

Hands-on Learning Resources

Visit our web site (above) to get detailed descriptions about the resources listed below.
To check out these resources on free-loan basis, contact Connie Niemann at above number or by e-mail cniemann@illinois.edu.

mAGic Kits: Bring mAGic into your classroom with these kits. The lessons in the mAGic kits are multidisciplinary, all inclusive, and designed to bring math, science, social studies and Language Arts to life through agriculture. The mAGic kits address the IL standards. The lessons include exercises for grades 4-8 in mapping, graphing, sequencing, reading, writing, experimentation, research and much more. **Lessons available at <http://www.ilaged.org/AITC> for free download.**



Illinois mAGic—Students learn about a variety of topics ranging from the prairie landscape to the Chicago stockyards, the Lincoln-Douglas debates, and the forests of Southern Illinois. As they map their way through IL, check out the seven wonders, meet famous Illinoisans, and discover all the great things that come from IL. Navigating IL waterways will allow the students to see just how diverse our state is, with Amish settlements and coal mines throughout the state. Yet the wealth of our state is found in its' soil.



Insect mAGic—Students will learn about the impact of insects on crop production through a variety of lessons and activities. Mapping exercises let students follow butterflies on migration patterns. Students track a day in the life of an insect and learn about wingspan, life cycles, anatomy, and social hierarchy patterns of common insects.

Dairy mAGic—Hands-on exercises let students explore the processes of using milk, acids, enzymes, and bacteria to make cottage cheese, yogurt, and ice cream. Students will find out how much milk one cow produces in a lifetime. They'll also dive into history, and they'll learn about issues of supply and demand in the dairy industry.

Plant mAGic—This kit offers problem-solving activities in plant propagation, production, and processing. Students will conduct experiments to learn about plant differences and plant ecosystems. They'll also sequence plant products, research the discoveries of George Washington Carver, and look at the impact of crops on the national economy.

Poultry mAGic—Students will uncover interesting facts about U.S. poultry production through exercises and hands-on experiments. They'll learn about the anatomy and nutritional value of an egg. They'll also learn about the history of egg production and find out how poultry dishes are prepared around the world.

Machine mAGic—Students will learn about simple and complex machines, the history of farm machinery and the impact of modern farming techniques on families and communities. They'll also learn how inventors John Deere and Cyrus McCormick helped shape modern agriculture. Hands-on exercises let students identify machinery parts and estimate farm machinery costs.

Soil mAGic—Soils are alive, as students will discover through the lessons in this kit. Students will learn to conduct experiments in soil pH, create soil profiles, and understand the components of soils. They will also unveil the history of crop rotation and dig into the Dust Bowl.



AgriLearning Kits: These cross-curricular thematic kits contain a collection of resources – lessons, books, digital media and more. Many lessons are aligned to the IL Learning Standards. Ideal for grades K-4.

By using these kits, students will learn that while we purchase our food from the store, it begins with plants or animals raised on farms, which are the heart of the agriculture industry. From the farm, products are transported, processed, marketed and distributed, involving a multitude of agricultural careers in this chain of events. Through these kits, students will discover that they all depend on agriculture every day of their lives.

Adventures Around the Farm—Whether living in the country, a small town, or a big city, people depend on farms for food, clothing, and many other things used every day. Farmers produce crops such as fruits, vegetables, nuts, and grains. They also raise livestock such as cattle, pigs, chickens, and sheep. Without the crops and livestock that come from farms, we would all go hungry. The lessons and materials in this kit will help students understand what a farm is, what farmers do, and what comes from farms. They will also learn that there are many different kinds of farms.

Pigs on the Farm—Hog production in the United States has changed dramatically over the years. Farmers used to feed their pigs slop, a mixture of leftovers from the farmhouse. Pigs were known for being dirty animals because they wallowed in the mud. Today, farmers feed their animals a balanced diet, many times in a temperature controlled building. The lessons and materials in this kit will help students understand what pigs are, what farmers do to take care of pigs, and how people benefit from pigs.

Seasons on the Farm—In Illinois we have a climate that is made up of four very different seasons. The earth moving around the sun makes the seasons. The lessons and materials in this kit will help students understand how agriculture revolves around the season and how the farm brings us many lessons about winter, spring, summer and fall.

The Wheat We Eat—Wheat has been grown for thousands of years as a food source for humans. Today's farmers use modern machinery to plant and harvest these valuable seeds. The main steps for doing so are the same today as they were for our early ancestors. Teach your students how wheat is grown, milled, and then made into foods worldwide. Using the resources and lessons in this kit, teach about the people who make bread, the places where bread is made, and the different ways to make bread, pasta, and many other foods!

Ag Mags for Your Class: To assist you in exploring many topics, request a **free** classroom set of Ag Mags which are a 4-page, colorful newspaper for students containing information, pictures, classroom activities, and agricultural careers. Interactive versions which provide links to other web sites to learn more, interviews, and lessons to further explore each topic are available at www.agintheclassroom.org.

Ag Mags currently available cover the following topics: apples, beef, careers, corn, dairy, horse, Illinois history, livestock, nutrition, pizza, pollinator, pork, poultry, pumpkins, renewable energy, seasons, soil, soybeans, specialty crops, water, and wheat. Other Ag Mags available online but not currently in print include: horticulture, urban, and tree at www.agintheclassroom.org.

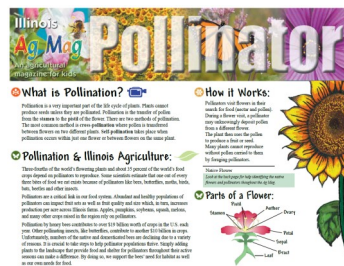
Getting to the Core: Apples and Orchards—How do apples grow? Where do all those varieties come from? Learn the answers to these questions and so much more! Take an inside look at apples and their history. Getting to the Core has a lot of hands-on activities and games, things to make and things to eat, videos, posters and books.

Pondering Pizza: A Slice of Agriculture—Take a look at a slice of agriculture...a pizza slice. Learn how all the ingredients on your pizza begin on farms, are processed, distributed and made in to a delicious meal. Explore Planet Pizza via video and visit a real "pizza farm." Take part in a slice of the action through the Pizza Party fractions game. Through hands-on activities, books, poster, and curriculum, ponder the wonders of pizza. (grades K-6)



Pumpkin Patch: A Vine Through Time—Discover the wonders of pumpkins. Watch seeds grow into several varieties of pumpkins in a time-lapse video and learn how to prepare the soil for next years' crop. The Pumpkin Patch contains posters, books, hands-on activities, recipes, and great pumpkin facts.

Unraveling Fibers: More Than Just Clothes—Unravel the mysteries of the fibers that make up our clothing and a multitude of other items. Through hands-on activities, books, a video, and fiber samples, discover the origins of many natural fibers such as cotton, wool, and silk. Try your hand at spinning and weaving and learn how fibers are woven into our daily lives. Use the magnifying lenses to take a closer look at the textile industry.



AgriScience Kits: Students learn science concepts through hands-on applied agricultural activities utilizing these self-contained teaching units. Kits come with teachers guide and materials for activities. Lessons are aligned to the Illinois Learning Standards.

Eggciting Experiments - Chick Incubation and Embryology (grades K-8): Students participate in a 5-week study of living organisms including incubation of chicken eggs, charting events as the embryos develop in the eggs, and observation and care of the hatched chicks.

Genetics and How We Grow (grades 4-8)—Colored paper clips are used to illustrate genes and chromosome chains as students learn how traits are inherited by offspring from parents. A germination study of seeds which produce albino or normal green corn plants helps students understand genotypes and phenotypes. Students learn about probabilities of transmission of two genes from parent to offspring.

Polymers & Oils in the Classroom (grades 3-8): The practical, hands-on activities in this kit were designed to teach students to

observe, measure, and describe how renewable resources, such as soybeans, can be used to make industrial products. The lessons are focused on two important components of soybeans - oil and polymers. Students will make adhesives from soybean protein and candles, crayons, ink and hand cream from soybean oil. Since many products will be taken home to show parents, information sheets for parents containing ideas for further learning and exploration are included. As students learn about the physical properties of polymers and oils and their functional aspects, they will gain an appreciation for the importance of renewable resources in the manufacturing of numerous industrial products.

Soil Erosion (grades 4-8)—This kit tackles the high-priority problem of soil erosion. Based around the Secret Agent Worms book, *The Disappearing Earth*, this kit includes a variety of exciting materials.

Resources Available from Our Program: The following items are available on a free-loan basis.

Field Trip Pack for Early Childhood Educators includes many items to assist your early childhood students as they explore nature. Hands-on equipment will encourage self-initiated learning. Suggestions for teachers on how to incorporate natural resources activities into your lessons are also included. Suggested grades: Prekindergarten - 3. Provided by Illinois Department of Natural Resources

Illinois Birds Trunk: Studying birds can jump-start your students' interest in nature and conservation. The Illinois Birds Trunk is a great way to enhance your lessons. This trunk is filled with field guides, books, track and egg replicas, CD-ROMs, videos, DVDs, CDs with bird songs and calls and even bird replicas that sing! Suggested grades: PreK - 8, but can be modified for other grade levels. All items are correlated to the Illinois Learning Standards and the Illinois Early Learning Standards. To see a list of items included in the trunk, please visit the trunk section on www.dnr.illinois.gov/education. Provided by Illinois Department of Natural Resources

Illinois Insects & Spiders Trunk: Insects and spiders fascinate students. Encourage them to learn more about these organisms by using the resources in this trunk. Books, CD-ROMs, student activities, field guides, posters, insect/spider observation equipment and a video are just some of the items included. Targeted Grades: PreK-6. To see a list of items included in the trunk, please visit the trunk section on www.dnr.illinois.gov/education. Provided by Illinois Department of Natural Resources

Illinois Pollinators

The Illinois' Pollinators resources trunk contains teaching tools to help you and your students explore the variety of pollinators in

our state. Targeted to grades prekindergarten through six, there are resources included for classroom use as well as a backpack with field guides and equipment for observation in the field. Sections in the trunk include "What are Pollinators?," "Why are Pollinators Important?," "How Does Pollination Work?," "Helping Pollinators" and "Pollinator Gardens." Lessons are correlated to Next Generation Science Standards and Illinois Early Learning and Development Standards. To see a list of items included in the trunk, please visit the trunk section on www.dnr.illinois.gov/education. Provided by Illinois Department of Natural Resources

Illinois Tree Trunk: Want to learn more about the forest? The trunks are large storage containers that include many items teachers can use to instruct students about trees, forests, forest careers and the forestry industry. Suggested grades: PreK-10. To see a list of items included in the trunk, please visit the trunk section on www.dnr.illinois.gov/education. Provided by Illinois Department of Natural Resources

Wild about Turkey Education Box: Developed by the National Wild Turkey Federation this to teach children about the comeback of the wild turkey – one of the greatest conservation success stories of all time – and the importance of managing wildlife resources properly. The box is a scaled replica of an actual wild turkey transport box used by wildlife biologists. It is full of activities and educational tools correlated to national education standards for K-12 students including a colorful bulletin board, display, a DVD of wild turkey history, communication and habitat videos, turkey caller, wild turkey anatomy replicas, a wild turkey biology and anatomy poster, a Making Tracks habitat management poster, and a multimedia CD with turkey sounds, NWTF Wildlife Bulletins, activities and much more!



Ag Readers for Your Class: To assist you in exploring a variety of topics, these 4-page student readers contain information about each commodity, pictures, and agricultural careers. The following commodity readers are available: apples, beef, cooperatives, corn, cotton, dairy, horses, invasive species, pizza, pollinator, pork, poultry, pumpkins, renewable energy, sheep, soil, soybeans, specialty animals, water, and wheat.

To examine agriculture as it relates to Math, Science, Social Studies, Language and Writing these commodity readers and sample student questions have been developed and made available for teachers to print and implement. Designed to mirror the Terra Nova Test, these readers are a way to expose students to more non-fiction based texts. The questions can be

answered using the text and are designed to take about 10 minutes per area.

The Readers can be downloaded in black & white or color from www.agintheclassroom.org. They can also be viewed on electronic devices.

POLLINATORS

USES: Birds, Bees, Butterflies, Moths, Flies, Beetles, Bats

WHAT ARE POLLINATORS?
These insects of the world's flowering plants and about 70 percent of the world's food crops depend on pollinators to reproduce. Many bees, butterflies, beetles, flies, moths, and birds are important pollinators. Some scientists estimate that one out of every three bites of food we eat would be gone if pollinators like bees, butterflies, moths, birds, bats, beetles and other insects.

HOW POLLINATION WORKS:
Pollinators visit flowers in search for food (nectar and pollen). During a flower visit, a pollinator may unintentionally deposit pollen from a different flower. The plant then uses the pollen to produce a fruit or seed. Many plants cannot reproduce without pollen carried to them by foraging pollinators.

VOCABULARY
ANTHER: The reproductive structure of a flower that produces pollen.
STAMEN: The male part of a flower which produces pollen and consists of a filament and an anther.
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WHAT ARE SPECIALTY ANIMALS?
Specialty animals are livestock that are not common to the typical American farm. These include, but are not limited to, llamas, alpacas, goats, and more. Specialty animals can be found in almost every state where they are raised. Many specialty animals are raised in the west, but they are also found in the northeast, middle, and south. Some of the animals are domesticated to show at a fair or to keep as a pet.

WHAT'S MY NAME?

Specialty Animal	Male	Female	Young
Alpaca/Llama	Male	Female	Cria
Goat	Buck	Doe	Kid
Rabbit	Buck	Doe	Kit
Sheep	Stag	Ewe	Lamb
Duck	Drake	Hen	Duckling
Chicken	Rooster	Hen	Chick

US & IL: ALPACA FARMS & ALPACAS
10,650 - # OF ALPACAS
1,944 - # OF ALPACAS
240 - # OF ALPACA FARMS

US & IL: OSTRICH FARMS & OSTRICHES
656 - # OF OSTRICHES
242 - # OF OSTRICH FARMS
5 - # OF OSTRICH FARMS

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Calendar provides reminder that agriculture is everyday!

At the beginning of the school year, you received a new classroom calendar featuring agricultural photos, facts, and recommended readings. Please be sure to save this calendar as it is part of a three year series to have the complete life cycle of these agricultural commodities.

Here are some ways educators have used this resource:

- Read fact as a part of daily routine.
- Use for writing or journaling ideas.
- Display in areas that students line up or visit daily so they can read it.
- Share along with daily school announcements.
- Use on school menus for fun facts.
- Use for bulletin boards - collect series and use both pictures and facts.
- Learn some new terminology each month.
- Utilize monthly topics to spur further exploration and activities.

August 2022

August 1st: National Day of the Cowboy

August 2nd: National Day of the Cowboy

August 3rd: National Day of the Cowboy

August 4th: National Day of the Cowboy

August 5th: National Day of the Cowboy

August 6th: National Day of the Cowboy

August 7th: National Day of the Cowboy

August 8th: National Day of the Cowboy

August 9th: National Day of the Cowboy

August 10th: National Day of the Cowboy

August 11th: National Day of the Cowboy

August 12th: National Day of the Cowboy

August 13th: National Day of the Cowboy

August 14th: National Day of the Cowboy

August 15th: National Day of the Cowboy

August 16th: National Day of the Cowboy

August 17th: National Day of the Cowboy

August 18th: National Day of the Cowboy

August 19th: National Day of the Cowboy

August 20th: National Day of the Cowboy

August 21st: National Day of the Cowboy

August 22nd: National Day of the Cowboy

August 23rd: National Day of the Cowboy

August 24th: National Day of the Cowboy

August 25th: National Day of the Cowboy

August 26th: National Day of the Cowboy

August 27th: National Day of the Cowboy

August 28th: National Day of the Cowboy

August 29th: National Day of the Cowboy

August 30th: National Day of the Cowboy

August 31st: National Day of the Cowboy

Books and DVDs: We have a large collection of books and DVDs available on various agricultural topics.

Web Sites to Visit

Illinois Agriculture in the Classroom

agintheclassroom.org

Illinois Farm Families

watchusgrow.org

National Agriculture in the Classroom

agclassroom.org

My American Farm

myamericanfarm.org

U of I Extension Schools Online

extension.illinois.edu/global/schools-online

IL Agriculture in the Classroom blog site

beyondthebarndoor.wordpress.com/

