Chemical Weapons Worldwide

The Bronx High School of Science

Forensic Science/Criminalistics
Web Quest (12th Grade)

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INTRODUCTION

After 9/11, concern over chemical weapons has reached massive proportions worldwide. With the rise in terrorism, there is heightened concern over the accessibility of chemical agents and their risks to mankind. Many people fear a chemical attack and worry about whether the hospitals, fire departments, and police departments will be prepared to handle these types of emergencies. They fear that they will not be able to protect themselves in the event of a chemical attack. Lots of people also want the government and schools to promote awareness about chemical weapons and how the public can protect itself if attacked. People must be helped to overcome their fears, learn ways to protect themselves, and something must be done to put an end to the development of chemical testing worldwide.

TASK

The President of the United States has just established a Chemical Control Committee with the hope of advising the House Judiciary Committee officials on issues related to chemical weapons worldwide. The President asks you, as a junior forensic investigator, to serve on this committee, as a member of the forensic science subcommittee on the use and abuse of chemical weapons worldwide, in affiliation with the FBI, the office of national security, and the office of homeland security. Your objective is to use your expertise to:

- Examine and assess the extent of the problem of chemical weapons worldwide.
- Examine the causes of the problem.
- Develop a policy proposal for the collection and processing of chemical weapons worldwide.
- Develop a policy proposal that addresses safety techniques to protect people worldwide.
- Suggest ways of overseeing the implementation of policies to assure the safety of people worldwide.

PROCESS

Follow the six steps of the public policy analyst:

- Define the problem (statistics, case studies, articles by experts, evidence, internet searches, interviews, surveys). Worksheet #1 and Worksheet #2

- Identify the causes of the problem (statistics, case studies, articles by experts, evidence, internet searches, interviews, surveys). Worksheet #3

- Research and evaluate the current policies that address the problem. Worksheet #4

- Develop public policy solutions. Worksheet #5

- Select the best public policy solution (benefits, costs, the Prince System).
  Worksheet #6 Worksheet #7 Worksheet #8 Worksheet #9
  Worksheet #10 Worksheet #11 Worksheet #12 Worksheet #13

- Developing a political strategy.
  Worksheet #14 Worksheet #15 Worksheet #16 Worksheet #17

PREPARE A POWER POINT PRESENTATION

Address the following:

- A clear identification of the problem.
- An explanation of the causes of the problem.
- The identification of chemical weapons found worldwide.
- An explanation of how chemical weapons affect human health and behavior (physical, psychological, and social).
- Screening tests for the identification and quantification of the chemical weapon.
- An evaluation of the current policies relating to the collection and processing of physical evidence in cases relating to chemical warfare.
- An evaluation of the current policies related to chemical weapons at the federal state and local levels.
- The most effective and feasible lab policy.
- The most effective and feasible public policy.

Process:

- For each slide, include appropriate information, graphic(s), and references.
- Present your slideshow.
- Post your slide show on the Forensic Biology website at Bronx Science.

RESOURCES

- TIPS Public Policy Analyst Guidelines
  - http://www.maxwell.syr.edu/plegal/TIPS/welcome.html

- Contact Experts in the Field
  - The New York State Police Forensic Science Laboratory System
    - http://www.troopers.state.ny.us/ForSc/ForScindex.html
  - Northeastern Association of Forensic Scientists (NEAFS)
    - http://www.geocities.com/CapeCanaveral/Lab/5122/labs.htm
  - American Academy of Forensic Sciences (AAFS)
    - http://www.aafs.org
  - American Board of Criminalistics (ABC)
    - http://www.criminalistics.com/ABC/abchome.htm
  - American Society of Crime Laboratory Directors (ASCLD)
    - http://www.ascld.org

PROBLEM

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- http://www.fas.org/nuke/guide/egypt/cw/
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SEARCH ENGINES

- Alta Vista
  - www.altavista.com
- Excite
  - www.excite.com
- ERIC
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- Entire Web
  - www.entireweb.com
- Google
  - www.google.com
- Specialized Search Engines
  - www.specializedsearchengines.com
- Yahoo
  - www.yahoo.com
- Clip Art
  - www.ArtClipArt.com

EVALUATION

- PowerPoint Presentation (35%)
  - 10 -15 slides.
  - Easy navigation.
  - Identify your class.
  - List the names of the students.
  - Generate MLA Style list of the sources you used.
  - Each slide should have a positive visual impact on the audience.
  - Use qualitative and quantitative information.
  - Use photographs, graphs, and drawings.
  - Gather information from multiple sources.
  - State the problem, identify the causes of the problem, and identify or formulate the best policy regarding chemical weapons worldwide.

- Written Reports (35%)
  - Search the internet for appropriate articles, graphics, information, etc.
  - Document your work.
  - Select appropriate graphics.
  - List references for information and graphics.
- Oral Presentation (15%)
  - You will serve as a guest speaker for all the classes at the Bronx High School of Science.
  - Your oral PowerPoint presentation will be graded on:
    - Your familiarity with the topic.
    - Clarity of concepts.
    - Use of visual aids.
    - How well you held the audience's attention.
    - Audibility.
    - Grammar.
- Bibliography (15%)
  - Use of MLA format to correctly attribute information to all rightful sources.

GRADING POLICY

Range: 1= Poor, 5= Excellent

Written Research Projects	Scoring
Facts and information from multiple internet sources.	1 2 3 4 5
Synthesis of information from multiple references.	1 2 3 4 5
Analysis of information.	1 2 3 4 5
Conclusions drawn from the results of the investigation.	1 2 3 4 5
Written clearly and succinctly.	1 2 3 4 5

Grading Policy

Grammar.	1 2 3 4 5
Understanding of scientific concepts.	1 2 3 4 5
Understanding of public policy.	1 2 3 4 5
Policy evaluation and design.	1 2 3 4 5
Bibliography.	1 2 3 4 5

Grading Policy

Oral Presentation	Scoring
State the purpose for your project.	1 2 3 4 5
Supporting information.	1 2 3 4 5
Presents information clearly and succinctly.	1 2 3 4 5
Clarity of concepts.	1 2 3 4 5
Effective use of PowerPoint slides.	1 2 3 4 5

Grading Policy

How well presenter held the audience's attention.	1 2 3 4 5
The organization of facts and information.	1 2 3 4 5
Public policy.	1 2 3 4 5
Policy decisions and solutions.	1 2 3 4 5
Bibliography.	1 2 3 4 5

Grading Policy

PowerPoint Presentation	Scoring
Ten to fifteen slides.	1 2 3 4 5
Visual impact of slides.	1 2 3 4 5
Easy navigation from slide to slide.	1 2 3 4 5
Use of qualitative and quantitative information.	1 2 3 4 5
Clear and succinct presentation.	1 2 3 4 5

Grading Policy

Use of multiple sources.	1 2 3 4 5
Appropriate graphics to illustrate the content and conceptual understandings.	1 2 3 4 5
Identification of the problem and the cause of the problem.	1 2 3 4 5
Policy and policy solutions.	1 2 3 4 5
Bibliography.	1 2 3 4 5

Grading Policy

Determination of Grades:

40-50 = A

30-39 = B

20-29 = C

10-19 = D

Below 10 = F

Timeframe:

- Mini research reports collected bimonthly up to and including March 7, 2005.
- Slide show due April 25, 2005.
- Oral presentations for all forensic science classes due on May 2, 2005.
- PowerPoint presentation posted online May 9, 2005.

High School Science Performance Standards

- Scientific Connections and Applications
  - Demonstrates an understanding of big ideas and unifying concepts.
  - Demonstrates an understanding of the impact of technology.
  - Demonstrates an understanding of the impact of science.
- Scientific Thinking
  - Frames question to distinguish cause and effect, and identified or control variables.
  - Uses concepts for Science Standards to explain a variety of observations and phenomena.
  - Uses evidence from reliable sources to develop descriptions, explanations, and models; and makes appropriate adjustments and improvements.

High School Science Performance Standards

  - Proposes, recognizes, analyzes, considers, and critiques alternative explanations; and distinguishes between fact and opinion.
  - Identifies problems; proposes and implements solutions; and evaluates the accuracy, design, and outcomes of investigations.
  - Works individually and in teams to collect and share information and ideas.
- Scientific Tools and Technologies
  - Uses technology and tools to observe and measure objects, organisms, and phenomena, directly, indirectly, and remotely, with appropriate consideration of accuracy and precision.
  - Records and stores data using a variety of formats.
  - Collects and analyzes data using concepts and techniques in Mathematics Standard 4.

High School Science Performance Standards

  - Acquires information from multiple sources.
  - Recognizes and limits sources of bias in data.
- Scientific Communication
  - Represents data and results in multiple ways.
  - Argues from evidence.
  - Critiques published materials.
  - Explains a scientific concept or procedure to other students.
  - Communicates in a form suited to the purpose and the audience.
- Scientific Investigation
  - Demonstrates scientific competence by completing fieldwork.
  - Demonstrates scientific competence by completing secondary research.

High School Math Performance Standards

- Number and Operation Concepts
  - Use addition, subtraction, multiplication, division, exponentiation, and root-extraction.
  - Represent numbers in various forms and graph them.
  - Compare numbers using order relations, differences, ratios, proportions, percents, and proportional change.
  - Recognize and respect basic number patterns.
- Function and Algebra Concepts
  - Make predictions by interpolating or extrapolating.
- Statistics and Probability Concepts
  - Organize, analyze, and display single-variable data appropriately.
  - Organize, analyze, and display two-variable data appropriately.

High School Math Performance Standards

- Use sampling techniques to draw references.
- Understand that making inferences from a sample involves uncertainty and that the role of statistics is to estimate the size of that uncertainty.
- Formulate hypotheses to answer a question and use data to test hypotheses.
- Interpret representation of data, compare distribution of data, and critique conclusions.
- Explore questions of experimental design, control groups, and responsibility.
- Create and use models of probability and understand the role of assumptions.

- Problem Solving and Reasoning
  - Formulation.
  - Implementation.

High School Math Performance Standards

  - Conclusion.
  - Mathematical reasoning.
- Mathematical Skills and Tools
  - Carry out numerical calculations and symbol manipulations effectively.
  - Make and use rough sketches, schematic diagrams, or precise scale diagrams.
  - Create and interpret graphs of many kinds.
  - Use technology to create graphs of spreadsheets.
  - Use tools in solving problems.
  - Know standard methods to solve basic problems and use these methods in approaching more complex problems.

High School Math Performance Standards

- Mathematical Communication
  - Be familiar with basic mathematical terminology, standard notation and use of symbols, common conventions for graphing, and general features of effective mathematical communication styles.
  - Use mathematical representations with appropriate accuracy.
  - Organize work and present mathematical procedures and results correctly.
  - Communicate logical arguments clearly, showing sensibility and validity.
- Putting Mathematics to Work
  - Data study.

High School English Language Arts Performance Standards

- Reading
  - Read and comprehend informational materials.
- Writing
  - Produce a report of information.
- Speaking, Listening, and Viewing
  - Participate in one-to-one conferences with the teacher.
  - Participate in group meetings.
  - Prepare and deliver an individual presentation.
- Conventions, Grammar, and Usage of the English Language
  - Independently and habitually demonstrate an understanding of the rules of the English language in written and oral work.
  - Analyze and subsequently revise work to improve its clarity and effectiveness.

High School English Language Arts Performance Standards

- Literature
  - Respond to non-fiction documents with an eye to strategies common to effective functional documents.
  - Produce functional documents appropriate to audience and purpose.

High School Applied Learning Performance Standards

- Problem Solving
  - Design a Product, Service, or System: Identify needs that could be met by new products, services, or systems and create solutions for meeting them.
  - Improve a System: Develop an understanding of the way systems of people, machines, and processes work; troubleshoot problems in their operation and devise strategies for improving their effectiveness.
- Communication Tools and Techniques
  - Develop a multi-media presentation.
- Information Tools and Techniques
  - Gather information to assist in completing project work.
  - Use online sources to exchange information for specific purposes.
  - Use word processing software to produce a multi-page document.

High School Applied Learning Performance Standards

- Learning and Self-Management Tools and Techniques
  - Review one's progress in completing work activities and adjust priorities.
- Tools and Techniques for Working with Others
  - Participate in the establishment and operation of self-directed work teams.