
Listening to the Prairie: Farming in Nature's Image

Lessons for Grades 9 - 12



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*For the United States Department of Agriculture -
Agriculture in the Classroom Program to accompany
the Smithsonian Institution's traveling exhibition.*



Listening to the Prairie: Farming in Nature's Image

"Agriculture is too important a topic to be taught only to the relatively small percentage of students considering careers in agriculture and pursuing vocational agriculture studies."

National Research Council

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Institution



Overview

Across the United States, serious efforts are underway by educators and professionals to raise public awareness about agriculture and the many difficult challenges facing our nation's most vital and vulnerable industry. Research has shown that most Americans know very little about agriculture, its social and economic significance in the United States, and particularly, its links to human health and environmental quality. Likewise, most students have very little knowledge of the growing number of exciting career opportunities available within the agricultural industry.

Listening to the Prairie: Farming in Nature's Image, is an exhibition that will change how people think about agriculture in America. It's about growing food on the North American prairie and the forces of change that turned vast grasslands into one of the most productive agricultural lands on earth. These lands are our nation's most fertile, diverse, fragile, and endangered ecosystems, but they also serve as a model for environmentally sound agriculture. The traveling exhibition focuses on how changes in this ecosystem and other ecosystems across the country impact people and their communities. It reveals information on how a natural ecosystem works, and tells stories of farmers and ranchers who are farming in nature's image.





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About These Activities

Agriculture in the Classroom, a national K-12 agriculture awareness program, is pleased to provide a series of lessons and activities to complement the Smithsonian Institution's traveling exhibition. These activities were created and compiled by New York Agriculture in the Classroom, a division of the Cornell Educational Resources Program at Cornell University in Ithaca, NY. The contents are designed for PreK-12 teachers, educators, home-schoolers, and parents who spend time with their families at libraries and learning centers. With the exception of the on-site scavenger hunts, most of the enclosed materials can be utilized before or after your visit to the exhibition.

The purpose of these activities is to serve as educational supplements to the exhibition as well as a method with which to engage students and families about the daily issues of agriculture and the food and fiber industry. Although only 2.5% of our population live on farms, all of us eat and wear products derived from agriculture every day, including many products from the North American Prairie. Since most of the United States population do not live in the prairie, the "clues from nature" emphasized in the exhibition may be applied to nearly every region of the country.

Lessons and activities have been divided into four grade-level groups: PreK-1, 2-5, 6-8, and 9-12. All of the enclosed lessons, activities, and worksheets are B&W photocopy reproducible, and clearly formatted. Each lesson contains a brief overview, objectives, a list of materials needed, background information, activity instructions, and suggestions for extensions for those who wish to further explore the lesson topic or concept. A separate chart is included that summarizes all of the enclosed lessons and the appropriate National Standards (McRel) addressed.

In addition, Smithsonian Institution's National Museum of Natural History, the American Library Association (ALA), and participating libraries have assembled an impressive program of supplementary resources, activities, lectures, tours, and workshops for visitors of all ages to enrich their visit to this important exhibition. *Consult your library staff for the calendar of events and the wealth of educational resources gathered especially for this event.*

Enjoy your visit at this most important exhibition. The lessons to explore are universal and timeless, and will serve as valuable resources in agricultural awareness and education for years to come.



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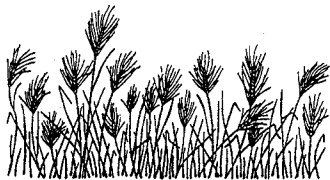
A Brief Prairie History¹

The First Prairie Farmers – Crops have been grown on the prairie for more than 4,000 years. Native prairie farmers cultivated the soft, alluvial soils in the river bottomlands because they did not have forged metal tools to work the tough prairie sods in the uplands. They raised corn, beans, squash, pumpkins, sunflower, and tobacco in small garden plots for about twenty-five years, and then moved to new plots on a two to three hundred year rotation. Native farming communities also gathered edible wild plants and hunted rabbits, deer, and bison.

The Will of Iron – By the end of the 19th century, the North American prairie had become one of the greatest food-producing regions in the world. New machinery, new railroads, new government policies and the tenacity of new settlers made this transformation possible. The steel plow broke heavy prairie soils for planting crops. Affordable barbed wire fencing enclosed grazing and crop lands on the treeless landscape. Windmills provided a reliable water source for livestock and crops, and transcontinental railroads linked the new prairie producers with urban markets in the East and in Europe.

The Fruitful Plain – Today one American farmer feeds 143 people, more than five times that of a farmer in 1950. This phenomenal growth in production has resulted largely from technological forces of change – new machinery, new crop varieties and the development of chemical fertilizers and pest controls. Farms and ranches are also fewer, larger, and more specialized than they were fifty years ago.

New Alternatives – The willingness of the farmers and ranchers to change has been the cornerstone of successful American agriculture. What are common practices now, chemical pesticides and fertilizers, for example, were alternatives fifty years ago. Today’s farmers and ranchers continue to adopt new approaches to keep their operations productive and profitable, while safeguarding the environment. If history is our guide, some of today’s alternatives will be tomorrow’s accepted practices.



¹ Adapted from the final exhibition script of “Listening to the Prairie: Farming in Nature’s Image.”



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Summary of Activities

Lessons for Grades PreK-1

1. Prairie Scavenger Hunt – Introduction to “Listening to the Prairie”
2. The Web of Life – Game demonstrating interconnections between plants and animals
3. Making Pretzels – Cooking activity from grain to food
4. Agriculture in Your Life – Connecting agricultural sources to everyday products
5. Here Come the Sunflowers – Planting and growing activity
6. Worm Watching – Activity for observing worms in action
7. “Oats, Peas, Beans and Barley Grow” – Song about farming and prairie crops

Lessons for Grades 2-5

1. Prairie Scavenger Hunt – Introduction to “Listening to the Prairie”
2. Weaving the Web – Game demonstrating interconnections between plants and animals
3. Losing Ground – Exploring water and wind soil erosion
4. Agriculture in Your Life – Connecting agricultural sources with everyday products
5. The Food Connection – Placing agriculture products on the Food Guide Pyramid
6. “Oats, Peas, Beans and Barley Grow” – Song about farming and prairie crops

Lessons for Grades 6-8

1. Prairie Scavenger Hunt – Introduction to “Listening to the Prairie”
2. Just Passing Through – Investigating properties of soils
3. Be a Food Detective – Exploring sources of food from food labels
4. Beyond the Beef – Exploring all the products from beef cattle
5. Striking a Balance – Game demonstrating interconnections between plants and animals

Lessons for Grades 9-12

1. Prairie Scavenger Hunt – Introduction to “Listening to the Prairie”
2. Exploring Soils – Investigating properties of soils
3. Be a Food Detective – Exploring sources of food from food labels
4. Striking a Balance – Game demonstrating interconnections between plants and animals
5. Farming in Nature’s Image: The Larson Farm – Case study of sustainable agricultural practices

Integration with State Frameworks or Learning Standards*

Grades PreK -1

Activity	ELA	SS	SCI	Math	Arts	LS
Prairie Scavenger Hunt	X	X	X	X	X	X
The Web of Life			X			
Making Pretzels	X	X	X	X		X
Agriculture in Your Life	X	X	X			X
Here Come the Sunflowers			X			
Worm Watching	X		X			
“Oats, Peas, Beans, and Barley Grow”	X				X	

Grades 2-5

Activity	ELA	SS	SCI	Math	Arts	LS
Prairie Scavenger Hunt	X	X	X	X	X	X
Weaving the Web			X			
Losing Ground	X	X	X			
Agriculture in Your Life	X	X	X			
The Food Connection	X	X	X		X	X
“Oats, Peas, Beans, and Barley Grow”	X				X	

Grades 6-8

Activity	ELA	SS	SCI	Math	Arts	LS
Prairie Scavenger Hunt	X	X	X			X
Just Passing Through			X	X		
Be a Food Detective	X	X	X			X
Beyond the Beef	X	X	X			X
Striking a Balance			X	X		X

Grades 9-12

Activity	ELA	SS	SCI	Math	Arts	LS
Prairie Scavenger Hunt	X	X	X			X
Exploring Soils			X	X		
Be a Food Detective	X	X	X			X
Striking a Balance			X	X		X
Farming in Nature’s Image	X	X	X			X

*Adapted from McRel (Mid-Continent Research for Education and Learning). For more information contact: <http://www.mcrel.org/standards-benchmarks/>