



For our externship, we learned how the 21st Century Skills, including Communication, Collaboration, Teamwork, and Networking are highly desirable for new employees across industries.

The externship experience included shadowing KCPH/EHSD employees, including:

- Plumbing Inspection
- Pest Control
- Hazardous Waste Collection and Storage
- Restaurant Inspection
- Pool Inspection

In addition to shadowing, we also met with employees who shared information about:

- Equity and Social Justice
- The Tacoma Smelter Plume Dirt Alert program
- Investigation of lead exposure and toxicity
- “Green” cleaning alternatives
- Toxicological analysis of toxic algae growth at Greenlake
- Efforts to study the effect of global warming on the frequency of harmful algal blooms in Puget Sound

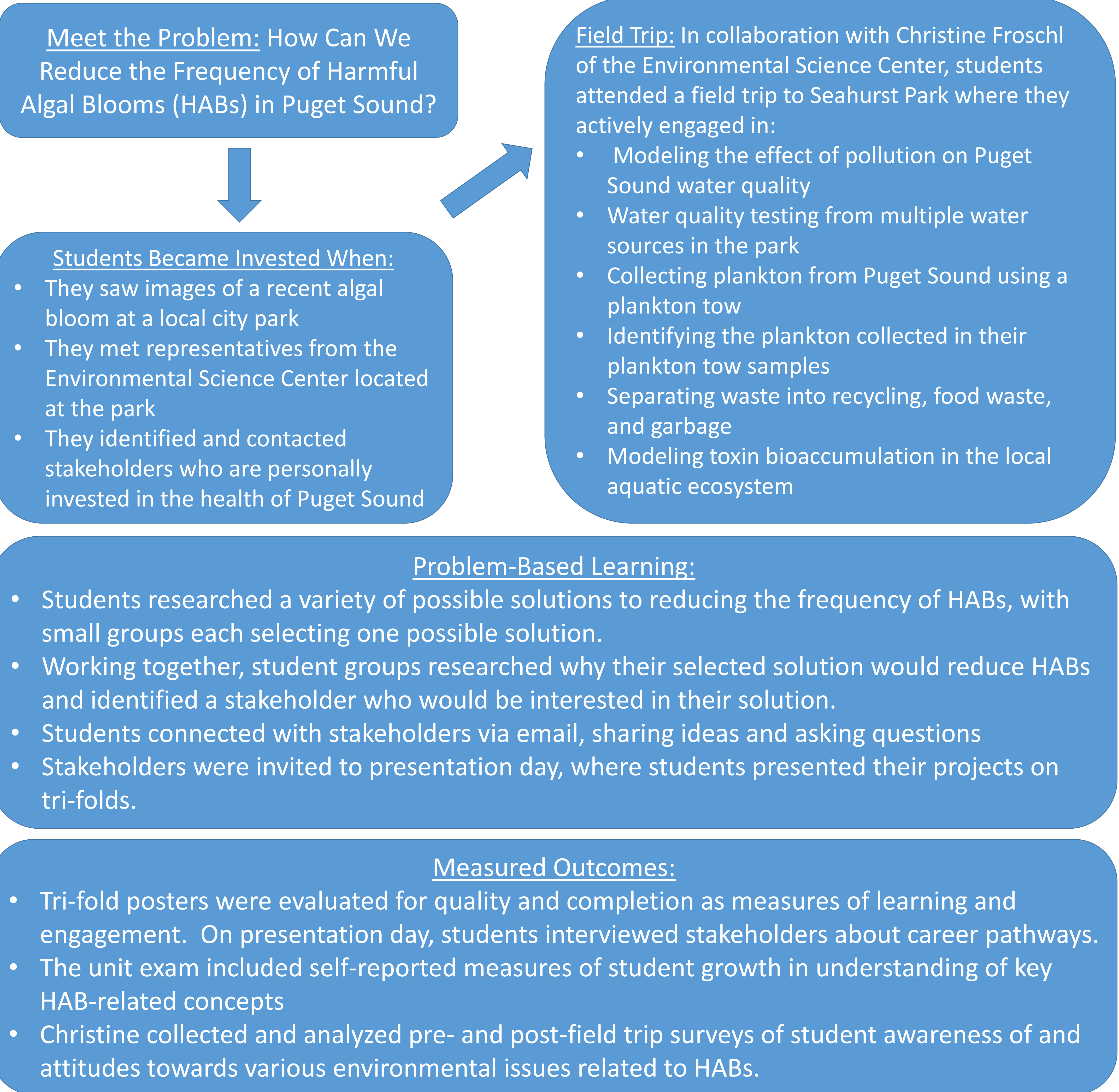
After careful consideration of the externship learning opportunities, connection with Next Generation Science Standards (High School Life Science Standards), timing within the school year, and available classroom resources, I decided to assemble a PBL focusing on harmful algal blooms.

HS-LS2-2 – Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.
HS-LS2-7 – Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

Reducing the Frequency of Harmful Algal Blooms in Puget Sound

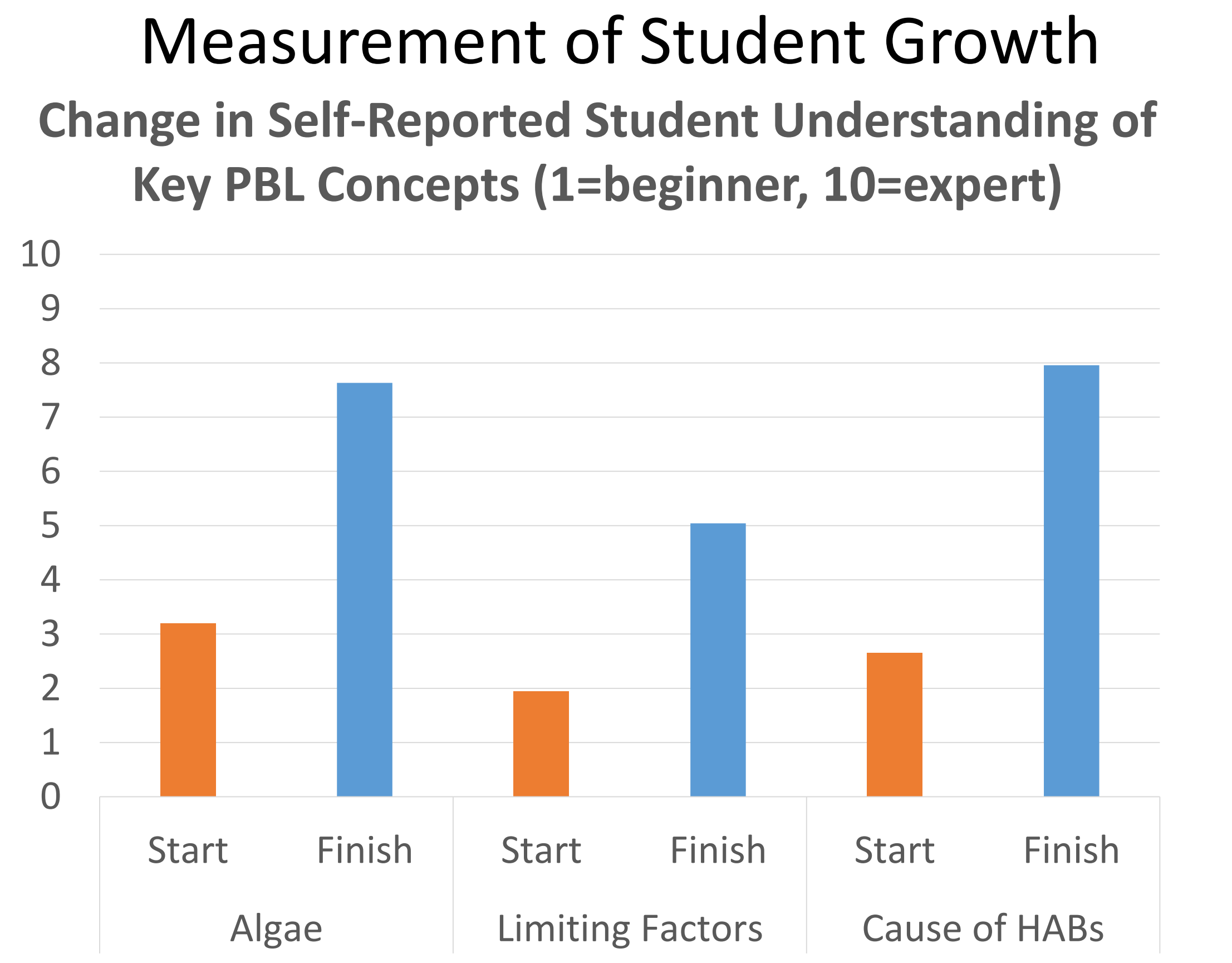
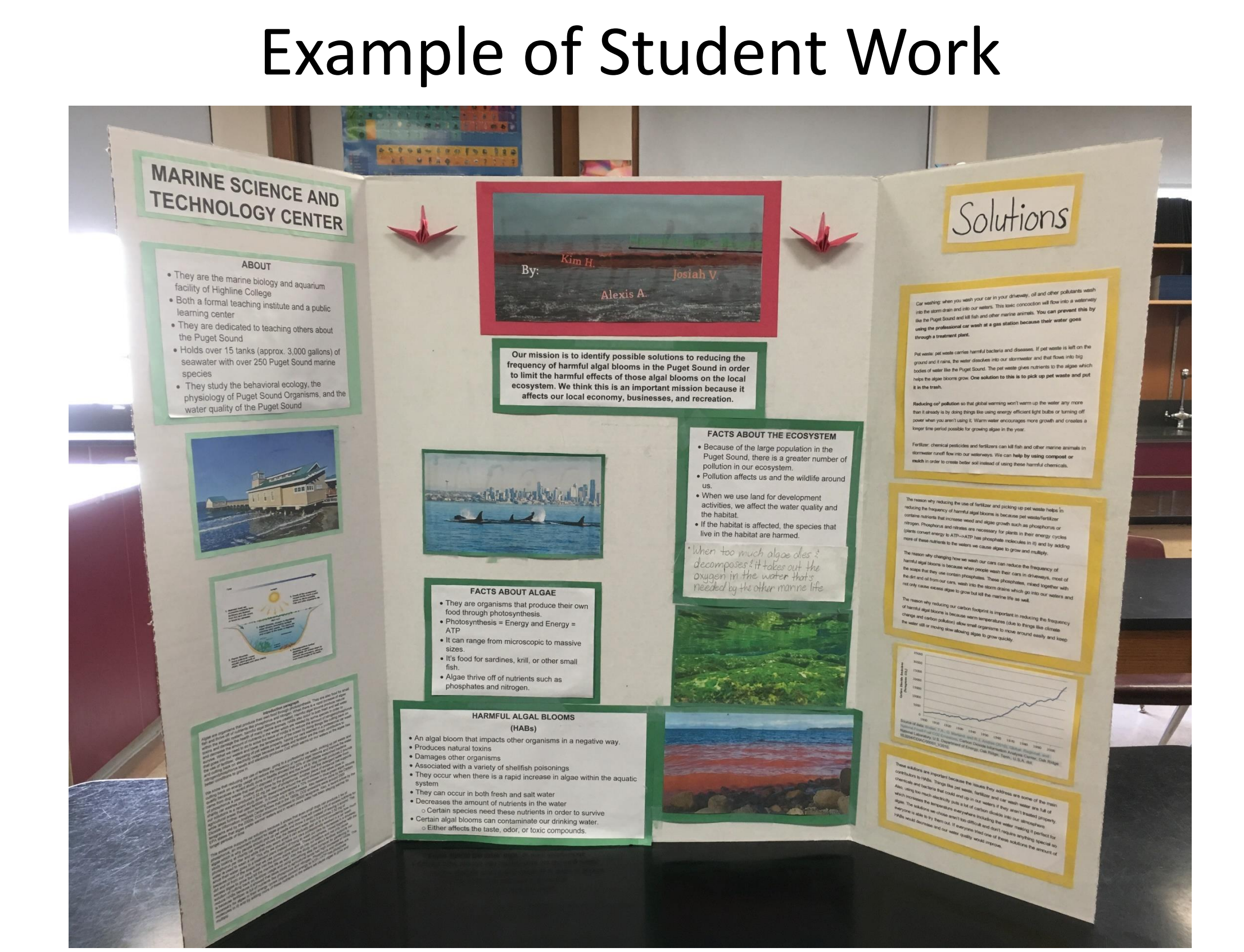
David Swart
Biology and Chemistry Teacher
School: Highline High School
District: Highline Public Schools
Externship Host: Greg Wilson of King County Public Health / Environmental Health Sciences Division (KCPH/EHSD)

Timing: This Problem-Based Learning (PBL) assignment occurred at the end of our first unit (Cells and Homeostasis) and was followed by the Energy, Matter, and Organization unit. It provided foundational knowledge for an Ecology unit that will occur prior to the Biology End-of-Course Exam.



Acknowledgements

Thank you to the Washington Alliance for Better Schools, King County Public Health, The Boeing Company, Renton Technical College, Highline Public Schools, Environmental Science Center, all of the field trip chaperones, and the stakeholders who worked with students on their projects and joined us on presentation day.



Analysis of a pre- and post- survey administered by the Environmental Science Center found:

- **13% increase in use of car washes**
- **9% increase in checking for car leaks**
- **8% increase in fixing car leaks**
- **14% increase in awareness of car leaks**
- **25% decrease in use of streets or driveways for car washes**
- **10% decrease in use of single-occupant cars**