

Dust Bowl

Dig in to a book, dig in to history, then dig in to your garden to explore soil conservation

Gardening Connection:

Through literature, students can understand the devastating impact of the Dust Bowl, and realize the importance of soil conservation practices used in agriculture today.

Time Required:

4-6 class periods plus reading time

Grade Level:

Grades 4-12

EDUCATOR NOTE:

This activity is adapted from a discontinued Project WET Activity, *Dust Bowls & Failed Levees*.

OBJECTIVES

Students will be able to:

1. Read and comprehend how Kansans living in the 1930's experienced the Dust Bowl.
2. Develop an understanding of soil conservation practices.
3. Apply soil conservation practices to the school garden.

BACKGROUND

Soil erosion by water, wind and tillage affects both agriculture and the natural environment. Soil loss, and its associated impacts, is one of the most important (yet probably the least well-known) of today's environmental challenges (BBC, 2000; Guardian, 2004). Planting a school garden can inspire students to pay close attention to soil and weather patterns as they nurture their crops.

This activity uses literature to introduce students to the experiences and challenges of living during the Dust Bowl. The combination of drought and lack of soil conservation practices were the root causes of the Dust Bowl. The Dust Bowl provides a good example of how humans can impact the land, and the land can impact humans in extreme ways. Some of the soil conservation practices in use today were developed as a result of the Dust Bowl, in hopes that such events can be prevented in the future. Through implementing soil conservation practices in the school garden, students can realize the importance of soil conservation practices used in agriculture today.

MATERIALS

- Class set of [Out of the Dust](#) by Karen Hesse (ages 9 and up)
- Class set of [Grapes of Wrath](#) by John Steinbeck (middle school, high school)
- Large piece of butcher paper with markers

Subjects

Reading
Language Arts
History
Social Studies
Science

Vocabulary

Erosion
Dust Bowl
Soil Conservation

Project Connections

WET – Dust Bowls & Failed Levees
Just Passing Through
PLT – A Look at Lifestyles
Soil Stories

PROCEDURES

Engage

Ask students what they know about soil erosion.

See resources section for a soil erosion demonstration, or do the activity *Just Passing Through* from Project WET. The Kansas School Gardens Curriculum activities *Map it Out* and/or *Soil and Slope* can also provide a hands-on introduction to soil considerations for school gardens.

Use the talking points below to engage the class in a discussion:

- Soil erosion is the wearing away of nutrient rich topsoil.
- Some factors that influence soil erosion include wind, water, soil composition, ground cover and tillage practices.
- During the process of soil erosion, chemicals from farming, which are contained in the topsoil, may be washed into surrounding waterways, causing pollution.
- Soil erosion is a worldwide environmental problem with up to 80% of the world's agricultural soils affected.
- It takes a long time for topsoil to form from the breaking down of rocks and organic matter. Without soil plants can't grow.

Explore

Everyone knows that weather patterns can be inconsistent, but most people have not had the profoundly life-changing experience of extreme weather events resulting from climatic cycles (such as the Dust Bowl). The combination of drought and lack of soil conservation practices were the root causes of the Dust Bowl. This activity uses literature to introduce students to the experiences and challenges of living during the Dust Bowl. The Dust Bowl provides a good example of how humans can impact the land, and the land can impact humans in extreme ways.

Have students read either *Out of the Dust* or *The Grapes of Wrath*. Educators may choose the book most appropriate for the age level and time available. Excerpts from either book may be assigned or read aloud to the class if time does not permit reading an entire book.

Engage students in a discussion of the readings:

- In what ways did this story help you to better understand what life was like during the Dust Bowl?
- Do you think this story was an accurate portrayal of the Dust Bowl? Which parts do you think were fact and which parts do you think were fiction? How can we find out?
- Describe at least three social and/or economic consequences of the Dust Bowl.
- What elements found within this story help to engage the reader (compelling characters, dramatic tension, story line, details, realistic dialogue, etc.)?
- Were they successful in engaging you as a reader? Why or why not?

Dust Bowl Historical Role Play:

Students create and act out their own Dust Bowl stories. Divide class into small groups of 4-6. Each group member will take on the role of a member of a fictional Kansas family living through the Dust Bowl (father, mother, son, daughter, grandparent).

Students may conduct background research for their fictional family's story by interviewing survivors, researching online (see resources section for Dust Bowl history sites) or by visiting the local library or historical society.

- How were kids affected (missed school, no water for baths, not going outside to play with friends, eyes & noses caked with dust, etc.)?
- How were parents affected (failed crops affecting family income, protecting their children's health, dust-proofing their homes, not being able to travel to get supplies, etc.)?
- How were grandparents affected (lack of food & water, dust in their lungs, etc.)?

Each group will develop a skit portraying a dramatic event in the life of their fictional family, told from the perspective of each family member. Skits will be presented to the whole class.

If a more in-depth writing assignment is appropriate, educators may choose to have each student write their own fictional story instead of or in addition to the skit.

Explain

Have students research soil conservation practices in Kansas. Representatives from the local County Conservation District may be invited as guest speakers to introduce students to Kansas soil conservation practices (see resources section below).

Elaborate

As a class, visit the school garden site. Use the Kansas School Gardens Curriculum activities *Map it Out* and/or *Soil and Slope* and evaluate the garden space for soil conservation challenges and opportunities. Develop a plan to implement soil conservation practices in the school garden. Plan may include, but is not limited to:

- Practices to implement (wind breaks, mulching, addition of organic matter, etc.)
- Materials, labor and expertise needed
- Cost estimate
- Time line
- Implementation

Evaluate

Students will create two experimental garden plots, close to each other, similar in size, and with comparable exposure to sun, wind, rain, etc. In one of the plots, implement soil conservation practices as outlined in the activity above. In the other plot, do the opposite. Plant the same crops in each plot. Have students compare and contrast the two plots of land with and without soil conservation practices throughout the growing season. Students may record their observations in a garden journal.

Extension

Engage students in a discussion about natural disasters resulting from climatic events (tornados, floods, droughts, etc.) that have affected human populations. How were people's lives changed by these weather events as they happened (lost homes, failed crops, etc.)? What was learned through these events, and

what strategies were developed to protect us from the devastating effects of such events in the future (levees, irrigation systems, storm shelters, etc.)?

Have students (and teachers) interview their parents, grandparents, great-grandparents, or elderly friends & neighbors about their experiences with natural disasters.

Interview questions may include:

- Tell me a story about a natural disaster you have experienced (what, when, how).
- How did the natural disaster affect you and your family as it happened?
- How did this experience change you, your community, and your nation long-term?
- What would happen if the same disaster were to occur today? Are there strategies in place today to help buffer us from the consequences of natural disasters?

Have students share their stories, and create a time line of the events on a large sheet of butcher paper.

Resources:

Soil Erosion Activity

<http://www.sciencefairadventure.com/ProjectDetail.aspx?ProjectID=182>

Soil Erosion Resources

<http://soilerosion.net/>

Library of Congress Teaching Materials for *Out of the Dust*

<http://www.loc.gov/teachers/classroommaterials/lessons/dust/index.html>

A Collection of Dust Bowl History Resources

<http://www.kansashistory.us/dustbowl.html>

Soil Conservation Resources

<http://www.ks.nrcs.usda.gov/soils/stsoil.html>

Kansas Conservation District Directory

<http://www.ksda.gov/doc/?cid=1915>