

**Ag in the Classroom**

# Alabama Ag in the Classroom



## Wheat Unit

# Wheat Detective On The Trail

*Objectives:* Students will

- Become aware that many, many products we eat have wheat flour as a primary ingredient.
- Categorize wheat flour based foods according to the following possible categories: **pasta, cereals, breads, desserts, fast foods**

*Materials Needed:*

- Food Containers with wheat as a major ingredient
- Large paper for food chart

*Keywords:*

ingredients, wheat, flour, products

*Brief Description:*

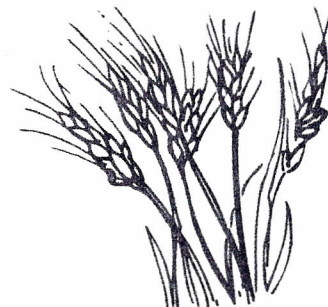
We will be making children more aware that wheat is a major ingredient in many of the foods that are eaten on a daily basis around the world.

*Lesson:*

1. The teacher displays a box of crackers, loaf of bread, box of cereal, pizza box, box of spaghetti, and a cake mix for examples. The teacher explains to the students that a major ingredient in each of these foods is wheat flour. Teachers displays a chart with the following possible headings (pasta, cereals, desserts, fast foods, and breads) Brainstorm, with students, foods that will fit into each category. Ask students to bring empty containers (box, can, or bags) from home the following day of food products with wheat flour as an ingredient.
2. Chart the food containers that the students brought from home. Use the same categories as were used the first day. Kindergarteners could place their food containers in the appropriately labeled areas.

*Assessment:*

Have students complete worksheets. For older students, have them write three wheat flour products that can be eaten for breakfast, lunch, dinner, and snacks.





# W

is for **wheat**. Many farmers grow **wheat** in their fields. **Wheat** is made into flour. Flour is made into food like bread, cakes, pancakes, muffins, and spaghetti.

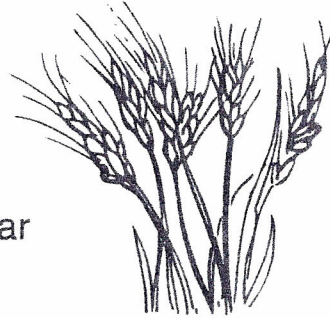


Read the word below. Then print the word.

wheat

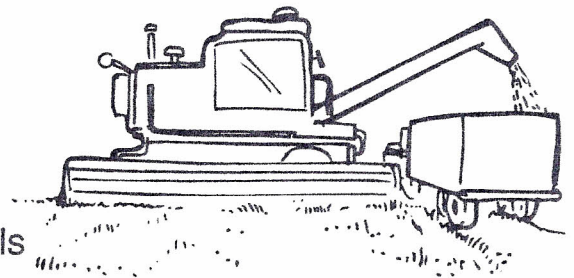
# How Bread Is Made

Bread is made from grain. Wheat is a popular grain used in making bread.

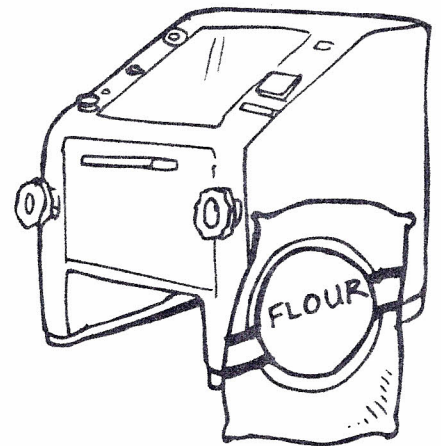


Wheat seeds are planted in a field.  
The farmer cares for the plants as they grow.

When the wheat has turned a golden color, a combine cuts it and separates the wheat kernels from the stalks.

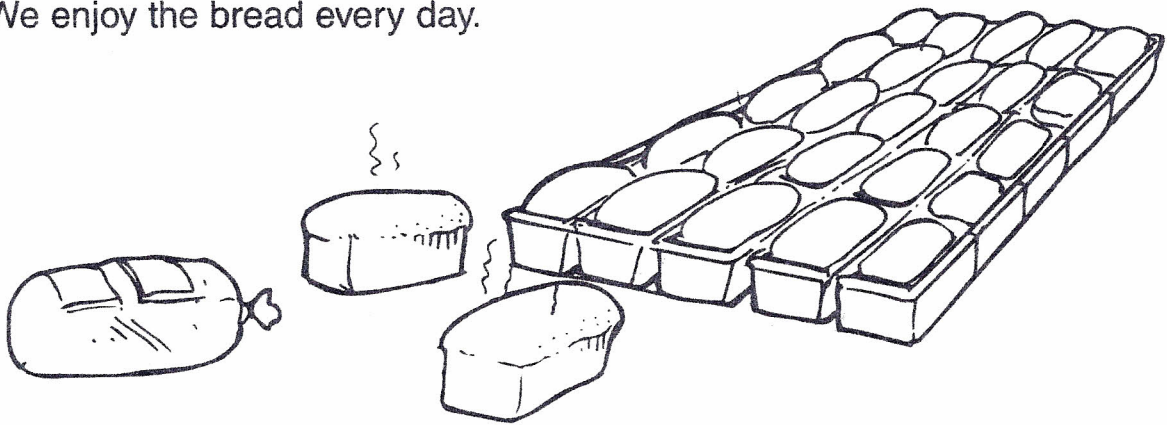


The wheat kernels are loaded on a truck and taken to a mill. The mill grinds the kernels into flour. The flour is placed in bags and sent by truck to a bread factory.



The flour is mixed with other ingredients to make bread. It is baked to a golden brown.

We enjoy the bread every day.

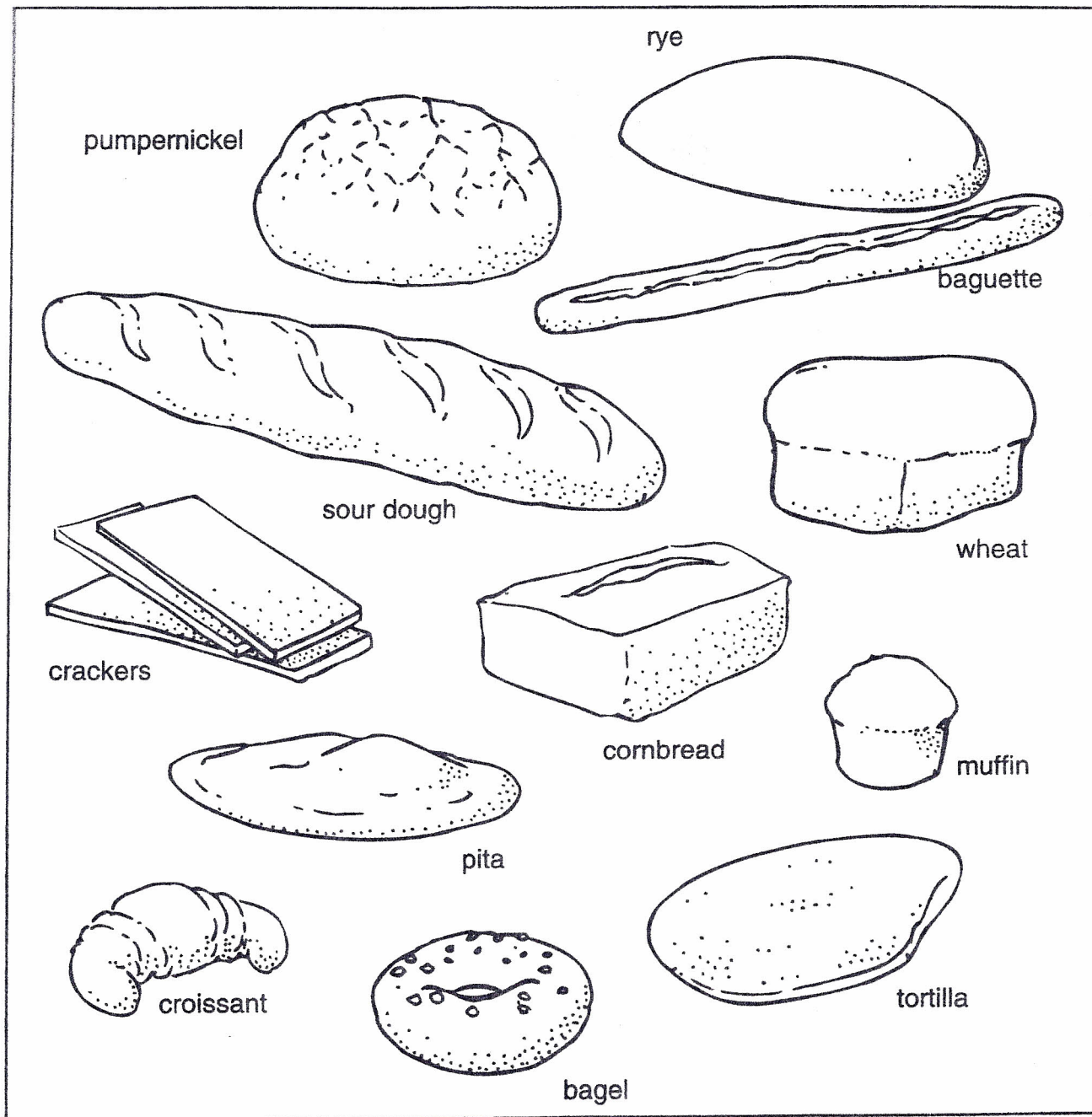




# Types of Bread

Look at these breads that are eaten around the world.

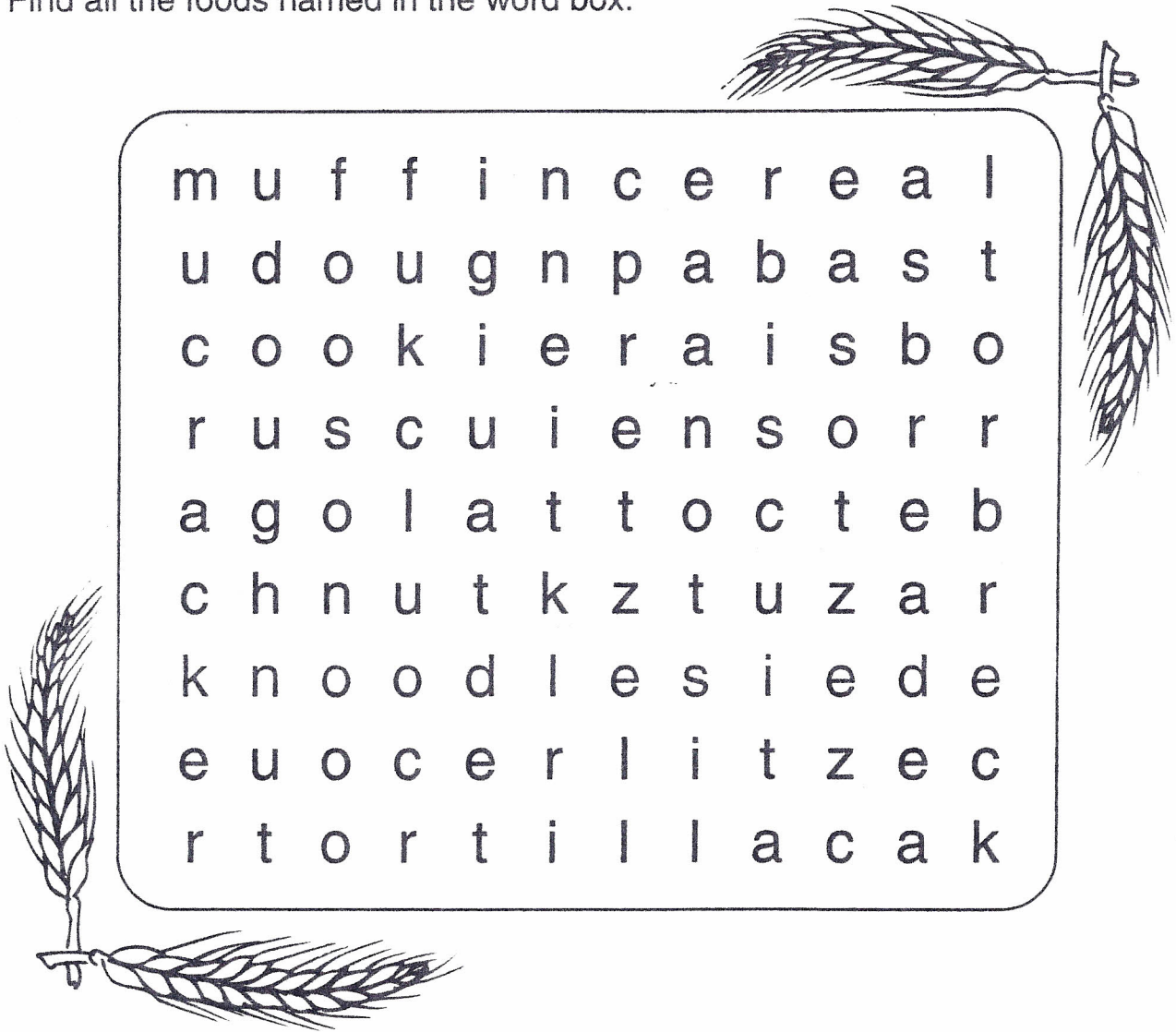
Circle the ones you have eaten.



# Wheat Word Search

Many kinds of foods are made from wheat.

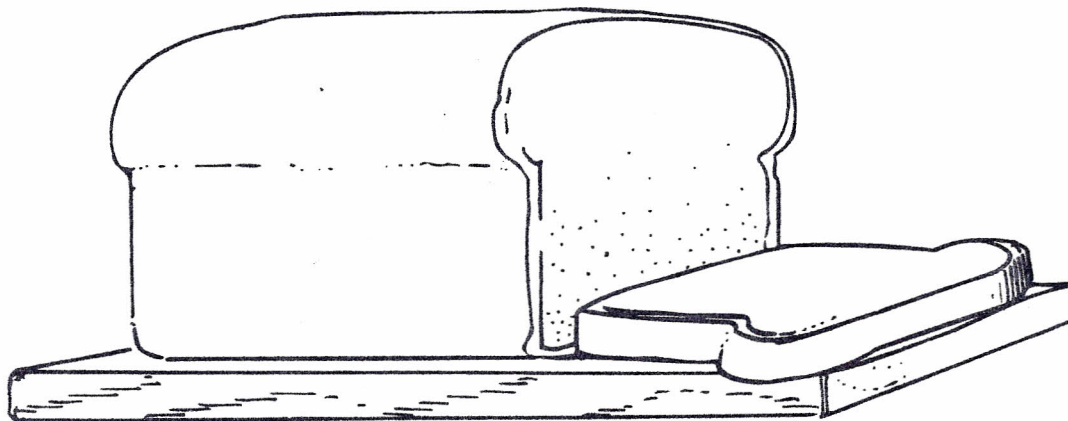
Find all the foods named in the word box.



Word Box		
biscuit	cookie	noodles
bread	cracker	pasta
cake	doughnut	pretzel
cereal	muffin	tortilla



# The Life of a Loaf



Bread is delivered to stores often because it has a short shelf life. Try this simple experiment with your students to demonstrate that bread spoils easily. Your students will discover what will happen to bread that is not consumed in a few days. As you set up the experiment, ask questions such as:

*What happens to bread that is not used in a few days?*

*Where is your bread stored at home?*

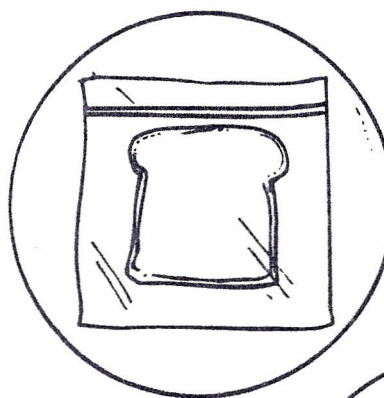
## Materials needed:

- two slices of bread
- two clear plastic bags
- two paper plates

Have students predict what changes will occur with each slice of bread.

## Steps to follow:

1. Place one slice of bread in a plastic bag and close it tightly.
2. Place the other slice of bread in a plastic bag and leave it open.
3. Place each bag on a paper plate.
4. Have your students look at the slices of bread and compare them each day for a two-week period.
5. Ask your students to record their observations on the log provided on page 37.



## Week One

### The Life of a Loaf

Day	Sealed Bread	Unsealed Bread
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		

## Week Two

### The Life of a Loaf

Day	Sealed Bread	Unsealed Bread
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		



## Breads Around the World

Can you match the bread to the country or region of its origin?

It's bread any way you say it!

1. Pita
2. Tortilla
3. Lefse
4. Soda Bread
5. Brioche
6. Bagel
7. Wonton
8. Scones
9. Stollen
10. Johnny Cake

- A. Germany
- B. Mexico
- C. Ireland
- D. Scandinavia
- E. United States
- F. Middle East
- G. Scotland
- H. Poland
- I. China
- J. France

## Pioneer Quick Breads

1. Match the common quick bread on the left with its pioneer counterpart on the right.

### Common Quick Breads

Biscuit	_____
Doughnut	_____
Waffle	_____
Pancake	_____
Muffin	_____
Cake	_____
Cornbread	_____

### Pioneer Quick Breads

a. Johnnycake
b. Dumpling
c. Griddlecake
d. Cruller
e. Crumpet
f. Sweet bread
g. Press Cake

2. Guess the quick bread.

Fried in oil and rolled in sugar \_\_\_\_\_

Don't squeeze them too tightly \_\_\_\_\_

Sausage and gravy are often served over them \_\_\_\_\_

Also known as flapjacks \_\_\_\_\_

The British have them with tea around 4 pm \_\_\_\_\_

Happy birthday to you \_\_\_\_\_

Bread served at the first Thanksgiving \_\_\_\_\_

## Answer Key

### Breads Around the World

Can you match the bread to the country or region of its origin?

It's bread any way you say it!

- |                 |                  |
|-----------------|------------------|
| 1. Pita         | A. Germany       |
| 2. Tortilla     | B. Mexico        |
| 3. Lefse        | C. Ireland       |
| 4. Soda Bread   | D. Scandinavia   |
| 5. Brioche      | E. United States |
| 6. Bagel        | F. Middle East   |
| 7. Wonton       | G. Scotland      |
| 8. Scones       | H. Poland        |
| 9. Stollen      | I. China         |
| 10. Johnny Cake | J. France        |

### Pioneer Quick Breads

1. Match the common quick bread on the left with its pioneer counterpart on the right.

#### Common Quick Breads

Biscuit	<u>b</u>
Doughnut	<u>d</u>
Waffle	<u>g</u>
Pancake	<u>c</u>
Muffin	<u>e</u>
Cake	<u>f</u>
Cornbread	<u>a</u>

#### Pioneer Quick Breads

a. Johnnycake
b. Dumpling
c. Griddlecake
d. Cruller
e. Crumpet
f. Sweet bread
g. Press Cake

2. Guess the quick bread.

Fried in oil and rolled in sugar doughnut

Don't squeeze them too tightly presscake

Sausage and gravy are often served over them biscuit

Also known as flapjacks pancakes

The British have them with tea around 4 pm crumpet

Happy birthday to you cake

Bread served at the first Thanksgiving johnnycake



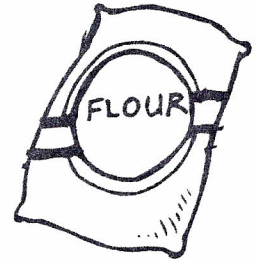
## From Flour to Tortillas

*Objectives:* Students will

- Become familiar with the process of growing wheat
- Make and enjoy eating tortillas

*Materials Needed:*

- Recipe and ingredients for tortillas
- The Wheat We Eat by Allan Fowler



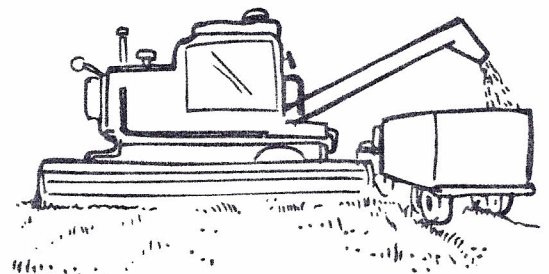
The farmer plants the tiny wheat kernels in the ground using a grain drill. The seed germinates and begins to grow into a plant, which consists of roots, a stem, long, slender leaves, and a head, which has kernels. The farmer will combine or harvest the wheat and unloads the combine hopper into trucks or wagons. The farmer will haul the wheat to the local elevator. An elevator has giant silos to store grain. The farmer receives payment for his wheat, and then the elevator ships the wheat by truck or rail to a grain terminal. Next the wheat is sold to various industries, which make food or feed, or for shipment overseas.

The place where wheat is shipped to make flour is called the mill. The people who process the wheat are called millers. The wheat is put through a cleaning process to remove foreign matter (wheat seeds, corn seeds, beans, stems). Rollers then press over the wheat kernels to break them into pieces, and they are shaken on screens to sift out the bran (the broken coat of the kernel) and germ (the part of wheat used to grow a new plant) not used in wheat flour. This is repeated three times to make a soft powdery substance we know as flour. If whole bread is what the mills want to make, the bran and germ are added back in. Next the miller adds a special ingredient to the flour to whiten it, along with B-vitamins and iron for nutrients. The flour is shipped in bags to the bakery or to the grocery store.

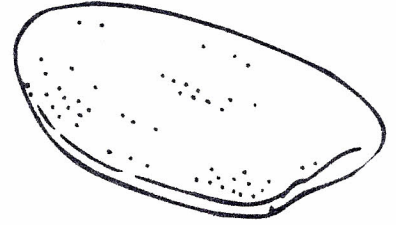
Bakers like to use wheat flour because it contains a magical protein called gluten. To make bread dough, active yeast, warm water, and other ingredients are added to the flour. The gluten traps the air bubbles the yeast releases and causes the dough to rise.

*Assessment:*

Students will make the connection of how grain is grown to produce the flour and the flour is taken and made into food products such as tortillas.



## MAKE TORTILLAS IN A BAG



### FLOUR TORTILLAS

1 ½ cups all-purpose flour

1 teaspoon salt

½ teaspoon baking powder

3 tablespoons shortening (shortening is available in sticks and is easier to use in this form)

½ cup hot water (125-130°F)

In a large plastic bag combine flour, salt, and baking powder. Close bag and shake to mix.

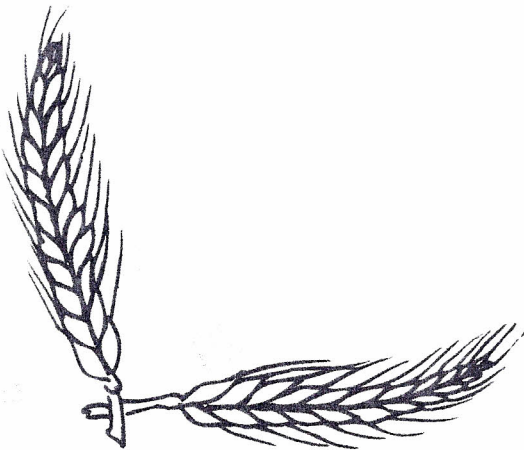
To the ingredients in the bag, add the shortening. Close bag with twist tie and work mixture with fingers until the ingredients form soft dough that pulls away from the sides of the bag.

Add the hot water to the bag. Close the bag and mix with fingers until the ingredients form soft dough that pulls away from the sides of the bag.

Turn the dough out onto a lightly floured surface. Divide dough into 4 equal pieces and shape into balls. Each child receives two balls. Cover them with the plastic bag, and let rest for 15 minutes.

Roll or pat the dough into 8 to 10-inch circles. Place each circle on a griddle or frying pan, heated to medium high. Cook until dark brown spots appear. Turn tortilla and cook on the other side until brown.

Want a quick meal? Roll up a tortilla with cheese, salsa and fat-free refried beans. "OR...make a fun dessert, sprinkle with cinnamon and sugar on top roll up and eat, OR...add pie filling for a tasty treat."



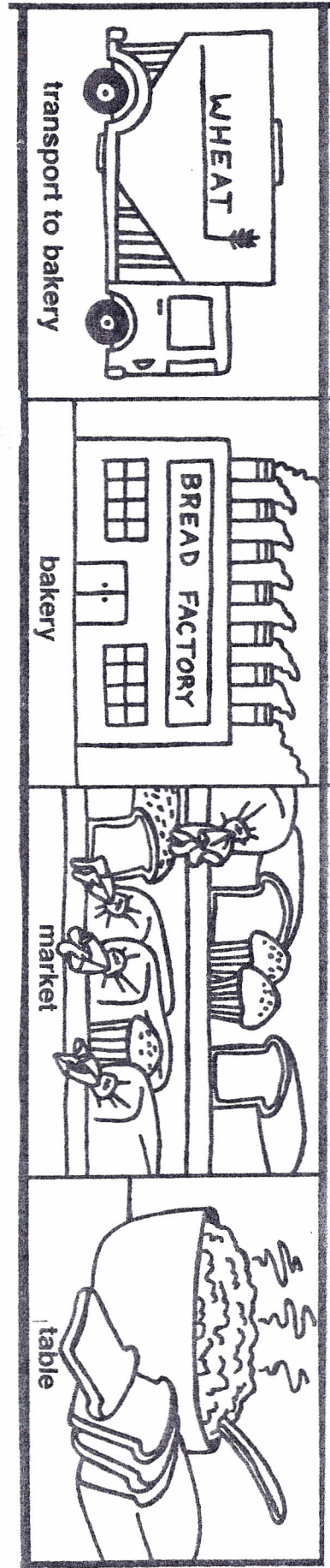
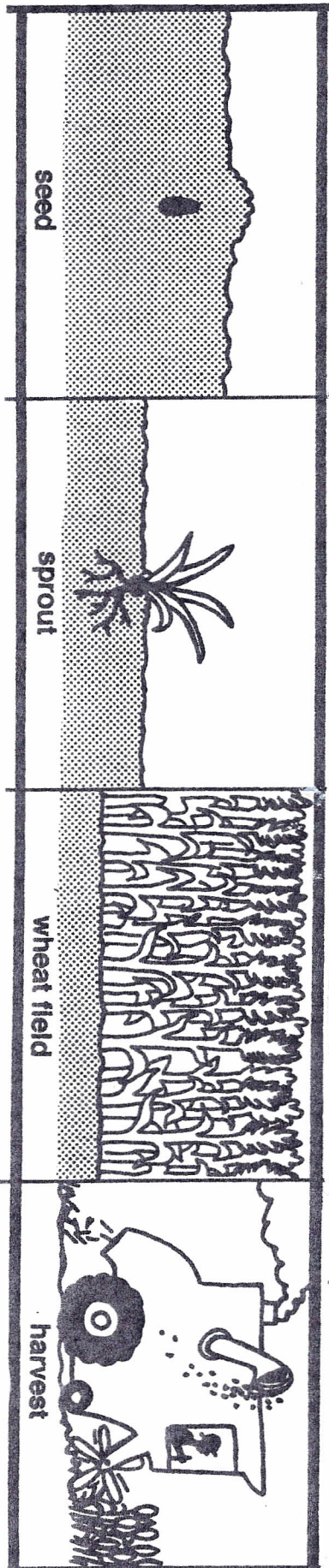


## From Farm to Table

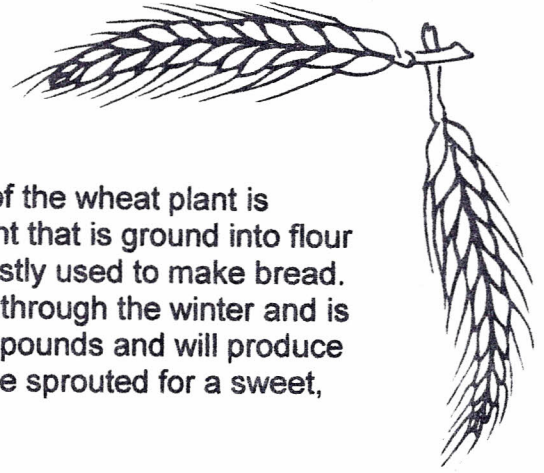
This activity is designed to give the children greater understanding of how some products are grown, processed, and brought to the market.

### To Make Sequence Cards:

1. Color all pictures.
2. Laminate all cards.
3. Cut pictures along solid lines and store in a resealable bag.
4. Let the children sort the cards into sequential order showing how wheat is grown, processed, and delivered to the table.



## Wheat Berries



Wheat is the most consumed grain on Earth. The seed of the wheat plant is called a wheat kernel or berry. This is the part of the plant that is ground into flour for bread. Hard red winter wheat is the kind of wheat mostly used to make bread. Hard red winter wheat is planted in the fall, lies dormant through the winter and is harvested in the spring. One bushel of wheat weighs 60 pounds and will produce 73 one-pound loaves of bread. Wheat berries can also be sprouted for a sweet, nutritious treat.

### Activities:

#### Make your own wheat berry sprouts.

*Materials Needed:* wheat berries

1. Rinse, rinse and rinse again.
2. Place rinsed wheat berries in a quart size jar or large clear glass.
3. Soak overnight.
4. Drain water from the jar, and cover the opening with a piece of cheesecloth or clean cotton rag. Secure with a rubber band. Lay the jar on its side in a dark place.
5. Rinse and drain the berries each morning until they sprout and grow to about 1 inch in length.
6. When the sprouts have grown to about 1 inch in length, place the jar in a sunny window for one day.
7. Enjoy your sprouts on a sandwich or in a salad.

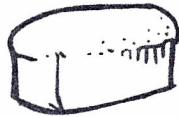
#### Make sprouting bags.

*Materials Needed:*

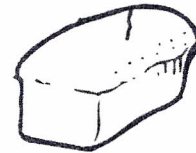
- Wheat berries
- Jewelry size zip-lock bags
- Yarn for necklaces
- Water hydrating crystals ( found in garden centers)

The teacher can squirt several drops of food coloring into a pint of water. Each child receives 2 wheat berries, 3 or 4 water crystals, 1 small jewelry size zip-lock Bag (with hole punched above the seal) and 3 or 4 drops of colored water. Zip the bag shut and thread yarn through to make a necklace. The necklace could be worn everyday until there are sprouts.





## Did You Know? Fun Wheat Facts



Wheat is grown in nearly every state. Because it is such a versatile crop, it is being harvested somewhere in the world every month of the year.



Much of the wheat grown is produced on land that is marginal for other crops.



A bushel of wheat weighs about 60 pounds and yields about 42 pounds of white flour or 60 pounds of whole wheat flour.



Hard red winter wheat is grown in the Great Plains region of the US and California. It is used in pan breads, Asian noodles, hard rolls, flat breads and general-purpose flour.



Durum wheat is grown in the North Central and desert Southwest regions of the US. It is used to make pasta, couscous and some Mediterranean breads. (Couscous is pasta that is shaped like rice.)



Soft red winter wheat is grown in the eastern third of the US and is used to make pastries, cakes, cookies, crackers, pretzels and flat breads.



Bread, pasta, cereal, pretzels, and licorice all are foods made with wheat. Cosmetics, pet foods, paper, soap and trash bags also contain wheat.



Average production is about 30 bushels per acre. An acre will produce enough wheat for about 2,500 loaves of wheat bread.

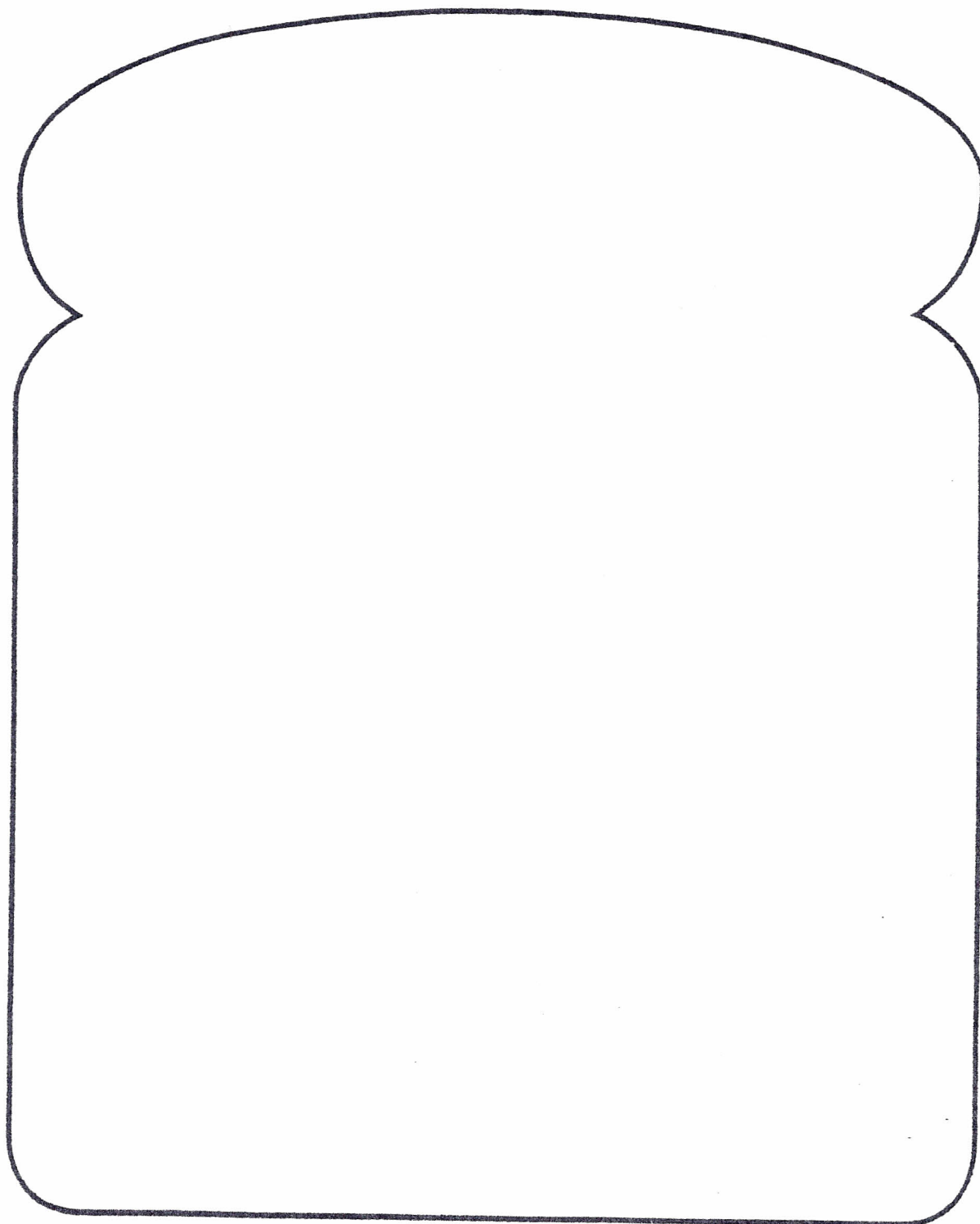


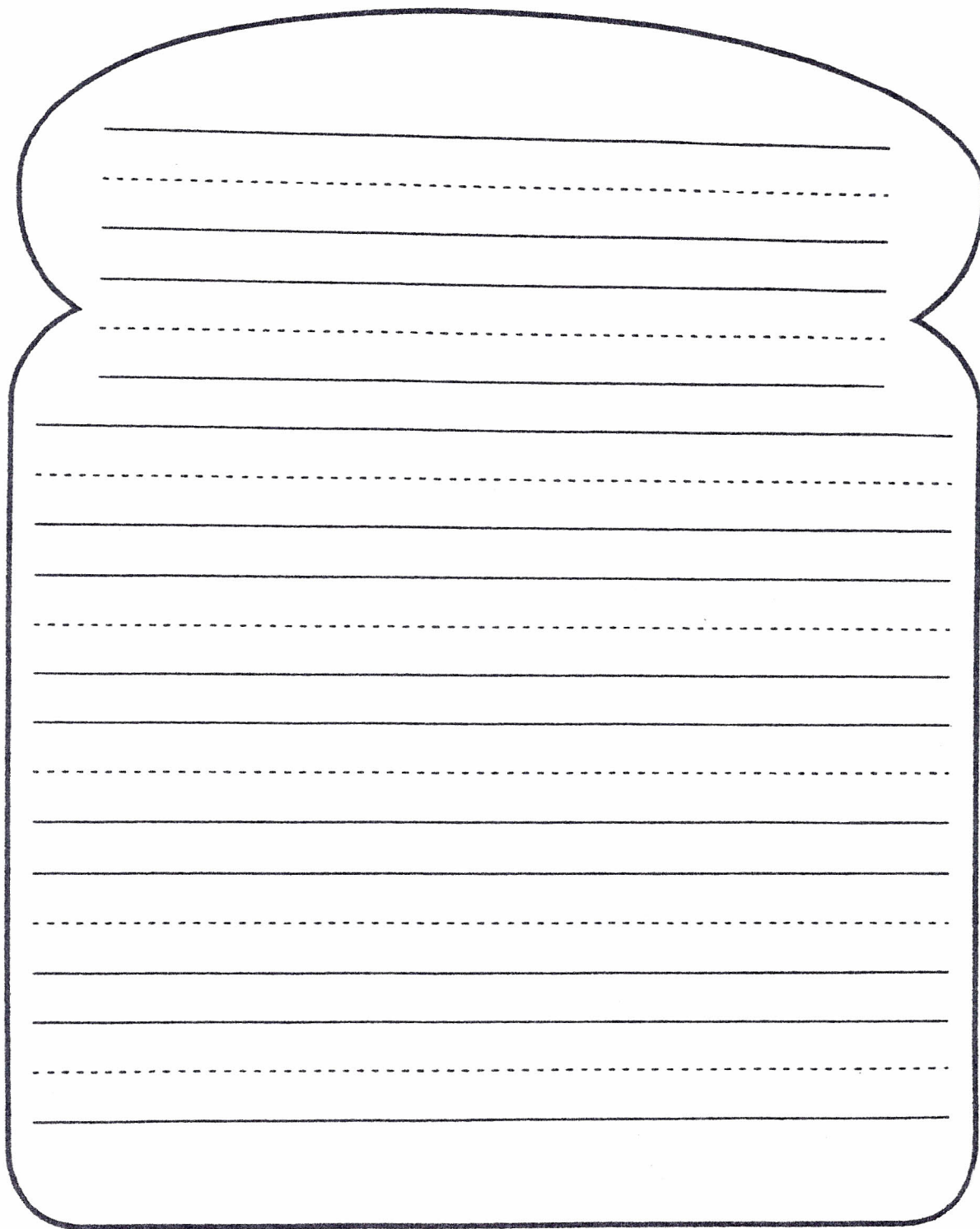
A kernel is a wheat seed. There are about 50 kernels in a head of wheat and 15,000 to 17,000 kernels in a pound.



## **Mmmm Mmmm Good... Sandwich Time.....**

Photocopy the sandwich pages for the students. Have the students write a story about their favorite sandwich or make-up a new kind of sandwich. Photocopy the blank sandwich pages for the cover and the back of the book. Each child can have their own sandwich book or make a class book of the student's favorite sandwiches!





## **Other Resources:**

Morris, Ann Bread Bread Bread

Fowler, Allan The Wheat We Eat

Taus-Bolstad, Stacy From Wheat to Bread (Start to Finish)

Snyder, Inez Grains to Bread (Welcome Books)

The Little Red Hen

Alabama Standards

Science

Language Arts

Social Studies