KFAC | Kansas Foundation for AGRICULTURE IN THE CLASSROOM

9-12

Teacher Toolkit

Welcome

We are here to help you weave agriculture into your everyday teaching with ready-to-use resources. Our goal is to make agricultural connections feel natural and meaningful, giving you simple ways to enrich core subjects with real-world relevance.

Why use agriculture to teach core learning?

Using agriculture to teach core subjects enhances student learning by making lessons more engaging, practical, and relevant. By connecting academic concepts to real-world applications, students gain hands-on experiences that reinforce key skills. Agriculture naturally integrates multiple disciplines—improving literacy through writing about food systems, enriching social studies through global food security discussions, and deepening science and math understanding through environmental data and problem-solving. This interdisciplinary approach fosters critical thinking, collaboration, and creativity.

Agriculture is also a cornerstone of our economy and community—especially in Kansas, where one in every eight jobs is tied to the agricultural industry. Farming and ranching contribute billions of dollars to the state's economy and are vital to sustaining rural communities. From the food we eat and the clothes we wear to the fuel that powers our lives, agriculture plays a role in nearly every aspect of daily life. That makes it not only a powerful teaching tool, but also a gateway to understanding essential systems and exploring meaningful career paths.

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Where Do I Start?

Get connected with Kansas Foundation for Agriculture in the Classroom!

Follow us on Facebook to get information on our resources, scholarships, grants and events.

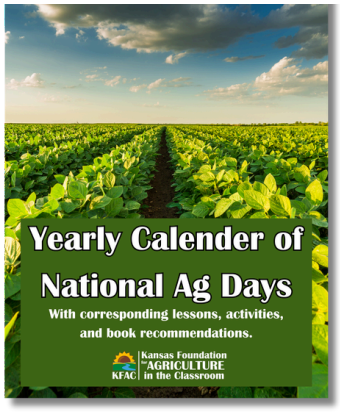
https://www.facebook.com/ksagclassroom

Get Connected

Subscribe to the monthly Kansas Foundation for Ag in the Classroom newsletter to receive program updates, classroom grant opportunities, lesson ideas and so much more!

Kansas Kids Connection Magazines

Kansas Kids Connection magazines are free resources that supplement KFAC's Educator's Guides with additional activities and information about Kansas agriculture.



Ag Days Calendar

There is a national day for almost everything agriculture related, from popcorn to pizza to pollinators. Our calendar pairs these days with K-12 lessons and activities, making it easy to bring agriculture into your classroom in a fun and meaningful way.

Lesson Plan Kits

Our classroom kits are hands-on, grade-specific, and connected to state standards, linking core classroom topics to agriculture in a meaningful way. Follow us on Facebook to order a complete kit during our March or August release windows. Prefer to get started sooner? All of our kit lessons and supply lists are available to download for free on our website so you can do the activity any time of year.

I'm Warming Up

Continue building your KFAC involvement by growing your toolkit with these opportunities.

Resource Posters

Kansas Foundation for Agriculture in the Classroom provides a wide range of resources, including lesson plans, activities, and multimedia materials, to help educators incorporate agriculture into their teaching. These resources support hands-on learning, enhance student engagement, and connect agricultural concepts to various academic subjects.

Lesson Plans

Kansas Foundation for Agriculture in the Classroom offers a variety of standards-aligned lesson plans that integrate agricultural concepts into core subjects. These lessons are designed to be engaging and hands-on, helping students connect real-world agricultural topics to their learning while promoting critical thinking and problem-solving skills.

Scholarships

Thanks to the support of our generous partners, we are excited to be able to offer scholarships for K-12 educators to attend the National Agriculture in the Classroom Summer Conference. This conference is an experience like no other, and we want as many Kansas educators as possible to have the opportunity to attend! Apply today for a chance to experience agriculture in another state, attend educational sessions, and network with other teachers across the nation incorporating agriculture into their classrooms.

Mini Grants

Start off your next school year right with a mini-grant from Kansas Foundation for Agriculture in the Classroom. Use this grant to purchase the resources necessary to execute agriculture-based lesson plans in your classroom. Winning classrooms will be featured on the Kansas Foundation for Agriculture in the Classroom website and on social media.

Getting Started

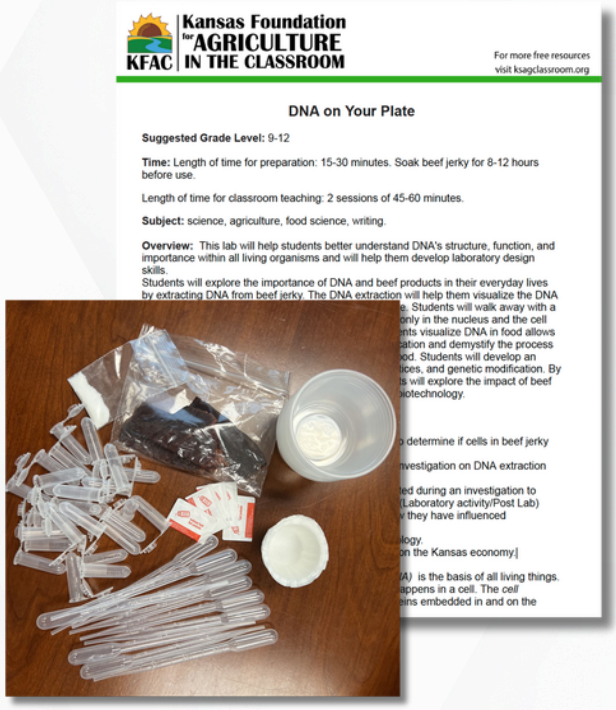
Check out these free resources for 9th - 12th grade!

Free Lesson Plans and Kits!

Follow us on Facebook to order a complete kit during our March or August release windows! Prefer to get started right away? You can also create your own using our easy-to-follow Make Your Own Kit—fun, flexible, and perfect for any time of year!

DNA on Your Plate

DNA on Your Plate offers students a hands-on opportunity to extract DNA from beef jerky, providing an engaging way to explore genetics and biotechnology. This lesson plan is associated with our free DNA on Your Plate kits, which provide all of the necessary materials for a class of 25.



Diving Deeper

Check out these free resources for 9th - 12th grade!

How will we sustainably feed nearly 10 billion people by 2050?

Journey 2050 is an immersive game that challenges students to think like global decision-makers. As they manage a virtual farm, students explore how to sustainably feed nearly 10 billion people by the year 2050. Through real-world scenarios, they learn how agricultural choices impact the environment, economy, and society—and why sustainability is key to our future. Each level of the gam has an accompanying PowerPoint and lesson and the teacher can see each student's progress through the back end of the game.

Learn more at journey2050.com.

Diving Deeper

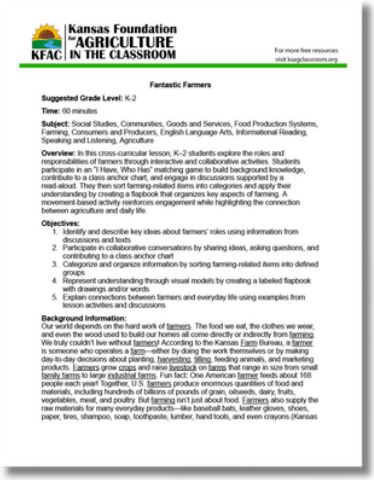
Check out these free resources for K - 2nd grade!

Vertical Gardening

This unit features 11 hands-on lessons that guide students through building and maintaining vertical gardens right in their classroom. It includes an online learning platform with podcasts, activities, and supplemental resources; a 3D virtual tour of the aeroponics system; career exploration cards; and more.

DIY Cooperative

Students learn about the origins and modern role of cooperative businesses, examine key milestones like the Rochdale Pioneers and major legislation, create a cooperative in groups, and finish by researching Kansas cooperatives. The lesson supports history, business, economics, career development, and strengthens presentation skills.



Kansas Foundation for AGRICULTURE IN THE CLASSROOM

Fantastic Farmers

Suggested Grade Level: K-2

Time: 60 minutes

Subject: Social Studies, Communities, Goods and Services, Food Production Systems, Farming, Consumers and Producers, English Language Arts, Informational Reading, Speaking and Listening, Agriculture

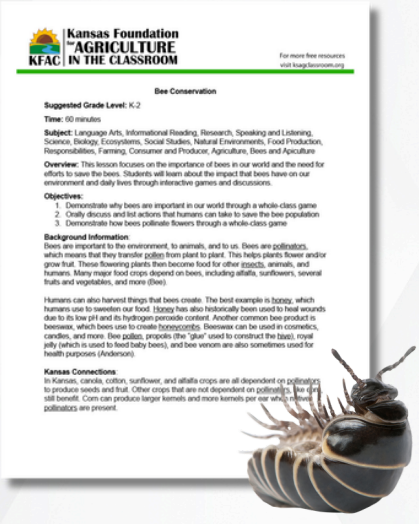
Overview: In this cross-curricular lesson, K–2 students explore the roles and responsibilities of farmers through interactive and collaborative activities. Students participate in an "I Have, Who Has" matching game to build background knowledge, contribute to a class anchor chart, and engage in discussions supported by a read-aloud. They then sort farming-related items into categories and apply their understanding by creating a flapbook that organizes key aspects of farming. A movement-based activity reinforces engagement while highlighting the connection between agriculture and daily life.

Objectives:

1. Identify and describe key ideas about farmers' roles using information from discussions and texts
2. Participate in collaborative conversations by sharing ideas, asking questions, and contributing to a class anchor chart
3. Categorize and organize information by sorting farming-related items into defined groups
4. Represent understanding through visual models by creating a labeled flapbook with drawings and/or words
5. Explain connections between farmers and everyday life using examples from lesson activities and discussions

Background Information:

Our world depends on the hard work of farmers. The food we eat, the clothes we wear, and even the wood used to build our homes all come directly or indirectly from farming. We truly couldn't live without farmers! According to the Kansas Farm Bureau, a farmer is someone who operates a farm—either by doing the work themselves or by making day-to-day decisions about planting, harvesting, tilling, feeding animals, and marketing products. Farmers grow crops and raise livestock on farms that range in size from small family farms to large industrial farms. Fun fact: One American farmer feeds about 166 people each year! Together, U.S. farmers produce enormous quantities of food and materials, including hundreds of billions of pounds of grain, oilseeds, dairy, fruits, vegetables, meat, and poultry. But farming isn't just about food. Farmers also supply the raw materials for many everyday products—like baseball bats, leather gloves, shoes, paper, tires, shampoo, soap, toothpaste, lumber, hand tools, and even crayons (Kansas



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Bee Conservation

Suggested Grade Level: K-2

Time: 60 minutes

Subject: Language Arts, Informational Reading, Research, Speaking and Listening, Science, Biology, Ecosystems, Social Studies, Natural Environments, Food Production, Responsibilities, Farming, Consumer and Producer, Agriculture, Bees and Apiculture

Overview: This lesson focuses on the importance of bees in our world and the need for efforts to save the bees. Students will learn about the impact that bees have on our environment and daily lives through interactive games and discussions.

Objectives:

1. Demonstrate why bees are important in our world through a whole-class game
2. Orally discuss and list actions that humans can take to save the bee population
3. Demonstrate how bees pollinate flowers through a whole-class game

Background Information:

Bees are important to the environment, to animals, and to us. Bees are pollinators, which means that they transfer pollen from plant to plant. This helps plants flower and/or grow fruit. These flowering plants then become food for other insects, animals, and humans. Many major food crops depend on bees, including alfalfa, sunflowers, several fruits and vegetables, and more (Bee).

Humans can also harvest things that bees create. The best example is honey, which humans use to sweeten our food. Honey has also historically been used to heal wounds due to its low pH and its hydrogen peroxide content. Another common bee product is beeswax, which bees use to create honeycombs. Beeswax can be used in cosmetics, candles, and more. Bee pollen, propolis (the "glue" used to construct the hive), royal jelly (which is used to feed baby bees), and bee venom are also sometimes used for health purposes (Anderson).

Kansas Connections:

In Kansas, canola, cotton, sunflower, and alfalfa crops are all dependent on pollinators to produce seeds and fruit. Other crops that are not dependent on pollinators, like corn, still benefit. Corn can produce larger kernels and more kernels per ear when insect pollinators are present.

Soil Biodiversity Experiment

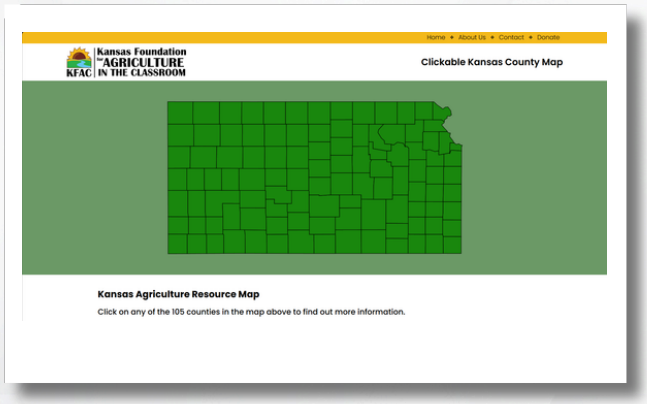
Introduce K–2 students to the importance of bees as pollinators. Through quick, engaging games and discussions, students learn how bees help our environment and what people can do to protect them. This lesson connects ELA, science, and social studies.

Keep Exploring

Check out these free resources for K - 2nd grade!

Explore Virtual Agriland!

KFAC's Virtual Agriland is an engaging online resource that introduces students to agriculture through interactive lessons, virtual tours, and hands-on activities. Find resources for K - 2nd grade by clicking the link above!

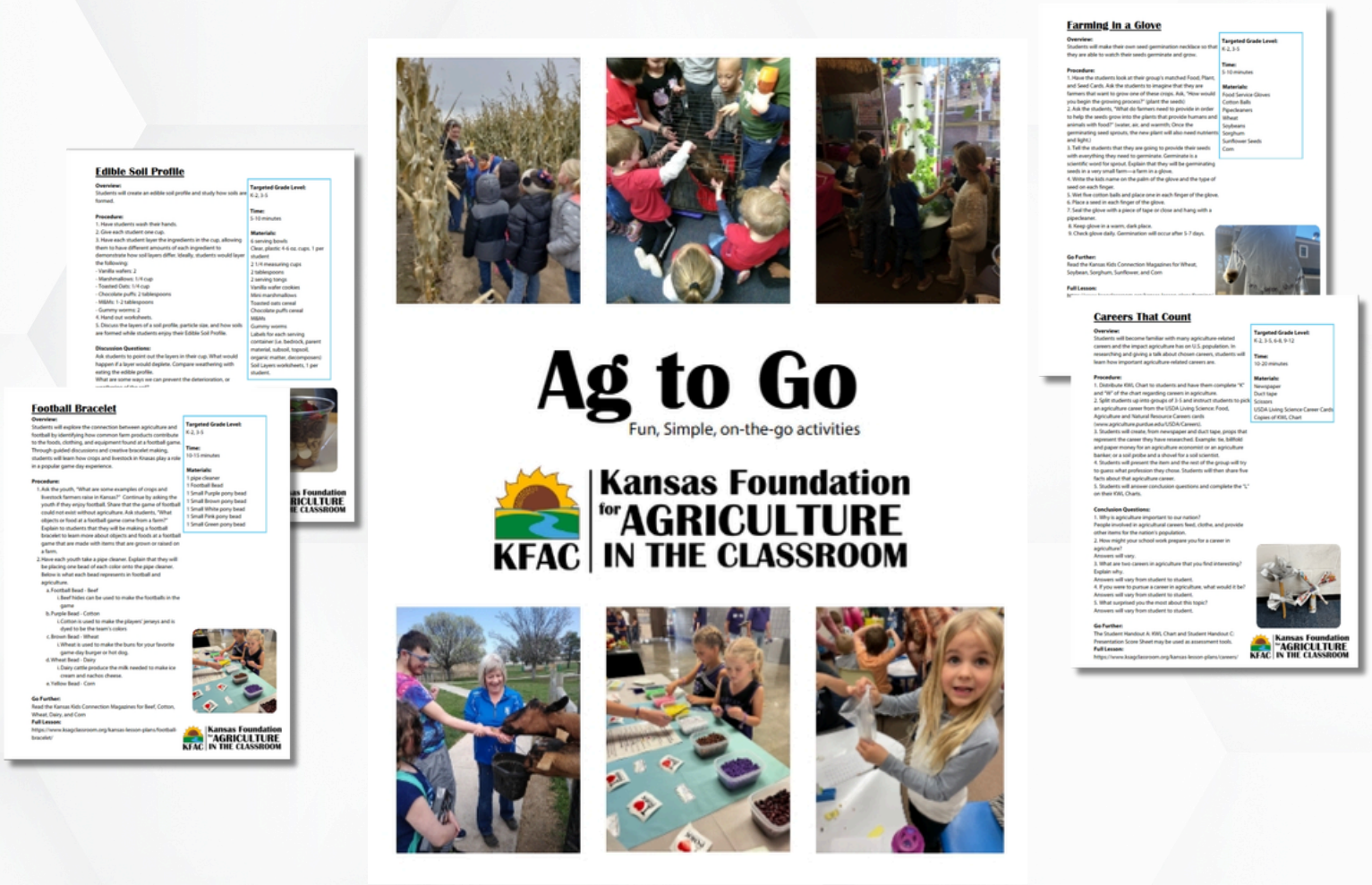


Check Out Our Interactive Map!

The Interactive Map provides county-level access to local statistics, educational resources, and directories of agricultural businesses. Each county is clickable, allowing users to explore local data and connect directly with their community. To view the map, visit the link above.

Take It Further

Check out these free resources for K - 2nd grade!

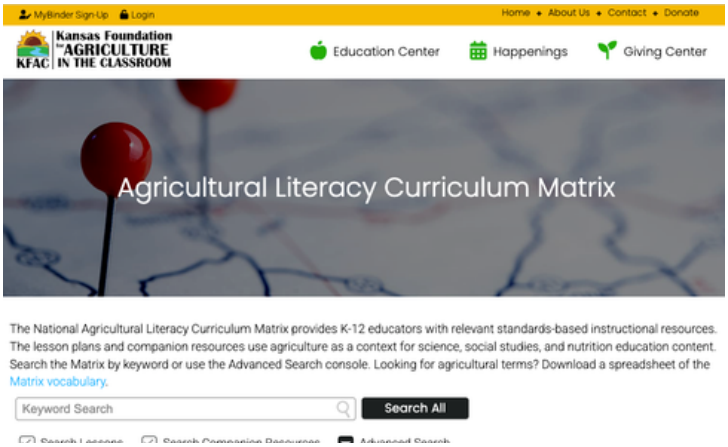


Ag to Go: Fun, Simple, On-The-Go Activities

The Ag to Go Guide is a simple, ready-to-use resource that makes it easy to teach agriculture anywhere, anytime. Its short, hands-on activity bites are perfect for high school students who want to lead lessons in elementary schools, giving them a practical way to build confidence, leadership skills, and agricultural literacy while teaching younger learners. Click the link above to check it out!

I'm All In

Bring agriculture into your classroom with exciting materials, training opportunities, and events!



Instructional Materials

Engage students in activities that align to standards and explore teaching themes such as inquiry-based learning, and three-dimensional learning. Use the Curriculum Matrix to find lessons on specific topics and themes for your classroom.

Professional Development

Kansas Foundation for Agriculture in the Classroom (KFAC) provides professional development for educators through workshops, training, and resources that integrate agriculture into the curriculum. KFAC helps teachers create engaging, real-world learning experiences, fostering a deeper understanding of agriculture's role in society.

National Agriculture in the Classroom Conference

Join educators from across the nation to learn how to use agricultural concepts to teach reading, writing, math, science, social studies and more at the annual national convention.Explore agriculture across the country as the conference has a new location each year.

Kansas Foundation for AGRICULTURE IN THE CLASSROOM

KFAC

National Agriculture in the Classroom (NAITC) aims to improve agricultural literacy by providing educators with resources, lesson plans, and professional development opportunities to incorporate agriculture into their classrooms. Our mission is to connect students to agriculture, helping them understand its impact on their lives and the world. Find more resources at https://agclassroom.org/.

Kansas Foundation for Agriculture in the Classroom (KFAC) is the state-level affiliate of NAITC. KFAC provides tailored resources, lesson plans, and professional development opportunities to help teachers integrate agricultural topics into their curriculum. By fostering a deeper understanding of agriculture's role in society, KFAC aims to engage students in hands-on learning and promote agricultural literacy across Kansas.

Kansas Foundation for AGRICULTURE in the Classroom

KFAC

About Us

KFAC is a statewide, self-funded 501(c)3 nonprofit agricultural literacy program providing educational resources, training, and support for schools, educators, and volunteers to spark meaningful connections between classrooms and Kansas agriculture.

Kansas Foundation for Agriculture in the Classroom...

- Provides educators with agricultural lesson plans and resources.
- Offers professional development opportunities for teachers.
- Promotes agricultural literacy through hands-on learning experiences for students.

Every year, KFAC reaches...

160,000+
Students

5,500+
Teachers

Connect with us:

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