

TIES 2001

# The Government as Protector

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# The Government as Protector

## Curriculum Unit Overview

### Summary

In manufacturing, adherence to federal regulations dealing with the protection of both the workers and the consumers takes time, energy and financial resources. Often, these mandated protective measures do not have an obvious return on investment. This 6-week unit is designed to familiarize high school students with three federal agencies - OSHA, FAA, FDA, - which exist to protect.

### Big Picture

The hook activity will be an OSHA film (and possibly a speaker) which will show actual workplace disasters and how accidents happen and could have been avoided.

Possible videos include:

- Backhoe Safety – 600048
- Competent Person and Soils Testing – 600050
- Construction – Stairways and Ladders – 600019
- Fall Protection: The Basics – 600054
- Scaffold Safety: It's No Joke – 600051
- Drugs, Drinking, and Driving – 6500013

A complete list of videos can be found at

[www.ohiobwc.com/employer/services/safetyhygiene.asp](http://www.ohiobwc.com/employer/services/safetyhygiene.asp)

### Preparation

1. Collect videos
2. Collect AV equipment
3. Invite a speaker from an organization which deals with OSHA, FAA, and/or FDA

### Overview

On the following page is a summary chart of the unit GOVERNMENT AS PROTECTOR which provides an overview of the 9 ALTs. This table provides an overview of tasks in the unit sections and shows how the activities in the different teaching areas relate to each other.

# The Government as Protector

A 6-Week Cross-Discipline Unit

<p>Accidents Happen ENGLISH</p>	<p>Accidents Happen SOCIAL STUDIES</p>	<p>Accidents Happen MATH</p>
<p><b>ALT 1 - A Novel Way</b>  Reading novels related to the American workplace</p>	<p><b>ALT 1 - Who's Lookin' Out For You, Kid!</b>  Researching (electronic and print) one of three agencies: FAA, FDA, OSHA</p>	<p><b>ALT 1 - Smoking – By The Numbers</b>  Completing Smoking and Lung Cancer Data Analysis Activity Using Excel</p>
<p><b>ALT 2 - Finding the Facts</b>  Creating a survey sheet or interview questionnaire</p>	<p><b>ALT 2 - Timeline To The Past</b>  Developing a timeline of the history of the agency</p>	<p><b>ALT 2 - Seek and You Shall Find</b>  Researching data related to the selected government organization</p>
<p><b>ALT 3 - Reporting the Facts</b>  Writing a formal report including the results of the survey/interview, statistical analysis of data, and a bibliography</p>	<p><b>ALT 3 - Agencies In The Community</b>  Surveying a local industry or workplace for information related to the compliance to government regulations</p>	<p><b>ALT 3 - What Do The Numbers Say?</b>  Conducting statistical analysis and creating graphs on Excel</p>

## TRANSFER ACTIVITY

The pre-selected collaborative groups will publicly (to the class and visitors) present the findings about government protection in the community. Each presentation will have a visual (timeline, graph, chart), a handout and/or Power Point of the survey results, and the researched information. 15 minutes will be allotted for each presentation. Each class member will evaluate the presentations using the attached rubric.

## **Accidents Happen English**

### **ALT 1: A Novel Way**

#### **Summary**

The students will work in collaborative groups established in SS ALT 1. Each group will choose a novel, which in some way connects with the activities of the agency of study selected in SS ALT 1. Each student will read the novel and the group will produce a bookmap.

#### **Competencies**

1. Utilize multi-step directions
2. Examine uses and purpose of propaganda
3. Recognize an author's purpose and attitude
4. Support an interpretation by locating specific information
5. Use context clues to determine the meaning of words
6. Identify the structural components of a novel

#### **Time**

Classroom reading -	1 hour
Home reading -	7 hours
Bookmap -	2 hours

#### **Materials**

1. Novel lists (E ALT1 Booklist)
2. Poster boards, markers, pencils, rulers
3. Magazine pictures

#### **Instructions**

1. Form groups of 4----a researcher, a writer, a visual producer, a presenter.
2. Select novels.
3. Read the novels carefully.
4. Produce a bookmap (a poster which indicates the main characters, character sketches, plot steps, themes, settings, 10 new vocabulary, favorite quotes).

## Evaluation

Standard evaluation rubric where 1 equals lowest and 5 equals the highest.

### Team

1. Team works constructively	1	2	3	4	5
2. Individuals accept responsibility	1	2	3	4	5
3. Time is used efficiently	1	2	3	4	5
4. Team project is complete	1	2	3	4	5

### Bookmap

1. Work is neat and legible	1	2	3	4	5
2. Characters are well defined	1	2	3	4	5
3. Plot steps are accurate	1	2	3	4	5
4. Themes are plausible	1	2	3	4	5
5. Vocabulary is listed	1	2	3	4	5
6. Settings are descriptive	1	2	3	4	5
7. Quotes are provocative	1	2	3	4	5

## Closure

The students will use the bookmap, the research, and the timeline (from the SS ALT1 and 2) for an oral presentation.

## **Accidents Happen English**

### **ALT 2: Finding the Facts**

#### **Summary**

The students will work in collaborative groups from SS ALT 1. Each group will prepare a 25-question survey or interview sheet, which will be used to find facts about the impact of governmental regulations in the community. The community could be defined as the workplace of one of the group members.

#### **Competencies**

1. Utilize multi-step directions
2. Examine uses and processes of information gathering
3. Support an interpretation by locating specific information
4. Use exact word choices

#### **Time**

Classroom writing - 1 hour  
Homework - 1 hour

#### **Materials**

1. Directions
2. Interview Suggestion Sheet ( E ALT2 Handout 1)
3. Paper, pencils
4. Word processor

#### **Instructions**

1. Devise 25 questions for a survey or interview about adherence to governmental policy in a community workplace.
2. Wordsmith the question so that each can be answered by YES or NO.
3. Place the answer blank before the question number.
4. Make the first 5 questions for identification purposes.
5. Leave a space at the end for COMMENTS.
6. Word process into a usable form.

7. Make 20 copies.
8. Distribute and collect copies in the workplace.
9. Tabulate the results.

### **Evaluate**

Standard evaluation rubric where 1 equals lowest and 5 equals the highest.

1. The questions are useful	1	2	3	4	5
2. The questions are worded clearly	1	2	3	4	5
3. The finished form is usable	1	2	3	4	5
4. The form was distributed/collected	1	2	3	4	5
5. The information was tallied	1	2	3	4	5

### **Closure**

This activity is in partnership with the SS ALT 3 and will transfer for use in the research paper.

## **Accidents Happen English**

### **ALT 3: Reporting the Facts**

#### **Summary**

The students will work in collaborative groups from SS ALT 1. Each group will prepare a formal research report with parenthetical documentation and a bibliography. The paper will include the research about the agency, the survey/interview, and the statistical analysis.

#### **Competencies**

1. Utilize multi-step directions
2. Examine uses and processes of information gathering
3. Support an interpretation by locating specific information
4. Use exact word choices
5. Adhere to the conventions of grammar, usage, mechanics, and spelling

#### **Time**

Classroom writing - 5 hour  
Homework - 8 hours

#### **Materials**

1. Directions
2. Model research paper
3. Paper, pencils
4. Word processor
5. Rubrics for correction (E ALT3 Handout 2 and 3)
6. Researched information
7. Survey tally
8. MLA handbook

#### **Instructions**

1. Organize all the materials for this project.
2. Develop a graphic organizer which indicates a formal 5-paragraph essay to inform.
3. Rough draft each paragraph.
4. Peer edit using the attached rubric ( E ALT3 Handout 2 and 3).
5. Word process to hand-in form.
6. Add appendix which includes all research, the original survey/interview, and the mathematical analysis.

## Evaluate

Standard evaluation rubric where 1 equals lowest and 5 equals the highest.

1. The introduction grabs the reader's attention	1	2	3	4	5
2. The thesis statement is clear	1	2	3	4	5
3. The ideas and information are synthesized	1	2	3	4	5
4. The conclusion restates the thesis	1	2	3	4	5
5. Print and non-print sources are used	1	2	3	4	5
6. Sources are recent, reliable, objective	1	2	3	4	5
7. Documentation is according to form	1	2	3	4	5
8. Format is MLA consistent	1	2	3	4	5

## Closure

This activity is in partnership with the SS ALT 3 and the M ALT 3 will transfer for use in the public presentation.

## **Accidents Happen Social Studies**

### **ALT 1: Who's Lookin' Out For You Kid!**

#### **Summary**

The students will work in collaborative groups of 4 students per group. Each group will research one of three government agencies. The agencies students can choose from are the Food and Drug Administration, Occupational Safety and Health Administration, and Federal Aviation Administration. Within the agency chosen, students will research the agency's history, mission, services, and any other area of interest. Research will be done through print and electronic means.

#### **Competencies**

1. Analyze information about major historical developments
2. Identify cause and effect relationships for major historical developments
3. Explain cause and effect relationships for major historical developments
4. Discuss the economic roles of government in a market economy

#### **Time**

Agency Research - 2 hours  
Presentation Preparation - ½ hour  
Presentation - 5 minutes per group

#### **Materials**

1. Media Center
2. Computer Lab
3. 3.5" floppy disks
4. Internet search starter sheet for chosen agency (SS ALT1 Handout 1A, 1B, 1C)
5. Paper, pencils

#### **Instructions**

##### **Teacher**

1. Divide class into groups.
2. Determine if all 3 agencies will be researched by at least 1 group per class.

##### **Students**

1. Introduce group members.
2. Determine roles within group (facilitator, timekeeper, recorder, and reporter).

3. Decide which agency (FDA, OSHA, and FAA) the group is going to research.
4. Assign topic of research within agency to each group member. The topics are history, mission, services, and other area of interest.
5. Obtain Internet search starter sheet for chosen agency and go to the site to start search (SS ALT1 Handout 1A, 1B, 1C).
6. Research individual topic using the computer (Internet, electronic encyclopedia, etc.) and print resources in the media center (books, reference material, articles, etc.).
7. Compile topic information on agency and prepare a short (5 minute or less) oral presentation to educate class about your agency.

## Evaluate

Standard evaluation rubric where 1 equals lowest and 5 equals the highest.

1. Group worked together	1	2	3	4	5
2. Members fulfilled defined role tasks	1	2	3	4	5
3. Group stayed on task	1	2	3	4	5
4. Group researched chosen agency	1	2	3	4	5
5. Each topic within agency was researched	1	2	3	4	5
6. Group compiled topic information	1	2	3	4	5
7. Sources are reliable	1	2	3	4	5
8. Group prepared presentation	1	2	3	4	5
9. Group presented class with sufficient information	1	2	3	4	5

## Closure

Each group will give up to a 5-minute presentation about the agency researched. The presentations will help educate the entire class about each of the agencies. This activity will be used for SS ALT 2 in developing a visual timeline that depicts the history of the chosen agency.

## **Accidents Happen Social Studies**

### **ALT 2: Timeline To The Past**

#### **Summary**

Students will work in the same collaborative groups from SS ALT 1. Students will use their agency research to develop a visual timeline about their chosen agency. The timeline will be displayed in the classroom and will be used as part of E ALT 1 and 3, and Transfer Activity.

#### **Competencies**

1. Analyze information about major historical developments
2. Identify cause and effect relationships for major historical developments
3. Explain cause and effect relationships for major historical developments

#### **Time**

Creation of timeline - 1 hour

Construction of timeline – 1 hour

#### **Materials**

1. Research from SS ALT 1
2. Poster board
3. Construction paper
4. Pencils, pens
5. Markers, colored pencils
6. Scissors
7. Glue, tape
8. Magazines (for pictures)

#### **Instructions**

1. Review agency research from SS ALT 1.
2. Decide how group wants to make timeline.
3. Decide which group members are going to do which part of the timeline.
4. Timeline should include traditional timeline layout, text descriptions, drawings, and pictures. Timeline should be CREATIVE and well done. The timeline will also be part of several other ALTs.

## Evaluate

Standard evaluation rubric where 1 equals lowest and 5 equals the highest.

1.	Group worked together	1	2	3	4	5
2.	Members fulfilled defined role tasks	1	2	3	4	5
3.	Group stayed on task	1	2	3	4	5
4.	Group developed timeline	1	2	3	4	5
5.	Timeline displayed history of the agency	1	2	3	4	5
6.	Timeline is creative	1	2	3	4	5
7.	Includes text and visuals	1	2	3	4	5
8.	Timeline is readable	1	2	3	4	5

## Closure

Each group will display timeline in the classroom to provide a visual learning aid for the agency studies. The timelines will be used with the presentations as part of E ALT 1 and 3, and Transfer Activity.

## **Accidents Happen Social Studies**

### **ALT 3: Agencies In The Community**

#### **Summary**

Student will use the 25-question survey sheet from E ALT 2 to interview someone in their community who deals with federal government agencies. The person to be interviewed could be an employer, a family member, or an acquaintance. The interview and discussion should focus on how agencies such as FDA, OSHA, and FAA affect businesses daily interactions. The final interview results document will be used with E ALT 3 and the Transfer Activity.

#### **Competencies**

1. Understanding the economic roles of government in a market economy

#### **Time**

Initial contact - 15 minutes  
Interview - 45 minutes (may be done in person or over the phone)  
Preparation of interview results - 50 minutes

#### **Materials**

1. Survey sheet from E ALT 2
2. Interview Guidelines Sheet (SS ALT 3 Handout 1)
3. Phone access
4. Contact list of possible people to interview
5. Computer access
6. Pen, pencil
7. Thank you note
8. Phone book

#### **Instructions**

1. Review survey sheet from E ALT 2.
2. Make list of possible interview contacts.
3. Contact people and list and set-up an interview.
4. Determine if interview is to be done over the phone or in person.
5. Conduct interview.
6. Send out thank you note to person interviewed.
7. Prepare interview results in a word document.

## Evaluate

1. Student used survey sheet	1	2	3	4	5
2. Student made contact and arranged interview	1	2	3	4	5
3. Interview was conducted	1	2	3	4	5
4. Thank you notes were sent	1	2	3	4	5
5. Interview information was prepared in a final document	1	2	3	4	5

## Closure

This activity will give students a real-life experience connecting their knowledge about government agencies to their personal experiences. They can also see how agencies affect businesses. The survey results will be used in E ALT 3 and the Transfer Activity.

## Accidents Happen Math

### ALT 1: Smoking – By The Numbers

#### Summary

The students will work individually with an as-needed consultation with a collaborative groups as assigned in SS ALT 1, to apply the concepts learned in class to the analysis of real world data from an actual study exploring the relationships between smoking and deaths from cancer. The students will explore the connection between numerical, algebraic, and graphical representations of data. They will analyze the data using scatterplots, least squares regression line, correlation coefficients, and residual plots. The students will also utilize technology by using Excel for their statistical analysis.

#### Competencies

1. Algebra and Functions
  - Represent a mathematical relationship using a table, graph, symbols, and words, and describe how a change in the value of one variable affects the value of a related variable.
  - Create and analyze graphs of linear and simple non-linear functions.
2. Data Analysis and Probability
  - Create, interpret, and/or analyze tables, charts, and graphs involving data.
3. Mathematical Processes
  - Communicate mathematical ideas, reasoning, and solutions through the use of appropriate mathematical terminology, notations, symbols, definitions, models, and other representations.

#### Time

Part 1 –	1.5 hours
Part 2 –	2 hours
Part 3 –	2 hours
End of Activity Group Discussion –	30 minutes

#### Materials

1. M ALT1 1: Description of Data, printed copy or web site (<http://lib.stat.cmu.edu/DASL/Datafiles/SmokingandCancer.html> or <http://curry.edschool.virginia.edu/teacherlink/math/activities/excel/Smoking/data.html>)
2. M ALT1 2: Student Directions
3. M ALT1 3: Activity Guide (available at <http://curry.edschool.virginia.edu/teacherllink/math/activities/excel/Smokinig/guide.html>)
4. Computer lab

5. 3.5" floppy disks
6. Calculators
7. Paper and pencil

## **Instructions**

### **Teacher**

1. Review instructions.
2. Review format of work to be handed in.
3. Assist with technical questions as needed.

### **Students**

1. Answer all questions and complete all tasks in the activity guide.
2. Print specified material.
3. Compile answers and ancillary information in a clear, logical format.
4. Prepare to share observations during closing discussion.

## **Evaluate**

The response to each question or instruction will be evaluated based on a point value assigned to each item. See student activity guide (M ALT1 3) for point values.

## **Closure**

The students will participate in a Think-Pair-Share activity to discuss:

- What was learned
- What element (tables, graphs, calculations, arrangement of data, etc.) most clarified understanding.

This activity will be used as a model for M ALT 2 and M ALT 3.

(Activity adapted from "Analyzing Smoking and Lung Cancer" by the Curry Center for Technology and Teacher Education, University of Virginia,  
<http://curry.edschool.virginia.edu/teacherlink/math/activities/excel/Smoking/home.html>)

## **Accidents Happen Math**

### **ALT 2: Seek and You Shall Find**

#### **Summary**

The students will work with collaborative groups, as assigned in SS ALT 1, to find data related to their selected government organization (FDA, OSHA, and FFA) and decide on the best statistical analysis and presentation of the data.

#### **Competencies**

1. Algebra and Functions
  - Represent a mathematical relationship using a table, graph, symbols, and words, and describe how a change in the value of one variable affects the value of a related variable.
  - Create and analyze graphs of linear and simple non-linear functions.
2. Data Analysis and Probability
  - Create, interpret, and/or analyze tables, charts, and graphs involving data.
3. Mathematical Processes
  - Communicate mathematical ideas, reasoning, and solutions through the use of appropriate mathematical terminology, notations, symbols, definitions, models, and other representations.

#### **Time**

Research -	1.5 hours
Planning/Compilation of information -	1.5 hours
End of Activity Group Discussion -	1 hour

#### **Materials**

1. M ALT2 1: Potential Data Sources
2. Library access
3. Computer lab
4. 3.5" floppy disks
5. Calculators
6. Paper and pencil

## Instructions

1. Determine roles within group (facilitator, computer operator, recorder, and reporter).
2. Find usable data related to the group's selected government organization.
3. Select appropriate statistical analyses to do in M ALT 3.
4. Select method to present information to use in M ALT 3.
5. Turn in original data, with sources cited, a description of proposed statistical analyses, and a one-paragraph explanation of the connection between the data and your selected government organization.
6. Prepare to share plan to use data and provide critiques for all group proposals in closing discussion.

## Evaluate

Standard evaluation rubric where 1 equals lowest and 5 equals the highest.

1. Group worked together constructively	1	2	3	4	5
2. Members fulfilled defined role tasks	1	2	3	4	5
3. Group stayed on task	1	2	3	4	5
4. Selected usable data	1	2	3	4	5
5. Chose appropriate statistical analyses	1	2	3	4	5
6. Chose appropriate presentation method	1	2	3	4	5
7. Showed a relevant connection to organization	1	2	3	4	5
8. Group compiled topic information	1	2	3	4	5
9. Sources are reliable	1	2	3	4	5
10. Group prepared presentation	1	2	3	4	5
11. Group participated in closing discussion	1	2	3	4	5

## Closure

Each group will present proposal to the class and solicit feedback from other groups.

This project will be used to complete M ALT 3.

## **Accidents Happen Math**

### **ALT 3: What Do The Numbers Say?**

#### **Summary**

The students will use the data from M ALT 2, to conduct a statistical analysis, and create appropriate graphs, and begin the written description to be combined with the final report for E ALT 3.

#### **Competencies**

1. Algebra and Functions
  - Represent a mathematical relationship using a table, graph, symbols, and words, and describe how a change in the value of one variable affects the value of a related variable.
  - Create and analyze graphs of linear and simple non-linear functions.
2. Data Analysis and Probability
  - Create, interpret, and/or analyze tables, charts, and graphs involving data.
  - Choose and apply measures of central tendency (mean, median, and mode) and variability (range and visual displays of information)
3. Mathematical Processes
  - Communicate mathematical ideas, reasoning, and solutions through the use of appropriate mathematical terminology, notations, symbols, definitions, models, and other representations.

#### **Time**

Activity –	3 hours
End of Activity Group Discussion –	1/2 hour

#### **Materials**

1. Data from M ALT 2
2. Computer lab
3. 3.5" floppy disks
4. Calculators
5. Paper and pencil

## Instructions

1. Determine roles within group (facilitator, computer operator, recorder, and reporter).
2. Enter data.
3. Conduct statistical analysis.
4. Create a narrative summary of statistical results.
5. Create charts/graph/tables.
6. Compile all information into a report form.
7. Submit report.

## Evaluate

Standard evaluation rubric where 1 equals lowest and 5 equals the highest.

1. Group worked together constructively	1	2	3	4	5
2. Members fulfilled defined role tasks	1	2	3	4	5
3. Group stayed on task	1	2	3	4	5
4. Appropriate display of data	1	2	3	4	5
5. Accurate statistical analyses	1	2	3	4	5
6. Clear narrative summary of results	1	2	3	4	5
7. Charts/graphs/tables made correctly	1	2	3	4	5
8. Overall presentation of material logical and clear	1	2	3	4	5

## Closure

Group discussion about final concerns and/or questions about how to integrate material into final project and how to display information for final presentation.

This project will be used to complete the E ALT 3 and the Transfer Activity.

## **Accidents Happen Transfer Activity**

### **Summary**

The pre-selected collaborative groups will publicly (to the class and visitors) present the findings about government protection in the community. Each presentation will have a visual (timeline, graph, chart), a handout and/or Power Point of the survey results, and the researched information. 15 minutes will be allotted for each presentation. Each class member will evaluate the presentations using the attached rubric.

### **Competencies**

1. Gathering appropriate data
2. Presenting information in a logical manner
3. Transitioning ideas
4. Using visuals effectively
5. Connecting with an audience
6. Satisfying time requirements
7. Speaking effectively

### **Materials**

1. Speaker system
2. TV and VCR
3. Computer
4. Easels
5. Tape
6. Evaluation sheets
7. Podium

### **Instructions**

1. The entire group is on stage as support.
2. The presentation chairperson speaks.
3. The visual chairperson explains the charts etc.
4. Each class member evaluates.

### **Evaluation**

Attached sheet

### **Closure**

Each group will tally, reflect, and respond to the results of the evaluation.

# Appendix