

TEACHER'S GUIDE

NEBRASKA'S FOOD CONNECTION

NEBRASKA STATE EDUCATION CONTENT STANDARDS CONNECTION

Can support standards aligned to Nebraska Language Arts Standards Adopted in 2021

- LA.4.RI.1 Analyze an individual, event, scientific idea or concept, or steps in a process.
- LA.4.RI.5 Integrate information from multiple informational texts on the same topic in order to demonstrate knowledge of the topic.
- LA.4.RI.6 Identify an author's claim(s) and explain how the author supports the claim in the text.
- LA.4.RI.8 Read and comprehend a wide range of informational texts of appropriate complexity for Grade 4 independently and proficiently.
- LA.4.V.1 Acquire and use grade-level academic vocabulary appropriately.
- LA.4.W.2.a Use prewriting activities and resources to plan, organize, and draft writing.
- LA.4.W.6 Locate and summarize relevant evidence from literary and/or informational text sources to answer questions about a topic.
- La.4.SL.1 Prepare for and participate in structured discussions and collaborations about 4th grade topics and texts.
- LA.4.SL.2.b Convey a perspective with clear reasoning and support.
- LA.4.SL.2.c Identify the purpose and credibility of information being presented.

Can support standards aligned to Nebraska Social Studies Standards adopted in 2019

- SS.4.2.3.a Give examples of human, natural, capital, and entrepreneurial resources used in making goods and services in Nebraska and the United States.
- SS.4.2.4.a Compare Nebraska with different regions and the goods and services each region produces.
- SS.4.2.4.b Discuss how technology has affected the specialization of Nebraska's economy and surrounding states.
- SS.4.3.1.c Determine why things are located where they are in Nebraska.

AGMAG INTEGRATION IDEAS

READING CENTER IDEAS & RESOURCES FOR *AGMAG*

Sequence of Events

Students can identify a series of events or steps in a process using the “Sequence of Events” handout. Have students read content and then summarize the process by writing words/sentences or drawing pictures on the handout. Pages 2 and 4-5 highlight specific processes that will work well with this handout.

In My Opinion

As students are reading content, have them utilize the “In My Opinion” handout. This encourages students to identify the topic, form an opinion, and come up with solid reasons to support their opinion. This can be used with pages 3 and 7 as well as other pages in *AgMag*.

Nebraska Interactive Map

The Nebraska Interactive Map is a place for students to learn, explore, and discover information. There are maps for geographical, agricultural, economic, environmental, and historical data and information. There are even teacher resources on how to utilize the maps and include ready-made activities. Many maps and activities complement *AgMag* and will be highlighted throughout the Teacher’s Guide. The Nebraska Interactive Map can be used in other parts of your classroom too!

NEBRASKA’S FOOD CONNECTION - PAGE 1

- Prior to distributing *AgMag*, have students do “What We Know!”
 - Have 8-10 food items at the front of the room—include fresh produce and packaged food. (If you don’t want to have actual food items, another option is to use pictures of food.)
 - Sample list: bread, box of cereal, milk, cheese, granola bar, bacon, hamburger, pasta, orange, apple, potato, beans, box of crackers, corn, green beans, peas, etc.
 - Have students work with a partner or group of three. Provide the “What We Know” handout to each student. Review instructions and have students complete the worksheet in four minutes.
 - When complete, have groups share with the entire class. Lead class discussion around similarities and differences.
 - Explain to students that the food we get to eat from the grocery store comes directly from agriculture. We live in Nebraska where our #1 industry is agriculture and we take pride in producing food for our state, nation, and the world!

agMAG

CONNECTING YOU TO NEBRASKA AGRICULTURE

Issue 5

- Distribute *AgMag* to each student. Individually or as a class, have students read page 1 and complete the activity.
 - Answers:
 - Corn States: Iowa, Illinois, Nebraska
 - Dairy States: California, Wisconsin, New York
 - Fruit States: Florida, California, Arizona
 - Vegetable States: California, Arizona, Florida
 - Beef States: Texas, Nebraska, Kansas
 - Pork States: Iowa, Illinois, Minnesota
- Nebraska Interactive Map
 - Use the link to access maps that include information on the following agricultural products included on page 1: Beef (cattle), cheese, citrus, corn, dairy cows, hogs, milk, oats, wheat.
www.nefbmap.org
 - Activities using Nebraska Interactive Map
 - *Includes worksheets and Teacher's Guide
 - Compare Nebraska's Corn Production
 - Rounding Up Beef
www.nefbmap.org/resources.php

FROM THE FARM TO YOUR TABLE - PAGE 2

- Before students read page 2, have them brainstorm individually, or in small groups, the steps it takes for bread to get to the shelf at the grocery store. Use a blank piece of paper or other writing surface. Students can use words/sentences OR draw pictures/images. Have students share their knowledge/predictions.
 - Explain there are a lot of steps and processes for food to get from the farmer's field to our table.
 - As a class, read page 2, "From the Farm to Your Table."
 - Compare and contrast the predictions/brainstorming to the actual steps and processes.
 - Have the students complete the "Sequence of Events" worksheet. Work with a partner or in group of three and have them summarize what they learned on page 2. Challenge them to complete the worksheet **without** referencing the content on page 2!
 - If time allows, have students research another Nebraska commodity and the steps it goes through to get from the farm to our table. Examples could include: corn, beef, pigs, dry edible beans, soybeans, etc.
- For additional information on wheat and its production in Nebraska, check out the Nebraska Wheat

Board's "The Story of Wheat for Kids." It contains more background information, vocabulary words, and a variety of activities for students to complete.

Download the pdf at: nebraskawheat.com/wp-content/uploads/2014/01/StoryOfWheat.pdf

SOYBEANS-PROVIDING PROTEIN FOR OUR PROTEIN - PAGE 3

- Have students read content on page 3 and answer the two questions at the bottom of the page. As a class, discuss what the "big ideas" are and what additional details each student identified.
 - Students get in small groups or with partners and share their responses.
 - As a class, review answers together:
 - **What is the connection between soybeans, pigs, and how we get protein?** Possible responses could include: Soybeans have a high amount of protein. Soybean meal is one of the primary components of nutrition for pigs. When pigs are processed into pork products (pork chops, ham, bacon, etc.) and we eat them, we get protein to fuel our bodies.
 - **What reasons support your thoughts?** Facts listed: soybeans provide protein/cup has 55 grams; soybean meal is one of the most common ingredients in pigs diet; pork is consumed by more people world-wide than any other meat.
- Alternative activity: hand out copies of "In My Opinion" worksheet. In groups/partners, students should complete the sections based on content on page 3. Also have students answer the questions at the bottom of page 3.
 - Discuss and share what it means to have an opinion: *a view or judgment formed about something, not necessarily based on fact or knowledge.*
 - What is the difference between opinion and fact? *Thing that is known or proven to be true.*
 - Based on the information you read and the definitions, what on page 3 is a fact and what (if anything) is an opinion?
 - Have class discuss and share responses.
- Digging Deeper
 - As a class, or in small groups, research other uses of soybeans. Check out the following resources:

Soybeans A-Z Poster available from Nebraska Farm Bureau Foundation:
www.nefbfoundation.org/educators/teacher-resources/supplemental-materials

Nebraska Soybean Board Educator Resources:
nebraskasoybeans.org/education
- Nebraska Interactive Map

- Use the link to access the student activity with teacher resources called “Livestock and Soybean Production” www.nefbmap.org/resources.php

SUGAR SHOCKER - PAGES 4 & 5

- Students do “Question Creation”—they will generate and answer questions to comprehend the text.
 - Prepare sets of the Question Word Cards (template found at end of Teacher’s Guide—print and cut into sets) enough for one set per 3-4 students and provide approximately 14 index cards or small pieces of paper to write questions.
 - Divide students into groups of 3-4. Provide one set of Question Word Cards they should place face down between them.
 - Have students turn to pages 4-5 in *AgMag*. Explain to students they should read the introduction section to Sugar Shocker and “How Sugar Beets are Processed” independently.
 - After reading content, explain that students will each select one card from Question Word Cards and read it aloud (i.e. When). Each student will then write one question and answer (on index card or small piece of paper) using the word on the card and based on the content they just read. *For example: if a student drew “when” card, their question could be, “When are beets washed?” Answer: after harvest.*
 - Have students place their written questions in a new stack in front of them or in a small container. Continue another 2-3 rounds until all cards have been used and there are 12 questions written in each group.
 - Next, have students shuffle questions or shake them in a container. In each group, have each student draw a question and see who in their group can answer the fastest. Continue until all questions are asked/answered.
 - For the remaining content, “How Sugar Beets Are Processed” switch student groups and repeat the process of reading, drawing cards, and writing questions. When complete, do question/answer as an entire class and have groups “compete” against each other to see who can answer the most questions.
- As a class or as individuals/small groups, have students complete the Digging Deeper questions.
 - *Digging Deeper:*
 - *What other states produce sugar beets?* Answers could include: North Dakota, Minnesota, Idaho, California, Michigan, Wyoming, Montana, Colorado, Texas.
 - *What are four types of sugar produced from Nebraska sugar beets?* Answers: granulated sugar, light brown sugar, dark brown sugar, and powdered sugar.
 - *What animals eat sugar beets or sugar beet by-products?* Answers: beef cattle, dairy cows, goats, and sheep (ruminants).

- Alternative Activity: have students read all content and summarize the sugar beet growth and processing steps using the “Sequence of Events” handout. Students work independently or in partners/triads. When complete, have other students/groups trade “Sequence of Events” worksheets and check work to see if it matches the flow in the content on pages 4-5.
- Nebraska Interactive Map
 - Use the link to access the map about sugar beets.
www.nefbmap.org/map.php.
 - Click on “Maps” on left column and then click Agricultural. Scroll down to sugar beets and students can compare Nebraska to the United States in sugar beet production.

THE FACTS ABOUT NUTRITION-IT’S ON THE LABEL - PAGE 6

- Have students independently read content and complete the questions under “The Facts About Nutrition.” Possible answers include:
 - Three specific foods that have carbs: bread, cereals, spaghetti (and other pasta), rice, cookies/cakes, soda/pop, potatoes, oatmeal, bananas.
 - Two favorite foods high in protein? *Answers will vary!*
 - What vitamins are in your favorite foods? *Answers will vary!*
 - When complete, have class share and lead discussion on different types of food students like and listed!
- Pose the question: What are products made from milk?
 - Have students brainstorm list.
 - From the list, identify cheese and ask follow-up questions of “what do we know about cheese?”
Examples might include: made from milk, lots of different kinds, eat it on different foods, etc. AND “How is cheese packaged in the store when we buy it? Examples might be: in slices, in chunks, shredded, etc.
 - Ask students if they know what is the SAME on all packages and types of cheese. *Answer: there is a food label!*
 - Explain that all food products contain a food label—ask students to predict what is included on a food label. *Examples might include: nutrition, calories, number of servings, etc.*
 - As a class or independently/small groups, have students read and complete the questions under “It’s On the Label.”
 - Answers:
 - 1. A typical sandwich might have how many servings of cheese? *Answer: 1 slice (some may say 2 slices!)*
 - 2. If you ate two servings, how many calories would you consume? *Answer: 120 calories*

- 3. You consumed 12 grams of fat. How many slices of cheese did you eat? *Answer: 3*
- 4. After studying the cheese label, is cheese a healthy item to eat? Why or why not? *Answer: it is healthy for you! A good source of dairy and protein as well as vitamins and minerals.*
- Other Resources
 - Check out the “Cool Facts for Kids on Nutrition Labels”—handout (pdf) from FDA: www.fda.gov/media/89325/download
 - Also from FDA: “Your Food is Trying to Tell You Something” video (1:55) www.youtube.com/watch?v=RxjgPwrVFXQ
 - Video (17:45) from SciShowKids www.youtube.com/watch?v=OMRX_G-rNaY
 - KidsHealth: “Figuring Out Food Labels” kidshealth.org/en/kids/labels.html

THE ABC’S OF GMOs: WHAT DOES IT ALL MEAN? - PAGE 7

- Write/project the following common acronyms (and/or others!) without the answers on a surface and keep hidden from class:
 - IDK (I Don’t Know), LOL (Laugh Out Loud), TTYL (Talk To You Later), ASAP (As Soon As Possible), POTUS (President Of The United States), DIY (Do It Yourself), SUV (Sports Utility Vehicle), BRB (Be Right Back), GMO (Genetically Modified Organism).
 - Ask class to define what an acronym is: *an abbreviation formed from the initial letters of other words.*
 - Explain we will be having a competition to see who knows the words that form acronyms.
 - With a partner, have students write down the correct responses as quickly as possible when you reveal the list. Go over correct responses as a class.
 - Pose the question: Which of these acronyms has to do with agriculture? GMO! Ask if students know what GMO stands for. Response: *Genetically Modified Organisms.*
 - Explain there is a lot in the news, online, and even on food and product labels regarding GMOs. It is hard to figure out what the facts are regarding GMOs.
 - We will explore the ABC’s of GMOs. Have students read “The What” and “The ABC’s of GMOs” sections independently or as a class.
 - Ask for student questions/thoughts about the content. Lead discussion around the questions and ideas.
 - Introduce concept of MYTHS and FACTS. Have students read and complete the section.
 - As a class, go over the correct responses: (*From gmoanswers.com*)
 - There are dozens of GMO crops including strawberries, bananas, and wheat. There is even GMO water and GMO salt! **MYTH**
Rationale: There are 10 genetically modified crops commercially available today: alfalfa, apples, canola, corn (field and sweet), cotton, papaya, potatoes, soybeans, squash, and sugar beets.

The majority of these crops, like alfalfa, field corn, and soy are actually used for livestock feed. Other uses for these crops include common food ingredients, such as sugar, canola oil, corn starch, and soy lecithin. You may find only a few of these in your produce section: rainbow papaya, summer squash, sweet corn, potatoes, and apples.

*You may also see non-GMO water and salt, but here's the catch: **it's not possible for either to be a GMO in the first place!** Although many products aren't among the 10 commercially available GMO crops sold in the U.S., you may still see a certified GMO-free label even though there's no GMO counterpart.*

- GMOs contributed to reducing the cost of food. **FACT**

Rationale: Food prices are affected by a number of factors, including commodity prices, and by other costs, such as wages, and transportation, in addition to losses due to weather, pests, or disease. For example, foods that have to be shipped or hauled long distances will be affected when the cost of fuel rises.

GMO crops have helped to increase the supply of corn and soybeans, so the rise in food prices is lower than the case if GMO crops did not exist. With lower crop yields without GMOs, corn prices would increase as much as 28 percent and soybeans as much as 22 percent, according to a study.

- If livestock eat GMO grain, there are GMOs in meat, milk, and eggs. **MYTH**

Rationale: GMOs have never been detected in milk, meat, or eggs derived from animals fed GMO feed.

It has been estimated that over 70 percent of harvested GMO crops are fed to food producing animals, making the world's livestock populations the largest consumers of the current generation of GMO crops. However, GMOs have never been detected in food derived from animals fed GMO crops.

- GMOs allow farmers to preserve land and do more with less resources to produce the food we eat. **FACT**

Rationale: GMOs in agriculture can preserve biodiversity, increase productivity, reduce soil erosion, conserve water, help improve air quality, and lead to fewer pesticide applications!

- Additional Resources

- For a comprehensive look at GMOs, including research and resources, check out gmoanswers.com

You can search for specific information and even submit individual questions.

FOOD SAFETY—WHAT CAN I DO? - PAGE 8

- Ask students to raise their hand if they cook and prepare meals for family and friends. Ask students to share some of the steps or processes they use when working in the kitchen. *Responses might include: wear an apron, wash and cut food, mix ingredients, wash hands, etc.*
- Explain that the food we get at the grocery store is safely raised and transported there for us. It is up to us to follow food safety guidelines as we prepare it to eat!
- Have students read the content in “Food Safety—What Can I Do?” When complete, ask students to summarize The Core Four and what that means.
- Have students complete the section “The Core Four and Me!”
 - Two recommendations that students always do: *Answers will vary.*
- Provide students the recipe for Taco Cheeseburger (found at end of Teacher’s Guide) and have students plan how they will use The Core Four to prepare the recipe. Encourage students to take it home and make the recipe with family or friends!
- For more information on The Core Four, check out this website:
www.fightbac.org/food-safety-basics/the-core-four-practices.
- Career Connection
 - Have students read the Career Connection about Registered Dietician Amber Pankonin and write one question they have after reading the content.
 - Students share the questions and discuss/answer as a class. If needed, start a list of questions and spend time researching information to find the answers.
 - Have students research other careers that connect agriculture, health, food safety, etc. *Possible careers could include: meat/food inspectors, veterinarian, flavor technician, etc.*
- For other resources and activities on healthy eating habits, check out www.choosemyplate.gov.

Nebraska Agriculture in the Classroom is a program of the Nebraska Farm Bureau Foundation whose mission is to engage youth, educators, and the general public to promote an understanding of the vital importance of agriculture in the lives of all Nebraskans. To learn more or access an electronic version of this publication, visit us at www.nefbfoundation.org or contact the Nebraska Farm Bureau Foundation.

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THE CORE FOUR PRACTICE!

Read the recipe for Taco Cheeseburger.

1. Identify all the places to use The Core Four food safety practices in preparation
2. Put it into practice—make the recipe with a trusted adult! Yum!

TACO CHEESEBURGER

(from Kids Recipes on foodnetwork.com)

INGREDIENTS:

- 3 tablespoons chili powder
- ½ teaspoon ground cumin
- Kosher salt
- 1 ½ pounds ground beef
- 2 tablespoons vegetable oil
- 4 slices of American cheese (halved)
- 8 soft or hard corn tortillas
- 1 cup shredded iceberg lettuce
- 1 tomato, halved and thinly sliced
- ¼ cup salsa or taco sauce
- Sour cream, for serving



DIRECTIONS:

1. Preheat oven to 400 degrees F to warm tortillas.
2. In a small bowl, combine the chili powder, cumin and 1 teaspoon salt. Stir until well mixed.
3. Divide the ground beef into 4 equal sections, about 6 ounces each. Gently form the meat into thick disks, then place on a piece of wax paper. Press the patties until they're about ½-inch thick and 6 inches in diameter. Sprinkle each patty on both sides with the spice mix, using about ½ tablespoon per burger. Cut each patty in half, giving you 8 pieces.
4. Heat a 10 -inch cast-iron skillet over medium heat for 3 minutes. When the pan is hot, add 1 tablespoon of the oil and place 4 of the patties into the pan. Cook until the meat is browned half of the way up the side, 2 ½ to 3 minutes. Flip and cook on the other side. Place a half-slice of cheese (torn into a few pieces so it fits on the burger) to cover the patty and melt over the top. Cook until the patty is well-browned on the bottom, another 2 ½ minutes. Remove the burgers from the pan tented with foil to allow the juices to redistribute, at least 5 minutes. Scrape out any crusty bits on the bottom of the pan and pour off the extra grease. Add the remaining tablespoon of oil and repeat the process for the remaining 4 patties.
5. Place the taco shells on a sheet pan to warm in the oven for about 5 minutes. If using soft tacos, wrap the stack of 8 in foil and warm for 5 minutes.
6. Line the center of the taco shell with some lettuce and insert the burger. Slide 2 tomato slices alongside the patties and top with 1 teaspoon salsa and some sour cream, and serve.

SEQUENCE OF EVENTS

ARTICLE: _____

FIRST

SECOND

THEN

NEXT

FINALLY

IN MY OPINION

ARTICLE: _____

WHAT'S THE TOPIC?

MY OPINION?

REASONS TO SUPPORT MY OPINION

1.

2.

3.

LIST

IDENTIFY

DEFINE

EXPLAIN

SUMMARIZE

USE

WHEN

HOW

WHY

WHO

WHAT

WHERE