



Wisconsin Ag in the Classroom
Monthly Themes- Links and Lessons
October 2020– Beef and Soybeans



October Themes
Beef and Soybeans



About this series:

The Monthly Theme Lesson Series from Wisconsin Ag in the Classroom is a compilation of resources found on Ag in the Classroom, commodity, and other educational websites, YouTube, and sources.

Each month we will feature an animal and crop and share lesson plans, career information, activities and videos about them.

Thank you to all our Ag in the Classroom partners, commodity groups, American Farm Bureau Foundation for Agriculture, and other sources who help to tell the agricultural story and provide educational resources for our students, teachers and volunteers!

Monthly Themes for the 2020-2021 School Year

Month	Animal	Crop
October	Beef	Soybeans
November	Dairy	Fall Produce
December	Turkeys-Poultry	Cranberries
January	Pork	Christmas trees
February	Dairy Goats	Vegetables
March	Llamas and alpacas	Corn
April	Aquaculture	Maple Syrup
May	Bees	Turf and Horticulture
June	Sheep	Grain Crops
June	Bison and buffalo	Cotton

In this booklet:

Beef - Pages 3 – 18

Soybeans- Pages 19- 34

Beef Resources

National Ag in the Classroom's Curriculum Matrix-

https://www.agclassroom.org/matrix/search_result/?search=beef

[A Tale of Two Burgers: Beef and Plant-based Protein](#)

Students will compare the components of beef and plant-based burgers by determining the production and processing methods of each product; evaluate the ingredients and nutritional differences between beef and plant-based products; and discuss different points of view in the agricultural industry concerning plant-based proteins and traditional beef.

[At Home on the Range \(Grades 3-5\)](#)

Students will learn about rangelands by participating in a hands-on activity of growing their own grass to represent a beef or sheep ranch.

[At Home on the Range \(Grades 6-8\)](#)

Students will learn about rangelands by participating in a hands-on activity to grow their own grass to represent a beef or sheep ranch.

[Beef Basics](#)

Students will explain the importance of the beef cattle industry, including the products cattle produce, the production process from farm to plate, and how cattle can utilize and obtain energy from grass and other forage.

[Beef: Making the Grade](#)

Students will evaluate the USDA grading system for whole cuts of beef and discuss consumer preferences and nutritional differences between grain-finished and grass-finished beef. Students will also distinguish various labels on beef products and discuss reasons for the government's involvement in agricultural production, processing and distribution of food.

[Build-a-Calf Workshop](#)

Students will explore concepts of heredity in beef cattle and identify dominant and recessive traits.

[Carbon Hoofprints: Cows and Climate Change](#)

Students will explore the carbon cycle and evaluate the carbon footprint of beef cattle. Using critical thinking skills, students will use the *Claim, Evidence, and Reasoning* model to determine the effect of cows' methane production on the environment and investigate the extent cattle contribute to climate change.

[Caring for the Land](#)

Students will explain why people have different opinions regarding soil management and identify cause and effect relationships relating to agriculture and the environment.

[Cattle in California History](#)

Students will map the history of cattle migrating to California with early explorers and settlers and describe how cattle have been important to people throughout different times in history.

[Making a Brand for Ourselves the "Cowboy" Way](#)

Students will explore cowboy culture and history and learn about 19th-century Texas cattle trails. Activities include writing cowboy poetry, mapping historic cattle trails, and creating cattle brands.

[Milk or Meat? Beef or Dairy?](#)

Students will identify the differences between beef and dairy cattle and determine the commodities produced by each type of cattle.

[Right This Very Minute](#)

Students will read *Right This Very Minute*—a table-to-farm book about food production and farming—and diagram the path of production for a processed product. Students will study a map to discover where different commodities are grown and write a thank-you letter to farmers in their local community.

[Roll of the Genes](#)

Students will learn about genes and how they affect important traits such as growth, reproduction, disease resistance, and behavior. Students will also discover the responsibilities of an animal geneticist.

[The Cattle Drive and Westward Expansion](#)

Students will gain a greater understanding of the historical context and purpose of the cattle drives that took place in the mid 1880s. Students will be able to explain the cause and effect relationships of life on the frontier including, population growth, and later the invention and use of barbed wire, refrigeration, and railroads.

[The QUEST for the Whole Enchilada](#)

This lesson utilizes a process learning model to recognize how the Columbian Exchange and early Spanish explorers impacted the culture and cuisine of the Southwest United States. Students will participate in a food lab to make enchiladas and learn about the production of each ingredient.

[The Remarkable Ruminant](#)

In this lesson, students will follow the farm to fork process of producing beef, learn how cattle and other ruminants convert grass into nutrient-rich foods such as milk and meat, discover ways cattle recycle food waste, and identify careers in the beef cattle industry.

[Where Did Your Hamburger Come From?](#)

In this lesson students will learn about the variety of agricultural products they consume in a hamburger and will trace the ingredients back to their source. This lesson contains information specifically for California students.

[Where Does It Come From?](#)

Students will explore the connection between geography, climate, and the type of agriculture in an area by reading background information and census data about the agricultural commodities beef, potatoes, apples, wheat, corn, and milk.

Companion Resources (35)

Activity

[Beef Blasters](#)

This activity introduces students to a unique and interesting sequence of events related to the nature of scientific discovery. They will explore how scientific discoveries evolve and often lead to unexpected outcomes. While researchers were trying to develop a method of tenderizing beef, they discovered that the process they were researching also decreased the harmful bacteria in meat by 40-60%. This activity teaches students about this process and how it was developed.

[Lose a Million Bacteria The Game](#)

Based on the popular TV game show, "Who Wants to be a Millionaire?", this activity allows students to put their food safety knowledge to the test. It reinforces safe food handling practices, promotes cooperative learning, encourages class participation, and reviews food safety in a fun, interactive way. On Day 1, students create their own evaluation questions based on what they've learned from the *Dr. X and the Quest for Food Safety* video, activities, and labs. Then, on Day 2, they play the game, using the questions as an evaluation exercise.

[The Very Hungry Western Caterpillar](#)

Based off of Eric Carle's *The Very Hungry Caterpillar*, this caterpillar takes a journey through the Western United States as he eats some of the most popular agriculture commodities in each state. This book can be made individually by students or used as a classroom copy.

Book

[Beef Cattle in the Story of Agriculture](#)

This book teaches about the production of beef from the beginning to the end. You will learn common terminology, breeds of beef cattle, about the life cycle of beef cattle, what they eat, how they grow, and much more.

[Farm Animals](#)

Farm Animals is a 32-page book filled with facts to learn about many types of farms and the animals that live there. The book includes real-life pictures and color illustrations. In addition to the text, each page includes a fun fact. Readers will learn why traditional farm animals such as beef cattle, dairy cattle, goats, sheep, chickens, and pigs are kept on farms. They will also learn why specialty farms raise ducks, geese, fish, and ostriches.

[Lazy B: Growing Up on a Cattle Ranch in the American Southwest](#)

Deep in the granite hills of eastern Arizona in 1880, H.C. Day founded the Lazy B Ranch, where US Supreme Court Justice Sandra Day O'Connor and her brother Alan spent their youth, a time they recall in this affectionate joint memoir. "We belonged to the Lazy B, and it belonged to each of us," write O'Connor and Day. This fascinating glimpse of life in the Southwest in the last century recounts an important time in American history, and provides an enduring portrait of an independent young woman on the brink of becoming one of the most prominent figures in America.

[Levi's Lost Calf](#)

Young Levi rides out one morning to bring the cattle home from the pasture. After a head count, Levi is surprised that one calf is missing. Little Red, his favorite heifer calf, is nowhere to be found. Determined to prove his independence—and locate Little Red, Levi rides out with his horse, Pepper, and Gus, his trusty dog, in tow. The three sleuths search high and low around the ranch in search for the calf. Little Red stays hidden as readers are introduced to a bevy of barnyard animals throughout the search. A kid-friendly recipe is added to compliment the adventure and bring the cowboy spirit home to the reader.

[Little Joe](#)

The novel *Little Joe* offers a realistic look at the bond between 9-year-old Eli Stegner and his Angus calf, Little Joe, as they prepare for the county fair -- and the beef auction that follows. Readers will be fascinated by the details of raising beef cattle and receive an in-depth account of life on the farm.

[My Family's Farm Book Series](#)

Learn through the eyes of young farmers how animals are cared for, crops are raised, and renewable resources are used as they take you for a tour of their family's farm. This digital book series includes titles for beef, corn, soybeans, wind (energy), pigs, and apples.

[The Girl Who Thought in Pictures: The Story of Dr. Temple Grandin](#)

When young Temple was diagnosed with autism, no one expected her to talk, let alone become one of the most powerful voices in modern science. Yet, the determined visual thinker did just that. Her unique mind allowed her to connect with animals in a special way, helping her invent groundbreaking improvements for farms around the globe!

Kit

[Ranch Starter Kit](#)

Need a great way to connect students to rangeland? Have them start their own ranch! This kit includes 35 jiffy peat pellet pots and enough grass seed to fill each pot. As your class learns about cattle grazing throughout our history, each student will be able to see how grazing can help - or hurt - rangeland, and will understand the importance of keeping our lands healthy. **Order this kit online from agclassroomstore.com.**

Map/Infographic

[Agricultural Commodity & Natural Resource Fact Sheets](#)

These fact sheets provide information on the history, production, top producing regions and economic values of various agricultural products and natural resources. The activity sheets provide specific lesson ideas and fun facts for each topic. Commodities include agricultural water, alfalfa, almonds, artichokes, asparagus, avocados, beef, cantaloupes, carrots, citrus fruits, cling peaches, corn, cotton, cut flowers, dairy, dried plums, dry beans, forest resources, mushroom, pears, pistachios, nitrogen, phosphorus, potassium, processing tomato, rice, strawberries, table grapes, walnuts.

[Animal Facts](#)

This three-page informational sheet describes the processes of how an animal grows, how it gets from the farm to the store, and what products are produced from that animal. Words and simple graphics are used to portray this information for beef cattle, pigs, chickens, sheep, and dairy cows. Text may be difficult for young readers but can be used by teachers as a basic resource for descriptive purposes.

[Chew It Twice Poster](#)

Did you know that a cow spends six hours eating and eight hours chewing its cud each day? Use this 25" x 32" activity poster to follow the path food takes on its way through the cow. **Order this poster online from agclassroomstore.com.**

[Compliments of Cattle Poster](#)

Meat isn't the only product that comes from beef cattle. The by-products of beef production are used to make numerous everyday items like lipstick, perfume, paint, crayons, leather balls, and more. This black line coloring sheet depicts cattle using items that come to us "compliments of cattle." Students can color cattle doing things like playing basketball, repairing cars, and putting on lipstick. As they are coloring, students can check off the list of everyday items that are made from beef cattle by-products. Download the lesson plan "Beef Basics" for great classroom activities and a shopping list to create your own beef by-products kit.

[Interactive Map Project](#)

Use this interactive map to help students see how geography and climate affects the production of agricultural crops. The map has USDA statistics built in to allow your students to answer questions such as, "Which state(s) produce the most cattle?" "Where does [my state] rank nationally in corn production?" "What region of the United States produces the most cotton?" etc. There are many agricultural maps available including field crops such as corn, wheat,

barley, and alfalfa in addition to fruit and vegetable crops, ornamental nursery crops, and livestock.

[Livestock Cards](#)

Double-sided cards representing four livestock species. These cards can add a reading supplement activity to lesson plans to help teach the basic principles about beef cattle, dairy cattle, pigs, and poultry. The cards can be printed from the attached PDF or ordered from the Nebraska Foundation for Agricultural Awareness.

[Meat Cut Posters and Fact Cards](#)

[Purchase](#) these colorful posters and fact cards to illustrate the wholesale and retail cuts of meat found in beef, lamb, pork, and chicken or [print](#) a black and white copy for use as a coloring page or an interactive notebook.

[Where Does Your Cheeseburger Come From?](#)

Do you know the source of the burger, bun and toppings that make a delicious cheeseburger? This 11" x 17" student poster breaks down the cheeseburger ingredients to help students correlate the farm-to-fork path. These are available to educators free of charge from Minnesota Agriculture in the Classroom.

[Who Makes the Best Burger?](#)

This 42" x 25" bulletin board teaches students about the production of the ingredients in hamburgers. A large picture of a hamburger is featured in the middle of the bulletin board and pictures of the ingredients and their descriptions are in each corner. An envelope asking students to vote for "Who makes the best burger?" is included. The envelope can be removed after the voting to display the words "FARMERS and RANCHERS." The bulletin board is mailed in a reusable storage tube. [Order this bulletin board online from agclassroomstore.com](#).
Movie/Video

[Beef Cattle PowerPoint](#)

This PowerPoint includes basic profile information about the major beef cattle breeds in the United States. It includes the name and basic characteristics of each breed including frame size, breed origin, size, coat colors, etc.

[Bon a la Beef Videos](#)

Four professional video clips featuring elementary through high school students preparing recipes to educate students, teachers, and the public about beef, its nutritional value, and its proper handling and preparation. The student-developed recipes use easy techniques and readily available ingredients.

[Illustrated Accounts of Moments in Agricultural History](#)

Modern Farmer magazine offers a number of illustrated accounts by Lucas Adams that depict interesting and important moments in agricultural history. The *Illustrated Account of 'The Great*

Die-Up' of the 1880s tells the story of the winter of 1886-7, which was so harsh that only about one out of ten cattle survived, and the era of the open range came to an end soon after. Other accounts address topics such as the Pleasant Valley Sheep War, mulberry and silk production in 1830s Connecticut, a maple syrup heist, and dairy farming in the 1940s. These graphic novel style articles are sure to engage students from upper elementary to high school and older.

[Into the Outdoors: Beef Farming](#)

Technically, how is beef raised and what's life like on a beef farm? Discover the answers by watching this four-minute video.

[Into the Outdoors: Cattle in the Environment](#)

Cows provide most Americans with food, but it is important to remember that beef production has the potential to really affect the environment. Fortunately, the majority of beef producers are committed to being good stewards of the environment. Learn how cattle are raised in a humane and environmentally-friendly way by viewing this four-minute video.

[Into the Outdoors: Meet the Meat](#)

Most of us agree that beef tastes really good. But how do we ensure that the beef we eat is safe? Why do some people prefer different kinds of beef, and what are those different kinds? Find out by watching the four parts to this video series, which will take you onto a cattle farm to see beef production in action and meet some of its friendly inhabitants.

[NMSU Field Trip! Video Series](#)

Field Trip! is a series of video field trips you can take right in your classroom. Video field trips include: Beef, Cheese, Cotton, Honey, Milk, Onion, Peanuts, Pecans, Pistachios, Red Chile Spice, Salsa, Turf, and Wine!

[NMSU Field Trip: Beef](#)

Take a *Field Trip!* from the farm to the grill to find out how that sizzling steak got to the grocery store. Nutritious and delicious, beef is a staple on our tables.

[Riding the Range on a Utah Cattle Drive](#)

Give students a peek into the lives of the Heaton's— a cattle ranching family from Alton, Utah. Follow them on their 30-mile journey from Rush Meadow to Dixie National Forest and learn more about the challenges these hardworking cowboys face.

[The Price of Climate Audio Series](#)

Listen to the Wall Street Journal's "Future of Everything" three-part audio series on the price of climate. These podcasts will cause students to critically think about the implications of climate change related to their food, clothing, and shelter.

[Utah Beefscapes](#)

Beef cattle are the leading source of farm income in Utah. This video is a mountain of beefy goodness that allows you to examine Utah beef from farm to fork.

[Why Can a Cow Eat Grass? Video](#)

Beef and dairy cattle provide us with hundreds of different products, and all they need is an ample supply of grass and other plants. Most of these plants people can't even eat, so why can cows eat them? This Gee Whiz in Agriculture video provides an in-depth look at the digestive system of cattle, focusing on differences between cattle and humans. Take a journey into a cow's stomach and microscopically view the stomach contents. Ten-year old "experts" will share their "MOO-ving" experiences with you. This video is available on DVD or [YouTube](#). **Order this DVD online from agclassroomstore.com.**

Website

[10 Global Gleanings](#)

Supplement a secondary lesson on global food production and markets using these facts about global agriculture. Which country exports the most soybeans? Which country imports and consumes the most soybeans? Which countries consume the most beef or pork? What is the most consumed meat across the globe? Find the answers to these questions and more.

[Before the Plate Website](#)

The *Before the Plate* website contains information about the *Before the Plate* documentary and videos and explanations for each step of the farm-to-fork process for beef, potatoes, honey, milk, and sunflowers.

[Into the Outdoors: Farm Science](#)

Into the Outdoors is a science website that has a section devoted to farm science. Visit the website to find activities and video clips about aquaculture science, beef cattle, soybean farming, dairy science, and corn. Each subject area has supplemental content for all grade levels K-12.

[American Farm Bureau Foundation for Agriculture- https://www.onthefarmstem.com/resources](https://www.onthefarmstem.com/resources)

True Beef: Pasture To Plate Educator Guide

Make the farm to fork connection with this series of lesson plans that supports the documentary "True Beef". This guide contains 8 lessons designed for the High School Culinary Arts or Family and Consumer Sciences program, however, STEM connections have been included for all lessons making it easy for teachers to make connections across the curriculum. The "True Beef"

documentary was produced by Pflugerville Independent School District (TX) and is available for [DVD purchase](#) in the Foundation store [foo bar](#)

[Purchase DVD](#)

[View](#)

All About Beef App

The All About Beef App offers versions of “The Steaks are High” and “Grocery Grab” in one app. In addition to teaching nutrition and environmental facts, the apps also feature kid-friendly beef recipes.

WINNER 2015 Horizon Interactive Awards:

GOLD in Mobile Apps, Education & GOLD in Mobile Apps, Game



[View](#)

Kid-Friendly Beef Recipes

Make dinner fun for all ages with kid-approved recipes that satisfy picky palates and grown-up sensibilities. Get the family together and enjoy mealtime with these free printables.



[Kid Friendly Beef Recipes](#)

[View](#)

Built from Beef

Beef is one of the many products we get from cattle, but it isn't the only thing! Learners will discover how cattle biproducts provide many of the things we use every day.



[Built From Beef](#)

[View](#)

Pasture Cow-Culations

Beef cattle eat grass for most of their life. They graze on grass that often could not be used to grow other crops. Learners will use math skills to determine the right pasture for each herd of cattle.



[Pasture Cowculations](#)

[View](#)

The Big Race

Click and flip your way through these exciting comic books that help connect kids to food, fiber and energy! Students will get a kick out of these easy-to-navigate online-readers.



[The Big Race Printable](#)

[View](#)

Beef Heritage eComic

Click and flip your way through these exciting comic books that help connect kids to food, fiber and energy! Students will get a kick out of these easy-to-navigate online-readers.



[Beef Heritage e-Comic](#)

[View](#)

The Science of Beef Toolkit

Bring science to life with real-world applications of scientific principles. This kit contains 8 learning tools which support Next Generation Science Standards Life Science Disciplinary Core Ideas.



[The Science of Beef Toolkit](#)

[View](#)

Immersive Experience Templates

Download free templates to host your own immersive experience.

- Facilitator Agenda
- Participant Agenda
- State Organization Letter
- Application Template
- Acceptance Letter
- Confirmation Form
- Travel Form
- Lunch with a Farmer Invite
- Welcome Letter
- Thoughts and Starters



[Immersive Experience Templates](#)

Immersive Experience Toolkit

Explore the 2016 On the Farm Author Experience and discover tips and tricks for hosting your own immersive experience.



[Immersive Experience Toolkit](#)

[View](#)

After School Resource Kit: Beef Education

Fun, quick activities that support learning after school or in an informal setting. Here are some fun activities for schools, teachers and families in your community to start the conversation about beef.



[Beef After School Resources](#)

[View](#)

Beef Up Your Nutrition

Learn about the power of beef in a healthy diet. This lesson plan guides learners through the process of creating a meal plan based on the My Plate guidelines, using beef as a lean protein source.



[Beef up Your Nutrition](#)

[View](#)

The Stage is Set for Beef

This lesson plan guides learners through the lifecycle of the beef animal, from cow-calf, to stocker ranch, to feed yard and finally processing.



[Beef Heritage Lesson](#)

[View](#)

Beef Volunteer Guide

This resource is intended to equip classroom volunteers with relevant material to share important information about the beef industry with teachers, students and students' families. In this resource, you will find four standards-aligned lesson plans that highlight important industry information while reinforcing key concepts taught in the classroom.



[Beef Volunteer Guide](#)

[View](#)

Beef Ag Mag Family Guide

This is a great tool for teachers and students in the classroom, but it is also fun for parents and children to dive into at home! Includes sections on beef breeds, nutrition, beef life cycle, career profiles, food safety, label reading information, and other suggested activities.



[Beef Ag Mag Family Guide](#)

[View](#)

Grocery Grab

Become a master meal builder and grocery store expert! In this fun game you'll beef up your nutrition knowledge.

Industry concepts:

- Beef Nutrition
- Confident buying skills

[Play Game](#)

[View](#)

Beef Ag Mag e-Reader

Explore this Ag Mag and you'll discover the power of beef. You'll also meet some of the amazing men and women who care for their animals, steward (or care for) the land, and provide safe quality food for you and me. Let's go!

[E-Reader](#)

[Purchase English](#)

[Purchase Spanish](#)

[View](#)

The Steaks are High

Ever wondered how your delicious beef got to your table? The "steaks" are high for farmers and ranchers who know the importance of caring for animals and the environment in the beef production process. Beef up your math skills as you play!

Industry concepts:

- Cattle production from cow-calf to feed yard
- Farmers care for animals
- Farmers care for the land

[Play the Game](#)

[View](#)

More Beef Resources!

How would you bring beef into your classroom? That's what we asked alum of the 2017 On the Farm STEM events. Download these resources to spark ideas.



[Beef Ed Resources](#)

Wisconsin Beef Council - <https://www.beeftips.com/education/beef-in-the-classroom>

MEET YOUR WISCONSIN BEEF FARMERS- VIDEOS- <HTTPS://WWW.BEEFTIPS.COM/RAISING-BEEF/BEHIND-THE-BEEF>

Have you ever wondered where your food comes from? How it got from the farm to your fork? We have those answers - and more - right here. Wisconsin is home to over 14,000 beef producers and over 10,000 dairy producers who are all working hard to provide you and your family healthy and wholesome beef!

National Cattlemen's Beef Association

Industry Statistics- <https://www.ncba.org/beefindustrystatistics.aspx>

Infographic Library- <https://www.beefitswhatsfordinner.com/resources/infographic-library>

Cattle and the Environment- <https://www.beefitswhatsfordinner.com/raising-beef/environment>

Beef Safety- <https://www.beefitswhatsfordinner.com/raising-beef/beef-safety>

Animal Care- <https://www.beefitswhatsfordinner.com/raising-beef/animal-care>

Beef Lifecycle- <https://www.beefitswhatsfordinner.com/raising-beef/animal-care>

Wisconsin Youth Livestock Program- <https://fyi.extension.wisc.edu/youthlivestock/>

Illinois Ag in the Classroom-

All about Beef booklet-

http://www.agintheclassroom.org/TeacherResources/Lesson%20Booklets/AllAboutBeef_.pdf

Iowa Ag in the Classroom and Iowa Beef- <https://www.iabeef.org/education/iowa-resources>

A Letter to the Educator

How to use the PowerPoint presentations; science and social studies standards; objectives; list of activities included.

Wow That Cow! PowerPoint

A lesson on Cows for lower elementary students.

Wow That Cow! Coloring Page

My Cheeseburger Came from the Farm! A lesson on where cheeseburgers come from for upper elementary (and older) students.

Activities and Lessons

LOWER ELEMENTARY ACTIVITIES

[Beef Cattle Memory Game](#)

[Jokes & Fun Facts](#)

[Vocabulary Coloring Pages](#)

UPPER ELEMENTARY ACTIVITIES

[Comprehension Worksheet - My Cheeseburger Came from a Farm](#)

[The Cheeseburger Connection](#)

[Ruminants Recycle](#)

[Wastes are Food Too!](#)

[Byproduct Unscramble](#)

Into The Outdoors

Beef Farming- <https://intotheoutdoors.org/topics/beef-farming/>

Cattle and the Environment- <https://intotheoutdoors.org/topics/cattle-in-the-environment/>

Beef Farming and Consumption- <https://intotheoutdoors.org/topics/beef-consumption-farming/>

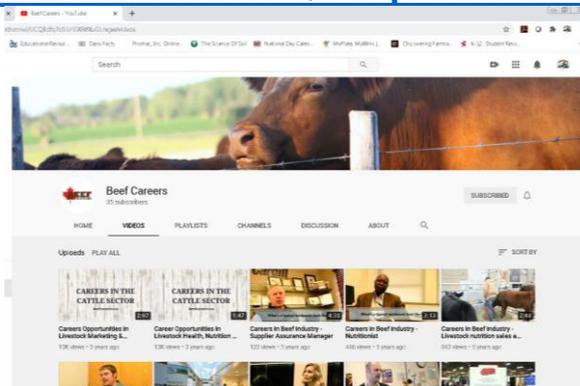
Beef Food Safety- <https://intotheoutdoors.org/topics/beef-food-safety/>

Beef in your diet- <https://intotheoutdoors.org/topics/beef-in-your-diet/>

Beef Careers

<https://ncba.hyrell.com/UI/Views/Applicant/VirtualStepCareers.aspx>

<https://www.youtube.com/channel/UCQBdfq7o5UrGXR8XuGLrxgw/videos>



Soybean Resources

Soybean Science Kit- <https://www.wisagclassroom.org/lessons-resources/classroom-lessons/soybean-science-kits/>

Wisconsin Agriculture in the Classroom (AITC) through the support and sponsorship of the Wisconsin Soybean Marketing Board offers an exciting resource for educating Wisconsin students and teachers about soybeans and their many uses in food, household products, newspaper ink, and alternative fuels.

It's unlike any curriculum you've ever used. The Soybean Science Kit is an engaging, interesting hands-on approach that teaches 4th to 9th graders the physical properties of polymers and oil, while instilling an appreciation for the use of biological, renewable resources in industrial manufacturing. Biotechnology is also covered, as students learn about the structure of DNA and gain a better understanding of this building block for all forms of life. Developed by Purdue University researchers and public-school teachers, the Soybean Science Kit has been helping teachers meet Science Proficiencies—particularly the fourth and fifth-grade interdisciplinary curriculum—for many years!

Supplies for the kit are included- check with your county coordinator for the procedure for restocking the kit. Materials in the kit may be reordered using a convenient form in the lesson binder. More complete information is available online at www.soybeansciencekit.com . Kits have been distributed and there might be one in your county! Check the list of Soybean Kit Coordinators at www.wisagclassroom.org so you may contact to schedule usage of a kit. If there isn't a kit in your county, contact the closet county to borrow their kit.

Soybean Science Kit Lessons

Polymers

- ✓ Chains in the Classroom
- ✓ Germinating and Growing Soybeans
- ✓ Polymers in Your Life
- ✓ "It Does What? -Oobleck"
- ✓ Links in the Classroom
- ✓ "It Does What? -Gluep"
- ✓ What's in a Soybean
- ✓ Chromatography Using Soybean Leaves
- ✓ Many Kinds of Glue
- ✓ Glue Tests
- ✓ Chains in Ink
- ✓ Polymers Everywhere: Evaluation

Oils

- ✓ Marbleizing
- ✓ Salad Dressing
- ✓ Lip Balm
- ✓ Hand Cream
- ✓ Oil & Water Emulsion
- ✓ Candles & Crayons
- ✓ Putt-Putt Boats

Biotechnology

- ✓ DNA Modeling
- ✓ DNA Extraction

Interactive CD

- ✓ Growing
- ✓ Processing
- ✓ Products

Nonfiction Minute-<https://www.nonfictionminute.org/the-nonfiction-minute/henry-ford-grows-a-car>

The screenshot shows a web browser displaying the Nonfiction Minute website. The page title is "Henry Ford Grows a Car" by Peggy Thomas, dated 1/15/2020. A video player is visible with a progress bar at 01:07. The text below the video reads: "Henry Ford is famous for founding the Ford Motor Company in 1903. He built the Model T and changed America from a horse-and-buggy country to a nation of paved roads and honking cars. Yet most people don't realize that Henry also transformed American agriculture with his work with soybeans." A sidebar on the left contains navigation links like "summer minutes 3 for teachers" and "ink home". A "NEWS FLASH" box on the right states: "6/15/20 is our last week of Minutes before summer vacation. We will be publishing 3 lists of 10 Minutes each for June, July and August." A cookie consent banner is at the bottom.

The Henry Ford Museum Website- <https://www.thehenryford.org/collections-and-research/digital-resources/popular-topics/soy-bean-car/>

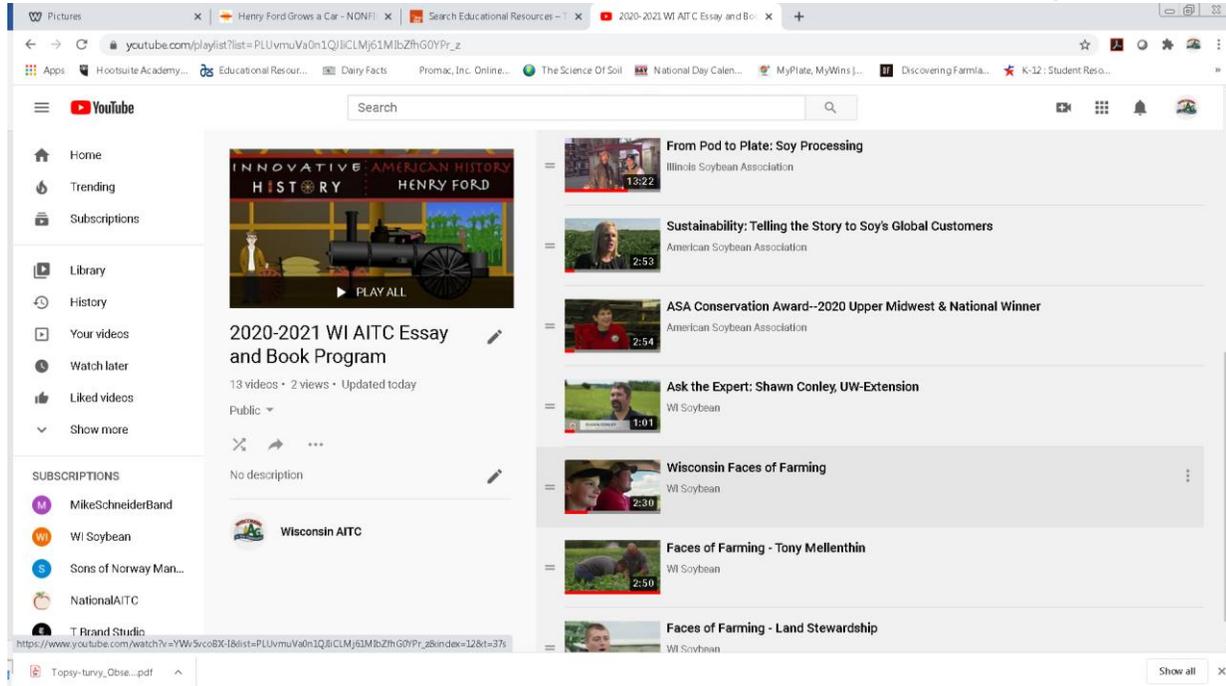
The screenshot shows the Henry Ford Museum website. The page title is "Soybean Car" under the "Popular Research Topics" section. The main image features a vintage car with two men standing behind it. The text "the Henry Ford" logo is on the left. A navigation bar at the top includes "Collections & Research", "Digital Resources", and "Popular Research Topics". A yellow banner at the top says "Welcome Back: Venue schedule, tickets, member reservations & safety measures. Learn More." A cookie consent banner is at the bottom.

Interactive Nebraska Map- <http://www.nefbmap.org/map.php?P=8&PV=0>

YouTube- Wisconsin AITC Channel- Playlist for the 2020-2021 Wi AITC Essay and Book Program-

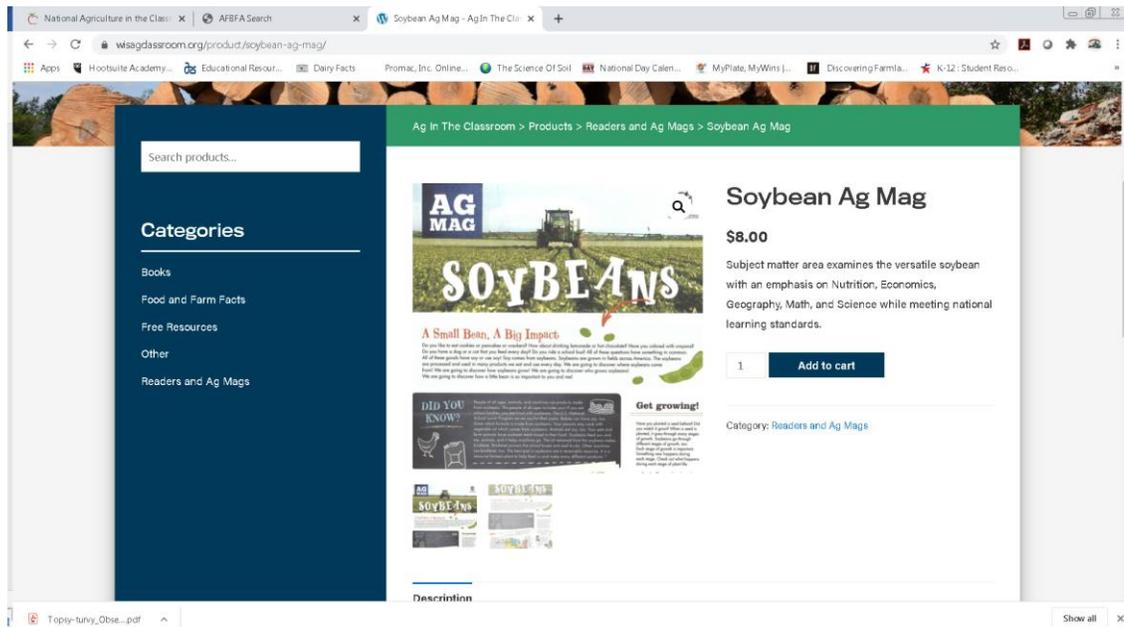
https://www.youtube.com/playlist?list=PLUvmuVa0n1QJliCLMj61MibZfhG0YPr_z

We will continue to add videos to this Playlist during the year!



Soybean Ag Mag- Available from Wisconsin Ag in the Classroom

<https://www.wisagclassroom.org/product/soybean-ag-mag/>



Into the Outdoors- Three Soybean Features!

Technology of Soy- <https://intotheoutdoors.org/topics/technology-of-soy/>

The screenshot shows the 'Technology of Soy' page. The header features the 'Into the Outdoors' logo, a search bar, and the tagline: 'Creating pathways to environmental awareness and outdoor lifestyles that empower our next generation to become sustainable stewards of Planet Earth.' The navigation menu includes 'HOME', 'SCIENCE CATEGORIES', 'I T O @ H O M E', 'PARTNERS', 'ABOUT US', 'CONTACT US', and 'WATCH'. The main content area has a green background with a large leaf graphic. The title 'Technology of Soy' is followed by the question: 'WHY HAD FEW PEOPLE IN THE U.S. BEFORE 1900 HEARD OF SOYBEANS? HOW DID THEY GET HERE AND WHAT PRODUCTS COME FROM THEM THESE DAYS?' Below this is a paragraph of text and a video player showing a man standing next to an early 20th-century car in front of a large building. At the bottom, there are sections for 'AVAILABLE LESSONS' and 'STANDARDS COVERED'. A 'Show all' button is visible in the bottom right corner.

Soybean Farming- <https://intotheoutdoors.org/topics/soybean-farming/>

The screenshot shows the 'Soybean Farming' page. The header features the 'Into the Outdoors' logo, a search bar, and the tagline: 'Creating pathways to environmental awareness and outdoor lifestyles that empower our next generation to become sustainable stewards of Planet Earth.' The navigation menu includes 'HOME', 'SCIENCE CATEGORIES', 'I T O @ H O M E', 'PARTNERS', 'ABOUT US', 'CONTACT US', and 'WATCH'. The main content area has a green background with a large leaf graphic. The title 'Soybean Farming' is followed by the question: 'HOW DID A PLAIN-COLORED BEAN BECOME ONE OF THE MOST IMPORTANT CROPS ON EARTH? HOW ARE SOYBEANS FARMED? WHAT ROLE DO THEY PLAY IN THE COMMUNITY?' Below this is a paragraph of text and a video player showing a green tractor in a field. At the bottom, there are sections for 'AVAILABLE LESSONS' and 'STANDARDS COVERED'. A 'Show all' button is visible in the bottom right corner.

Soybean Science – <https://intotheoutdoors.org/topics/soybean-science/>



National Ag in the Classroom Curriculum Matrix- Search “Soybeans”

<https://www.agclassroom.org/teacher/matrix/index.cfm>

Lesson Plan(s)

Bean Seed Cycle

This lesson introduces students to how soybeans are grown by farmers, teaches seed anatomy through a seed dissection activity, and illustrates the germination of the soybean plant.

From Soybeans to Car Parts

Students learn about soybeans and investigate the collaborative work of an agricultural scientist and engineer who found new uses for an agriculture product (soybeans). This lesson can be used as an opportunity to discuss careers in science and engineering, biobased products, and the use of renewable resources.

Full of Beans: Henry Ford Grows a Car

Students will identify the variety of soybeans uses for human consumption, livestock feed, and industrial products; explain how key historical events affected soybean production in the United States; and create a bioplastic made from soybeans.

Grow it Now, Drive it Later?

Students will discover potential careers in agriculture with a focus on the growing field of biofuel development.

The Science of a GMO

Students will compare and contrast methods of selective plant breeding, describe the scientific process of creating a genetically modified plant, compare

genetically modified soybean seeds to conventional soybean seeds, describe the impact weeds have on plant growth, and understand how a genetically modified seed can help farmers manage weeds.

Topsy-Turvy Soybeans

Students will observe how plants respond to gravity by germinating soybeans in a CD case and rotating the case as they grow.

Companion Resource(s)

Book

Auntie Yang's Great Soybean Picnic

Auntie Yang starts an enduring picnic tradition when she discovers soybeans, a dearly-missed food from China, growing in Illinois. The picnic tradition quickly grows into an annual community celebration. Based on actual events, this story can be used to teach about soybeans, immigration, diversity, culture, and community. The book includes some simple Chinese words defined in a glossary at the back as well as additional information about the people who inspired the story and additional information about soybeans.

Full of Beans: Henry Ford Grows a Car

With a mind for ingenuity, Henry Ford looked to improve life for others. After the Great Depression struck, Ford especially wanted to support ailing farmers. For two years, Ford and his team researched ways to use farmers' crops in his Ford Motor Company. They discovered that the soybean was the perfect answer. Soon, Ford's cars contained many soybean plastic parts, and Ford incorporated soybeans into every part of his life. He ate soybeans, he wore clothes made of soybean fabric, and he wanted to drive soybeans, too.

My Family's Farm Book Series

Learn through the eyes of young farmers how animals are cared for, crops are raised, and renewable resources are used as they take you for a tour of their family's farm. This digital book series includes titles for beef, corn, soybeans, wind (energy), pigs, and apples.

Soybeans A to Z

Introduces young readers to agriculture by providing basic information on soybeans while teaching them their alphabet. Young readers learn where soybeans come from, how they are used and their relationship to the food, fiber, the environment and renewable fuel made from soybeans.

Soybeans in the Story of Agriculture

This book introduces elementary readers to soybeans, an important agricultural crop. Follow the stages of soybean production, processing, distribution, and marketing.

Kit

GM Soybean Seed Kit

Provide a hands-on experience for students to compare conventional soybean seeds to genetically modified Roundup Ready® soybean seeds. This kit includes conventional soybean seeds, GM soybean seeds, and the testing materials to indicate which seed contains the protein responsible for making Roundup Ready® soybeans tolerant to the herbicide glyphosate. **Order this kit online from agclassroomstore.com.**

Grains and Legumes of the World

This hands-on activity explores grains and legumes common in global agricultural production—barley, dent corn, popcorn, oats, rice, wheat, soybeans, lentils, and pinto beans. Students create their own journals that include important facts, descriptions, and samples of the seeds of these crops. Teachers can use the information to expand students' knowledge of agriculture while connecting to lessons in social studies and science. This kit contains enough seeds for a classroom of 35 students. A master copy of the grains and legumes information cards is also included. **Order this kit online from agclassroomstore.com.**

Poster, Map, Infographic

Corn and Soybean Processing and Utilization Poster

Corn and soybeans have hundreds of uses. These reproducible posters depict how corn and soybeans are fractionated and converted into food ingredients, biofuels, and biobased products.

Crop Cards

Double-sided cards representing ten agricultural crops. Each card shows the plant in each stage of growth, explains how and when it is planted and harvested and describes its use as feed for animals or food for humans. The cards can be printed from the attached PDF or prints can be ordered from the Nebraska Foundation for Agricultural Awareness.

Interactive Map Project

Use this interactive map to help students see how geography and climate affects the production of agricultural crops. The map has USDA statistics built in to allow your students to answer questions such as, "Which state(s) produce the most cattle?" "Where does [my state] rank nationally in corn production?" "What region of the United States produces the most cotton?" etc. There are

many agricultural maps available including field crops such as corn, wheat, barley, and alfalfa in addition to fruit and vegetable crops, ornamental nursery crops, and livestock.

Multimedia

Connecting to Agriculture

This 17-minute video is a great way for students to learn about how agriculture connects to their lives. Animation, fun facts, and farmers tell the story of agriculture and how it relates to economics, science, and business. Interwoven through the commodity stories of corn, cotton, apples, dairy, and soybeans are important concepts such as: biodegradable properties, renewable resources, biotechnology, foreign trade, pest management, conservation practices, and food quality. [Order this DVD online from agclassroomstore.com](http://agclassroomstore.com).

Genetically Engineered Crops in the United States Report

Despite the rapid increase in the adoption of genetically engineered (GE) corn, soybean, and cotton varieties by US farmers, questions persist regarding their economic and environmental impacts, the evolution of weed resistance, and consumer acceptance. This report examines issues related to three major stakeholders in agricultural biotechnology: GE seed suppliers and technology providers (biotech firms), farmers, and consumers.

Modern Marvels: World's Largest Combine

The Lexion 590R is the largest farm combine of its kind. Harvesting exponentially more and faster than hundreds of human laborers, see why this machine is at the top of its class. Use this three-minute video to give students an example of the importance of technology in agriculture.

Website

10 Global Gleanings

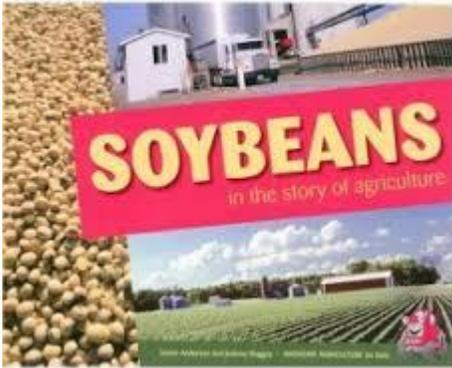
Supplement a secondary lesson on global food production and markets using these facts about global agriculture. Which country exports the most soybeans? Which country imports and consumes the most soybeans? Which countries consume the most beef or pork? What is the most consumed meat across the globe? Find the answers to these questions and more.

Journey of a Gene

This website engages students in the genetic engineering process in a problem and solution format. The video series describes a plant disease in soybeans and then illustrates the steps in genetic engineering that could be employed to develop seeds that are resistant to the disease.

**American Farm Bureau Foundation for Agriculture – www.agfoundation.org
Search for “Soybeans”- there are 100 results so here are just a few!**

Your search for **soybeans** received 100 results.



Soybeans in the Story of Agriculture by Susan Anderson, Joanne ...

The book introduces students to five stages of **soybeans** as they make their way from farm to table. Each stage is explained in a separate chapter and each ...

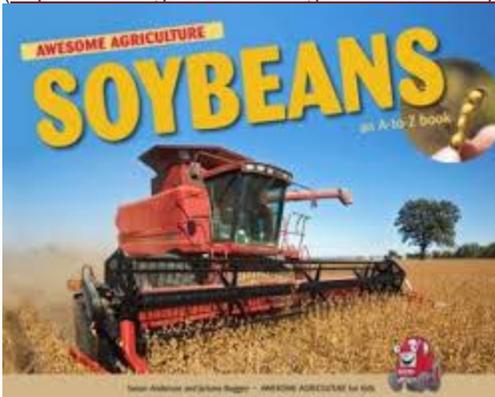
(<https://www.agfoundation.org/recommended-pubs/soybeans-in-the-story-of-agriculture>)



Soybeans Ag Mag by The American Farm Bureau Foundation for ...

Soybeans Ag Mag · A four page colorful agricultural magazine for kids · Contains information about agriculture, bright pictures, classroom activities and agricultural ...

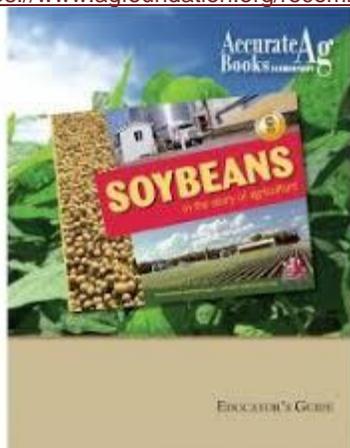
(<https://www.agfoundation.org/recommended-pubs/soybean-ag-mag>)



Soybeans an A to Z book by Susan Anderson, JoAnne Buggey ...

The book introduces young readers to agriculture by providing basic information on **soybeans**. The information is presented simply and to the point. Young ...

(<https://www.agfoundation.org/recommended-pubs/soybeans-an-a-to-z-book>)



Soybeans in the Story of Agriculture Educator Guide by American ...

These lesson plans accompany the **Soybeans** in the Story of Agriculture book. For 3rd -6th grade it covers: Reading/Language arts, Science, Social Science and ...

(<https://www.agfoundation.org/recommended-pubs/soybeans-in-the-story-of-agriculture-ed-guide>)



Where do your back to school supplies come from?

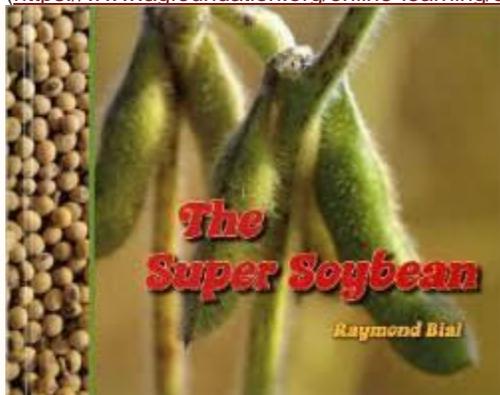
Aug 23, 2016 ... Essential for many craft projects, glue contains beef byproducts. Learn about beef .
4. Crayons. Some crayons are made with **soybeans**! What ...

(<https://www.agfoundation.org/news/where-do-your-back-to-school-supplies-come-from>)

A Small Bean, A Big Impact

vegetable oil which comes from **soybeans**. Animals eat soy, too. Your pets and farm animals have **soybean** meal mixed in their food. **Soybeans** feed you and.

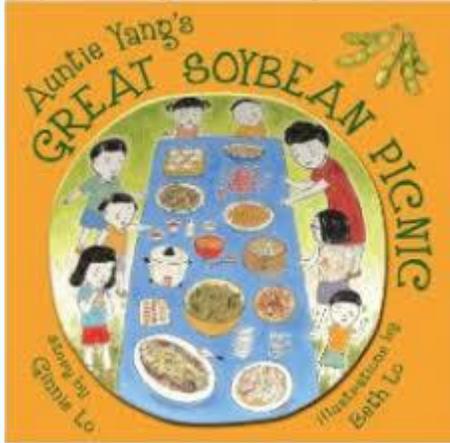
(<https://www.agfoundation.org/online-learning/soy-interactive-pdf.php>)



The Super Soybean by Raymond Bial - Recommended by American ...

This book captures the A-Z of **soybeans**. From seed to harvest the photos and text depict how **soybeans** are grown, harvested, chipped, and marketed.

(<https://www.agfoundation.org/recommended-pubs/the-super-soybean>)



Auntie Yang's Great Soybean Picnic by Lo, Ginnie - Recommended ...

Two young Chinese-American girls enjoy visiting Auntie Yang's house where they get to visit with their cousins. One day they find **soybeans** which were grown ...

(<https://www.agfoundation.org/recommended-pubs/auntie-yangs-great-soybean-picnic>)



From Bean to Book

Feb 4, 2020 ... I am no stranger to the **soybean**. From my home in Middleport, New York, I can head in any direction and soon be knee deep in a **soybean** field.

(<https://www.agfoundation.org/news/from-bean-to-book>)



Farm Bureau Foundation and Ford Rev Up Ag Education

Aug 4, 2020 ... The book delves into Henry Ford's **soybean** car invention. The accompanying ag mag explores how **soybeans** grow and are used in many ...

(<https://www.agfoundation.org/news/farm-bureau-foundation-and-ford-rev-up-ag-education>)

National Ag in the Classroom's Store - <https://agclassroomstore.com/>
Ready to use kits and resources at affordable prices!



• **Living Necklace (Wheat & Soybean Seeds)**

Grow your own necklace! This kit contains enough materials for 35 students to plant a wheat, and soybean seed in a mini zip-lock and the yarn necessary to create a living necklace. Given a few days,...



• **GM Soybean Seed**

Provide a hands-on experience for students to compare conventional soybean seeds to genetically modified Roundup Ready® soybean seeds. This kit includes conventional soybean seeds, GM soybean...



• **Dwarf "Space Plant" Seeds - Hoyt Soybeans**

Grades K-12 (Seeds) The USU Crop Physiology Laboratory has identified and characterized six varieties of dwarf crop plants. These short, early-flowering plants are ideal for growth on the...



GM Leaf Test

This lab allows students a hands-on opportunity to see and handle the seeds and/or plants of both conventional soybeans and genetically modified soybeans. If time is short, do the GM Soybean Seed...



Seeds for Terrariums

Grade K-12 (Seeds) This kit contains a variety of agronomic or crop seeds for planting in terrariums. Seed varieties include wheat, soybeans, popcorn, and bean seeds. Download the lesson plan:...



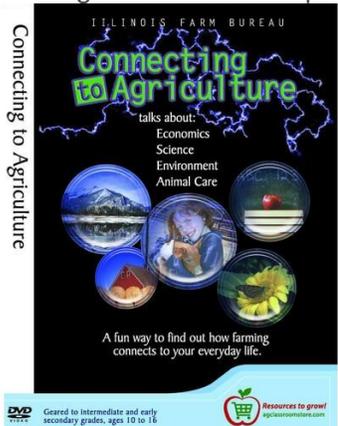
Test Tube Hydroponics Refill

Investigate the importance of nutrients for plant growth and discover how plants grow without soil. Use this kit to grow and observe plants in a test tube hydroponic system. This refill kit includes...



Test Tube Hydroponics

Investigate the importance of nutrients for plant growth and discover how plants grow without soil. Use this kit to grow and observe plants in a test tube hydroponic system. Kit includes rock wool,...



Connecting to Agriculture

Grades 6-8 (DVD 17 min.) This exciting, fast-paced video is a great way for students to learn about how agriculture connects to their lives. Animation, fun facts and farmers tell the story of...



Grains and Legumes of the World

Grades 4-9 (Kit) This hands-on activity explores grains and legumes common in global agricultural production—barley, dent corn, popcorn, oats, rice, wheat, soybeans, lentils, and pinto beans...

Additional Websites to check out!

United Soybean Board- <https://www.unitedsoybean.org/media-center/issue-briefs/biodiesel/>

Wisconsin Soybean Association and related websites- Badger Bean, Cool Bean, Crop Doc and Corn Soy Expo- begin at <https://wisoybean.org/>

American Soybean Association- <https://soygrowers.com/>

American Soybean Association Soy Stats- <http://soystats.com/>

Coolbean The Soybean Book- <https://www.coolbeanthesoybean.org/home>

Careers – Soybeans

Plant Scientist- <https://youtu.be/Z18JTR3HIAM>

Plant Scientist- <https://youtu.be/2k5-Wrlyj9k>

Agronomist- <https://youtu.be/reasLCdcy88>

Communications specialist- <https://youtu.be/hXdey1pF5ow>

Farmer-Agribusiness Major- <https://youtu.be/Z1A2rJEIKxg>

Cool Bean and Wisconsin Soybean careers- <https://coolbean.info/about-us/>

Other links and resources from Cool Bean

Research:

- [North Central Soybean Research Program](#)
- [Plant Health Initiative](#)
- [Purdue University Agronomy Department's' Chat 'n Chew Café](#)
- [University of Wisconsin Agronomy Department](#)
- [University of Wisconsin Soybean Health](#)
- [UW Corn Agronomy](#)
- [UW-Extension](#)
- [Wisconsin Soybean Association](#)
- [Wisconsin Soybean Marketing Board](#)
- [University of Wisconsin Integrated Pest and Crop Management](#)
- [United Soybean Board](#)

Soy Related:

- [Aquaculture with Soy](#)
- [Coolbean The Soybean](#)
- [QUALISOY](#)
- [Soy Stats](#)
- [Soy Transportation Coalition](#)
- [United States Soybean Export Council](#)

Consumers:

- [Animal Agriculture](#)
- [CommonGround](#)
- [Center for Food Integrity](#)
- [Soy Labs](#)
- [Soyfoods Association of North America \(SANA\)](#)
- [Soyfoods Council](#)
- [WI Department of Agriculture, Trade and Consumer Protection](#)
- [U.S. Farmers and Ranch Alliance](#)