

## *Teacher Resource Information*

### **Where Does Our Bread Come From?**

Wheat is an important part of our everyday lives, whether we recognize it or not. We eat wheat on a daily basis, as part of sandwiches, bagels, cereals, pretzels, pancakes, tortillas and many other products. There is a long process to get those items on the shelf at the grocery store. And it all starts in a field.

1. A farmer plants wheat in the fall to be harvested the next summer. To prepare the ground, the farmer must plow, drill (which plants the seeds) and then fertilize the seeds.
2. The seeds begin to germinate in the ground and the wheat seedlings will be able to be seen above the soil.
3. The seeds begin to grow, but are then dormant during the winter months. Snow may cover the ground, but the wheat is still okay and will grow in the spring as a general rule. In fact, the snow will often act as an insulator for the plants from the cold temperatures and wind.
4. During the spring, the farmer will fertilize the wheat to help it grow. The wheat continues to grow and mature as kernels develop on the plant through the spring and summer.
5. In the fall, the wheat begins to turn golden in color, and it is harvest time! The grain must have the proper moisture content, so farmers wait until it has dried to the right stage. This is why it is so important to have some dry weather around harvest time. But things like hail and severe rainstorms can damage an entire crop very easily.
6. Finally, the field is ready to harvest. A combine is a machine that cuts the wheat. The heads of wheat are pulled up into the machine where the kernels are separated from the chaff. The stems and head parts of the plant are thrown out the back and the grain is stored in the machine.
7. The wheat is then transferred to a truck, which takes the wheat to bins on the farm where it is stored. Wheat may also be stored at country elevators. The wheat arrives by truck, is weighed, and then stored in the silo.
8. The wheat may be stored in one of these silos for some time, but then will be transported. Some wheat will be transported by railroad car to a gulf port so the wheat can be exported. Some wheat will be sent to mills so that flour can be made from the wheat. Mills may be large, supplying flour to large companies like Wonder and other national brands. Other mills are smaller and may supply local bakeries.
9. At the mill, the endosperm must be separated from the rest of the kernel. This is the flour.
10. The wheat must be cleaned and then tempered, which means water is added to raise the kernel moisture. The wheat is ground and sifted many times to get the flour. The flour is sent in one direction, while the other material from the wheat is sent in another direction.



11. Once the flour has become purified, the flour is enriched with vitamins and minerals. The flour is put into bags and is ready to be shipped out.
12. At this point, the flour goes in many different directions. The flour may end up on the grocery shelf for you to buy, it may go to bakeries where bread and other items are made, or any other places where flour is needed for food items. The food may be baked and made differently, but it all comes from wheat flour!

**Some Facts:**

- Americans consume 22 billion pounds of bread a year -- that's 77.6 pounds for each one of us. (1)
- Wheat is measured in "bushels." Generally, a 60 pound bushel (60 pounds) of wheat will produce about 45 pounds of white flour, and 60 pounds of whole wheat flour. (2)
- Wheat is grown on more land area worldwide than any other crop and is a close third to rice and corn in total world production. In 2004, world wheat production was approximately 624 million tons. (3)
- In 2004 the world leaders in wheat production were China (91.3 million tons), India (72 million tons), United States (58.8 million tons), Russia (42.2 million tons), France (39 million tons) and Australia (22.5 million tons). (4)
- An acre will produce enough wheat for about 2,500 loaves of wheat bread. (5)

**Sources:**

1. The bread trail: how do those fields of wheat become our morning muffin, afternoon sandwich and dinner roll? - Industry Overview Vegetarian Times, March, 1997 by T. Kelly Rossiter
2. [http://www.oznet.ksu.edu/aawf/July/july\\_5.htm](http://www.oznet.ksu.edu/aawf/July/july_5.htm) Adopt a Wheat Field--Kansas State University; <http://oklahoma4h.okstate.edu/aic/lessons/extras/facts/wheat.html>
3. <http://oklahoma4h.okstate.edu/aic/lessons/extras/facts/wheat.html> Quick Wheat Facts.
4. <http://oklahoma4h.okstate.edu/aic/lessons/extras/facts/wheat.html> Quick Wheat Facts.
5. <http://oklahoma4h.okstate.edu/aic/lessons/extras/facts/wheat.html> Quick Wheat Facts.

**Sources:** Adopt a Wheat Field (Kansas State University)

<http://www.oznet.ksu.edu/aawf/welcome.htm>; Quick Wheat Facts (Oklahoma Ag in the Classroom) <http://oklahoma4h.okstate.edu/aic/lessons/extras/facts/wheat.html>;

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