

THE DUST BOWL

A FILM BY KEN BURNS

“A Man-made Ecological Disaster of Biblical Proportions:” Examining the Dust Bowl and Other Environmental Events

Lesson Overview:

The Dust Bowl was an environmental catastrophe that, throughout the 1930s, destroyed the farmlands of the Great Plains, turned prairies into deserts, and unleashed a pattern of massive, deadly dust storms that for many seemed to herald the end of the world. It was the worst man-made ecological disaster in American history.

In this lesson, students will produce their own documentary on an environmental event, either recent or in the past, in their local community. To prepare for their production, students will first understand the historical significance of the Dust Bowl by discussing segments from the film. Students will then brainstorm a list of events in their community that involve human activity, natural disasters, and/or human and natural disasters; research the event; conduct a field study to gather data; and, finally, compile the information into a documentary. (Note: If students are not able to conduct the local field study research in this lesson, they can still produce a documentary on a local or national environmental event).

Grade Level:

7–12

Related Academic Subjects:

U.S. History, Geography, Environmental Studies, Journalism

Time Needed to Complete the Lesson:

- Opening Activity: One-half class period (viewing video segment could also be assigned as homework)
- Video Viewing Activity: Two class periods (viewing video segments could be assigned as homework). Three class periods if Optional Activity is conducted.
- Main Activity: One class period to set up. Research time may vary, for a field experience and producing the documentary.

Materials Needed to Complete the Lesson:

- Computers with Internet access for research
- Multimedia software: iMovie, Premier Elements, Movie Maker, etc., for video editing; slide show software; HTML authoring tools

- Copies of student handouts
 - Video Notes/Graphic Organizer
 - Producing Your Documentary

Lesson Objectives:

The student will:

- Examine the Dust Bowl event as an ecology case study on how natural and human-caused factors changed an environment.
- Design a storyboard for a documentary on the ecological impact of the Dust Bowl.
- Explore a familiar local environment and understand the connections in that environment.
- Research how a natural disaster, human activity, or a combination of both caused environmental change in a local area.
- Document the changes to the local environment and formulate a documentary presentation.

Video Segments Used in the Lesson

Video Segment 1: “The Dust Bowl” (series introduction)

Description: The Dust Bowl was a decade-long natural catastrophe of biblical proportions and the worst man-made ecological disaster in American history. Set in the first thirty years of the 20th century, a period of economic boom and bust, it is a classic tale of humans pushing too hard against nature and nature pushing back

Video Segment 2: “Recollections of No Man’s Land”

Description: People of the southern Plains testify to their lives and attachment to this region. A brief history of human activity on the Great Plains is also presented.

Video Segment 3: “Boom Time”

Description: The southern Plains experience a boom period as land speculators, government, and railroads encourage the settlement and development of the last, and most marginal, public land in the country.

Video Segment 4: “Modern Machinery Changes the Southern Plains from Virgin Buffalo Grass to Millions of Acres of Wheat Fields”

Description: Modern machinery, high wheat prices, and a wet weather cycle made farming easier and more profitable. The result was more land speculation, more acreage turned over to wheat farming, and a blind faith that the good times wouldn’t end, but warning signs were evident.

Video Segment 5: “Environmental Catastrophe”

Description: As the Great Depression deepens, farmers in Oklahoma, Texas, Kansas, New Mexico, and Colorado began to feel its effects. A combination of natural and made-made factors turn profitable farming land into a vast wasteland.

Lesson Procedure:

Provide a brief introduction to the lesson by instructing students to examine the environmental catastrophe known as the Dust Bowl. In the process student learn how climatic cycles and human activity combined to create the worst natural and environmental disaster in American history.

Opening Activity—KWL Chart:

1. Distribute the “Video Notes/Graphic Organizer” handout to all students.
2. Review the instructions at the top and either show students the introductory video segment (THE DUST BOWL introduction) or have them view it as homework. Have students complete the KWL chart and discuss what they know and what they still want to discover in class. Save the “What I Learned” column for after the Video Viewing Activity.

Video Viewing Activity:

1. Have students review video segments 2–5 and take notes on the graphic organizer either in class or as homework.
2. Have students review the Discussion Questions on the handout either in groups or as a full class.
3. Divide the class into groups of 2 or 3 students. Have them complete the third column in the KWL chart explaining what they’ve learned about the Dust Bowl. These can be single sentences rather than full explanations. Tell students they can write additional details of what they’ve learned on the back of the handout or on a separate sheet of paper.
4. After groups have completed their “What I Learned” statements, distribute several index cards to each student.
5. Have students develop a storyboard for a documentary that explains what they’ve learned from watching THE DUST BOWL video segments. The sequence of the storyboard should follow either a traditional essay writing format (introduction – body – conclusion) or a news article format, in which, a wide view of the issue and sequencing down to specific details. Students can include illustrations on the index cards.
6. Have students arrange their index cards as scenes in the documentary and present to the class.

Optional Activity:

Students can use multimedia tools (slide show, video camera, etc.) to create a documentary of their own on the Dust Bowl.

Main Activity:

Students will produce a documentary of an environmental event, either recent or in the past, in their local community. This will be a broad look at environmental change and could involve natural disasters, human activity, or natural disasters with human activity. This change may or may not be negative or transformative. It might just be a change in land use from natural to human activity. Select several events that occurred in your community (either recently or historically) where human activity and/or natural disasters have had an effect on the environment, or have students brainstorm a list of these events. Students will then research an

event, conduct a field study to gather more data, and compile information into a video documentary.

1. From the categories below, identify a local event where the environment has experienced some type of change:
 - Human activity (housing subdivisions, business park construction, new roads, introducing farmland in wilderness areas, mining, oil/gas drilling, logging, etc.)
 - Natural disasters (fires, tornadoes, earthquakes, hurricanes, landslides, climate change, weather pattern change, drought, flood, etc.)
 - Human environmental disasters (chemical or oil spills, landslides, over-plowing, clear-cutting, nuclear power plant accidents, over-fishing, garbage dumping, etc.)
 - Natural disasters where human activity caused or exacerbated the natural disaster. (hurricanes and weak levies, sea tides and oil/chemical spills, poor building construction and earthquakes)
2. Distribute the handout “Producing Your Documentary” to all students and review.
3. Form groups of 3 or 4. Have each group select one environmental event from the list. As an alternative you can have the entire class document one event dividing the different tasks outlined in the student handout.
4. Provide time for students to conduct background research on the area following the “5 Ws and H” research method to create and answer questions. Major events can be researched in local media outlets. Smaller events can be researched through local resources like history societies, city or county planning boards, local EPA chapters, or local chapters of environmental groups.
5. Mapping Activity: using Google Maps (or an equivalent), have students map the site to document its location (latitude and longitude), size, shape, proximity to populated areas, and location.
6. Field Experience: Students will go to the location to observe and record notes. Before having students visit the site of the event, guide them in obtaining any necessary permission from property owners or officials who control the site. The field experience is an important component of this lesson, but if students are not able to conduct the field experience, they can still produce a documentary on a local or national environmental event by completing the other tasks in the activity.
7. Producing the Documentary: Whether you have students produce the documentary as a video production, a website or blog, a slide presentation, or a traditional oral presentation, have them follow the guide on the student handout to compile their information.

Assessment Strategies:

- Asses thoroughness in completing video notes and participation in class discussions
- Evaluate storyboard development on the Video Viewing Activity.

- Evaluate students' documentaries on their construction, including historical accuracy, spelling and grammar, aesthetic aspects of the presentation, etc. Sample rubrics for digital documentary or traditional oral presentation that can be used as is or adapted to meet the teacher's needs are included at the end of the lesson.

Extensions/Adaptations:

- Have students hold a film festival to present their documentaries to the community or have them broadcast their documentaries on a local cable access channel. They could invite local environmental supporters, government officials, and members from local industries or commercial development projects to comment on the productions.
- Have students screen other environmental documentaries on major natural or human-made disasters. How do their documentaries compare with those produced? Have them conduct an evaluation of one of these documentaries, examining how facts are presented, the balance or bias in the presentation, the flow coherence of the documentary's story, and its effectiveness in telling the story.

Resources:

- THE DUST BOWL: <http://www.pbs.org/dustbowl>
- America from the Great Depression to World War II: Photographs from the FSA-OWI, 1935-1945: <http://memory.loc.gov/ammem/fsowhome.html>
- EH.net (Economic History Association) Dust Bowl page: <http://eh.net/encyclopedia/article/cunfer.dustbowl>
- Google for Educators http://www.google.com/educators/p_maps.html
- Place-based Landscape Analysis and Community Education (PLACE) <http://www.uvm.edu/place/>
- Lights, Camera... Leadership! Youth Document their Community http://www.whatkidscando.org/featurestories/2008/04_vermont_youth/index.html
- Teaching History With Technology "Digital Storytelling" page <http://thwt.org/index.php/presentations-multimedia/digital-storytelling>
- "Power of Story" documentary film-making guide (from Ken Burns's THE WAR) <http://www.pbs.org/thewar/downloads/PowerofStory8-30-07.pdf>

Related Academic Standards:

This lesson meets the following standards set by the Mid-Continent Research for Education and Learning (McRel) (<http://www.mcrel.org/compendium/browse.asp>).

U.S. History:

- Standard 16: Understands how the rise of corporations, heavy industry, and mechanized farming transformed American society
- Standard 22: Understands how the United States changed between the post-World War I years and the eve of the Great Depression

Historical Understanding:

- Standard 1: Understands and knows how to analyze chronological relationships and patterns
- Standard 2: Understands the historical perspective

Visual Arts:

- Standard 1: Understands and applies media, techniques, and processes related to the visual arts

Geography:

- Standard 1: Understands the characteristics and uses of maps, globes, and other geographic tools and technologies
- Standard 2: Knows the location of places, geographic features, and patterns of the environment
- Standard 4: Understands the physical and human characteristics of place
- Standard 14: Understands how human actions modify the physical environment

About the Author: Greg Timmons has been a social studies teacher for more than 30 years. He has written lessons for several PBS productions, including THE NEWSHOUR, FRONTLINE, and various Ken Burns' productions, including THE WAR, THE NATIONAL PARKS: AMERICA'S BEST IDEA, BASEBALL, and PROHIBITION. He resides in Washington state and Montana.

Student Handout: Video Notes/Graphic Organizer

Instructions for Video Segment 1: THE DUST BOWL (series introduction): This video serves as the introduction to THE DUST BOWL series. View the segment and develop the KWL chart below.

What I KNOW about the Dust Bowl	What I WANT to Know about the Dust Bowl (Use question prompts below or write your own questions.)	What I LEARNED about the Dust Bowl (save for end of viewing activity)
Who?		
What?		
When?		
Where?		
Why?		
How?		

Instructions for Video Segments 2–5: View the video segments and take notes on the graphic organizer below. After you've complete your notes, review the discussion questions included for each segment, and be ready to discuss those in class. You may wish to view the segments more than once in order to more completely answer the discussion questions and take notes on the segment.

Video Segment 2: “Recollections of No Man’s Land”

This video segment provides a description and history of the southern Plains to give you an idea of what the environment was like prior to human settlement.

a. What are some of the natural plants and animals that live in this environment?	
b. What do these plants and animals use for shelter?	
c. What do they use for food and water?	
d. What climate and weather factors influence plants and animals in this environment?	
e. In a short paragraph, describe the environment of the southern Plains.	
f. Document the ways humans influenced this environment from the 1600s to the early 1900s.	

Discussion Questions:

- Why do you think Caroline Henderson wanted to start her future in this environment?

- Would you want to live your life in this environment at this time in history?

- How did different forms of human activity between 1500 and 1900 change the Great Plains?

Video Segment 3: “Boom Time”

1. During the last years of land settlement on the southern Plains, land promoters promised that the very act of farming would increase the precipitation: “Rain follows the plow.” What exactly does that phrase mean?

Do you think such a thing is possible? Why or why not?

2. How did the weather change the way people looked at the southern Plains?

3. How did land speculators and their agents convince people that the southern Plains were changing and could sustain farming as well as livestock grazing?

4. How did world events encourage the expansion of wheat farming in the southern Plains?

Discussion Questions:

Summarize the messages farmers received that changed their earlier belief that the southern Plains were not good for crop growing. Identify other information that would disprove or at least question what people were saying about the economic viability of wheat farming on the southern Plains. Why do you think many farmers didn't heed the caution about farming on the southern Plains?

Video Segment 4: "Modern Machinery Changes the Southern Plains from Virgin Buffalo Grass to Millions of Acres of Wheat Fields"

This video segment shows how modern machinery made crop farming more profitable and changed the structure of the land. The result was more land speculation, more acreage turned over to wheat farming, and a blind faith that the good times wouldn't end.

1. Explain the environmental impact that modern plows had on the southern Plains.

2. How did the ability to plow vast tracts of land change the economic value of the land in the southern Plains?

Discussion Questions:

- Summarize the messages of those who doubted that the good economic times of the southern Plains would continue.
- Why do you think they were not that optimistic that the good times would last forever?
- Why do you think their warnings weren't taken seriously?

Video Segment 5: "Environmental Catastrophe"

As the nation slipped into the Great Depression, farmers on the Great Plains slowly began to feel its effects. In 1930, the price of wheat per bushel dropped from a dollar to 70 cents. Farmers believed they could still make a profit by planting more wheat. But reduced rainfall and the

environmental impact of plowing so much land led to massive dust storms that moved into the southern Plains with increased frequency and intensity.

1. Document your reaction to the photos of the dust storms coming close to the towns in Texas and Oklahoma. Describe what you see and your thoughts if you had been there.

2. Describe the impact of the dust storms on the environment of the southern Plains.

3. Describe the impact of the dust storms on the economy of the southern Plains.

4. Describe the impact of the dust storms on the people's quality of life and emotional state.

Discussion Questions:

- Discuss the changing conditions that began occurring in the late 1920s and early 1930s that led to the massive dust storms on the southern Plains. Identify the different natural factors and the human activities that contributed to these changes.
- As people began to understand how the environment was changing due to the natural factors and human activities you identified, what actions could people have taken to reduce the impact of the dust storms?
- Why do you think people continued to live on the southern Plains even though it became clear that the dust storms were getting worse?

STUDENT HANDOUT: Producing Your Documentary

Producing a documentary is an excellent method for expressing your ideas and what you've learned. Documenting your findings not only helps you strengthen your understanding of a topic, event, or idea, it also helps others understand what you know and helps educate them on the issues, problems, or concerns you are trying to address.

Use the following guide to produce your documentary on the environmental event in your community.

Research Your Event:

1. Start your research by getting some basic understanding of the event. Use the “5 Ws and H” research method (Who? What? When? Where? Why? and How?) to develop questions and answers regarding the event. Some of this information you might already know.
2. Go deeper in your research by gathering the following information:
 - a. What was the cause of the event?
 - b. How long did the event last and how long have its effects been felt?
 - c. If the event caused a problem, what efforts have been made to address the problem and by whom?
 - d. How has the event affected people in the area?
 - e. What are the opinions people have about the event, the change, or any of the problems?
 - f. What action has been taken on the site after the event?
 - g. What are people's opinions of the actions taken?
 - h. What further or different actions do people think should be taken?
3. Consult media archives (television, radio, print) at your library and on the Internet for more information. Also consider contacting or visiting local historical societies, local environmental quality agencies and environmental groups. Obtain any photographs, maps, and descriptions. Consider recording interviews with individuals knowledgeable about the event. If the event involves some controversy, obtain information and interviews that reflect all sides of the controversy.
4. Record all your data in an information log. Document examples to support the information you gathered in step 2. Remember to record your sources for later identification.
5. Develop a map of the area using mapping tools like Google Maps or others listed in the resources section below. Document the area's location, size, shape, proximity to populated areas, and location within the state with an inset map. If possible, compile historical maps and descriptions of the area before and after the event.

Field Experience:

Before you visit the site of the event, work with your teacher to obtain any necessary permission from property owners or officials who control the site.

1. If possible, take a trip out to the site and become familiar with the area. Look at your map(s) and identify areas you see.
2. Record your observations of the site in its current condition using the following guide. Take photos, video, and notes.
 - a. General description of the site (natural and human-made)
 - b. Describe any changes caused by the event, by observing and recording differences in the environment that have occurred since that time. These could be any initial changes caused by the event and any subsequent changes or developments.
 - c. Record any relationships between different elements in the environment and how the event might have affected these relationships. (For example: What is the relationship between the birds and trees in the area? How has clear-cutting affected both? What are the relationships between people and the environment, and what has been the effect of each on the other?)
 - d. Record your personal reactions to your observations of the event and its effects on the environment.

Producing the Documentary:

Whether you produce your documentary as a video production, a website or blog, a slide presentation, or a traditional oral presentation, use the following guide to compile your information.

- Background on the site location and the environmental event
- Examples of the site before and after the event
- Summary of the changes caused by the event
- Different viewpoints of the event and its effects
- Any actions taken since the event
- Different viewpoints on the actions taken (or not taken)
- What further actions people think should be taken
- Your thoughts on the event, its changes, and actions taken

Documentary Production Rubric

Student Name _____

CATEGORY	4	3	2	1
Effectiveness	Project includes all material needed to gain a comfortable understanding of the topic. It is a highly effective study guide.	Project includes most material needed to gain a comfortable understanding of the material but is lacking one or two key elements. It is an adequate study guide.	Project is missing more than two key elements. It would make an incomplete study guide.	Project is lacking several key elements and has inaccuracies that make it a poor study guide.
Content - Accuracy	All content throughout the presentation is accurate. There are no factual errors.	Most of the content is accurate but there is one piece of information that might be inaccurate.	The content is generally accurate but one piece of information is clearly flawed or inaccurate.	Content is typically confusing or contains more than one factual error.
Sequencing of Information	Information is organized in a clear, logical way. It is easy to anticipate the type of material that might be on the next card.	Most information is organized in a clear, logical way. One card or item of information seems out of place.	Some information is logically sequenced. An occasional card or item of information seems out of place.	There is no clear plan for the organization of information.
Spelling and Grammar	Presentation has no misspellings or grammatical errors.	Presentation has 1–2 misspellings, but no grammatical errors.	Presentation has 1–2 grammatical errors but no misspellings.	Presentation has more than 2 grammatical and/or spelling errors.

Originality of Production	Presentation shows considerable originality and inventiveness. The content and ideas are presented in a unique and interesting way.	Presentation shows some originality and inventiveness. The content and ideas are presented in an interesting way.	Presentation shows an attempt at originality and inventiveness on 1–2 cards.	Presentation is a rehash of other people's ideas and/or graphics and shows very little attempt at original thought.
Cooperation with Group Members	Group delegates tasks and shares responsibility effectively all of the time.	Group delegates tasks and shares responsibility effectively most of the time.	Group delegates tasks and shares responsibility effectively some of the time.	Group often is not effective in delegating tasks and/or sharing responsibility.
Digital Camera Use (optional)	Picture is high quality. The main subject is in focus, centered, and of an appropriate size compared to other objects in the picture.	Picture is good quality. The main subject is not quite in focus but it is clear what the picture is about.	The pictures are of marginal quality. The subject is in focus but it is not clear what the picture is about.	No picture taken OR picture of poor quality.

Dust Bowl Oral Presentation Rubric

Student Name _____

CATEGORY	4	3	2	1
Preparedness	Student is completely prepared and has obviously rehearsed.	Student seems pretty prepared but might have needed a couple more rehearsals.	The student is somewhat prepared, but it is clear that rehearsal was lacking.	Student does not seem at all prepared to present.
Content	Shows a full understanding of the topic.	Shows a good understanding of the topic.	Shows a good understanding of parts of the topic.	Does not seem to understand the topic very well.
Comprehension	Student is able to accurately answer almost all questions posed by classmates about the topic.	Student is able to accurately answer most questions posed by classmates about the topic.	Student is able to accurately answer a few questions posed by classmates about the topic.	Student is unable to accurately answer questions posed by classmates about the topic.
Speaks Clearly	Speaks clearly and distinctly all (95–100%) the time and mispronounces no words.	Speaks clearly and distinctly all (95–100%) the time but mispronounces one word.	Speaks clearly and distinctly most (85–94%) of the time. Mispronounces no more than one word.	Often mumbles or cannot be understood OR mispronounces more than one word.
Posture and Eye Contact	Stands up straight, looks relaxed and confident. Establishes eye contact with everyone in the room during the presentation.	Stands up straight and establishes eye contact with everyone in the room during the presentation.	Sometimes stands up straight and establishes eye contact.	Slouches and/or does not look at people during the presentation.