

Use this website and go the Credits page for direct access to the links to use as resources: <http://www.pekinhigh.net/webquest/snoble/index.htm>

"Arsenic and Old Lace"

The Chemistry Connection

A WebQuest for High School Chemistry Students. Designed by Stacy E. Snoble; ssnoble@pekin.net
Last updated on December 14, 1999. Based on a template from The WebQuest Page

Introduction

"Arsenic and Old Lace" is a play written in 1941 by Joseph Kesselring. It is the story of two elderly sisters who poison unsuspecting gentlemen boarders by serving them elderberry wine laced with arsenic then bury them in the cellar of their home. What is arsenic? How does it affect the body? Have any historical figures died from arsenic poisoning? Are there cases of arsenic poisoning today?

The Task

You and your team members will assume the roles of news magazine reporters. Your jobs will be to cover the story of Brewster sisters and their deadly deeds. The plot of the play will provide the foundation for the story but other information is needed to provide viewers a better understanding of arsenic and arsenic poisoning. Each team member will take one of four roles: chemist, doctor, historian(s), and news reporter. Together, you will prepare a ten to fifteen minute video similar to a segment on a news magazine show reporting on arsenic and arsenic poisoning.

The Process

The following is a day-by-day guide for completing this project, although we may make some adjustments to the scheduling.

Day 1

1. You will be assigned to a group with three other students.
2. With groups sitting together, the class will start watching a movie version of "Arsenic and Old Lace". You should take notes to help you remember the main points of the story.

Days 2 and 3

1. The class will finish watching the movie.
2. Within each group, roles will be chosen. (chemist, doctor, historian, news reporter)
3. Each group will collaboratively write a news story reporting the discovery of the bodies of several gentlemen, the cause of their death, information about the suspects, and the motive behind the crimes. The plot of the play should be the foundation for this story.

Days 4 through 7

1. Each group member will search electronic, as well as, printed material to find

information pertaining to their specific role. A job description and a list of potential sources is provided with each role listed below.

2. You are encouraged to find other sources as well.
3. Some of the sources contain information that may be useful for roles other than the one specified so make sure to maintain communication with your group members.
4. Be sure to properly document all sources used.

Chemist

The job of the chemist is to find basic information about the element arsenic. This information should include but not be limited to:

- atomic number
- atomic mass
- electron configuration
- number of valence electrons
- location in periodic table (its group and period)
- variety of physical properties
- variety of chemical properties
- person credited with its discovery
- occurrence in nature
- compounds it forms
- other environmental or health impacts
- uses (helpful and harmful)

Some possible sources include:

- <http://library.advanced.org/~3659/pertable/33.html>
- <http://www.chemicalelements.com/elements/as.html>
- <http://140.198.18.108/periodic/As.html>
- <http://www.webelements.com/webelements/elements/text/key/As.html>
- <http://www.chemicool.com/elements/arsenic.html>
- <http://klbproductions.com/yogi/periodic/As.html>
- <http://www.we.fh-osnabrueck.de/htbin/htimage/fbwe/periodic/periodic.map?438,125>
- <http://www.lcse.umn.edu/~jolson/groundwater/arsenic.html>

Chemical Elements, Carbon to Krypton, Volume 1, A-F. Written by David E. Newton. Edited by Lawrence W. Baker. Published by UXL 1999. pp.31-36.

Doctor

The job of the doctor is to find information pertaining to arsenic poisoning. It should include but not be limited to:

- physiological effects of ingesting arsenic
- dosage levels
- symptoms of arsenic poisoning

- tests to confirm arsenic poisoning
- treatments

Some possible sources include:

- <http://www.grand-illusions.com/napol2.htm>
- <http://crystal.biol.csufresno.edu:8080/projects97/122.html>
- http://www.oneworld.org/patp/pap_6_3/Arsenic.html
- <http://danpatch.ecn.purdue.edu/~epados/waste/house/arsenic.htm>

Historian

The job of the historian is to find information pertaining to arsenic poisoning of famous or historic figures. It should include but not be limited to:

- the names of famous or historic figures that have died or are thought to have died of arsenic poisoning
- the circumstances surrounding the death
- how the poisoning was confirmed

Some possible sources include:

- <http://www.ornl.gov/ORNLReview/rev27-12/text/anaside6.html>
- <http://bicn.com/acic/infobank/mortoza7.htm>
- <http://chemistry.about.com/>
- <http://www.elibrary.com>
- <http://scottishculture.about.com/culture/scottishculture/library/blfamsmith.htm?iam=ma>
- <http://www.agric.wa.gov.au/progserv/animal/ahl/ahwa/arsenic.htm>

News Reporter

The job of the news reporter is to find information pertaining to arsenic poisoning in our society today. It should include but not be limited to:

- cases of recent, intentional arsenic poisoning
- cases of recent, accidental arsenic poisoning
- cases of natural arsenic poisoning

Some possible sources include:

- <http://www.hvr.se/nov97/arsenic.html>
- <http://www.smh.com.au/news/9810/03/text/world7.html>
- http://www.oneworld.org/ips2/Dec98/16_21_056.html
- <http://dogs.about.com/home/dogs/library/weekly/aa070497.htm?iam=ma>
- <http://www.rediff.com/news/oct/13as.htm>
- <http://bicn.com/acic/infobank/mortoza6.htm>

1. Organize the information you gathered.
2. Write a "script" for your segment of the video.

Day 9

1. Have a production meeting with the rest of your group to discuss the video. Two issues that need to be addressed are the order of segments and segues that provide transition from one segment to the next.
2. One group member should be chosen to act as the anchor that will deliver the lead story line and conclusion in addition to his or her own specialty segment.
3. The set should be discussed as well.
4. Wardrobe plans should be made so each member is dressed according to his or her own role.

Day 10

1. Your group should rehearse.
2. Set a time for taping within two days. Taping needs to be done on your own time.

Days 11 and 12

1. We're moving on - temporarily; we will investigate elements in health and the environment

Day 13

1. Your group will turn in a complete copy of the script and the video tape.
2. You will turn in an evaluation of your group's project.

Days 14 and 15

1. The class will watch and evaluate each video.

Evaluation

- Your grade for this project will be determined using evaluations from you, your classmates, and your teacher. You and your teacher will evaluate all four categories in the table below; your classmates will evaluate only the last category. All the scores will be added together for a total of 72 points.
- In addition, you must turn in a properly formatted bibliography for the materials you used. You are not restricted to website. Books and periodicals may also be used.. Many of my chemistry books may have some information of use to you, and you are welcome to use them in school, in the JRC. I will create a 'reserve shelf of materials relevant to this task.
- For each website you cite, you must turn in a completed site evaluation form. Failure to do so will lower your grade. Evaluation forms will be left in a marked container in the JRC.
- The grading rubric is on the next page.

	Beginning 2 points	Developing 4 points	Accomplished 6 points	Exemplary 8 points
SEGMENT SCRIPT INFORMATION (this is an individual grade based on each role's research)	Covers only some of the required topics..	Covers all the required topics but does not thoroughly explain them.	Thoroughly covers all the required topics but has no additional information.	Thoroughly covers all the required topics and has additional information.
SEGMENT SCRIPT WRITING (this is an individual grade based on each role's written script)	Written style unclear and hard to follow with several grammatical errors.	Written style unclear in places with several grammatical errors.	Written in a clear manner with a minimum of grammatical errors.	Written in a flowing style with a high degree of clarity and a minimum of grammatical errors.
VIDEO SCRIPT (this is a group grade based on the introduction, conclusion, and segways)	Introduction includes only a few plot points and is uninteresting; segways are minimal or absent; conclusion does not tie the segment together or is absent.	Introduction lacks some main plot points; segways are not smooth; and conclusion does not tie the segment together.	Introduction covers most of the main plot points of the play; segways are smooth; and conclusion ties together most of the information from the segment.	Introduction covers all main plot points of the play in an interesting manner; segways are smooth and logical; and conclusion ties together all information from the segment.
Video Segment (this is a group grade based on the quality of the videotaped segment)	Reports are delivered in a rough manner with minimal eye contact with the camera; members are not dressed for their roles; setting is average; less than 13 minutes in length.	Some of the reports are delivered well with minimal eye contact with the camera; some members are dressed for their roles; setting is average; less than 13 minutes in length.	All reports are delivered well with fair amount of eye contact with the camera; all members are dressed for their roles; setting is interesting; 13-15 minutes in length.	All reports are delivered in a smooth, interesting manner with frequent eye contact with the camera; all members are dressed for their roles; setting is interesting; 13-15 minutes in length.

Conclusion

Now that you have completed this project, you should be more knowledgeable about the element arsenic. You should also be aware of how toxic this element and its compounds can be. Along the way, you also were exposed to a humorous play and gained some insight as to how news magazine stories are researched and put together. Hopefully this project has made you realize that chemistry is encountered in many aspects of life.

Resources

Use the following website as sources of information.
You may use other reliable websources. (see evaluation section)

Other online resources are available on two web pages I have created for other projects:
<http://trackstar.4teachers.org/trackstar/ts/viewTrack.do?number=282870>
<http://wizard.4teachers.org/builder/worksheet.php3?PHPSESSID=bf61423888d49a3cd3de78998d24703f&ID=96362>

make it easier to type: go to <http://trackstar.4teachers.org> and in the section "find a track" type in 282870

for the second one: go to <http://wizard.4teachers.org> and in the section "find a worksheet" type in 96362

Credits

Information for this WebQuest was obtained from the following:

<http://library.advanced.org/~3659/pertable/33.html>

<http://www.chemicalelements.com/elements/as.html>

<http://140.198.18.108/periodic/As.html>

<http://www.webelements.com/webelements/elements/text/key/As.html>

<http://www.chemicool.com/elements/arsenic.html>

<http://klbproductions.com/yogi/periodic/As.html>

<http://www.we.fh-osnabrueck.de/htbin/htimage/fbwe/periodic/periodic.map?438,125>

<http://www.lcse.umn.edu/~jolson/groundwater/arsenic.html>

Chemical Elements, Carbon to Krypton, Volume 1, A-F. Written by David E. Newton.
Edited by Lawrence W. Baker. Published by UXL 1999. pp.31-36.

<http://www.grand-illusions.com/napol2.htm>

<http://crystal.biol.csufresno.edu:8080/projects97/122.html>

http://www.oneworld.org/patp/pap_6_3/Arsenic.html

<http://danpatch.ecn.purdue.edu/~epados/waste/house/arsenic.htm>

<http://www.ornl.gov/ORNLReview/rev27-12/text/anaside6.html>

<http://bicn.com/acic/infobank/mortoza7.htm>

<http://chemistry.about.com/>

<http://www.elibrary.com>

<http://scottishculture.about.com/culture/scottishculture/library/blfamsmith.htm?iam=ma>

<http://www.agric.wa.gov.au/progserv/animal/ahl/ahwa/arsenic.htm>

<http://www.hvr.se/nov97/arsenic.html>

<http://www.smh.com.au/news/9810/03/text/world7.html>

http://www.oneworld.org/ips2/Dec98/16_21_056.html

<http://dogs.about.com/home/dogs/library/weekly/aa070497.htm?iam=ma>

<http://www.rediff.com/news/oct/13as.htm>

<http://bicn.com/acic/infobank/mortoza6.htm>