

Wheat Theme 1: Growing Wheat

Use the information below to present the wheat production cycle. For your play, imagine that you are growing winter wheat. The growth of a wheat plant is measured in stages. Understanding the stages of growth is important to help farmers get the best yield.

- **Planting**—Winter wheat is planted in the fall. Before anything else happens the farmer needs to add some kind of fertilizer to the soil to help the plant get enough nutrients for the coming year. Then the farmer plants the wheat.
- **Germination**—Seeds begin to sprout in the fall if there is enough moisture. If there is no rain in the fall, the seeds may not sprout until spring. Moisture is key to germination. Winter wheat will not produce grain if it does not experience cold winter temperatures. The plants go dormant for the winter and begin to grow again in the spring.
- **Growth**—When wheat is young and green, it looks like grass. The farmer needs to make sure that there are not too many weeds in the field. Weeds may interfere with the growth of tender young plants. As wheat matures, it grows tall stalks that have heads on them that will grow the seeds. The seeds are what we know as grain or wheat kernels—the part of the plant we eat.
- **Harvesting**—Wheat is usually harvested in the fall. Before farmers can harvest wheat, it has to dry out. When it is ready to harvest, it changes from green to a golden color. It cannot be wet during harvest. The wheat is harvested by a machine called a *combine* which cuts and threshes the wheat. Threshing separates the grain from the straw stalks.

Consider using a toy combine or a paper cut out of a combine as a prop.

Wheat Theme 2: Wheat By The Numbers

Thresh and grind some wheat. Create wheat puppets to be news reporters who present the story of how to thresh wheat to their wheat puppet audience. Grind wheat kernels into flour with a hand-grinder, and calculate how many wheat heads it takes to make a loaf of bread. Have your news reporters present your findings.

A Wheat Grinder kit is available to borrow from utah.agclassroom.org; search keywords *wheat grinder*. A visual tutorial of wheat threshing can also be found on this page.

Prediction: How many seeds are there in one head of wheat? Thresh the wheat to find out.



How To Thresh or Remove the Seed from the Plant

1. Place the seed head between both hands with your palms in a horizontal position and move your hands backwards and forwards repeatedly while applying pressure. This is similar to the threshing action in a combine.
2. After the grain has been threshed, shake the separate parts in the palm of one hand, letting the bigger, lighter parts of the head float to the top and the heavier grain kernels settle to the bottom. Now skim the spikes and hulls that have floated to the top off to the side and discard them. This is similar to the separating action of the combine performed by the straw walkers and sieves.
3. Next clean the chaff (seed hulls) from the grain that remains in your hand. A combine completes this job by blowing air through the grain and chaff, removing the lighter chaff and blowing it out the rear of the combine. Stand near a waste paper basket and pour the grain from one hand to the other while blowing lightly on the material as it drops through the air from one hand to the other.
4. Remember that the trip through the combine for the seed head only takes about 15 seconds and that there are thousands of heads going through the combine at the same time. Historically, farmers would have had livestock walk on the wheat heads on a hard surface to thresh the grain out of the heads. Then they would separate the straw and spikes by hand and throw the grain and chaff up into the air for the wind to blow the chaff away.

Question: Knowing that there are three cups of flour in one loaf of bread, how many wheat heads do you think it takes to make one loaf of bread? Grind a few threshed heads and do some calculations to determine how many wheat heads it takes to make one loaf of bread.

Hints:

1. Count how many threshed heads it takes to get 1 tablespoon of flour.
2. It takes 16 tablespoons to make 1 cup.
3. You need 3 cups of flour to make a loaf of bread.
4. How many heads are in 3 cups?

_____Heads x 16 Tablespoons = _____Heads _____ Heads x 3 Cups = _____Heads

Wheat Theme 3: Counties That Count

Use a Utah Agriculture Activity Map (available at utah.agclassroom.org; search keywords *utah agriculture*) to find out which counties in Utah produce wheat. Pick four of those counties to research online. Find out why they are ideal places for growing wheat and some other interesting facts about them. Then write a play using some wheat puppets as tourists with lots of questions about the chosen counties and other wheat puppets as tour guides who will answer the questions. The tourists may ask about major agricultural products, recreational things to do in the county, the county's climate, or any other important questions you can think of. Use the back of the paper if you need more space.

Four counties that produce wheat and other interesting facts about those counties:

Questions:

Answers:

Wheat Theme 4: The Little Red Hen

Create wheat puppets to present the story of *The Little Red Hen* found below. Each member of the group should highlight his or her lines.

Background

Once upon a time, a little red hen lived in a small cottage. She worked hard to keep her family fed. One day, when the little red hen was out walking with her friends, the goose, the cat, and the pig, she found a few grains of wheat.

“Who will help me plant this wheat?” asked the little red hen.

“Not I,” said the goose, “I’d rather swim in the pond.”

“Not I,” said the cat, “I’d rather sleep on the hay.”

“Not I,” said the pig, “I’d rather lie in the mud.”

“Then I’ll do it myself,” said the little red hen. And she did.

Time went by and the wheat grew, but so did the weeds.

“Who will help me pull the weeds?” asked the little red hen.

“Not I,” said the goose, “I’d rather swim in the pond.”

“Not I,” said the cat, “I’d rather sleep on the hay.”

“Not I,” said the pig, “I’d rather lie in the mud.”

“Then I’ll do it myself,” said the little red hen. And she did.

All summer the wheat grew taller and taller. It turned from brown to golden amber. And, at last, it was time to harvest the wheat.

“Who will help me harvest the wheat?” asked the little red hen.

“Not I,” said the goose, “I’d rather swim in the pond.”

“Not I,” said the cat, “I’d rather sleep on the hay.”

“Not I,” said the pig, “I’d rather lie in the mud.”

“Then I’ll do it myself,” said the little red hen. And she did.

At last, the wheat was harvested and put into a large sack, ready to be taken to the mill to be ground into flour.

“Who will help me take the wheat to the mill?” asked the little red hen.

“Not I,” said the goose, “I’d rather swim in the pond.”

“Not I,” said the cat, “I’d rather sleep on the hay.”

“Not I,” said the pig, “I’d rather lie in the mud.”

“Then I’ll do it myself,” said the little red hen. And she did.

The next day came and the little red hen was hungry.

“Who will help me bake this flour into bread?” asked the little red hen.

“Not I,” said the goose, “I’d rather swim in the pond.”

“Not I,” said the cat, “I’d rather sleep on the hay.”

“Not I,” said the pig, “I’d rather lie in the mud.”

“Then I’ll do it myself,” said the little red hen. And she did.

At last, the bread was baked and the little red hen called to her friends once more.

“Who will help me eat this bread?” asked the little red hen.

“I will,” said the goose.

“I will,” said the cat.

“I will,” said the pig.

“Oh, no you won’t!” said the little red hen. “I found the wheat, I planted it, I weeded it, and when it was time to harvest it, I did that too. I took it to the mill to be ground into flour and at last, I baked it into bread.

“Now,” said the little red hen, “I’m going to eat it with my family.”
And she did.

Wheat Theme 5: Wheat Doll

Create wheat puppets to present your version of *The Wheat Doll* in a play.

Characters:

Costumes:

Script: (use the back of this paper if you need more space)

Wheat Theme 6: *Weslandia* for Pioneers

Pioneer Life

What might a pioneer need to survive in a new location in Utah? Water? Plants for food? Livestock for food, fabric, farm work, and transportation? After you are assigned a location in Utah, research the area's physical features by using GoogleEarth or a map of Utah. Look up climate information online or in a textbook. Consider reading the book *Weslandia* by Paul Fleischman for ideas on how to set up a new community in a new environment. Write a play that uses wheat puppets to act out what pioneers would need to do after arriving in their new location in Utah to set up a community.

Characters:

Costumes:

Script: (use the back of this paper if you need more space)