



**Grade Level:** K-4

**Essential Skills:** 4, 9

**CCSS:** RL.K.1, RL.1.2, RL.2.3, RL.3.3, RI.K.1, RI.1.2, RI.2.1, RI.3.1, RI.4.1, RF.K.1.B,

**NGSS:** K-LS1-1, K-ESS2-2, K-ESS3-3

**Oregon Social Science:**

K.G.GR.1, K.G.HI.7, K.G.HI.8, K.E.ES.2, K.E.IC.3, K.H.CC.2, K.H.CE.3, 1.G.GR.2, 1.G.HE.6, 1.G.HE.7, 1.E.MI.4, 1.E.ST.6, 1.H.CP.5, 2.G.GR.3, 2.G.HE.8, 2.E.MI.4, 2.E.IC.5, 2.E.ST.6, 3.C.IR.5, 3.G.GR.1, 3.G.HE.7, 3.E.ST.7, 3.H.CH.1, 3.H.CP.6, 4.G.HI.6, 4.E.MI.4, 4.E.MI.5, 4.E.ST.10, 4.H.CE.4

**Time:** 45-60 minutes

**Materials (AITC provided\*):**

- \*Our Little Kitchen book by Jillian Tamaki
- \*Grown in Washington County map
- \*Wheat or other grain stalks
- \*Printed lesson
- \*Online students: Grain Foods Source Match: From Field to Table
- Internet access and projector
- Coloring paper
- Coloring materials

## Lesson to Grow

# Amazing Grains: Women Growing the Grains of Our Local Food Supply Chain

### Description:

In celebration of 2026 as the International Year of the Woman Farmer<sup>1</sup>, this year's project introduces students to the basics of grains through the stories of local women involved in grain production. Students will **listen** to and **reflect** on a children's fictional story about a resourceful group of neighbors who cook together, **learn** about several women from Washington County who grow or use grain for various purposes, use their senses to **examine** a real stalk of locally produced grain, and **collaborate** in an activity where they place grain types in order from field to table.

### Vocabulary:

**Agriculture:** the science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool, and other products.

**Grain:** the edible seed or seed-like fruit of grasses that are cereals such as wheat, oat, corn, and rice. Pseudocereals include buckwheat and quinoa.

### Activity Directions:

#### Part 1: Introduction to the 6 F's of Agriculture

*Materials needed: 6 F's of Agriculture image sheet (included in lesson).*

1. Explain to students that today they will be learning about agriculture and grain.
2. Ask students to raise their hand if they have heard the word **agriculture** and to share what they think it means.
3. Review the 6 F's of Agriculture (page included), then share that they're going to learn more about farming and food.
4. Ask: *What does a farmer do? Did you know that this year is the International Year of the Woman Farmer?*
5. Explain that *international means all across the world, and that for the whole year of 2026, people around the world are finding ways to celebrate and share the stories of all the amazing women that are farmers. People are also celebrating women who work with farming in other ways, like selling and trading things grown on farms, and using what is grown on a farm to make things like clothing (referring back to the 6 F's images), bouquets of flowers, and even furniture. It is also a celebration of women who teach about farming. In Washington County, there are amazing women who grow **grain** on their farms, and women who teach about grain, who you'll learn more about in a minute. In Oregon, about 44% of producers (farmers) are women<sup>2</sup>.*

## Part 2: Meet Your Grain!

*Materials needed: Video link (noted in this section), provided grains, paper plate (for catching loose grains).*

1. Ask: *Can anyone tell me what grain is?*
2. Displaying your provided grains (wheat or buckwheat), explain that *most grains are the edible seed or seed-like fruit of grasses that that we call cereals.*
3. Ask: *Can anyone share what kinds of grains there are?*
4. Take a few guesses then share a few examples by writing them on the board and displaying included grain cards depicting wheat, oats, corn, quinoa (KEEN-wah), rice, and buckwheat. *Wheat is a very popular grain. Lots of people know about wheat because we use it in making foods like pasta, cereal, bread, noodles, and even desserts like cake and cookies. Quinoa and buckwheat are the only grains in this list that aren't grasses.*
5. **Optional:** Show video about wheat and reflect on learnings (duration: 1:30 minutes) : Oregon Harvest for Schools: Wheat <https://www.youtube.com/watch?v=agfoRMks-L4>
6. Review the provided "Anatomy of a Grain" sheet. Distribute coloring sheets at your discretion.
7. Distribute provided grains onto paper plates for hands-on exploration.
8. Inform students that *the grain is not to be eaten because it isn't fully ripe and has not been cooked.*
9. Invite students to take apart their stalk of wheat or buckwheat (consider having students draw their grain), separating the seeds from the plant. Ask:
  - a. *How does the plant or grain seed feel?*
  - b. *Does the plant or grain remind you of anything else?*
  - c. *What did the plant need to grow?: Seed, sun, soil, nutrients, water, and care.*
10. Clean-up for Part 2. Use the plant or grains to feed a school compost, try to sprout the grains, make a piece of art, or other activity of your choosing.

## Part 3: Discover Local Grain Growers

*Materials needed: Grown in Washington County Map; Grain Chat 1, 2, and 3; Our Little Kitchen book*

1. Display Grown in Washington County map (on a projector, large poster, or 8.5" x 11" map), explaining that this is where we live, then ask: *Can you find where the wheat pictures are? and, What do they mean?*
2. Explain that the little pictures on the map show us where farmers are growing crops around us. Some women in our community actually grow wheat and other grains.
3. Use the *Grain Chat 1 & 2* to share the stories of Vicki Hertle and Polly Gottesman, who grow grain and use it.
4. Use *Grain Chat Part 3: Charlene Murdock of Food Ways at Nana Cardoon* to share the story of Charlene Murdock, who grows grain and teaches about food.
5. Share that Charlene (depending on your provided grain), A) Harvested the wheat from her friend Lyle who grew them in Forest Grove, or B) Grew and harvested the buckwheat at her home farm in Forest Grove.
6. Tell students that you will now read a book about people coming together to cook and enjoy food together, just like Charlene and her community.
7. Read *Our Little Kitchen* book.
8. After reading, ask:
  - a. *Have you ever cooked with a piece of food that wasn't perfect? What did you cook?*
  - b. *What can we learn when we make food with other people?*



## Part 4: Food Sources

*Materials needed: Grain Foods Source Cards (consider laminating for future use).*

1. Explain to students that they will now play an activity where they will match grains to the food made with them.
2. Disperse to each student 1 card from the Grain Foods Source Cards deck.
3. Students will move around the room to locate their peers with cards matching their grain type. Students will need to look carefully at their card to decide if what they have is oat, rice, quinoa, wheat, or corn.
4. **2nd-4th** graders should try to line up according to the order of grain going from field to kitchen to table (plant to harvested grain to prepared food). Ask students to raise their hand when they think they have found their matching grain group and ensure that they have lined themselves up in order from field to table.

Grains cards answer key, in order from field to table: Corn: 26, 5, 6, 11, 29; Wheat: 1, 30, 2, 13, 24, 25; Rice: 21, 3, 4, 10, 23; Quinoa: 12, 15, 16, 28; Oat: 27, 7, 8, 9, 14, 19; Buckwheat: 20, 17, 18, 22

## Debrief questions:

1. What grains did we learn about today? Which ones are grasses? What are the different parts of a grain? How does a grain go from seed to plate?
2. Who were the people we learned about today and what do they do with grains?
3. Why are locally grown grains important (according to the people we learned about)?
4. What kind of foods could you make with grain?
5. How can cooking or growing food help us to build community (build trust and make friends)?

## Extension Activities:

1. **Videos:** PBS: *Superabundant: Why people all over the world love Oregon-grown wheat:* <https://www.opb.org/article/2021/10/01/superabundant-oregon-wheat-donuts-bao-agriculture-exports/>
2. **Lesson:** *Growing Grains: Students investigate a variety of grains, discover how and where they are grown, and explore their nutritional benefits.* <https://agclassroom.org/matrix/lessons/868/>
3. **Lesson:** *Farm Web: Students use the visual representation of a web to explore the role of agriculture in their daily lives and understand how most of the necessities of life can be traced back to the farm.:* <https://oregonaitc.org/lessonplan/farm-web/>
4. **Lesson:** *"Grown in Oregon" Map Scavenger Hunt:* <https://oregonaitc.org/lessonplan/grown-in-oregon-map-savenger-hunt/>
5. **Kit:** *Serious Cereals Science Kit: This kit invites students to explore the world of cereal crops while connecting science to real-world careers in food production, quality assurance, and agribusiness.:* <https://agclassroomstore.com/serious-cereal-science/>
6. **Check it out:** Grain Mill: [oregonaitc.org/product/grain-mill/](https://oregonaitc.org/product/grain-mill/)
7. **Check it out:** <https://oregonaitc.org/product/doing-her-bit-a-story-about-the-womans-land-army-of-america/>
8. **Partner resources:** *Check out the many wheat and grain educational resources available from the OSU Food Hero program:* <https://foodhero.org/whole-grains>

## References:

1. Oregon Department of Agriculture: <https://www.oregon.gov/oda/agriculture/pages/iywf.aspx>
2. Oregon Department of Agriculture: <https://www.oregon.gov/oda/Documents/Publications/Administration/BoardReport.pdf>
3. Whole Grains Council: <https://wholegrainscouncil.org/whole-grains-101/whats-whole-grain-refined-grain>

## 6 F's of Agriculture

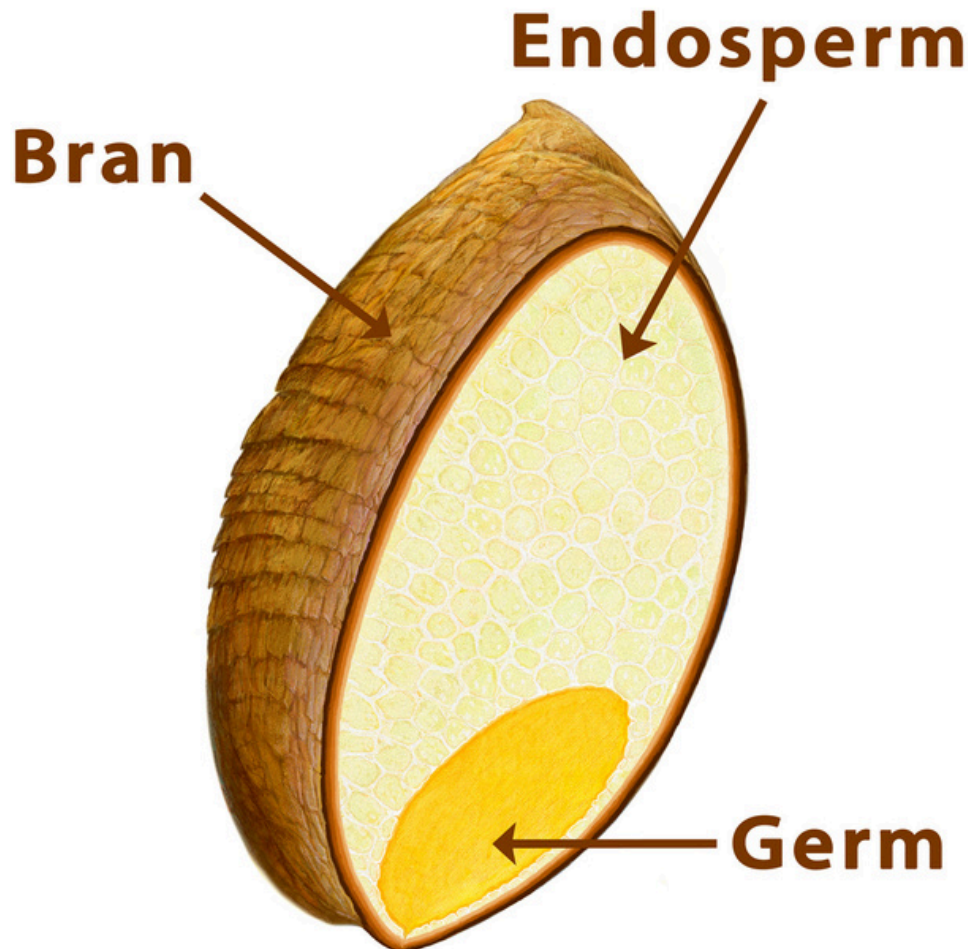
Use this sheet to help students learn about the 6 F's of agriculture.





## Anatomy of a Grain

Use this sheet to help students learn about the anatomy and terminology related to grain.

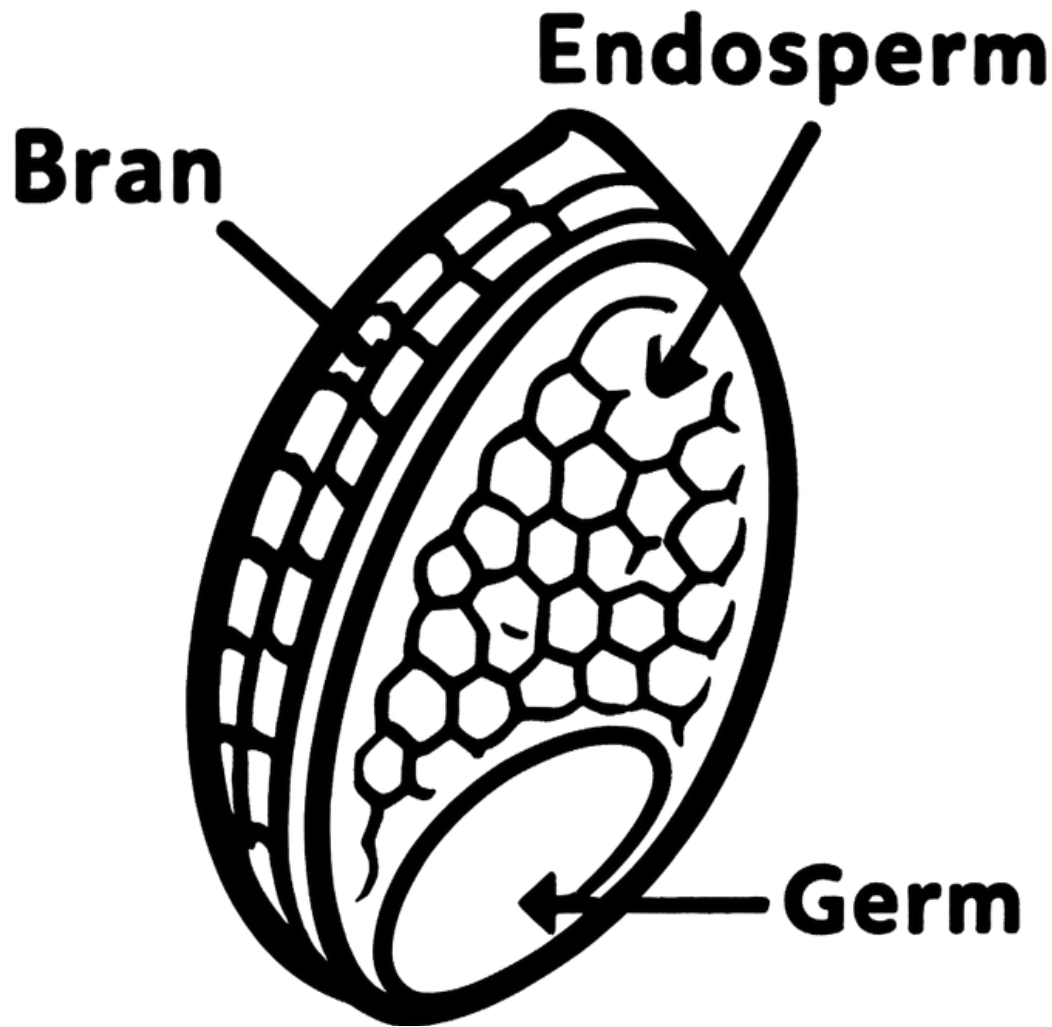


### Terms:

1. **Bran:** The multi-layered outer skin of the edible kernel. It contains important antioxidants, B vitamins and fiber.
2. **Germ:** The embryo which has the potential to sprout into a new plant. It contains many B vitamins, some protein, minerals, and healthy fats.
3. **Endosperm:** The germ's food supply, which provides energy to the young plant so it can send roots down for water and nutrients, and send sprouts up for sunlight's photosynthesizing power. The endosperm is the largest portion of the kernel, containing starchy carbohydrates, proteins and small amounts of vitamins and minerals.
4. **Whole wheat vs whole grain:** Whole wheat is one kind of whole grain, so all whole wheat is whole grain, but not all whole grains are whole wheat. A grain is "refined" when it is missing one or more of its three key parts (bran, germ, or endosperm). Refining a grain removes about a quarter of the protein in a grain, and half to two thirds or more of a score of nutrients. This is why we are encouraged to eat whole grains.

## Anatomy of a Grain

### Coloring Sheet



### Terms:

1. **Bran:** Outside skin of the grain. Has vitamins and fiber that are good for your health!
2. **Germ:** A new plant waiting to sprout! It contains many B vitamins, some protein, minerals, and healthy fats.
3. **Endosperm:** This part of the grain has many nutrients that the germ needs to be able to grow into a new plant. It is the largest part of the grain with healthy carbs and proteins, and small amounts of vitamins and minerals.
4. **Whole grain:** A grain with no missing parts. Sometimes, a grain is “refined”, which means it has part of the grain taken out, such as the endosperm, germ, or bran. A refined grain has less protein and nutrients. This is why whole grains are a healthier choice to eat.
5. **Whole wheat:** A kind of whole grain.

### Grain Chat 1: Vicki Hertel of Sun Gold Farm



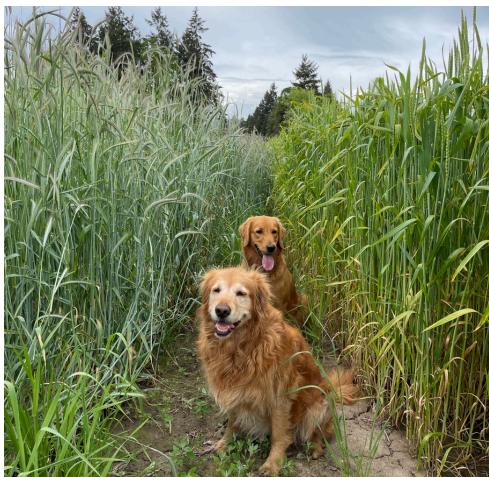
Vicki Hertel grows many kinds of grains at her family farm, called Sun Gold Farm, in Forest Grove. They grow Purple Karma barley, Red Fife wheat, heirloom soft white wheat, Dark Northern rye, oats, and corn.

Vicki took over growing grains from her dad, who was growing soft white wheat that he shipped to places like China. Now, since growing several types of grains, Vicki likes growing rye the best. She likes that rye, once it's harvested and milled, makes great flour for baking. She also likes how beautiful rye is when it's growing.

When she was looking for ideas of types of grains to grow, Vicki got the idea from her friend Lyle to grow barley. Lyle gave her some of his barley grains to grow, which she still grows today! Lyle is the farmer who donated wheat for the Fall Literacy Project!

Growing grains locally is important to Vicki because it means that you can get to know your farmer and trust that your food is grown safely. When food is grown locally, she says, it also gets to your table quicker, meaning it's fresher and uses less energy in transportation.

Below, left to right: Vicki's dogs stand in a field of grain, combine harvesting, harvested Sun Gold Farm grains.



You can meet Vicki at their farm on Tuesdays from 10 A.M. to 5 P.M., or at the PSU farmers market on Saturday. Sun Gold Farm: 6995 NW Evers Rd, Forest Grove, OR 97116



## Grain Chat 2: Polly Gottesman of Pumpkin Ridge Gardens



Polly Gottesman grows ornamental grains at her family farm, called Pumpkin Ridge Gardens, in North Plains. Ornamental means something that looks nice, like a decoration. Polly uses the grains she grows to make wreaths that people might hang in their house.

Polly grows oats, flax, and ten kinds of wheat. Once the grains are mature, or fully grown, she will harvest them by hand. Then, she will hang the grains and flowers she's harvested in a cool, dark place so they can dry without getting moldy or eaten by birds. After about a month of drying, she weaves the grains into a wreath that people can buy at the farmers market in fall time.

Polly makes wreaths because she enjoys discovering the kinds of grains and flowers that dry best, keeping their color for months, and even years! Her favorite kind of ornamental grain is called Utrecht (EW-trecked), because of its beautiful, light blue color. She says that this grain can be difficult to grow because it will “lodge”, or bend, in bad weather. Polly explained that grain used to be much taller, but over history, people have selected seeds that grow shorter plants which are much stronger and can handle bad weather<sup>1</sup>. Stronger grain means Polly can make more wreaths for her customers!



Top to bottom: Flowers and wheat drying, details of Polly's wreath featuring Utrecht blue wheat.

You can meet Polly at the Beaverton Farmers Market on Saturdays, March-November, from 10 A.M. to 1:30 P.M., 12375 SW 5th St, Beaverton, OR 97075

<sup>1</sup> Li A, Hao C, Wang Z, et al. Wheat breeding history reveals synergistic selection of pleiotropic genomic sites for plant architecture and grain yield. Mol Plant. 2022;15(3):504-519. doi:10.1016/j.molp.2022.01.004



### Grain Chat 3: Charlene Murdock of Food Ways at Nana Cardoon



Majestic is a word that Charlene uses to describe her favorite grain, Dark Northern rye. When she talks about why growing grain locally is important, it's easy to understand why she also loves to teach people about growing food. Charlene has seen how food brings people together, making the places we live feel so special, and maybe even a bit majestic.

Charlene started growing grains because she was curious to find out which would taste the best in her baking. She also wanted to be able to grow and mill her own grain that we find in common foods, such as bread, crackers, and cookies. Growing and buying grains locally,

she says, helps to keep the food fresher because it doesn't have to travel as far. Charlene now grows several kinds of grains, including Red Fife, Tinker buckwheat, Purple Karma barley, and her favorite, Dark Northern rye. Charlene actually worked together for many years with her friend, Lyle Spiesschaert, to grow grains, some of which Vicki Hertel now grows!

Education is very important to Charlene, and so runs her own non-profit called Food Ways at Nana Cardoon, where she works with her community to teach others about growing and making food. Charlene says that if you enjoy food, like bread and cookies, you should also try growing grain to learn which ones you like the best!

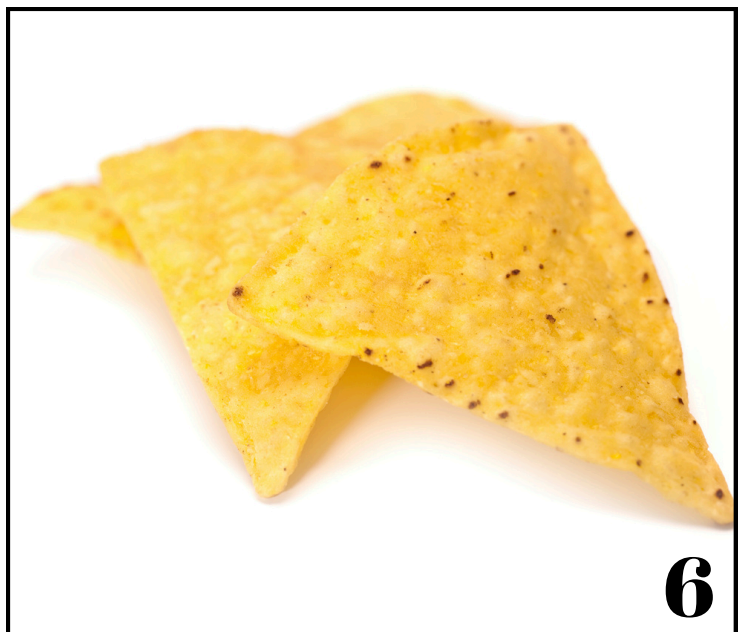
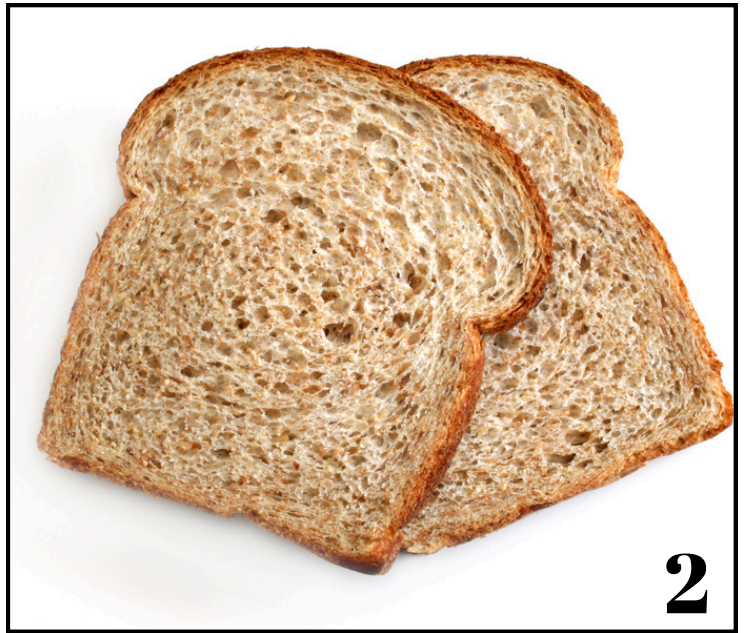


Top to bottom: Charlene harvesting Lyle's wheat for the Fall Literacy Project; Charlene's sculpture of wheat and agriculture goddess, Demeter; Charlene's rye bread on display at Helvetia Market.

You can meet Charlene at Stoneboat Farm on Tuesdays and Wednesdays from 2:30 P.M. to 6 P.M.  
Stoneboat Farm: 10850 NW Jackson Quarry Rd, Hillsboro, OR 97124



## Grain Foods Source Cards



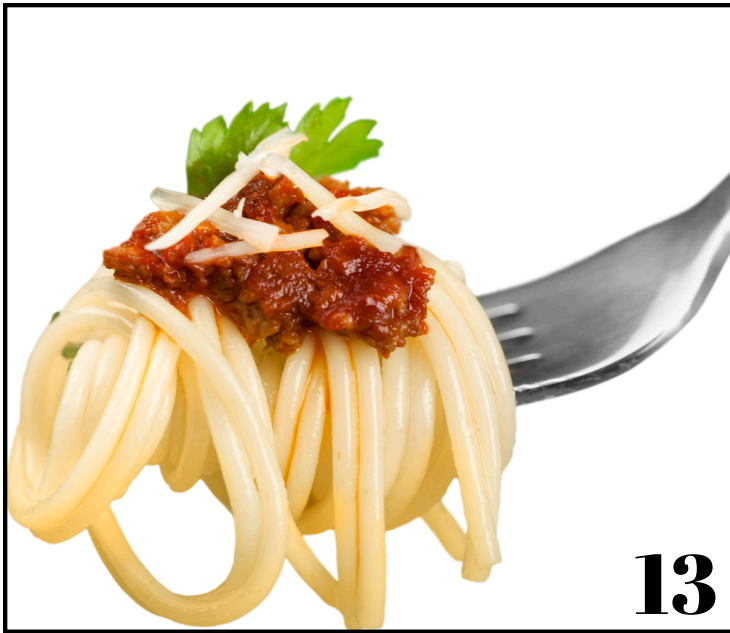


## Grain Foods Source Cards





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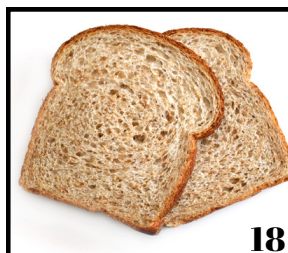
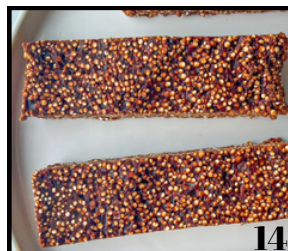
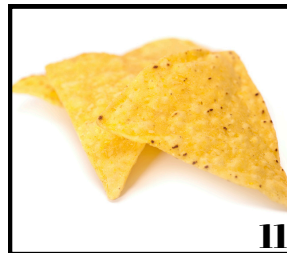




## Grain Foods Source Match: From Field to Table

### Online student directions:

Look at the pictures below and use the next page to match the grain type from field to kitchen to table (plant to grain to food).





## Grain Foods Source Match: From Field to Table

### Online student directions:

Look carefully at the pictures on the previous page to match the grain type from field to kitchen to table (plant to grain to food). Below, write the number of each card where it belongs within the grain type. The first plant answer has been provided for you as an example.

**Corn:** 22 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_  
plant      grain      food      food

**Wheat:** \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_  
plant      grain      food      food

**Rice:** \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_  
plant      grain      food      food

**Oats:** \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_  
plant      grain      food      food

**Buckwheat:** \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_  
plant      grain      food      food

**Quinoa ("KEEN-wah"):** \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_  
plant      grain      food      food

