



SC Farm Bureau
Ag in the Classroom
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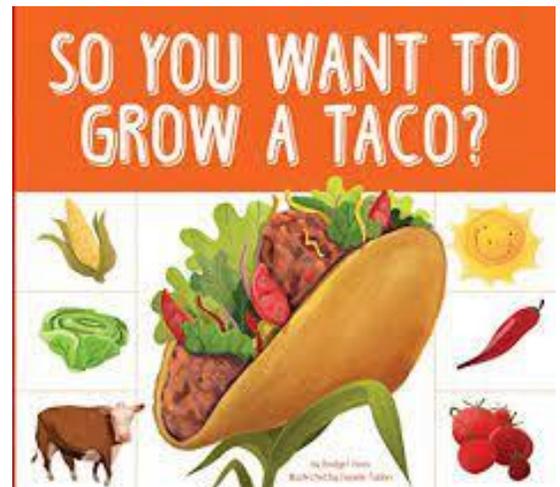
May 2022

So You Want To Grow A Taco?

By: Bridget Heos

If you really wanted to grow a taco, you'd need a corn field, a cow, a vegetable garden... and you'd run out of room quickly!

The sensible narrator advises each child gardener to start small, and they all gain an appreciation for fresh ingredients by the end of the book. Essentially, a young boy wants to grow his own tacos, learns where the many ingredients come from, and learns how to grow corn and make tortillas. This book also includes a kid-friendly taco recipe.



Did You Know? (Ag Facts) ²

1. One third of all US farms includes cattle.
2. There are around 10,000 varieties of tomatoes worldwide.
3. About 50% of Americans visit Taco Bell once per month.
4. California produces approximately 70% of the lettuce grown in the US.
5. On average, Americans eat five billion tacos annually.

Discussion Questions

- Has your family ever grown a garden? What did you plant?
- What toppings do you add to your taco?

Grade Level(s): K-3

Purpose: Students will explore how American farmers produce our food and fiber.

Vocabulary:

- **bull:** intact male cattle
- **byproduct:** an incidental or secondary product made in the manufacture or synthesis of something else
- **calf:** a young cow or bull
- **cow:** female cattle
- **edible:** suitable or safe to eat
- **heifer:** female cattle that have never had a calf
- **inedible:** not possible or safe to eat; not edible
- **rangeland:** large, mostly unimproved section of land that is primarily used for grazing livestock
- **climate:** the prevailing weather conditions in a specific area over a long period of time
- **consumer:** a person who buys and uses goods and services
- **cultivate:** to prepare (land or soil) for the growth of crops; to plant, tend, harvest, or improve (plants) by labor or skill
- **floriculture:** the cultivation of flowers
- **fruit:** the part of a plant that develops from the flower and contains the seeds of the plant
- **horticulture:** the science and art of growing fruits, vegetables, flowers, or ornamental plants
- **specialty crop:** fruits, tree nuts, vegetables, herbs, spices, nursery, floriculture, and horticulture crops that are not considered staple foods.
- **vegetable:** any edible part of a plant that does not contain seeds

Background Agricultural Connections: ²⁻³⁻⁴

So you want to grow a taco? Well, you can, but you will actually be growing all of the *ingredients* for a taco...

One US farmer produces enough food to feed 165 people worldwide, but farmers are not the only workers involved in making food available to the consumer. Agriculture, food, and related industries employ 21.6 million American workers. These jobs include harvesting, storing, transporting, processing, packaging, and selling the food we eat. Farms are the source of almost all the food we consume.

Vegetables for tacos:

In most cases, some, but not all, of the foods people eat are grown in their state. While most states produce their own milk, eggs, fruits, vegetables, and grains, the availability of certain foods depends upon season. The climate and soil of a particular region determines the types of foods that can be grown. Consumer demands influence the items that stores and restaurants offer. Many people want to be able to eat fresh fruits and vegetables in the middle of the winter or out of season. Grocery stores meet these demands by having food transported from other regions of the United States and even from other countries.

Specialty crops are fruits and vegetables, tree nuts, dried fruits, and horticulture and nursery crops, including floriculture, that are cultivated or managed and used by people for food, medicinal purposes, and/or aesthetic gratification. Local specialty crops can be found at grocery stores, food co-ops, farmers' markets, and plant and garden centers.

Tortillas for tacos:

The Corn Belt is a region of the United States where corn is the predominant crop grown. Iowa and Illinois are the top corn-producing states, and they typically grow just over one-third of the US crop. Other major states for corn production include Nebraska, Minnesota, Indiana, Wisconsin, Michigan, South Dakota, Kansas, Missouri, Kentucky, and Ohio. These twelve states can be considered part of the Corn Belt. Warm, rainy summers and deep, fertile soils make this region particularly well suited for growing corn.

An ear of corn has an average of sixteen rows with 800 kernels. There are approximately 1300 kernels in one pound of corn. An acre (about the size of a football field) of corn can yield more than 13 million kernels. In the United States, corn production is commonly measured in bushels. This measurement originated as a unit of volume but has been standardized to units of weight for different commodities. One bushel of shelled corn is equivalent to 56 pounds (25 kg).

First domesticated in Mexico, corn is now grown on every continent of the world except Antarctica. The United States produces more corn than any other country. The scientific name for corn is *Zea mays*. All types of corn belong to this species, including sweet corn, popcorn, dent (field) corn, flour corn, and flint corn. Dent corn is the type most widely grown and processed in the United States. Hybrids of corn, produced by crossbreeding different varieties, have been developed to grow well in varying conditions and locations worldwide. The development of hybrid varieties, along with synthetic fertilizers and new farm machinery, has facilitated huge increases in corn productivity. Today, more corn can be grown on less land than ever before.

Beef for tacos:

The average American consumes 55 pounds of beef each year. As a country, we devour nearly 50 billion hamburgers annually. Not only is beef an important part of the American diet, but it also plays a significant role in our economy. Beef cattle are raised in every state across the nation. Texas, Oklahoma, and Missouri rank as the states with the highest inventory of beef cattle.

Why such a high demand for beef? In addition to being prized for its delicious taste, beef provides many nutrients essential to the human diet. Humans need complete proteins with balanced amino acids in order to build muscle, nerves, and organ tissue. Animal proteins are one way to fill this nutritional need. Beef is a good source of ZIP: zinc (a mineral that ensures proper functioning of the immune system), iron (a mineral that helps red blood cells carry oxygen to body cells and tissues), and protein (a nutrient that builds, maintains, and repairs body tissues); as well as B12 (a vitamin that promotes healthy skin, nerves, and red blood cells).

Cattle designated for beef production will be sold to stockers (also called backgrounders). Stockers are cattlemen who raise weaned steers and/or heifers until they are ready to be sent to market or to a feedlot. Most beef cattle will spend four to six months at a feedlot where they are fed a grain-based diet that helps them gain weight quickly. During this "finishing phase," the cattle's health is monitored on a daily basis. When market weight is reached, the animals are sent to a processing facility. The average beef animal weighs 1,200 pounds (544 kg) and yields approximately 520 pounds

(236 kg) of meat. While beef cattle are primarily raised for meat, they also provide valuable by-products such as medicine, paint, adhesives, soap, cosmetics, detergents, and hundreds of other products. Including by-products, as much as 99% of the animal is used.

How It's Made: Corn Tortillas ⁴

Materials:

- *So You Want To Grow A Taco?* By Bridget Heos
- [How It's Made: Corn Tortillas video](#)

Procedures:

1. Ask the students to raise their hands if they have a garden or have helped in a garden. Ask, "What did you grow in the garden?"
2. Explain to the students that not all fruits and vegetables can be grown in their state.
3. Have the class brainstorm fruits and vegetables that they are familiar with. Point out what kind of climate each grow in. For example, bananas grow in a warm, frost-free climate.
4. Pull out a world map or globe. Point to where your state is located and talk about what fruits and vegetable can best be grown in the state. Use the website for your state found in the *Background Agricultural Connections* section of this lesson for ideas. In addition, visit the [State Agricultural Facts](#) webpage and click on your state for more information about your state's agricultural resources.
5. Ask the students, "How do fruits and vegetables get to our cafeteria or in your lunchbox?"
6. Read the book *So You Want To Grow A Taco?* by Bridget Heos and watch the video, "How It's Made: Corn Tortillas".
7. Discuss the steps it takes to get food from the farm to your lunch:
 - Planting
 - Growing
 - Harvesting
 - Processing
 - Transporting
 - Preparing
 - Serving

Tomato - Tomoto ³

Materials:

- KWLH chart
- Several different varieties of tomatoes
- [Tomato Life Cycle](#)
- Tomato seeds

Procedures:

1. Print the [KWLH Chart](#). This should be kept on chart paper so that it can be used and posted throughout the entire lesson. Ask students the following questions and place their answers in the first three columns. The fourth column will be filled in at the conclusion.
 - a. What I know.
 - What do you know about tomatoes?
 - What color(s) are tomatoes?

- Where can you buy tomatoes?
 - What foods do you eat that have tomatoes in them?
- b. What I want to know.
- Is a tomato a fruit or vegetable?
 - What does a tomato grow from, a tree or a plant?
 - How do tomatoes travel from the field, to the grocery store, and to your plate?
- c. How can I learn more about tomatoes?
- Where can I find information about tomatoes?
 - Who can I ask about the life cycle of a tomato?
 - What farmers in my hometown grow tomatoes?
2. For a visual, have the students bring in labels of items they use at home that contain tomatoes such as ketchup, spaghetti sauce, salsa, tomato soup, etc. Make a collage of the labels in the shape of a tomato and post it next to the *KWHL Chart* as a resource.
 3. Bring in several tomatoes of different sizes, varieties and ripeness.
 4. Have the students discuss the many properties of tomatoes. Examples include, color, size, shape, texture, etc.
 5. Have each student pick out two tomatoes (or divide the tomatoes into two groups) and orally state a sentence that compares the two tomatoes. For example, "This tomato is larger than that tomato."
 6. Next, tell the student to trade their two tomatoes with a student that sits to the right and state another sentence that compares the two new tomatoes. For example, "These two tomatoes are smaller than the first tomatoes I held in my hands."
 7. Ask the students to smell the tomatoes and state a sentence that describes what they smell.
 8. Refer back to the *KWHL Chart* and have students voluntarily add information to the third column. For example, in column three a student may respond by saying, "I can learn more about tomatoes by looking at them closely."
 9. Using the [Tomato Life Cycle](#), have each student cut out the pictures of the tomato plant during different stages in its life.
 10. Have the students place the pictures in what they think is the correct order.
 11. Ask the students to glue the pictures on their paper and write their predictions under each one.
 12. Plant 8-10 tomato seeds (from a purchased packet-the seeds from a fresh tomato will not grow well) and watch the seeds develop into plants. It is helpful to keep a moist paper towel over the surface of your soil until the seeds sprout. The seeds will take 7-13 days to sprout.
 13. Have the students draw a picture or write down their observations from each day. They can compare their sequencing hypotheses with what actually happens to the seeds that you planted.
 14. Discuss the life cycle of the tomato from what they observed.
 15. Using the glued pictures and their drawings from the observations, have the students create a proper sequence of the tomato life cycle.
 16. Refer back to the *KWHL Chart* and have students voluntarily add information to the fourth column. For example, in column four a student may respond by saying, "I learned the correct steps of the tomato life cycle from planting a tomato seed in the classroom."

Extension Activities:

- Visit the [Interactive Map Project](#) website and show the [Beef Cow Inventory Map](#). Identify the top beef producing states and then find where your state ranks in beef cattle inventory.
- Read the [Beef eReader](#) as a class or on digital devices. You may also print student copies of

the [Beef Reader](#) for each student or group of students to read.

- Play the My American Farm interactive game [The Steaks Are High](#).
- Invite a tomato farmer to your classroom. Have them discuss tomato farming.
- Make homemade tomato sauce with your students. Have each student contribute one tomato to the sauce, measure the sauce and finally, enjoy it over noodles. Have the students predict how many cups of sauce the tomatoes will produce.
- Have a local fast food restaurant donate one packet of ketchup to each of your students. Discuss the sequence of events that had to occur to make the ketchup. Enjoy the ketchup on sandwiches.
- View the [Tomato: How Does it Grow?](#) video to learn more about how tomatoes are grown and harvested.

Suggested Companion Resources:

- [Chew It Twice Poster](#)
- [Compliments of Cattle Poster](#)
- [Meat Cut Posters and Fact Cards](#)
- [Utah Agriculture Activity Map](#)
- [Where Does Your Cheeseburger Come From?](#)
- [Beef Cattle PowerPoint](#)
- [Bon a la Beef Videos](#)
- [NMSU Field Trip: Beef](#)
- [Riding the Range on a Utah Cattle Drive](#)
- [The Steaks Are High Online Game](#)
- [Utah Beefscapes](#)
- [Why Can a Cow Eat Grass? Video](#)
- [A True Book: Corn](#)
- [Carlos and the Cornfield](#)
- [Corn](#)
- [Corn in the Story of Agriculture](#)
- [Eating the Plates](#)
- [Crazy About Corn](#)
- [Farming in a Glove \(Corn Seeds\)](#)
- [Get Popping!](#)
- [Popped Secret: The Mysterious Origin of Corn](#)
- [Those Amazing Kernels of Corn!](#)
- [In The Three Sisters Garden](#)
- [Evolution of Corn](#)
- [Eating the Alphabet](#)
- [Fresh-Picked Poetry: A Day at the Farmers' Market](#)
- [Fruit Bowl](#)
- [How Did That Get in My Lunchbox?](#)
- [How Food gets from Farms to Store Shelves](#)
- [The Fruits We Eat](#)
- [The Life of a Potato](#)
- [Try It! How Frieda Caplan Changed the Way We Eat](#)
- [Who Grew My Soup?](#)
- [Dig In! Posters](#)
- [MyPlate Activity Poster](#)
- [Plant Part Chart](#)

- [What is a Fruit? What is a Vegetable? Bulletin Boards](#)
- [How Does it Grow? Video Series](#)
- [MyPlate](#)
- [Producepedia](#)

Sources/Credits:

1. Heos, Bridget. *So You Want To Grow A Taco?*, Amicus, 2016.
2. Oregon, Utah, and Illinois Ag in the Classroom
3. Utah Ag in the Classroom
4. Minnesota Ag in the Classroom

Suggested SC Standards Met:

English/Language Arts:

- K.RI.5.1 With guidance and support, ask and answer who, what, when, where, why, and how questions about a text; refer to key details to make inferences and draw conclusions in texts heard or read.
- K.RI.5.2 With guidance and support, ask and answer questions to make predictions using prior knowledge, pictures, illustrations, title, and information about author and illustrator.
- K.RI.6.1 With guidance and support, retell the central idea and identify key details to summarize a text heard, read, or viewed.
- 1.RI.5.1 Ask and answer who, what, when, where, why, and how questions to demonstrate understanding of a text; use key details to make inferences and draw conclusions in texts heard or read.
- 1.RI.5.2 Make predictions using prior knowledge, pictures, illustrations, title, and information about author and illustrator.
- 1.RI.6.1 Retell the central idea and key details to summarize a text heard, read, or viewed.
- 2.RI.5.1 Ask and answer literal and inferential questions to demonstrate understanding of a text; use specific details to make inferences and draw conclusions in texts heard or read.
- 2.RI.5.2 Make predictions before and during reading; confirm or modify thinking.
- 2.RI.6.1 Retell the central idea and key details from multi-paragraph texts; summarize the text by stating the topic of each paragraph heard, read, or viewed.
- 2.RI.7.1 Compare and contrast topics, ideas, or concepts across texts in a thematic, author, or genre study heard, read, or viewed.
- 3.RI.5.1 Ask and answer literal and inferential questions to determine meaning; refer explicitly to the text to support inferences and conclusions.
- 3.RI.6.1 Summarize multi-paragraph texts using key details to support the central idea.
- 3.RI.7.1 Compare and contrast diverse texts on the same topic, idea, or concept.

Science (2021 standards):

- K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.
- K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
- 2-LS2-1. Plan and conduct an investigation to determine what plants need to grow.
- 2-LS4-1. Make observations of plants and animals to compare patterns of diversity within different habitats.
- 3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment
- 3-ESS2-2. Obtain and combine information to describe climate patterns in different regions of the world.

Topic: Tomatoes

Name: _____ Date: _____

What I know	What I want to learn	How I can learn more	What I have learned

Tomato Trivia

The Tomato Life Cycle

Cut out the pictures and place them in the proper order.

