

Wednesday, April 29, 2009

4-H2O: Fountain Valley 4-H club kids tests water quality

Effort is part of national project to help United States' science workforce compete globally.

By ANN HOUGH

SPECIAL TO THE VIEW

Peering through a test tube of reddish water, 4-H members Katie Cohee and Julie Hough debate on the rating they should assign a water sample, comparing it to a card that indicates ranges for the nitrate level.

"Don't look at the turbidity, look at the color," instructs parent volunteer Jose Guerra. After consulting with the rest of the team, they agree the nitrate level is 10, and everyone records their results in their notebooks. The turbidity, or murkiness, is a separate experiment.

Katie, 10, and Julie, 8, are part of a group from the 4-H Fountain Valley Cloverdales club that spent Sunday afternoon hiking through the San Joaquin Marsh, collecting samples of water from

Irvine Water Ranch Water District Natural Treatment Ponds and performing scientific tests on each of them.

The fieldwork was the culmination of weeks of training and preparation as part of the 4-H2O Watershed project; a program that helps kids become aware of the scarcity and fragility of fresh water sources and guides them through scientific experiments that demonstrate the effect of urbanization on these sources.

At a table covered with test tubes and water samples, Kevin Wattier, a parent leader on the project, puzzles over some of the results from the kids' testing that isn't consistent with the other results. Finally, one of the kids consults his notebook and points out an error on their summarization page, and everyone adjusts their records.

The 4-H2O Watershed program is one of many developed nationwide as part of the 4-H Science, Engineering and Technology Initiative, with a goal of "One Million New Scientists, One Million New Ideas."

The 4-H National Youth Development committee created the focus in response to statistics that show that the United States is falling dangerously behind other nations in developing its future workforce of scientists, engineers, and technology experts.

4-H S.E.T. partners with national corporate and foundation partners for funding and with the UC Cooperative Extension for curriculum to create programs that encourage kids to consider these fields. The 4-H2O Watershed was funded by a grant from Toyota.

"The lessons the staff at UC Extension put together were really engaging for the kids," said

Brennan Wattier (back) checks his notes while Anthony Tran determines the pH level of his water sample.

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Vanessa Koble, a parent leader.

Activities included polluting a "lake" in a fish tank after considering the affects of several shoreline development projects and simulating the various mixes of fertilizers by substituting colored candies for nutrients such as nitrate, phosphate and potassium. The hit of that activity was the "fertilizer bag" the kids were given to create their own mix to take home.

Wattier selected the Natural Treatment Ponds for the testing site because it corresponded well with the 4-H2O curriculum.

"The progressive treatment of the water, as it flows through successive ponds, lends itself to allowing the kids to test the water at different points in the process," said Wattier, who works as general Manager of Long Beach Water Department. "They should be able to see the changes in the nutrient levels as they look at the different samples."

And although the fieldwork day was a central point of the project, the kids are far from done. In the next few months, they will meet several times to summarize and conclude upon their data. They will eventually present a demonstration at the Orange County Fair, showing their results and providing an educational outreach to the community on what they have learned.

"Before this project I didn't really like science, but now I love science and I've been getting a lot better at it," said Madison Koble, age 10. "I hope we get to do this next year."

Katie Cohee collects water sample.

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Back at the Duck House, the parents help the kids with their remaining tests on the water samples. Parents (left to right): Jose Guerra, Ann Hough, Vanessa Koble. Kids (clockwise): Katie Cohee, Isabella Guerra, Julie Hough, Madison Koble, Bridgette Guerra and Katherine Rutledge.

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Julie Hough collects water sample.

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Kevin Wattier looks on as the kids compare their sample to the standard for dissolved oxygen. Kids (left to right): John Rutledge, Chris Rutledge, Brennan Wattier, Bridgette Guerra, Madison Koble.

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