

Wheat: From Field to Oven

Objective

The student will read some paragraphs about wheat production and identify the main idea and supporting statements for each one.

Background

Most Oklahoma wheat producers grow winter wheat. Late in the summer, they prepare the soil for planting. They drive a tractor that pulls the plow through the fields. The plow turns the soil over and kills all the weeds. Then the farmer connects the tractor to a disk harrow and drives it over the field. The disk harrow breaks the soil down into smaller pieces. When the soil is ready for planting, the farmer uses a grain drill to plant the seed.

The wheat plant will grow about six inches before the frost comes. Each plant grows by producing more leaves and new stalks from the base of the plant. The new stalks are called “tillers.” When the weather gets cold the tiller will stop growing. This is called the dormant period. On most farms in the Great Plains cattle feed, or graze, on the young wheat plants while they are in their dormant period. The plants grow back. They are not damaged by proper grazing.

In the spring, the warm moist days make the wheat plants grow quickly. As the wheat comes out of its dormant period, more tillers of wheat emerge. Each tiller can form another head of wheat.

Some varieties of wheat grow as tall as seven feet, but most are only between two and four feet tall. During the early summer, the plants begin to fade from dark green to tan and then to a golden brown. Then the wheat is ripe and nearly ready for harvest. Now the wheat producer must race with the weather to get the wheat out of the fields.

Some years the wind and rain keep the plants from ripening, and they cannot be harvested. Other years hail may break all the heads, or a lightening storm may start a range fire. When the weather cooperates, and the wheat is ripe, the farmer must move fast. He checks the wheat by rubbing a wheat head between his hands, blowing the chaff away and then chewing some of the grain. If the kernels crack easily and get soft as they are chewed, the wheat is ready to harvest.

The farmer drives a combine across the fields to harvest the grain. When the storage bin of the combine is full, he empties it into a truck. Someone else drives the truck to the grain elevator in town. Workers at the grain elevator help empty the wheat into a very deep pit. Machinery in the grain elevator raises, or elevates, the wheat into a tall bin. In many small towns in Oklahoma, the grain elevator is the tallest building in the town.

The wheat stays in the grain elevator until the farmer is ready to sell it.

Standards

GRADE 2

COMMON CORE
Language Arts—2.RIT.2;
2.SL.5; 2.W.1

GRADE 3

COMMON CORE
Language Arts—3.RIT.2;
3.SL.5; 3.W.1

GRADE 4

COMMON CORE
Language Arts—4.RIT.2;
4.SL.5; 4.W.1

GRADE 5

COMMON CORE
Language Arts—5.RIT.2;
5.SL.5; 5.W.1

Materials

paper towel

wheat kernels

Ag in My Community

1. Invite a wheat producer to class to talk about the daily routine on a wheat farm.
2. Visit a bakery, and watch the end process of the wheat cycle.

Workers keep an eye on the wheat kernels to make sure they stay cool and dry. If the wheat kernels get wet or too hot they will spoil. Some of the wheat is sold to people who use it to make food for people and animals. The rest is cleaned and saved until it is time to plant again. One kernel of wheat can grow several hundred new kernels next harvest.

The wheat that is sold for food is taken to a mill. At the mill, huge machines grind the wheat kernels into flour. First the wheat must be cleaned several times. A series of disks separate the wheat kernels from other weed seeds, dirt and small stones. A giant magnet removes any metal pieces, like nuts or rivets that might have shaken loose from the farm machinery and fallen in with the wheat.

Finally the kernels go into a giant water bath where any remaining stones or other heavy materials drop to the bottom. Light materials float to the top and are washed away. Now the wheat is cleaned and ready to be milled.

Rollers crack the kernels into smaller pieces. Huge machines shake the wheat pieces through several screens to make the pieces even smaller. If the wheat is to be made into white flour, air currents blow the bran—the outer layer of the kernel — away from the rest of the wheat. The wheat bran and germ that have been removed are used in animal feeds. The pieces are now ready for grinding. Smooth rollers grind the wheat finer and finer. After grinding, the wheat is sifted through more screens, sometimes as many as 25 times. Each screen has smaller openings than the one before. Special ingredients are added to age the flour and whiten it. Vitamins and iron are also added to replace those that have been removed with the wheat germ and bran. Now the flour is ready for baking.

Language Arts: Main Idea and Supporting Details

1. Read and discuss background.
2. Hand out the student worksheets.
 - Review with students the method used to identify the main idea and supporting details of a paragraph.
 - Read the worksheet directions with your class.
 - Students will complete the worksheets.
 - Students will cut out the worksheet pages and staple them together to make a booklet.
3. Students will summarize or write the main idea of each paragraph in their own words.
4. Students will set up a display in the library or media room showing the different stages of wheat.
 - Students will draw pictures of the different stages or acquire samples of wheat in the different stages of growth (clean wheat, sprouting wheat, stalks with wheat heads still attached, wheat with the “trash” still in it).
 - Students will record messages for each stage to make the exhibit a self-guided display.
6. Bring white flour, whole wheat flour, wheat germ and wheat bran to class.

- Students will examine and write compare/contrast paragraphs.
2. Bring samples of white, part whole wheat and 100 percent whole wheat bread to class.
- Students will taste and write descriptions of the differences in texture.

Extra Reading

Fowler, Allan, and Allen Fowler, *The Wheat We Eat*, Scholastic, 2000.

Landau, Elaine, *Wheat*, Scholastic, 2000.

Levensen, George, *Wheat Comes to Life: A Garden of Wheat and a Loaf to Eat*, Tenspeed, 2004.

Mayo, Gretchen Will, and Susan Nations, *Cereal*, Weekly Reader, 2004.

Snyder, Inez, *Wheat*, Children's, 2004.

Yolen, Jane, and Greg Shed, *Harvest Home*, Harcourt, 2002

Vocabulary

bin—a box, frame, crib, or enclosed place for storage

blade—the cutting part of a tool

bran—the edible broken coat of the seed of a cereal grain left after the grain has been ground and the flour or meal sifted out

dormant—having growth or other biological activity much reduced or suspended

combine—a machine that harvests, threshes, and cleans grain while moving over a field

disc—a tilling implement (as a plow) with sharp-edged circular cutting

elevator—a building for elevating, storing, unloading, and sometimes grinding grain

germ—the embryo in the seed of a cereal (as corn or wheat) together with its cotyledon that is usually separated from the starchy part of the seed during milling

grain—the edible seed or seedlike fruit of grasses that are cereals

kernel—the inner softer part of a seed, fruit stone, or nut
b : a whole grain or seed of a cereal (as wheat or corn)

mill—a building with machinery for grinding grain into flour

tiller—a stalk or sprout from the base of a plant or from the axils of its lower leaves

Name _____

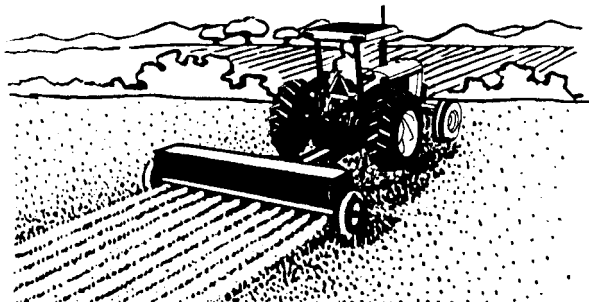
Wheat: From Field to Oven A

Read the paragraphs below, and find the sentence with the main idea. Write the sentence on the lines below each paragraph.

1. Clarence and Susie Brown grow winter wheat. They plant their wheat in the fall. It rests during the winter and starts growing again in the spring. In the summer, the Coldwaters harvest their wheat.



2. Before they plant their wheat, Clarence and Susie must till the fields to get rid of all the weeds. Then they work the soil to break the large clumps into smaller pieces. Getting ready to grow wheat is not an easy job.

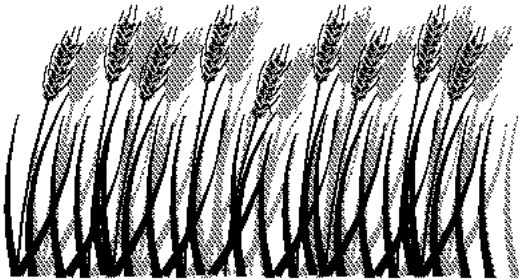


Name _____

Wheat: From Field to Oven B

Read the paragraphs below, and find the sentence with the main idea. Write the sentence on the lines below each paragraph.

3. The winter wheat plant will grow about six inches before the frost comes. It is called winter wheat, because it doesn't die when the weather gets cold. The wheat stops growing, but it stays green. This is called the "dormant period." When the sun warms the soil in the spring, the wheat starts to grow again.



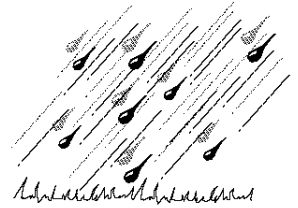
4. In the spring the warm, moist days make the wheat plants grow quickly. As it comes out of its dormant period, more stalks of wheat sprout from the root. This is called "tillering." Each tiller can form a head of wheat.

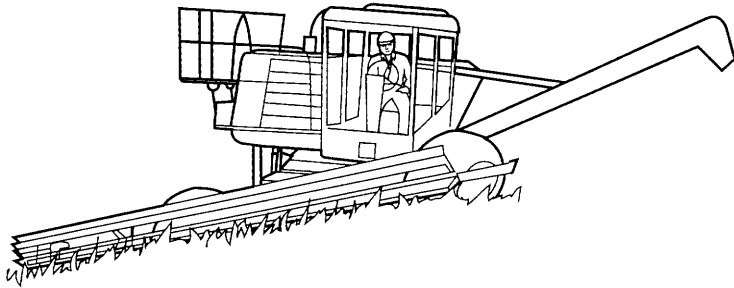
Name _____

Wheat: From Field to Oven C

Read the paragraphs below, and find the sentence with the main idea. Write the sentence on the lines below each paragraph.

5. When the wheat is ready for harvest, Clarence and Susie must race with the weather to get it out of the fields. Some years the wind and rain keep the wheat from getting ripe. Other years hail might break all the heads. One year a lightening storm started a fire and burned their biggest field.





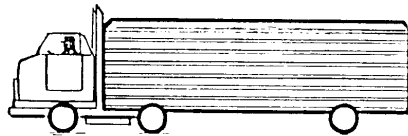
6. The Browns couldn't grow wheat if they didn't have the right kind of machinery. They use a plow and harrow to prepare the field. A grain drill helps them plant the wheat, and they harvest it with a combine. After the wheat is harvested, Clarence and Susie load the wheat on a truck and haul it to the grain elevator.

Name _____

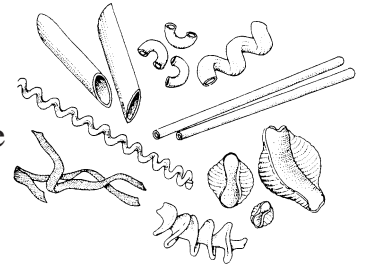
Wheat: From Field to Oven D

Read the paragraphs below, and find the sentence with the main idea. Write the sentence on the lines below each paragraph.

7. After wheat is harvested, the farmer must get it to the mill. Wheat can be transported in many different ways. It can be shipped by barges over water. It can be loaded onto rail cars and moved by train, or it can be hauled by trucks along interstate highways.



8. At the mill, workers test the wheat to decide what kind of flour they can make from it. If the wheat is soft they use it to make flour that can be used in making cakes and pastries. If it is hard they make flour that keeps well and can be used for making bread. Durum wheat is the hardest kind of wheat. It can be used for making macaroni, spaghetti and noodles.



Name _____

Wheat: From Field to Oven E

Read the paragraphs below, and find the sentence with the main idea. Write the sentence on the lines below each paragraph.

9. The wheat must be cleaned several times before it is ground into flour. Several disks separate the wheat kernels from other weed seeds, dirt and small stones. A giant magnet removes any metal pieces that have fallen in with the wheat. Finally the kernels go into a giant water bath. Heavy materials sink to the bottom. Light materials float to the top and are washed away.

10. Now it is time to grind the kernels into flour. First rollers crack them into smaller pieces. Then the huge machinery shakes them through several screens to make the pieces even smaller. If the wheat is to be made into white flour, air currents blow the bran away from the rest of the wheat. The bran is the outer layer of the wheat kernel. Smooth rollers grind the wheat finer and finer. Then the wheat is sifted through more screens, sometimes as many as 25 times. Each screen has smaller openings than the one before.

Name _____

Wheat: From Field to Oven F

Read the paragraphs below, and find the sentence with the main idea. Write the sentence on the lines below each paragraph.

11. After the flour has been ground, workers add the extra ingredients. Some ingredients age the flour. Others whiten it. Vitamins and iron are also added to replace those that have been removed with the wheat germ and bran. Now the flour is ready for baking.



12. People buy the flour from the grocery store and take it home. Sometimes they use it to make birthday cake or cookies for classroom parties. Sometimes they make biscuits or pancakes for breakfast. Sometimes they use it to make bread. Wheat can be prepared in many different ways to make nutritious, delicious food.

