



## PROGRAM SPOTLIGHT: PI PROGRAM WITH KIT PENNELL

### Partnerships bring the Pi Program to life

**C**himacum's Pi Program is a unique learning opportunity that focuses on experiential learning, community engagement, and active family involvement to tailor a students' education to their individual strengths and passions.

Hands-on science experiences, like those available through the Pi Program, are especially important to developing a deeper understanding of STEM disciplines.

"I found the standard approach to classroom teaching never fully captured the depth and breadth of what my experience of professional science embodied, or the math imbedded in it as the 'language' of science, so I lean toward getting students out in the field as much as possible," said Pi Program science and math teacher, Kit Pennell.

Partnerships with local scientists and programs are also key, as students are introduced to a wide variety of occupations available to them in STEM fields and are able to build connections with potential employers.

"It is out in the field with practicing scientists that students actually get a feel for how interesting and meaningful a career can be. Many of my past students

have gone on to pursue and excel in scientific careers throughout the U.S. and the world, with many of them finding work with local agencies we've been fortunate to partner with," said Pennell.

Students in Pennell's classes have worked with local scientist Jim Norris to map eelgrass on the shoreline of Port Townsend Bay with underwater cameras. They designed and engineered remotely operated vehicles (ROV's) and worked with UW scientists at the Friday Harbor Research Lab to map marine protected areas from a boat while 'driving' a ROV. They've assisted Battelle's Marine Research Lab in measuring light attenuation on the existing dock (how much light penetrates through water) that informed the design and mitigation strategies built into the Port Townsend Maritime Center's pier. This better supports the growth of eelgrass beds under the structure, a critical habitat in the Salish Sea.

Engaging students in authentic engineering and design projects provides them with real experience in communicating with a team, meeting deadlines, overcoming challenges and obstacles, and experiencing the joy of completing a project successfully.

#### *Behind the Program: Kit Pennell*

Kit Pennell is a science and math teacher at Chimacum, teaching grades 7-12 in the Pi Program. She worked at Hawaii Volcanoes National Park after graduating with a B.S. from the University of Oregon, then spent time on ships in the Bering Sea with the National Marine Fisheries and NOAA. After a few years of traveling the world, she got her Secondary Teaching Certificate from the U of O.

After saying she'd teach for 3 years then go back into the field, Kit "fell in love with the magic of learning with youth and Chimacum's rural community" so she's stuck around for over 30 years!





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## A hands-on language learning method

Multilingual students in Josette Mendoza's fifth-grade class learn more than just a new vocabulary word or concept during their lessons. They make connections between their primary language(s) and English to better understand what is being introduced.

Multilingual Learner (ML) students rely heavily on hands-on experience and visuals to grasp new concepts. It can be especially challenging when language becomes the primary delivery of instruction.

"When the primary delivery is in a language that is still being learned, it creates gaps and lack of understanding if we cannot tangibly provide hands-on learning, visuals, or materials in their primary language to help bridge the gap," said ML teacher Mendoza.

Mendoza focuses on connecting new vocabulary to a picture through concept mapping,

which uses diagrams to visually represent relationships between items. She also likes to introduce difficult science concepts with a specific problem to solve – this allows students to plan, test, and modify their thinking throughout the design and build process. Problem-solving also teaches how to struggle productively, work collaboratively, and look for more than one solution.

Multilingual learners bring their cultures, values, and beliefs to others, add dimension to the classroom and help open up the world around us.

"I love helping students find the value of their primary and secondary languages as equal partners, not subtracting the primary language. I was raised bilingually, and knowing two languages has opened different perspectives for me," shared Mendoza.



Community partner Jefferson Land Trust (JLT) sponsored a field trip for students in Josette Mendoza's class to explore a trail the JLT maintains in the Valley View Forest. Students found tangible, real-life examples of the interdependent relationships in ecosystems through their Rotten Log Safari.

**THANK YOU**

***A huge thanks to our  
many community partners!***

Community partnerships are a key to the success of Chimacum School District programs.

We'd like to thank some of our many community partners that have been especially important to expanding our STEAM offerings for students through hands-on place-based learning experiences:

- Community Boat Building Project
- Jefferson County Conservation District (JCCD)
- Jefferson Land Trust (JLT)
- North Olympic Salmon Coalition (NOSC)
- Northwest Watershed Institute (NWI)
- Port Townsend Marine Science Center (PTMSC)
- Port Townsend STEM Club

The Robotics Team would also like to extend an extra special thank you to the PT STEM Club, the Peninsula Support Organization (formerly the Boeing Bluebells) and the Friends of Chimacum Schools for funding our Robotics programs, which allow the students access to a rich array of resources and opportunities during their competition season. Good luck to our local STEM teams in their upcoming competitions!