Farm to Table

Suggested Grade Level: 3-5

Time: 2 20-minute lessons, with extension activities

Subject: Science, Biology, Energy and Dynamics, English Language Arts, Informational Reading, Speaking and Listening, Social Studies, Culture and Identity, Relationships Between People and Land, Economics, Agriculture, Farm to Table, Nutrition

Overview: In this interactive activity, students use colorful prints to create a “farm web” that shows how agriculture connects to the food, clothing, fuel, and other products they use every day. The lesson helps students clearly understand all that agriculture includes while engaging science, social studies, and language arts. Extension activities include a word web and books about where our food comes from.

Objectives:

1. Describe the origins of several commonly used foods and products.
2. Explain how farmers supply the world with food, fiber, and fuel.

Background Information:

In recent years, the Farm to Fork or Farm to Table movement has gained momentum, particularly since the COVID-19 pandemic emerged. Consumers want to know where their food comes from, its safety, and its nutritional value. The cost of food is increasing due to rising production and transportation costs. The USDA's March Food Price Outlook for 2022 predicted a 4.5% to 5% rise in food prices over the next year. The Consumer Price Index (CPI) for all food showed an increase of 6.5% to 7.5% in 2022 vs 2021. This is the most significant rise in food prices since 1981. Additionally, restaurant prices increased from 6% to 7% in 2022 (Sweitzer). The shorter the distance from production to consumer, the less produce will cost and the fresher it will be. Consumers are also concerned about their health and nutrition. Many people prefer organic products that are produced without the use of pesticides or fungicides. Therefore, farmer's markets and farm-to-table restaurants are becoming more popular. The number of farmer's markets has grown exponentially over the years. In 1994, there were just 1,755 farmers' markets in the U.S. In 2004, there were 3,706. In 2014, there were about 8,284 farmers' markets, a number that continues to grow yearly (Vogel). Farmer's markets allow small farmers and businesses to sell their products. They help meet the growing demand for locally produced food. Obtaining food from a farmer's market will provide fresher food for a family at a lower cost. It is a way to support local farmers and decrease the ecological footprint. The Kansas Department of Agriculture

Food Safety and Lodging Program employs local inspectors to complete random food inspections at farmers' markets. They check for proper licensing, temperature control, and labeling.

Kansas Industry Information:

Local, made-in-Kansas products can be found on The Land of Kansas and Shop Kansas websites. The products sold directly to consumers must be produced and processed in accordance with governmental rules, regulations, and guidelines. Kansas provides and enforces these guidelines to ensure the product is safe for consumers.

Fast Facts:

1. Kansas ranks #6 in beef cattle (National Agricultural Kansas). From farm to plate, Kansas farmers produce beef for global consumption. Beef cattle supply high-quality protein and key nutrients to the human diet. Kansas farmers are responsible stewards of the animals in their care, ensuring they produce the best possible food for human consumption. Producers are obligated to supply the highest-quality meat, as beef is a vital food source for many people.
2. Kansas ranks #6 in animal fats (Kansas Department 2021). Meat isn't the only product that comes from a cow or other beef animal. The fat from beef is used to make many items, including cosmetics, detergents, pet food, livestock feed, insecticides, crayons, soap, paint, antifreeze, floor wax, perfume, plastics, shoe polish, brake fluid, linoleum, candles, and shoe polish.
3. Kansas ranks #7 in agriculture exports (Kansas Department Legislature). Kansas farmers and ranchers take their job of feeding the world seriously. Kansas commodities are exported to other parts of the world. Cattle and calves, corn, wheat, sorghum, and soybeans are examples of commodities commonly exported. Agriculture in Kansas depends on exports!
4. Kansas ranks first in winter wheat production (National Agricultural Kansas). Kansas is the number 1 wheat-producing state, and we export wheat to feed the world. From breads to crackers and numerous other goods, people depend on wheat for grain in their diet.
5. Kansas ranks #5 in Ethanol (U.S.). Ethanol is a renewable fuel produced from carbohydrates found in crops such as corn. Using ethanol in engines burns cleaner air and conserves nonrenewable resources. Kansas-produced ethanol starts with Kansas-grown corn! According to the Energy Information Administration, there are 12 ethanol plants in Kansas.
6. Kansas ranks #8 in corn for grain production (National Agricultural Kansas). Corn is a renewable resource used to feed people and livestock. It can also be used to produce ethanol, a fuel that helps keep our air healthier and our environment cleaner.
7. Kansas ranks #13 in soybeans (National Agricultural Kansas). Soybeans are a renewable resource. They are used to produce food, vegetable oil, feed for pigs, poultry, and cattle, as well as soy-based tires, concrete sealant, engine oil, and biodiesel, a renewable fuel that is cleaner for the environment than gasoline.

8. Our state ranks first in the nation in grain sorghum production (National Agricultural Kansas). Grain sorghum is most commonly used to produce animal feed and gluten-free food.
9. Kansas is ranked #14 in cotton production (National Agricultural Kansas). Not all crops are food sources. According to Kansas Farm Food Connection, last year, Kansas farmers produced over 164 million pounds of cotton (Cotton). That is enough cotton to make 109,333,333 pairs of jeans, considering it takes 1.5 pounds to make one pair of jeans. Some Kansas farmers grow cotton to help conserve water because it is more drought-resistant than row crops.
10. Kansas is ranked #7 in dairy products (Kansas Department 2021). How does milk get from the farm to the plate? Milk comes from healthy, well-fed cows raised on dairy farms. It is also used to produce dairy products such as cheese, cottage cheese, yogurt, and ice cream. Milk and dairy products are delivered to schools, restaurants, and grocery stores on refrigerated trucks.
11. Kansas is ranked #11 in pork and pork products (National Agricultural Kansas).
12. Kansas ranks 11th nationwide in hog inventory, accounting for approximately 2.7 percent of the nation's total. According to the National Agricultural Statistics Service, as of the end of 2023, Kansas had around 2 million head of hogs (National Agricultural Kansas). Pork producers feed millions of people in our state and around the world. Pork by-products are used to make items you use daily, including medicines, gelatin, candy, crayons, chalk, glue, toothpaste, marshmallows, art brushes, floor wax, weed killer, plastics, matches, putty, insulation, glass, luggage, and buttons. Doctors even use pig heart valves in humans, and pig skin has been used to treat people who have been badly burned.
13. Kansas has tree farms! According to the Kansas Forest Service, "Many people are surprised to learn that Kansas timber harvests contribute to the state's economy. Though it is a small component of the overall economy (less than 1% of total manufacturing receipts), it is certainly important," (Kansas). Most Kansas trees are converted into furniture, gun stocks, veneer, wooden pallets, dunnage, and other wood-derived products. Hammons Black Walnuts, a company that purchases, shells, and sells black walnuts in the U.S. (including at seven Kansas locations), indicates walnut shells are ground into powder and used to make products like abrasive cleaners, water filtration systems, cosmetics, soap, dental cleaners, skin exfoliates, and denture polishers. It is also used in making filler for dynamite, as an adhesive for plywood and particle board, and on the seals of oil well drilling rigs (Hammons).

Materials:

- Lesson Plan from National Agriculture in the Classroom's Curriculum Matrix: https://agclassroom.org/matrix/lesson/298/
- Color pictures, cut out (and preferably laminate).
  Print one set for each group of students that will be working together.
- 30 pieces of yarn, 6-8 inches long

- If you want pre-printed cards with string already cut, you can order the kit here: https://agclassroomstore.com/my-farm-web/
- Books about where food comes from, farm to table, etc. Several suggestions are listed in the "Supporting Resources" section below.

Instructional Format:

1. Review background information.
2. Conduct engagement exercise.
3. Complete the activity.
4. Explore options for extension activities and/or books.
5. Optional: Conduct assessment exercise.

Engagement:

Ask the students, "What kinds of things do you use daily?" (*You should get answers like food, clothes, books, paper, computers, balls, water, TV, etc.*) Discuss with the students that the items we use daily are either grown or mined (with a few exceptions, like the sun!). If the item is explicitly grown for people, it is a product of agriculture. Ask the students, "Where do we get the things we use daily?" Most students will say, "At the grocery store!" Some might say, "a factory." Tell the students that the store is a distribution center where we buy things and that the factory is a place where "raw" ingredients, grown for us (wheat for bread) or provided by nature (petroleum for fuel or plastic), are put together to make a product that ends up in the store. Ask your students, "What is agriculture?" Have the students offer their answers and use the information in the *Background Information, Kansas Connections,* and *Vocabulary* sections of this lesson to define "agriculture." Help students recognize their connection to agriculture by understanding that food, fabric, flowers, and forestry products (such as wood) all originate from agricultural sources.

Procedures:

Activity

1. To prepare, print and cut out the Farm Web Graphics at the end of this lesson. The 30 four-inch color images can be laminated for this activity. You may also purchase the My Farm Web Kit https://agclassroomstore.com/my-farm-web/ as referenced above. This activity can be conducted indoors or outdoors, in any location with approximately 10 square feet of floor space.
2. Ask the students, "Where does agriculture begin?" (Answer: *On a farm.*)
3. Guide the students to understand that agriculture begins on a farm and that there are all kinds of farms. Cattle ranches for beef and leather; dairy farms for milk and all the products made from milk; orchards that grow apples to make juice and apple pies; pig farms for pepperoni, bacon, and ham; grain farms that grow corn for fuel or corn syrup for soda, and wheat for bread; cotton farms for blue jeans; and tree farms for paper and landscaping. There are different kinds of farms for nearly every type of product. Farms specialize in what they grow based on their location (climate and soil), and farmers choose only a few crops because

the kind of equipment used to plant and harvest each crop is very specific and expensive.

4. Inform students that they will create a "farm web" to help them understand agriculture and where the items they use every day come from.
5. Have students move to the area where they will build the farm web.
6. Place the farm picture in the center of the floor. Mix up the remaining pictures and either place them in a pile or pass one to each student.
7. Ask the students, "Which pictures will go closest to the farm picture?" (*The pictures of plants or animals grown or raised on a farm should be placed the closest.*)
8. Students who have products made from farm-raised ingredients should post pictures of their items on the web after the items are sold.
9. As each picture is placed, ask the students to use a linking phrase, such as "*dairy cows make milk"* (the word "*make"* is the linking word), to describe how their items connect to the web. Discuss each new connection as you go.
10. Once all the pictures are in place, review the linking phrases and ask students if they can add any more pictures to the web.
11. To conclude the activity, read aloud one or more of the recommended books (See "Supporting Resources" below) and ask students where the products mentioned in the books would fit into their farm web.

Figure 1: Concept Word Web

1. To ensure students understand concept maps and the content, ask them to create a concept web with words on paper or a whiteboard.
2. Divide the students into six groups. This can be done as a whole class or in 2-3 groups, with each group given 2-3 words. Give each group a sheet of chart paper or disperse them along the whiteboard (draw a large rectangle, the size of the chart paper, on the whiteboard for each group); write one of the words (farm, food, fabric, forestry, flowers, fuel) in the center of each paper or rectangle.
3. Ask students to create a concept map around their group's word by considering products they can associate with it. Give them about 5 minutes.
4. Next, ask them to create linking phrases.
5. Ask each group to share and explain their concept of the web to the class. Then, post the paper maps on the wall.

6. Conclude the instruction by announcing that the students have visually created a definition of agriculture.
7. *Optional:* Read aloud or listen to another book about where food and farm products come from, how they arrive at the store or a table, or how food is grown commercially. Or, ask students to define agriculture using the words "food, fiber, forestry, farm, flowers, fuel."

Vocabulary

- **Agriculture:** the science, art, or practice of cultivating the soil, producing crops, and raising livestock, and, in varying degrees, the preparation and marketing of the resulting products.
- **Fiber:** a thin thread-like part of plants or animals that can be spun into cloth or used to make paper and other products. Examples are cotton, wool, and flax.
- **Fabric:** cloth or other material produced by weaving or knitting fibers.
- **Flower:** the part of a plant that contains reproductive parts and attracts pollinators.
- **Forestry:** the science of caring for or cultivating forests and the management of growing timber.
- **Fuel:** combustible matter used to maintain fire, such as coal, wood, oil, or gas, to create heat or power; an energy source for engines, power plants, or reactors.

Career Information: The farming industry encompasses numerous job opportunities.
Nutritionist: Researches nutrition, reproduction, growth, and development of livestock.
Crop Scouts: Assesses crop performance and problems of crops grown for feeding purposes.
Housing Specialists: Handle the design and ventilation of dairy production buildings, hog operations, chicken dwellings, and other related facilities.
Mechanics: Keep machinery in operating order.
Truck Drivers: Haul produce, animals, equipment, and processed goods from farms to stores
Accountants: Advise the farm on business decisions and financial matters.
Advertisers: Assist in selling the end products to stores and customers.
Food Safety Inspector: Inspects all aspects of food production from the farms, processing plants, and products to ensure safe and healthy products for consumers.
Veterinarians: Study, treat, and control animal injuries and diseases.

Many of these careers require a college degree or vocational training; some, such as veterinary medicine, require advanced degrees.

Assessment: To conclude the Farm Web activity, ask students where the products mentioned in the books would fit into their Farm Web after reading a book, as suggested in the lesson. Assign students to document their meals for one or more days.

Have students explain where each item comes from or what agricultural product it is produced from.

Kansas Standards:

Next Generation Science Standards

3rd Grade
Biological Evolution: Unity and Diversity
3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

4th Grade
From Molecules to Organisms: Structures and Processes
4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
Earth and Human Activity
4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

5th Grade
Energy
5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.
Ecosystems: Interactions, Energy, and Dynamics
5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Language Arts

3rd Grade
Reading: Informational
Key Ideas and Details
RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts or steps in technical procedures in a text, using language that pertains to time, sequence an cause/effect.
Craft and Structure
RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a third grade topic or subject area.
Integration of Knowledge and Ideas
RI.3.7 Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why and how key events occur).
Writing
Speaking and Listening
Comprehension and Collaboration
SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups and teacher-led) with diverse on third grade topics and texts, building on others' ideas and
expressing their own clearly.

4th Grade
Reading: Informational
Key Ideas and Details
RI.4.3 Explain events, procedures, ideas or concepts in a historical, scientific or technical text, including what happened and why, based on specific information in the text.
Craft and Structure

RI.4.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a fourth grade topic or subject area.
Writing
Research to Build and Present Knowledge
W.4.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information and provide a list of sources.
W.4.9 Draw evidence from literary or informational texts to support analysis, reflection and research.
Speaking and Listening
Comprehension and Collaboration
SL.4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups and teacher-led) with diverse partners on fourth grade topics and texts, building on others' ideas and expressing their own clearly.
SL.4.2 Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively and orally.

5th Grade
Reading: Informational
Key Ideas and Details
RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas or concepts in a historical, scientific or technical text based on specific information in the text.
Craft and Structure
RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a fifth grade topic or subject area.
RI.5.6 Analyze multiple accounts of the same event or topic, noting important similarities and differences in the perspective (viewpoint) they represent..
Writing
Research to Build and Present Knowledge
W.5.9 Draw evidence from literary or informational texts to support analysis, reflection and research.
Speaking and Listening
Comprehension and Collaboration
SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups and teacher-led) with diverse partners on fifth grade topics and texts, building on others' ideas and expressing their own clearly.
SL.5.2 Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively and orally.

History, Government, and Social Studies
Standard 3: Societies are shaped by the identities, beliefs, and practices of individuals and groups
3.1 The student will recognize and evaluate how societies are shaped by the identities, beliefs, and practices of individuals and groups.
3.2 The student will analyze context and draw conclusions of how societies are shaped by the identities, beliefs, and practices of individuals and groups.
3.3 The student will investigate and connect how societies are shaped by the identities, beliefs, and practices of individuals and groups with contemporary issues.
3.4 The student will use their understanding of how societies are shaped by the identities, beliefs, and practices of individuals and groups to make a claim or advance a thesis using evidence and argument.
Standard 5: Relationships among people, places, ideas, and environments are dynamic.
5.1 The student will recognize and evaluate dynamic relationships that impact lives in communities, states, and nations.
5.2 The student will analyze the context and draw conclusions about dynamic relationships.
5.3 The student will investigate and connect dynamic relationships to contemporary issues.

5.4 The student will use their understanding of dynamic relationships to make a claim or advance a thesis using evidence and argument.

National Agricultural Literacy Standards:

Plants and Animals for Food, Fiber, and Energy

- Provide examples of specific ways farmers/ranchers meet the needs of animals (T2.3-5 d.)

Science, Technology, Engineering & Mathematics

- Provide examples of science being applied in farming for food, clothing, and shelter products (T4.3-5 d.)

Culture, Society, Economy & Geography

- Discover that there are many jobs in agriculture (T5.3-5 b.)
- Explain the value of agriculture and how it is important in daily life (T5.3-5 d.)

Supporting Resources:

About Farm Animals Booklets https://agliteracy.org/matrix/companion-resources/123/
About Farm Animals Mini Kit https://agliteracy.org/matrix/companion-resources/122/
AgBadging Field Guide Booklet https://agliteracy.org/matrix/companion-resources/1236/
Ag Today Booklet https://agliteracy.org/matrix/companion-resources/829/
Ancient Agriculture Book by Michael and Mary B. Woods
https://agliteracy.org/matrix/companion-resources/185/
Barn Book by Debby Atwell https://agliteracy.org/matrix/companion-resources/186/
Beef Byproducts Poster
https://ksagclassroom.org/supporting-resources/beef-byproducts/
Bread Comes to Life Book by George Levenson
https://agliteracy.org/matrix/companion-resources/174/
Corn Byproducts Poster
https://ksagclassroom.org/supporting-resources/corn-byproducts/
Cotton Byproducts Poster
https://ksagclassroom.org/supporting-resources/cotton-byproducts/
Dairy Byproducts Poster
https://ksagclassroom.org/supporting-resources/dairy-byproducts/
Farm Book by Elisha Cooper https://agliteracy.org/matrix/companion-resources/907/
Fascinating Farms Around the World Website
https://agliteracy.org/matrix/companion-resources/354/
Flowchart Sample Pack https://agliteracy.org/matrix/companion-resources/1402/
Food and Farm Facts Booklet https://agliteracy.org/matrix/companion-resources/22/
Food and Farm Facts eLearning Module Website
https://agliteracy.org/matrix/companion-resources/1353/
George The Farmer Video Series
https://agliteracy.org/matrix/companion-resources/1147/
Harvest Year Book by Chris Peterson
https://agliteracy.org/matrix/companion-resources/98/
Heartland Book by Diane Seibert https://agliteracy.org/matrix/companion-resources/7/
How Did That Get In My Lunchbox? Book by Chris Butterworth
https://agliteracy.org/matrix/companion-resources/194/

How to Make an Apple Pie and See the World Book by Marjorie Priceman
https://agliteracy.org/matrix/companion-resources/343/
My Farm Web Kit https://agliteracy.org/matrix/companion-resources/303/
Pizza Time Bulletin Board https://agliteracy.org/matrix/companion-resources/386/
Right This Very Minute Book by Lisl H. Detlefsen
https://agliteracy.org/matrix/companion-resources/946/
Sorghum Byproducts Poster
https://ksagclassroom.org/supporting-resources/sorghum-byproducts/
Soybean Byproducts Poster
https://ksagclassroom.org/supporting-resources/soybean-byproducts/
Thank a Farmer Book by Maria Gianferrari
https://agliteracy.org/matrix/companion-resources/1273/
The Hundred Year Barn Book by Patricia MacLachlan
https://agliteracy.org/matrix/companion-resources/1158/
The Perfect Barn Book by Sunshine Shanks
https://agliteracy.org/matrix/companion-resources/1000/
The Tree Farmer Book by Chuck Leavell and Nicholas Cravotta
https://agliteracy.org/matrix/companion-resources/81/
The Very Hungry Western Caterpillar Booklet
https://agliteracy.org/matrix/companion-resources/847/
Two Truths and a Lie Activity https://agliteracy.org/matrix/companion-resources/1001/
Wheat Byproducts Poster
https://ksagclassroom.org/supporting-resources/wheat-byproducts/

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References:

Hammons Black Walnuts. (n.d.). Home. Retrieved March 7, 2025, from https://black-walnuts.com/

Kansas Commerce. (n.d.). Agriculture. Retrieved March 7, 2025, from https://www.kansascommerce.gov/industry/agriculture/

Kansas Department of Agriculture. (2022, April 27). 2021 Kansas Agricultural Exports [PDF]. https://content.govdelivery.com/attachments/KSOG/2022/04/27/file_attachments/2142599/International%20Marketing%20and%20Trade%20Statistics%20FINAL%20UPDATED.pdf

Kansas Department of Agriculture, Kansas Legislature. (2025, March 6). Kansas Agriculture Update: Testimony for the House Committee on Appropriations [PDF]. (p. 7). www.kslegislature.gov/li/b2025_26/committees/ctte_h_apprprtns_1/documents/testimony/20250306_01.pdf

Kansas Farm Food Connection. (n.d.). Fun Fact: Cotton in Kansas. Retrieved March 7, 2025, from https://kansasfarmfoodconnection.org/fun-facts/fun-fact-cotton-in-kansas

Kansas Forest Service. (2025, January 10). Forest Product Industry. https://www.kansasforests.org/forest_products/

Morris, V., & Spielmaker, D. (n.d.). My Farm Web (Grades 3-5). National Agriculture in the Classroom. https://agclassroom.org/matrix/lesson/298/

National Agricultural Statistics Service. (2024). 2024 State Agriculture Overview: Kansas. https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=KANSAS

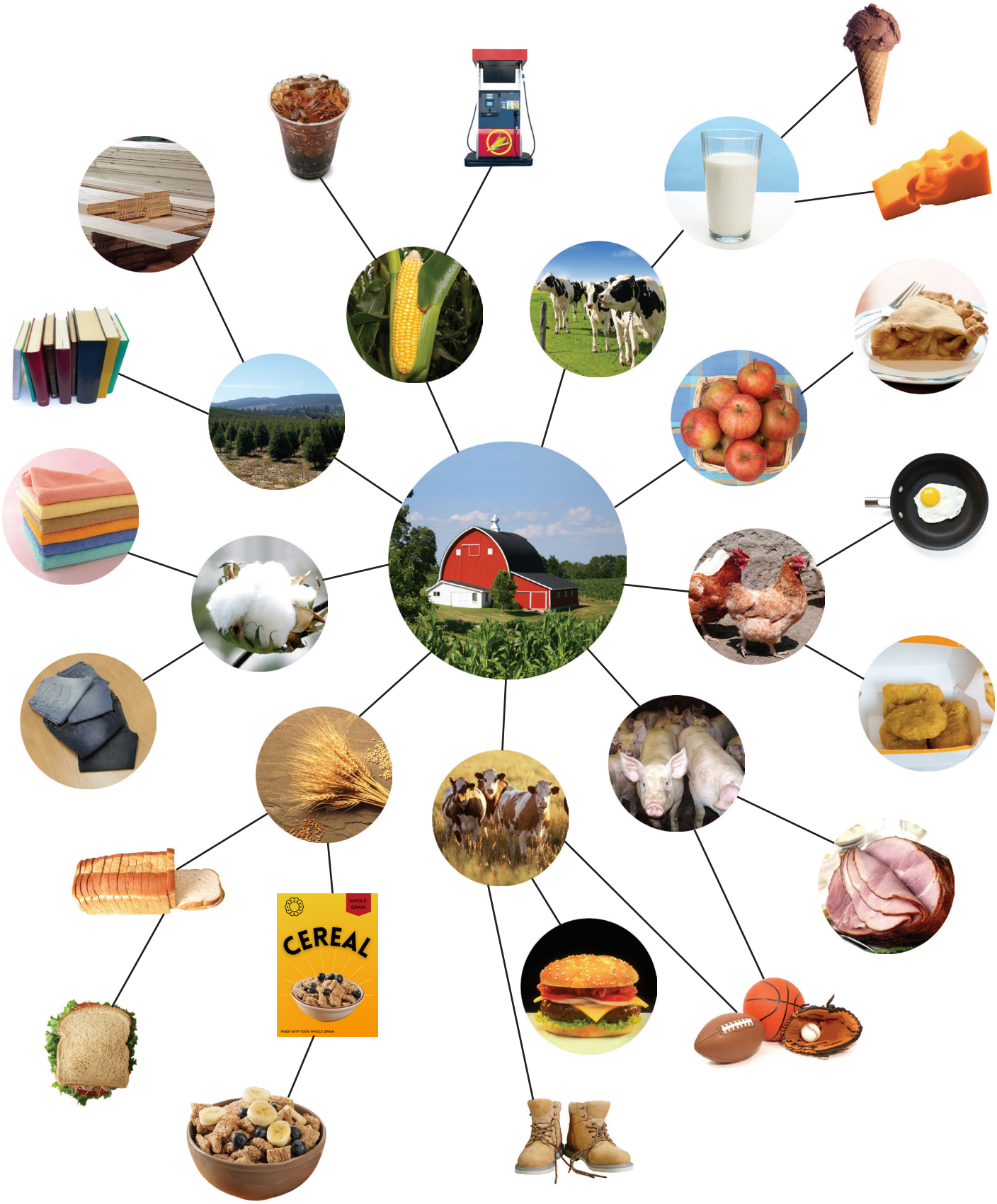
National Agricultural Statistics Service. (2025, May 30). Kansas Rank in U.S. Agriculture [News release]. https://www.nass.usda.gov/Statistics_by_State/Kansas/Publications/Economic_Releases/Rank/2025/KS-rank25.pdf

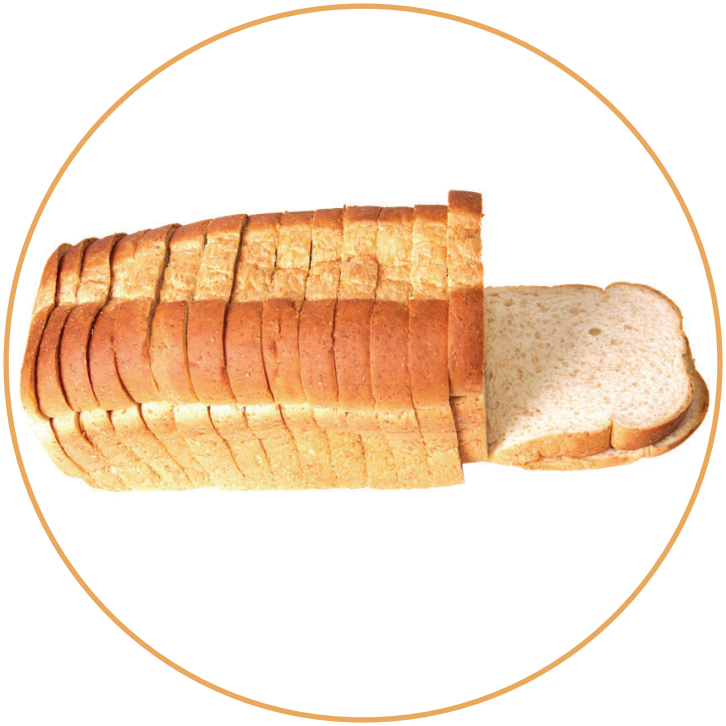
Sweitzer, M., & Davidenko, V. (2025, January 24). Food Price Outlook - Summary Findings. Economic Research Service; United States Department of Agriculture. https://www.ers.usda.gov/data-products/food-price-outlook/summary-findings

U.S. Energy Information Administration. (n.d.). Kansas Profile Overview. Retrieved March 7, 2025, from https://www.eia.gov/state/?sid=KS

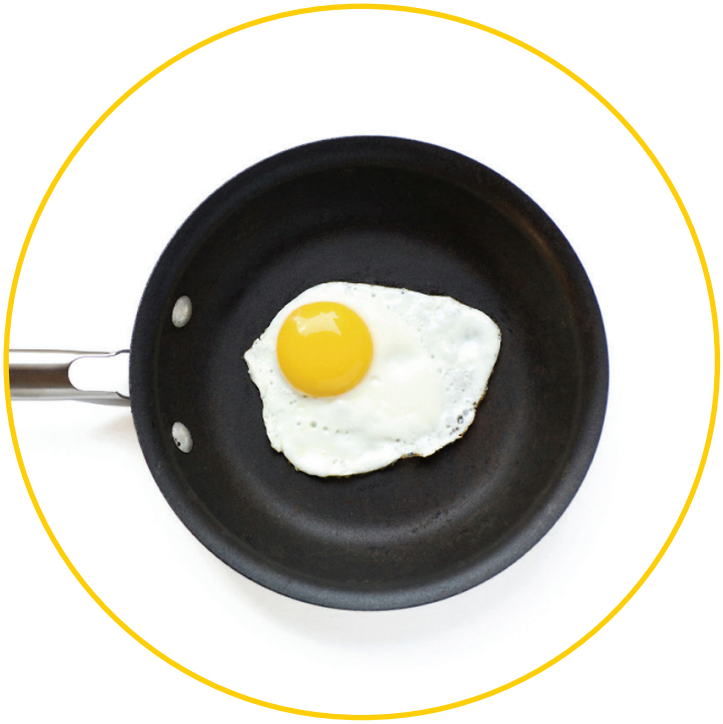
Vogel, S. (2014, August 4). Number of U.S. farmers' markets continues to rise. Economic Research Service; United States Department of Agriculture. https://www.ers.usda.gov/data-products/charts-of-note/chart-detail?chartId=77600

“My Farm Web” Master






WHOLE
GRAIN
CEREAL
MADE WITH 100% WHOLE GRAIN

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