



SOLVING REAL-WORLD PROBLEMS ONE DROP AT A TIME

Students at Westridge Elementary Use the Engineering Process to Address Water Pollution

An algae bloom in Provo Lake that threatened to cancel a field trip for Westridge Elementary students quickly became an exciting opportunity for them.

“One of the projects we do each year in learning about the water cycle is creating a water filter,” said Mark Nance, a fourth grade teacher at Westridge Elementary School in Provo School district. “When we found out our field trip may be cancelled, we decided to learn more about filtering and how to clean Provo Lake’s water.”

Soon the students were applying their classroom learning to an issue impacting their community.

Nance’s class visited Utah Lake to retrieve 10 gallons of water from where the algae



were centralized. Back in the classroom, students examined samples through microscopes to better understand what needed to be removed from the water and make it safe.

Students then created filters based on various criteria, including cost constraints, what organisms needed to be removed from the water and the clarity of the water.

“With the filters, several groups were able to get their water to look as clear as tap water, but when they looked at it under the microscope they could see the living organisms were still there,” Nance said.



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After their first attempt to filter the water, students worked to improve their filters, making note of what they changed and why the changes were made. Finally, groups demonstrated their filtering process to the class, detailing both attempts and their results.

Nance invited a member of the Provo Water Coalition to come to the school, and one group from each class was able to present to the representative.

"The Water Coalition member was able to tell my students about what the coalition is doing now to clean the water in Provo," Nance said. "It's hard for students to understand and relate to water issues in other countries, but they can relate to the water issues in Provo. This project gets the kids excited and thinking 'Is this something I can do in the future?' One student mentioned his goal is to make sure people have clean drinking water. It's a world and local issue."



The steps of the engineering design process are:

- ✓ What is the problem?
- ✓ Brainstorm solutions
- ✓ Design
- ✓ Create a prototype
- ✓ Try it out
- ✓ Make it better



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