

Project Wagon Wheel

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Introduction:

This lesson focuses on Project Wagon Wheel, which was introduced in the early 1970s. This project was part of a larger government program known as Operation Plowshare. The name “Plowshare” came from the Old Testament verse, Micah 4:3, which stated “they shall beat their swords into plowshares, and their spears into pruning hooks; nation shall not lift up sword against nation, neither shall they learn war any more.” The plan was to use atomic weapons for peaceful purposes. One of the proposals was called Project Wagon Wheel, which called for the detonation of a series of nuclear devices deep underground near Pinedale, Wyoming. The goal of the project was to break up the rock and free large quantities of natural gas. Project Wagon Wheel was proposed by the El Paso Natural Gas Company and the Atomic Energy Commission. Many residents of the Pinedale area were opposed to the project. Through a grassroots campaign of public meetings, letter writing, and official visits, the citizens, along with Wyoming’s delegation to Congress, were able to stop the project. The lesson provides teachers and students with primary source materials from the American Heritage Center at the University of Wyoming. These primary sources and their accompanying activities were chosen with both students and teachers in mind. Students should find them interesting and engaging. Teachers will find them appropriate for their classrooms and easy to use. Students will analyze the Project Wagon Wheel Proposal and the response by the local citizens along with the actions of the Wyoming legislators.

Objectives:

Students will be able to:

- Analyze the proposed action of the El Paso Natural Gas Company and its consequences.
- Analyze the response by average Wyoming citizens.
- Evaluate the opinions and motives of both sides of the issue.

Overview of Instructional Activities:

- Exploring primary source material
- Taking a stand and supporting it
- Writing a letter stating personal opinion
- Writing a creative story
- Comparing and contrasting
- Writing dialog based on research
- Engaging in a Town Hall Meeting
- Drawing a sketch
- Drawing and captioning a political cartoon
- Expressing feelings through poetry, sketches, or song lyrics

Correlations to Wyoming State Standards:

This lesson addresses benchmarks and standards from the Wyoming Social Studies Content and Performance Standards. A list of the applicable benchmarks and standards is provided in Appendix C of the lesson plan.

Notes to the Instructor:

This lesson plan was created using a multi-sensory approach incorporating reading, writing, acting, drawing, and creativity. While specific activities are provided, teachers should feel free to modify and adapt the lesson to meet the needs of their individual classes. The lesson activities can be used as they are, or can be used as a starting point to develop their own activities. All of these activities do not have to be used in order for students to benefit from this study of Project Wagon Wheel.

The rubrics should also be considered as starting points. Teachers may want to adjust them in order to better assess the learning by their students.

Before using this lesson, instruction should be provided to students in the following areas:

- The meaning and use of primary and secondary sources
- The background of events leading up to Project Wagon Wheel, including the stockpiling of atomic weapons following WW II and the plan to use them in a peaceful way. The following links will provide background information.
 - http://en.wikipedia.org/wiki/Operation_Plowshare
 - http://uwacadweb.uwyo.edu/robertshistory/project_wagon_wheel.htm
 - <http://www.sublette.com/roundup/v103n13/v103n13s5.htm>
- Location of Pinedale, Wyoming.

Terms to Know:

Editor

Atomic or Nuclear Bombs

Grassroots movement

Gale McGee, U.S. Senator from Wyoming during the Wagon Wheel debate

Clifford Hanson, U.S. Senator from Wyoming during the Wagon Wheel debate

Teno Roncalio, U.S. Congressman from Wyoming during the Wagon Wheel debate

Atomic Energy Commission (AEC)

Plowshare

Detonation

Materials Needed:

Primary Source Documents (letters, government documents, meeting agendas, citizen documents, corporate documents, etc)

Instructor's Guide

Web Links to background information:

http://en.wikipedia.org/wiki/Operation_Plowshare provides basic information on the Plowshare project

http://uwacadweb.uwyo.edu/robertshistory/project_wagon_wheel.htm provides a summary of the Wagon Wheel project and opposition to it

<http://www.sublette.com/roundup/v103n13/v103n13s5.htm> provides newspaper accounts of the citizen opposition

<http://www.usconstitution.net/const.html> contains the text of the United States Constitution. The site also provides information for younger students to make the document easier to understand

Estimated Time to Complete:

(Activity length includes only the time needed to complete the assignment. Reading the documents will require more time.)

Background Information – instruction, reading, and discussion – 60 minutes

Letter to the Editor – 45 minutes

Compare and Contrast – 30 minutes

Letter to Senator McGee or Representative Roncalio – 45 minutes

Creative Story – 60 minutes

Town Hall Meeting – 100 to 150 minutes

Political Cartoon – 30 minutes

Sketch or Picture – 30 to 60 minutes

Poetry or Lyrics – 30 to 60 minutes

Final Project – 60 to 90 minutes

Assessment Tools:

Rubrics for each activity are located in Appendix B.

Instructor's Guide:

Project Wagon Wheel provides a unique opportunity to study how a grassroots organization challenged the plans of a corporation and the federal government. The Wagon Wheel Information Committee of Pinedale, Wyoming, through a variety of means, effectively opposed a plan by the El Paso Natural Gas Company and the Atomic

Energy Commission (AEC). This struggle is an excellent example of people exercising their First Amendment rights using a successful, organized, legal, and peaceful resistance effort.

The American Heritage Center has collections which document the process as it took place. Included in the collection are corporate and government documents supporting Project Wagon Wheel as well as letters, reports and statements in opposition to the project. By using selected material from several collections, this lesson plan provides meaningful information that will engage all levels of learners. It makes primary source material available to teachers that will touch each student. The project also provides classroom activities to accompany the primary sources. Teachers will be able use these activities as they are, or use them as a starting point to develop their own activities which can be tailored to meet the needs of their own students.

By using the Gale McGee and Teno Roncalio Collections, students will have access to primary documents involving these two legislators. There are also reports produced by El Paso Natural Gas and the Atomic Energy Commission. The collections also contain letters from concerned citizens and reports and correspondence from the Wagon Wheel Information Committee.

This project addresses Content Standard 1, Citizenship/Government/Democracy, of the Wyoming Social Studies Content and Performance Standards. By using the above collections, students will have access to documents which show a strong citizen response to the actions of a company and a government agency. Company and government reports will show one side of the story, while the documents and letters of average citizens will show the other side. Students will then be able to formulate their own opinions and draw their own conclusions about which side was right. Students will have the opportunity to demonstrate their knowledge through a variety of activities.

Introducing the Lesson:

Introduce this lesson by asking the students what they know about the use of atomic bombs against Japan during WW II and the destruction caused by these weapons. These are the images that most Americans have when atomic weapons are discussed. Ask the students whether or not they think bombs like these can ever be used for something other than destruction.

Transitional Exercise:

Ask the students to read the Operation Plowshare article found at http://en.wikipedia.org/wiki/Operation_Plowshare. Ask the students to share one thing they learned from this document.

Critical Thinking Exercises:

Writing Activities

1. Taking a Stand and Supporting It
After reading and discussing the following documents ask the students to form an opinion on the project. Ask the students to write a letter to the editor of the *Pinedale Roundup* expressing their support or their opposition to the project. They are to use evidence from these sources to support their position.
 - “*Project Wagon Wheel Today*”
 - “*Fact Sheet: A Study Relating to a Possible Experiment in the Use of a Nuclear Explosive...*”
 - “*Wagon Wheel Fact Sheet*”
 - “*Why We Oppose the Wagon Wheel Project*”
2. Compare and Contrast
After reading the documents used in Activity 1, ask the students to write two or more paragraphs comparing and contrasting the positions of the two sides involved in this controversy. The students should include supporting evidence from the primary documents.
A possible extension exercise to this activity would be to ask the students to write an article for a national magazine about the project and the local opposition to it.
3. Taking a Stand and Supporting It
After reading the documents used in Activity 1 and the letters written by citizens to their representatives, ask the students to write a letter to Senator McGee, Senator Hansen, or Representative Roncalio expressing their views. They should include supporting evidence from the primary documents to support their position.
4. Creative Writing
Based on the readings and discussion that took place while completing Activities 1 through 3, ask the students to write a creative story that tells what the Pinedale area would look like today if Project Wagon Wheel had gone forward. The story should be based on information in the primary documents. As an extension of this activity ask the students to add illustrations to their story.

Artistic Activities

1. After the students have read and discussed the El Paso and AEC reports and the reports and letters from the Wyoming citizens and legislators, ask them to conduct a town hall meeting like the one held in Pinedale. “The Project Wagon Wheel Discussion Meeting” agenda for March 20, Appendix A.7, should be used to obtain the names of the speakers and the speaking order. Have the

students write dialog and then portray representatives of the El Paso Natural Gas Company and the U.S. Government, as well as Wyoming legislators and citizens as they debate Project Wagon Wheel.

As an extension of this activity ask the students to make posters and banners expressing support or opposition to the project. Hang these around the classroom or have students hold them during the meeting.

2. After the students have read about and discussed the possible consequences of Project Wagon Wheel, ask them to draw political cartoons that illustrate their positions in this controversy.
3. Ask the students to draw a sketch or paint a picture that shows what the Pinedale area would have looked like if Project Wagon Wheel had gone forward. As a possible extension of this activity ask the students to collaborate and develop a pamphlet suitable for distribution based on the written and artistic work they have developed.
4. Ask the students to write an original poem or put new words to an existing tune. They may describe the project as it happened or what might have happened had the project actually taken place. A possible tune to use is Barry McGuire's 1965 "The Eve of Destruction." The first verse of that song pertains mainly to the Viet Nam War, but the rest of the song relates to the song writer's view of the world during the 1960s. The song can be heard at the following website:
<http://www.brownielocks.com/eveofdestruction.html>

Concluding the Lesson:

Following this introduction to Project Wagon Wheel and the results of the citizen action it produced, bring closure to this lesson by giving students a chance to express themselves to their elected officials.

- Ask the students to discuss whether or not there are any similarities or differences between Project Wagon Wheel and the extensive drilling for oil and gas in Wyoming taking place in now.
- Direct students to research Wyoming newspapers for stories about this drilling and its impact on the environment. They may want to check out the following websites and archived articles as well. Several of these provide a variety of views on the issue. These include:
 - <http://wyomingrange.org/>
 - http://money.cnn.com/magazines/fortune/fortune_archive/2007/06/11/100082885/?postversion=2007060406.
- After completing their research and discussion, ask students to write a letter to Wyoming's current U.S. Senators and Representative expressing their views on the current situation.

Supplemental/Additional Activities:

1. See the suggested extension activities for Writing Activities 2 and 4 and Artistic Activities 1 and 3.
2. The documents used in this lesson and many more relating to Project Wagon Wheel are available at the American Heritage Center. These documents can provide excellent resources for use in a Wyoming History Day project.

Appendices:

- **Appendix A - Primary Documents**
- **Appendix B - Rubrics**
- **Appendix C - List of Wyoming State Standards Addressed**

Appendix A - Primary Documents:

1. Documents produced by the El Paso Natural Gas Company:
ah032000, ah032001, ah032002, ah032003, ah032004, ah032005,
ah032006, ah032007, ah032008, ah032009
2. Document titled “Why We Oppose the Wagon Wheel Project:
ah032039, ah032040, ah032041, ah032042, ah032043, ah032044,
ah032045, ah032046, ah032047, ah032048, ah032049, ah032050
3. Document titled “Wagon Wheel Fact Sheet”
ah032052, ah032053, ah032054, ah032055
4. AEC Summary Sheet of the Draft Environmental Statement:
ah032012, ah032013
5. Letter from the AEC:
ah032015, ah032016
6. AEC Staff Report titled “Staff Report in Response to Comments Received from Mrs. Mary Ann Steele on the Draft Environmental Statement for the Wagon Wheel Gas Stimulation Project, Sublette County, Wyoming:
ah032017, ah032018, ah032019
7. “Project Wagon Wheel Discussion Meeting” Agenda:
ah032029
8. “Your Vote Does Count” Poster:
ah032056

9. Map of Sublette County:
ah032010
10. Letters from citizens to their representatives:
ah032030, ah032031, ah032033, ah032080, ah032081, ah032082,
ah032026, ah032083, ah032087, ah032088, ah032035
11. Letters from Gale McGee and Teno Rencalio:
ah032014, ah032027, ah032028, ah032020, ah032021, ah032022,
ah032023, ah032024
12. Possible Effects of the Wagon Wheel Project on the Boulder Irrigation
Project Sublette County, Wyoming:
ah032057, ah032058, ah032059
13. “Wagon Wheel – Boon or Bane?” by Teno Rencalio:
ah032060, ah032061, ah032062, ah032063

Appendix B - Rubrics:

Writing Activities

1. Taking a Stand and Supporting It: Letter to the Editor
2. Compare and Contrast Issues: Summarizing Both Sides
3. Taking a Stand and Supporting It: Letter to a Representative
4. Writing Model: Creative Writing

Artistic Activities

1. Class Debate: Town Hall Meeting
2. Drawing: Drawing a Political Cartoon
3. Creating a Picture: Drawing or Painting Based on Research
4. Writing Model: Project Wagon Wheel Creating Poetry/Lyrics

(Master copies appear on the following 8 pages.)

(All rubrics were created using **RubiStar** at (<http://rubistar.4teachers.org>). Copyright © 2000-2007 Advanced Learning Technologies in Education Consortia, ALTEC, the University of Kansas.)

Taking a Stand and Supporting It: Letter to the Editor

Evaluator's Name: _____

Student's Name: _____

Project: _____

Category	4 Advanced	3 Proficient	2 Basic	1 Below Basic	Score
Focus or Thesis Statement	The thesis statement names the topic of the letter and outlines the main points to be discussed.	The thesis statement names the topic of the letter.	The thesis statement outlines some or all of the main points to be discussed but does not name the topic.	The thesis statement does not name the topic AND does not preview what will be discussed.	
Support for Position	Includes 3 or more pieces of evidence (facts, statistics, examples, real-life experiences) that support the position statement. The writer anticipates the reader's concerns, biases or arguments and has provided at least 1 counter-argument.	Includes 3 or more pieces of evidence (facts, statistics, examples, real-life experiences) that support the position statement.	Includes 2 pieces of evidence (facts, statistics, examples, real-life experiences) that support the position statement.	Includes 1 or fewer pieces of evidence (facts, statistics, examples, real-life experiences).	
Evidence and Examples	All of the evidence and examples are specific, relevant and explanations are given that show how each piece of evidence supports the author's position.	Most of the evidence and examples are specific, relevant and explanations are given that show how each piece of evidence supports the author's position.	At least one of the pieces of evidence and examples is relevant and has an explanation that shows how that piece of evidence supports the author's position.	Evidence and examples are NOT relevant AND/OR are not explained.	
Accuracy	All supportive facts and statistics are reported accurately.	Almost all supportive facts and statistics are reported accurately.	Most supportive facts and statistics are reported accurately.	Most supportive facts and statistics were inaccurately reported.	

Compare and Contrast Issues: Summarizing Both Sides

Evaluator's Name: _____

Student's Name: _____

Project: _____

Category	4 Advanced	3 Proficient	2 Basic	1 Below Basic	Score
Position Statement	The position statements provide clear, strong statements of each side of the issue.	The position statements provide clear statements of each side of the issue.	Position statements are present, but do not make each side's position clear.	There are no position statements.	
Support for Position	Includes 3 or more pieces of evidence (facts, statistics, examples, real-life experiences) that support the position statements. The writer anticipates the reader's concerns, biases or arguments and has provided at least 1 counter-argument.	Includes 3 or more pieces of evidence (facts, statistics, examples, real-life experiences) that support the position statements.	Includes 2 pieces of evidence (facts, statistics, examples, real-life experiences) that support the position statements.	Includes 1 or fewer pieces of evidence (facts, statistics, examples, real-life experiences).	
Evidence and Examples	All of the evidence and examples are specific, relevant and explanations are given that show how each piece of evidence supports the positions.	Most of the evidence and examples are specific, relevant and explanations are given that show how each piece of evidence supports the positions.	At least one of the pieces of evidence and examples is relevant and has an explanation that shows how that piece of evidence supports the positions.	Evidence and examples are NOT relevant AND/OR are not explained.	
Sequencing	Arguments and support are provided in a logical order that makes it easy and interesting to follow the author's train of thought.	Arguments and support are provided in a fairly logical order that makes it reasonably easy to follow the author's train of thought.	A few of the support details or arguments are not in an expected or logical order, distracting the reader and making the essay seem a little confusing.	Many of the support details or arguments are not in an expected or logical order; distracting the reader and making the essay seem very confusing.	

Taking a Stand and Supporting It: Letter to a Representative

Evaluator's Name: _____

Student's Name: _____

Project: _____

Category	4 Advanced	3 Proficient	2 Basic	1 Below Basic	Score
Focus or Thesis Statement	The thesis statement names the topic of the letter and outlines the main points to be discussed.	The thesis statement names the topic of the letter.	The thesis statement outlines some or all of the main points to be discussed but does not name the topic.	The thesis statement does not name the topic AND does not preview what will be discussed.	
Support for Position	Includes 3 or more pieces of evidence (facts, statistics, examples, real-life experiences) that support the position statement. The writer anticipates the reader's concerns, biases or arguments and has provided at least 1 counter-argument.	Includes 3 or more pieces of evidence (facts, statistics, examples, real-life experiences) that support the position statement.	Includes 2 pieces of evidence (facts, statistics, examples, real-life experiences) that support the position statement.	Includes 1 or fewer pieces of evidence (facts, statistics, examples, real-life experiences).	
Evidence and Examples	All of the evidence and examples are specific, relevant and explanations are given that show how each piece of evidence supports the author's position.	Most of the evidence and examples are specific, relevant and explanations are given that show how each piece of evidence supports the author's position.	At least one of the pieces of evidence and examples is relevant and has an explanation that shows how that piece of evidence supports the author's position.	Evidence and examples are NOT relevant AND/OR are not explained.	
Accuracy	All supportive facts and statistics are reported accurately.	Almost all supportive facts and statistics are reported accurately.	Most supportive facts and statistics are reported accurately.	Most supportive facts and statistics were inaccurately reported.	

Writing Model: Creative Writing

Evaluator's Name: _____

Student' Name: _____

Project: _____

Category	4 Advanced	3 Proficient	2 Basic	1 Below Basic	Score
Word Choice	Writer uses vivid words and phrases that linger or draw pictures in the reader's mind, and the choice and placement of the words seems accurate, natural and not forced.	Writer uses vivid words and phrases that linger or draw pictures in the reader's mind, but occasionally the words are used inaccurately or seem overdone.	Writer uses words that communicate clearly, but the writing lacks variety, punch or flair.	Writer uses a limited vocabulary that does not communicate strongly or capture the reader's interest. Jargon or clichés may be present and detract from the meaning.	
Sentence Structure (Sentence Fluency)	All sentences are well-constructed with varied structure.	Most sentences are well-constructed with varied structure.	Most sentences are well-constructed but have a similar structure.	Sentences lack structure and appear incomplete or rambling.	
Accuracy of Facts (Content)	All supportive facts are reported accurately.	Almost all supportive facts are reported accurately.	Most supportive facts are reported accurately.	NO facts are reported OR most are inaccurately reported.	
Support for Topic (Content)	Relevant, telling, quality details give the reader important information that goes beyond the obvious or predictable.	Supporting details and information are relevant, but one key issue or portion of the storyline is unsupported.	Supporting details and information are relevant, but several key issues or portions of the storyline are unsupported.	Supporting details and information are typically unclear or not related to the topic.	

Class Debate: Town Hall Meeting

Evaluator's Name: _____

Student's Name: _____

Project: _____

Category	4 Advanced	3 Proficient	2 Basic	1 Below Basic	Score
Information	All information presented in the debate was clear, accurate and thorough.	Most information presented in the debate was clear, accurate and thorough.	Most information presented in the debate was clear and accurate, but was not usually thorough.	Information had several inaccuracies OR was usually not clear.	
Organization	All arguments were clearly tied to an idea (premise) and organized in a tight, logical fashion.	Most arguments were clearly tied to an idea (premise) and organized in a tight, logical fashion.	All arguments were clearly tied to an idea (premise) but the organization was sometimes not clear or logical.	Arguments were not clearly tied to an idea (premise).	
Understanding of Topic	The team clearly understood the topic in-depth and presented their information forcefully and convincingly.	The team clearly understood the topic in-depth and presented their information with ease.	The team seemed to understand the main points of the topic and presented those with ease.	The team did not show an adequate understanding of the topic.	

Drawing: Drawing a Political Cartoon

Evaluator's Name: _____

Student's Name: _____

Project: _____

Category	4 Advanced	3 Proficient	2 Basic	1 Below Basic	Score
Drawing	Drawing is expressive and detailed. Shapes, patterns, shading and/or texture are used to add interest to the drawing. Student has great control and is able to experiment a little.	Drawing is expressive and somewhat detailed. Little use has been made of pattern, shading, or texture. Student has basics, but had not "branched" out.	Drawing has few details. It is primarily representational with very little use of pattern, shading or texture. Student needs to improve control.	The drawing lacks almost all detail OR it is unclear what the drawing is intended to be. Student needs to work on control.	
Use of Class Time	Used time well during each class period. Focused on getting the project done. Never distracted others.	Used time well during each class period. Usually focused on getting the project done. Never distracted others.	Used some of the time well during each class period. There was some focus on getting the project done. Occasionally distracted others.	Did not use class time to focus on the project. Often distracted others.	
Knowledge	Student can accurately answer all questions related to facts in the sketch.	Student can accurately answer most questions related to facts in the sketch.	Student can accurately answer 75 %questions related to facts in the sketch.	Student appears to have insufficient knowledge about the facts in the sketch.	

Creating a Picture: Drawing or Painting Based on Research

Evaluator's Name: _____

Student's Name: _____

Project: _____

Category	4 Advanced	3 Proficient	2 Basic	1 Below Basic	Score
Drawing	Drawing is expressive and detailed. Shapes, patterns, shading and/or texture are used to add interest to the painting. Student has great control and is able to experiment a little.	Drawing is expressive and somewhat detailed. Little use has been made of pattern, shading, or texture. Student has basics, but had not "branched" out.	Drawing has few details. It is primarily representational with very little use of pattern, shading or texture. Student needs to improve control.	The drawing lacks almost all detail OR it is unclear what the drawing is intended to be. Student needs to work on control.	
Use of Class Time	Used time well during each class period. Focused on getting the project done. Never distracted others.	Used time well during each class period. Usually focused on getting the project done. Never distracted others.	Used some of the time well during each class period. There was some focus on getting the project done. Occasionally distracted others.	Did not use class time to focus on the project. Often distracted others.	
Knowledge	Student can accurately answer all questions related to facts in the sketch.	Student can accurately answer most questions related to facts in the sketch.	Student can accurately answer 75 %questions related to facts in the sketch.	Student appears to have insufficient knowledge about the facts in the sketch.	

Writing Model: Project Wagon Wheel Creating Poetry/Lyrics

Evaluator's Name: _____

Student's Name: _____

Project: _____

Category	4 Advanced	3 Proficient	2 Basic	1 Below Basic	Score
Focus on Topic (Content)	There is one clear, well-focused topic. Main idea stands out and is supported by detailed information.	Main idea is clear but the supporting information is general.	Main idea is somewhat clear but there is a need for more supporting information.	The main idea is not clear. There is a seemingly random collection of information.	
Accuracy of Facts (Content)	All supportive facts are reported accurately.	Almost all supportive facts are reported accurately.	Most supportive facts are reported accurately.	NO facts are reported OR most are inaccurately reported.	
Flow & Rhythm (Sentence Fluency)	All sentences sound natural and are easy-on-the-ear when read aloud. Each sentence is clear and has an obvious emphasis.	Almost all sentences sound natural and are easy-on-the-ear when read aloud, but 1 or 2 are stiff and awkward or difficult to understand.	Most sentences sound natural and are easy-on-the-ear when read aloud, but several are stiff and awkward or are difficult to understand.	The sentences are difficult to read aloud because they sound awkward, are distractingly repetitive, or difficult to understand.	

Appendix C - Wyoming Social Studies Content and Performance Standards Addressed

- Grade Span K-4
 - Content Standard # 1 Citizenship/Government/Democracy
 - Benchmark Grade 4: 1 and 2

- Grade Span 5-8
 - Content Standard # 1 Citizenship/Government/Democracy
 - Benchmark Grade 8: 1 and 3
 - Content Standard # 3 Production/Distribution/Consumption
 - Benchmark Grade 8: 1
 - Content Standard # 4 Time Continuity and Change
 - Benchmark Grade 8: 1, 2, and 3

- Grade Span 9-12
 - Content Standard # 1 Citizenship/Government/Democracy
 - Benchmark Grade 11: 1 and 2
 - Content Standard # 4 Time Continuity and Change
 - Benchmark Grade 11: 1, 2, 3, and 4