

Chemistry and Drug Use Intervention A Eureka City Schools Service-Learning Lesson Plan

Grade Level: 11th

Service Areas: Education, Public Works and Safety, Health

Academic Area: Science

Duration of Service: Long Term

Degree of complexity: Medium

Contact Information

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Introduction and Description of the Lesson

Eureka High School is situated in the coastal town of the same name in the pristine redwood region of Humboldt County. The chemistry students of HealthPath, an integrated four-year academic career program that assists high school students in pursuing a career in the health care industry, became involved in a service-learning activity to combat high school drug use. To help provide relevance and personal connections to chemistry topics, a Drug and Alcohol counselor was brought in to speak to a junior class of chemistry students about drug use and its effect on brain chemistry. Once prompted by the presentation, 20-chemistry students participated in an in-depth-study of drug abuse at Eureka High School. The students recognized the problem of drug abuse by their peers and brainstormed solutions to educate the campus of its chemical effects.

The students elected to design a PowerPoint presentation to show teachers, fellow high school students and the local junior high school about campus wide drug use and the chemical effects to the brain from the most commonly abused drugs. The focus of the study was first to educate the students about the chemistry of how drug abuse affects the brain and the actions and emotions of the user. The second issue focused on the indicators of drug abuse to help teachers identify drug use in their students, as well as what action to take. The service-learning activity fulfilled the California Academic Content Standards for Chemistry, including Investigation and Experimentation. The activity involved research and analysis of a science-based social issue.

Instructional Process

Preparation

Enlightened by the presentation of the honest portrait of drug use at Eureka High School, the students brainstormed ways to address high school drug use problems. The

students arranged to provide a presentation at a faculty staff meeting, to speak in various classrooms, and give a presentation to the local junior high school. The chemistry students believed it was their social and civic responsibility to educate the students and staff of Eureka High School about drug use among the student population.

California State Academic Content Standards

Ninth-Twelfth Grade Science: Chemistry 2.0a, 2.0b, 5.0b, 5.0d, 8.0a, 8.0b, 8.0c, 9.0b, 10.0a, 10.0b, 10.0e; Investigation and Experimentation 1.0a, 1.0j, 1.0k, 1.0l, 1.0m

Action

The students worked in groups of three to four on selected illegal drug abuse-related issues. The student groups used the library and Internet to research connections between Chemistry and their specific topic. The students conducted anonymous student surveys on personal drug use in preparation for their PowerPoint presentations.

[Editor's note: The Healthy Kids Web site <http://www.wested.org/cs/we/view/area/5> provides a health risk assessment and resilience information].

The Drug and Alcohol counselor came back once a week to monitor the students' progress and provide feedback. When each group completed their research they put together a rough draft presentation for the Drug and Alcohol counselor who provided additional feedback and advice for the students. The students then incorporated the suggestions into their projects.

Finally, the students gave a PowerPoint presentation on their findings to the students and staff of Eureka High School and at the local junior high. These presentations took place during school hours, whereas the staff presentation took place after school.

Reflection

The students reflected on the drug use on their campus and how they could best address the issue through discussions with the Drug and Alcohol counselor before and during the activity. The counselor's multiple visits provided the students with many opportunities to reflect on the information they gathered. They were able to address the question if they were successfully making an impact on the community need.

At the end of the service-learning activity each student wrote a reflective essay analyzing the project from the beginning to the final product. In the essay the students discussed what they learned about themselves, their classmates, their teachers, and their community in relation to the understanding and use of drugs on campus. Each essay also reflected on the students understanding of Chemistry and its relevance to the topic of drugs.

Student Assessment

The chemistry teacher assessed the students periodically as the project went along, and measured each student's progress against the previously identified content standards. The teacher evaluated the PowerPoint presentations on their organization, relevance, synthesis, clarity, creativity, and professionalism. Finally, the teacher and an

evaluation panel judged the students' performance skills as they presented their findings in front of other teachers and the junior high school students.

Project Evaluation and Expansion

Following the presentation, students participated in a debriefing panel discussion. In this discussion the students evaluated the effectiveness of their own project. As a group, the students identified ways to make the project more beneficial for the school, and they discussed methods to expand the project in the future.

[Editor's note: Other possibilities for expansion include a special presentation for parents, producing a brochure or flyer as a handout, offering the PowerPoint presentation on the district web site, and perhaps a follow up survey directed to the junior high school students about the effectiveness of the presentation].

Celebration and Public Recognition

The students contacted the local newspaper then took part in interviews about their informative presentations. The students also presented their project at the school Academic Fair. Games were organized outside of school hours for the rest of the campus to participate in as part of the overall service-learning celebration.

Materials and Staff Development Needs

There were no additional staff development needs for the activity. A rubric with project due dates is attached.

Funding, Resource Support, and Sustainability

There were no expenses involved in the activity, however if needed, expansion ideas could be paid for with small donations or grants. The sustainability of the activity lies in the perpetual need for accurate and honest student-driven drug education.

Community Partners/Resources

Nancy Hunter, Eureka High School Drug and Alcohol Counselor
Eureka High School Counseling Staff

DRUG PROJECT RUBRICS

PowerPoint Presentation~ Due Date _____

1 2 3 4 5 PowerPoint is complete

1 2 3 4 5 PowerPoint is creative

1 2 3 4 5 PowerPoint contains relevant information

1 2 3 4 5 PowerPoint is informative

1 2 3 4 5 PowerPoint is easy to read

1 2 3 4 5 PowerPoint is interesting and engaging

Student Presentation~ Due Date _____

1 2 3 4 5 Student is prepared

1 2 3 4 5 Student is organized

1 2 3 4 5 Student is knowledgeable

1 2 3 4 5 Student is professional

1 2 3 4 5 Student's information is easy to understand

Group Presentation~ Due Date _____

1 2 3 4 5 Group is prepared

1 2 3 4 5 Group is organized

1 2 3 4 5 Presentation is synthesized and flows

1 2 3 4 5 Information is presented in a logical manner

1 2 3 4 5 Information is relevant and interesting

1 2 3 4 5 Group is professional

1 2 3 4 5 Group is knowledgeable

Final Group Presentation ~ Due Date _____

1 2 3 4 5 Group is prepared

1 2 3 4 5 Group is organized

1 2 3 4 5 Presentation is synthesized and flows

1 2 3 4 5 Information is presented in a logical manner

1 2 3 4 5 Information is relevant and interesting

1 2 3 4 5 Group is professional

1 2 3 4 5 Group is knowledgeable

DRUG PRESENTATION FEEDBACK

1. Do not READ to people
2. Determine how your words are relevant to the overall purpose of the statement
3. Understand what you are talking about
4. Make pictures BIG so they are easy to see!
5. Make it PERSONAL
6. Do you have student quotes?
7. Did you do a survey of students recent drug use?
8. Did you use your student surveys?
9. Discuss the amount of money spent on propaganda
10. Speak loud and SLOW
11. Prepare handouts so teachers have your information in front of them
12. Have confidence in what you are saying