

Wheat in Kansas

Make a book about growing and processing wheat.

OBJECTIVES

Students will:

- Î learn that wheat is an important crop in Kansas
- Ï learn the sequence of growing winter wheat
- Ð learn to recognize grain elevators and what their role is in the wheat process

MATERIALS FROM TRUNK

Book

Climbing Kansas Mountains

Object

Wheat Flip Book

Worksheet

#11 - The Wheat Process

Graphic

#23 - Wheat Road Sign

#24 - Wheat

OTHER MATERIALS

- ' Paper, colors, scissors, and glue.

TEACHER PREPARATION

- ' Photocopy worksheet #11 for each student.
- ' For each student cut one piece of 8 ½" x 11" paper in half widthwise creating two pieces of paper 5 ½" x 8 ½". Fold these in half like a book and staple the spine. Make one eight-page booklet (two pieces of paper) for each student.

HISTORICAL BACKGROUND

A man who grew wheat in central Kansas for fifty years declared:

"Wheat was and is the crop of first importance. It is the backbone of our economy and has made Kansas famous around the world."



When Erich Freuhauf made this observation in the 1970s, winter wheat had been grown in Kansas for over one hundred years. Statistics on wheat production have been kept since the mid 1800s. By the early twentieth century Kansas was producing more wheat than any other state. North Dakota, the closest rival to Kansas in wheat production, has had a higher annual yield only a few times in the last one hundred years. Signs along Kansas roads that proudly proclaim "Kansas, No. 1 Wheat Producer" are an accurate statement of the great success of wheat production in Kansas. However, in the long course of human history, wheat is a relatively late arrival on the plains of Kansas.

Wheat is one of the oldest food plants cultivated by humankind, but not until the mid-1800s did it reach Kansas, the future breadbasket of the world. Kansas Territory was opened for settlement in 1854. Early settlers grew mostly corn but planted some wheat. In the 1870s winter wheat, the wheat type best adapted to the climate and conditions of the Plains, was becoming more widely used in Kansas. Land promoter T.C. Henry of Abilene planted a sizeable acreage of winter wheat in 1873. The next year Russian-German immigrants, accustomed to dryland agriculture, devoted a large portion of their new lands to wheat cultivation. Many others followed their successful dryland cultivation methods.

According to Erich Freuhauf

"Hard Red Winter Wheat is the natural plant for the High Plains. Tough and hardy, it establishes a good root system in the fall of the year underground, and grassy growth of leaves on the surface which acts as protective cover for the soil.

A good stand of wheat is sufficient protection against the winter storms. When they begin to blow and the soil freezes, the wheat plant goes dormant. Its foliage dies almost to the ground.

The first warm days revive it. New leaves appear and grow until they are long enough to sway and roll in the wind like waves on a lake. Around the end of March the wheat heads form on top of the stalks on which they will eventually ripen. By this growth habit it is possible for the winter wheat plant to utilize the winter snow or rain before the days become too hot and the soil too dry."

In the early years of wheat growing in Kansas, most farmers stored their wheat until it was sold. Grain storage capacity developed with the spread of wheat cultivation. Wooden elevators gradually gave way to concrete bins, which were becoming common by 1910. Some wheat went directly to local flour mills, which were located in many Kansas towns. Today wheat is stored in huge elevators along railroad tracks. The wheat is then moved to larger elevators along the seacoast for export to other countries or to flour mills. Kansas is the leading flour milling state.

During milling of wheat into flour, the bran (outer covering) and germ (embryo or sprouting



section) are usually removed. The remaining endosperm is then ground into what we know as refined white flour. Many nutrients of the whole grain are lost when the bran and germ are removed. Enriching flour replaces many nutrients. Whole wheat flour is made from the entire wheat kernel and has the most nutrients and fiber.

The earliest attempts to promote Kansas as a "land of plenty" can be found in letters from early settlers encouraging family and friends to immigrate to Kansas. Emigrant aid societies published tracts glorifying the agricultural opportunity to be found there. Through the years exuberant residents have contributed to the image of Kansas as a land of plenty. From 1949 to 1959 license plates conveyed the message that Kansas was "The Wheat State." Today highway signs placed by the Kansas Agri-Women boast that Kansas is the number-one wheat producer. The Wichita State University mascot, the "WU Shocker," also promotes the image.

VOCABULARY

Dormant Not actively growing, but being protected from the environment.

Elevator A building for storing grain.

Milling The process of grinding grain into flour or meal.

ACTIVITY

- 1) Read the book *Climbing Kansas Mountains* to the class. Ask the class if they have seen elevators. What are grain elevators used for?

® *They store grain after it is harvested from the field and before it goes to mills to be processed.*

Why are there elevators in Kansas?

® *Because agriculture, and especially wheat production, is so important in Kansas.*

Show the class graphic #23, Wheat Road Sign. Explain that wheat is so important in Kansas that signs such as this one are found along highways in Kansas.

- 2) Talk to the class about winter wheat, when it is planted, and why it is a good crop to grow in Kansas. Use the Wheat Flip Book and graphic #24, Wheat to discuss this process.

® *Winter wheat is planted in the fall before cold weather stops the plants from growing for the year. By planting wheat at this time the seed has time to put roots into the ground before cold weather and snow comes. During the winter*



it lies dormant. When spring begins to warm the ground the wheat once again starts to grow. Because it is already in the ground it can use all the water from melting snow and spring rains to help it grow strong before the hot summer months of Kansas arrive.

- 3) Hand out worksheet #11, The Wheat Process and have the class color the pictures, cut them out, and glue them into the booklets in the correct order.
® *The correct order is:*
1) cover; 2) planting wheat; 3) fall growth; 4) dormant in winter; 5) spring growth; 6) harvest; 7) grain elevator.

EXTENDED ACTIVITIES

- 1) Use other programs offered by the Kansas State Historical Society that focus on wheat including the "Wheatland" traveling resource trunk or the *Wheat* video and *Portrait of a Wheat Farmer* film, both part of the Media Loan Program.
- 2) Read the book *Winter Wheat* by Brenda Z. Guiberson to the class and discuss how winter wheat is different from other types of wheat and why it is a superior type of wheat to grow in Kansas.
- 3) Use the bakers hat from the trunk, bring in flour and some items made from wheat flour (bread, cereal, etc.), and talk to the class about what wheat becomes once it is processed. Give homework assignments for the students to do with their parents. Have them find items made from wheat in their kitchens and bring lists to share with the class.
- 4) Let the class experience handling and kneading bread. Flour a table. Give each child a piece of bread dough. Use frozen bread dough that has been thawed.
- 5) Let the class experience the smell of baking bread and taste of warm bread. Bring in a bread machine and bake bread during class.

