our school year.

### **Student Experience Shifts**

In the first two years of the MDS initiative, the student experience across our district has shifted. One of the biggest shifts can be observed in our 8th grade program. Before the initiative our 8th grade students experienced a traditional middle school program with distinct math, science, social studies, and language arts classes. There was a yearly multi-day experiential learning trip to Mount St. Helens. As MDS was introduced, the 8th grade teaching team were early adopters, and in year zero,



they redesigned their previous experiential learning trip, into a year long program embedded into science, social studies, math and language arts classes. The Salish Sea to Olympics Challenge program they developed has students learning about and testing water quality across the Salish Sea, advocating for clean water issues, and gaining skills to help the transition to high school. The teachers have connected with a diverse number of community partners so that students are having multiple experiences through the year learning alongside a variety of agencies and organizations that are involved into water quality monitoring and regulation. Students had an opportunity to sail aboard *Adventuress* and learn about Maritime careers along with environmental issues. Integrated into the program was the annual trip students had been taking to the State Capitol Building, the teachers added context to the experience by having students focus on how they can use that experience to lobby their state legislators around environmental and water quality issues that they had been learning about in science and social studies. The MDS initiative has helped the teachers design a year long experiences that connects their learning across subjects around a common maritime environmental health theme. One student remarked, “my best learning experience this year was going on the *Adventures*, because while we were on the boat we learned a lot about what is happening in our water and how we can help it. We also learned about what we are doing to cause many environmental issues and how we can reduce our carbon footprint.”

High school students have experienced a shift in both our course offerings, as well as the curriculum taught in existing courses. Teachers have integrated maritime and place-based learning across the high school curriculum, so that our students will have many more experiences where they are learning about maritime topics and making a difference in the community. Our CTE course offerings have grown and shifted because of our Maritime Academy. A tenth grade student through the school year might be writing creative non-fiction based on the a visit to a local business such as Port Townsend Sail Loft, investigating geometry by creating storage containers to meet the needs of Key City Public Theater, working on the *Adventuress* to service blocks and do engine maintenance, putting together research on the

effects of climate change on ocean acidification for the community Climate Change Summit, and visiting Grant Street Elementary to work with a third grader to write a book in Spanish.

The shifts for our elementary students have been focused on creating more in-depth and integrated projects. Before the initiative our students had a number of great experiences throughout the day, but the projects did not all address real world community needs. An example of this shift would be the 3rd grade students birdhouse project. Students learned about local birds and the effect of humans on their habitat. This project included a study of seabirds with the Adventuress and the Northwest Maritime Center. They had an opportunity to apply math skills and build a wooden birdhouse that would provide habitat for local birds. In art class they studied birds and made pencil drawings of the birds they were learning about.

### **Successes**

More than 60% of teachers reported their students worked on school projects where they learned about nature, the sea, or our community one day a month or more through the year. A fifth grader remarked, “My best learning experience was when we went to the Dungeness River.” A 7th grader said, “My best learning experience is when we worked on nautical charts in math because I got to learn about the different terms on a chart, and I got to work with a group to help me find the markers and scales on the chart.” Parents are also excited about what’s happening for their kids. A middle school parent shared, “Water quality testing around our community and field trips to local water sources have really sparked an interest in chemistry. She talks about it a lot. Salinity, oxygen saturation and things like that.”

In a survey, 94% of teachers said they are comfortable facilitating project based learning, and 55% of teachers agreed that, the Maritime Discovery Schools initiative has helped them become a better teacher. With the help of our teacher recruiting efforts our principals report an increase in the quality of our applicants for open positions compared to before the implementation of MDS. For the 2016-17 school year, at least 50% of our new hires reported that the maritime and place-based focus of our district was one of the biggest factors influencing their application for the position. All of our new teachers have participated in curriculum planning sessions in the first months of school.



While end of year test score data is not the only metric we use to measure our success, we have not seen an implementation dip in our test score data as might be anticipated, and in comparison to the state average have seen some moderate gains. In year two, our average test scores in English Language Arts (ELA) are all above the state average, all but two grade levels math scores are above the state average. Compared to the year before implementation where three of our seven grade levels were below the state average in ELA,

and four of our seven grade levels were below the state average in math. Our science scores have been above the state average, and continue to be so, and our 10th grade scores have stayed steady while the state average declined.

### **Conclusion**

In the first two years of the initiative we have seen considerable progress in developing a pilot curriculum. In the next three years we will focus on sustaining and institutionalizing the progress, and refining our work. The High School Maritime Academy will be strengthened by the addition of programs, and schedules that allow for specific certification that will translate directly into employment readiness for our students. Sustaining the K-12 curriculum shifts will require continued professional development and sustaining the diverse community partnerships. Continued focus across the district, with all stakeholders, will be needed to sustain the maritime and placed-based learning focus of our district.