



Shauna Gardner, a Winnacunnet High School freshman, checks a water test conducted in her aquaculture lab during freshman science class Wednesday.

Photo by Amy Root-Donle

Love of learning

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By Patrick Cronin

Winnacunnet High School science teacher John Croteau is trying to bring some fun into biology class this year by introducing his students to the world of aquaculture.

"My goal is to get students excited about biology by giving them an opportunity to experience hands-on science," Croteau said.

Croteau recently received a \$1,000 grant from the Friends of the Winnacunnet Foundation to aid him in expanding the program, which is in its second year.

The foundation's goal is to provide additional funding to enhance programs of excellence in education at the high school.

Croteau said he decided to add aquaculture into the curriculum because there was a lot of students failing nonhonors biology. Aquaculture is the cultivation of aquatic animals and plants, especially fish, shellfish, and seaweed, in natural or controlled marine or freshwater environments.

"The experiences of the fish allow us to observe biology concepts in a real life context," Croteau said.

Students in the class are separated into four teams and oversee their own aquarium.

The students are responsible for testing and adjusting the water chemistry and caring for their tropical fish.

"Students visit their fish daily to feed them, observe their condition, and record brief notes," Croteau said. "They learn about organic chemistry, nutrition, life cycles and comparative anatomy. It really rounds out the entire biology course but makes it more real for them. The long-term goal is to get the fish to breed and create another generation."

Croteau said even though the school added aquaculture to the curriculum, it is still fulfilling all the requirements of a normal biology class.

"I didn't change the curriculum; I basically enriched it," Croteau said. "I'm teaching biology with aquaculture so they can make the connection to biology."

The curriculum also calls for students to create their own business plans to lease their tanks to another classroom.

Croteau said students have thrived with the curriculum. Not only have grades improved but students seem to be really excited about biology, Croteau said.

"A lot of the students rush to class just to have to time to visit and care for their aquarium," Croteau said. "I have also noticed an increase in parents attending parent conferences. The students are actually bringing their parents because they want to show off their work."

Other biology teachers are also taking notice. Starting next year, two other biology teachers are going to add aquaculture into their curriculums.

"The grant money was tremendous and will help us make that a reality," said Croteau, who noted that it allowed him to purchase 10 more aquariums. For more information about the foundation, please visit www.winnacunnetfoundation.com.

Update to the Foundation received from John Croteau January 6, 2007:

To: Friends of Winnacunnet Foundation

RE: Grant Recipient Update

From: John Croteau, Biology Teacher, WHS

The Foundation awarded me a \$1000.00 grant to help enhance the quality of the aquaculture portion of the biology curriculum. I went to work right away purchasing equipment to improve the aquarium technology for my classroom. I have purchased equipment so that other teachers can perform the aquaculture projects in their classrooms as well. The students have benefited from the quality equipment and are learning a great deal about biology in the mean time. The students no longer have to use mismatched and old equipment. Their enthusiasm for science is even stronger because of the opportunity to use the knowledge and skills they're getting to care for and learn from their living science projects.

The grant has brought positive media attention to the school. Two separate articles were written about the aquaculture curriculum and I've gotten many compliments from the community. The students were proud to see and hear about themselves in the paper. Many of these kids don't get enough positive attention and the articles definitely helped improve their self image. Due to the attention, other science teachers have shown more interest and

are doing some form of aquaculture in their classrooms. I have been asked by the New Hampshire Science Teacher's Association to do a workshop for teachers at the spring conference. Receiving the grant has given me the confidence to accept their invitation.

I am grateful for the grant and owe much of the success of the project to the attention and energy it brought. The Winnacunnet community is fortunate to have you. If I can be of any use to you in your fund raising efforts please do not hesitate to contact me.