

Scholars in Action

How an after school program can increase environmental awareness in at-risk youth

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ABSTRACT

The 21st Century Program at Keigwin Middle School is a science based initiative funded by a state grant. The program partners with the agricultural science and technology program at Middletown High School. I create lessons that teach sixth graders about natural resources. So far, I have taught the students about aquaculture and birds of prey. After each lesson, I have the students answer a few questions based on what they learned, whether they met the objectives for the day, and if they enjoyed the days lesson. Survey responses suggest that most students enjoyed the lessons and met the learning objectives. Every student walked out of the classroom with knowledge they had not previously had.



This is a biological filtration system in the fish lab that filters the water for two 500 gallon fish tanks in our Aquaculture Laboratory



This Power Point slide introduces the students to what makes birds of prey so unique

INTRODUCTION

The 21st Century Program at Keigwin Middle School is a science based initiative funded by a state grant. The 21st Century grant was written as a mentoring program for at-risk 6th graders. The goals are to provide a safe place for these students to go after school and to support their success in school. Currently, the program partners with the Agricultural Science and Technology Program at Middletown High School. The program is 22 weeks long and provides programing Monday through Thursday after school from 2:40 – 5:45. High school mentors, such as myself, develop and teach lessons in agricultural and environmental sciences, act as mentors and help the Keigwin students with their homework.

My primary responsibility is to develop and teach a lesson for four consecutive weeks at a time. The lessons are hands-on activities that (1) give students a taste of what it is like to be a student in the agricultural program at Middletown High School and (2) help support each student's engagement in the study of science. Already some of the students report that they enjoy the science lessons want to join the program when they get to high school.

This power point slide has basic facts about tilapia.

Did You Know ...

- Tilapia need a maintained water temperature of 70 degrees to survive
- Tilapia farming is a 2.5 million dollar industry
- It takes 6-12 months to grow market-sized tilapia



This tilapia fish weighs about a pound. Tilapia have to live in water that is at least 68 degrees Farenheight. Tilapia have sharp spines along their back so when holding them you have to make sure to hold the spines down.

MATERIALS AND METHODS

I created lessons that taught sixth graders about natural resources. So far, I have developed and taught the students about aquaculture and birds of prey. When creating a lesson plan, the first thing I think about is what I want the students to learn and then I develop hands-on activities on that topic.

The aquaculture lesson taught the students the definition of aquaculture, how farmed fish are raised, and how to identify tilapia. Students got to see tilapia up close. I helped them catch a fish out of the tank and held it for students to get a better look.

The Birds of prey lesson taught the students what is unique about birds of prey and how to identify three different birds of prey. Students got to hold talons from these three birds, hear the bird calls, and watch a video of bald eagles in their nest. There are life-sized outlines of a bald eagle, a red tailed hawk, and a sharp-shinned hawk. Students got to measure themselves compared to the outlines, a bald eagles wingspan ranges from 72-90 inches and all of the students were smaller than the bald eagle.



The wingspan of a Bald Eagle ranges from 72-90 inches. As you can see my wingspan is smaller than a bald eagles.



Students here are comparing their wingspan with the bald eagles.



RESULTS

The aquaculture lesson had 3 objectives:

1. Define the word Aquaculture.
2. Understand how farmed fish are raised.
3. Identify Tilapia as a fish species.

The birds of prey lesson had 2 objectives:

1. Identify the 3 things that make a bird of prey unique.
2. Identify a Bald Eagle, Red Tailed Hawk, and a Peregrine Falcon.

I had the students answer 3 to 4 questions based on what they learned. They also self assessed using a 5 point scale. They assessed based on two questions. Did you meet the objectives for the day? Did you enjoy the day's lesson?

Student Responses to Post Lesson Reflection Questions					
Rating on a Scale of 0 to 5	1	2	3	4	5
Number of Students who reported that they <u>met the lesson objectives</u>	2	0	1	4	22
Number of Students who reported that they <u>enjoyed the lesson</u>	2	0	0	2	25

78% of students self-reported that they met the objectives of the lesson

86% of students self-reported that they enjoyed the lesson

Student Responses to Post Lesson Reflection Questions on the Birds of Prey Lesson					
Rating on a Scale of 0 to 5	1	2	3	4	5
Number of Students who reported that they <u>met the lesson objectives</u>	0	0	1	4	23
Number of Students who reported that they <u>enjoyed the lesson</u>	0	0	1	0	27

82% of students self-reported that they met the objectives of the lesson.

96% of students self-reported that they enjoyed the lesson

CONCLUSION

Mentoring 6th graders is a tough but rewarding experience. Working with these students has made a big impact on my life. Since some of these students are at risk, they come to this program to get help. I know I have helped some of these students just by being there for them so that they have someone to talk to. I now understand how teachers feel sometimes and have more respect and admiration for them. Working with 6th graders has taught me a great deal of patience on top of becoming an expert in solving conflicts between students.

I believe that the students enjoy going to the high school to learn about different topics that they wouldn't normally get to learn about, such as environmental science. They seemed very interested in what I taught them and are curious for more information. Some of the students even said that they want to join the Agricultural program when they get to high school. Since I want to major in environmental science, teaching students about it is easy because it's my passion. Teaching young children about important topics like this will make the students more aware of them as they grow older, and they will see and understand what harmful things are being done to the environment and maybe they will try to help stop it.