

The PBL model provides our students with the opportunity to apply their knowledge to real world problems, answering complex questions, and creating high quality products.

(From left to right) Discover students, **Scarlett Derstine**, **Avery Goldcamp**, and **Ella Weaver**, present their PBL final product at the second quarter EXPO.

Let's Discover Why PBL?

Change can be hard, especially in education. The analogy of a hurricane is sometimes used to better understand the dissonance between education theory and reality; the surface of the hurricane is windy and stormy, representing the debates on new theories and research on best practices in education, while below on the ocean floor it remains calm, representing the school structures and systems that continue on unchanged most of the time. Some ideas make sense and are backed by research, but the challenges of changing culture are real.

Project Based Learning (PBL) is a proven educational approach that can meet the needs of twenty-first century students. Author A.J. Juliani recently shared that, "studies comparing learning outcomes for students taught via project-based learning versus traditional instruction show that when implemented well, PBL increases long-term retention of content, helps students perform as well as or better than traditional learners in high-stakes tests, improves problem-solving and collaboration skills, and improves students' attitudes towards learning."





Juliani argues that we are in the midst of a "hinge" of history, similar to other revolutionary periods triggered by advances in technology like the internet, radio and television, or even the printing press... "Some hinges are undoubtedly bigger than others, and we may not know the full impact of Generative Artificial Intelligence for many years to come. But, here we are, and the perfect storm exists that is taking on a compliance-based model of education head-on. How do we respond? How do we teach and learn in a world of distraction and artificial intelligence?"

This year we celebrate five years of Project Based Learning in Dock's middle school, representing a change success story and a proactive response to the current "hinge" of history we are in. Read on to learn how and why PBL was implemented at Dock from one of the *pioneers* that made it happen. **Mrs. Claire Wanamaker** (current EC-8 Principal) was teaching middle school Math at Dock when she agreed to assist in exploring the PBL model. Not everyone is able to be an "early adopter" when it comes to change, but thanks to Mrs. Wanamaker and her colleagues, their hard work and willingness to engage in a non-traditional middle school model pioneered the path for the success that we experience today.



Project Based Learning



By **Mrs. Claire Wanamaker**
EC-8 Principal

In the Spring of 2018, Dock decided it was time to evaluate its middle school. If you ventured into the middle school wing during that time, you would see students sitting in rows and living by a 45-minute bell system. Teachers stuck to their own discipline with very little crossover or interdisciplinary work. We asked ourselves - Is this what is best for our students' academic, social, and spiritual growth?

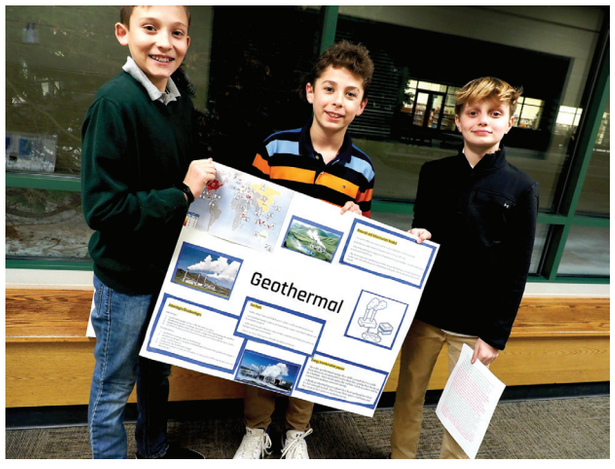
A group of administrators and teachers were tasked with looking at best practices for a middle school model. There were visits to view various middle school models within a three hour radius and Zoom calls with middle schools on the West Coast. The group read numerous books including *Project Based Teaching* by Suzie Boss and *Setting the Standard for Project Based Learning* by John Larmer. Luckily for this committee, the Association for Middle Level Education (AMLE) held their annual conference on the East Coast that year. Then, in the Spring of 2019, the middle school teachers and students piloted a mini PBL unit. And so, the journey with PBL began.

Project Based Learning prepares students for the future. Twenty-first century students are being raised in a world full of technology and media. Students need to see the real life relevance of what they are learning. The PBL model provides our students with the opportunity to apply their knowledge to real world problems, answering complex questions and creating high quality products. Students are learning how to collaborate together and think critically. They are developing technology skills and growing in their digital literacy. There is perseverance and self-management occurring each day in the classroom.

On the first day of each quarter, *Discover* students (7th & 8th grade) are presented with a challenging problem or question, which becomes the heart of our students' projects for the quarter. Past questions have included: "How can we do our part locally to work on issues that affect our globe?", "How can we differentiate between myth and reality?", and "How can words push us apart or bring us together?" More than just *looking up facts*, these questions guide the students through their sustained inquiry. The inquiry is integrated into science, social studies, writing, Bible, and technology classes. As the students move through the quarter, they witness the authenticity of the question. There is voice and choice for the students as they dive deeper into the content and project. Working toward the public presentation, the students are engaged in a reflection process along with critiques and revisions.

At the end of each quarter, the *Discover* students invite family, friends and local community members to attend their evening EXPO event. During this time, students share their solutions to the question as well as the processes they used during their inquiry time. These solutions can come in many forms including models, talks, magazines and videos. Following each EXPO, the teachers guide the students in self reflection. The students then use this self reflection to give and receive constructive feedback from their classmates.

The PBL model engages our students in a learning that is deep and long lasting. Students are being inspired by this model of learning and are making personal connections with their own academic experiences; preparing them to apply this knowledge to new situations. With these engaged hearts and minds our students are living out the mission of Dock.













PBL Making its way to High School

AP Environmental Science Transitions to PBL Curriculum

High school science teacher, **Ms. Valerie Metzler** ('08), is another Dock early adopter of PBL. Last year, the Science Department began using a new PBL curriculum for *AP Environmental Science* called *Knowledge in Action (KIA)*. Ms. Metzler prepared well for this transition by participating in professional development, first during the summer through an AP College Board class to gain approval for the new PBL curriculum, followed by a yearlong online professional development course meant to assist teachers in the transition.

Now in the curriculum's second year, Ms. Metzler continues to appreciate the new PBL curriculum for AP Environmental Science: "One of the changes that I appreciate with the new PBL curriculum for AP Environmental Science is the more consistent focus on environmental stewardship questions like, 'how can our families, and our school, be more sustainable?'" "Something else that I appreciate about the PBL curriculum is that it applies students' knowledge to action (in fact, "knowledge in action" is the name of the curriculum KIA)."

Accounting Class Helps Yoga Studio Entrepreneur

Students in **Mr. Zach Bower's** ('02) *Foundations of Accounting* class had an exciting end to their Project Based Learning first semester, presenting to a panel of Business and Accounting experts: **Courtney May**, **Meredith King** ('18), and **Caleb Mangum**. Students worked hard in two teams preparing materials and resources to start a new yoga studio that will be a successful socially responsible business. This was not a hypothetical situation that the students were trying to figure out. An important feature of PBL is an authentic audience; in addition to the expert panel, students began this project by meeting **Tiffany Smith**, the real entrepreneur that is planning to open up a yoga studio sometime in the next couple of years.

Another important feature of PBL is including professionals and experts as resources. Students had visits from realtor **Scott Newell**, local business owner **Nate Clemmer** ('94), Zoomed with the owner of a local Yoga Studio, and even experienced yoga firsthand from teacher **Mrs. Darla Bergey** ('88). Finally, guest speakers that came to class in Quarter 1 gave more of their time and expertise to provide feedback on the students' work leading up to the final presentation; special thanks to **Isaac Martin** ('05), **Jesse Kolb** ('16), **Connor Derstine** ('19), **Mrs. Patti Baker** (Director of Finance and Operations), and **Jennifer Landis** ('01). Keep a look out for Saha Yoga Studio sometime in the near future!

At the end of the semester, students spent time doing some self-evaluating and reflecting on the projects. One student shared, "before we started I didn't know much about accounting at all, but now I can confidently say that I have a good beginner's understanding of accounting work as well as what it takes to run a business." Students were also asked to reflect on times of frustration and failure, recognizing that it's important to treat failure as expected in a growth mindset. AI researcher Eliezer Yudkowsky goes as far as saying, "If you never fail, then you aren't trying to do difficult enough things." Some students cited times of frustration in knowing how to start the project, while others reflected on struggle with team communication and expectations. This is where PBL shines and meets the needs of twenty-first century students head on.

Alongside learning business and accounting principles, many students identified important learnings related to communication, collaboration, and time management skills; all soft skills that, according to LinkedIn, are on the "Top 10 In-Demand Soft Skills for Landing a Job." Another student commented in their reflection, "I enjoyed that through this project we were able to solve real life problems for people. I also liked this PBL project because I am a very physical learner. I don't learn by sitting down and listening, I instead learn by doing."