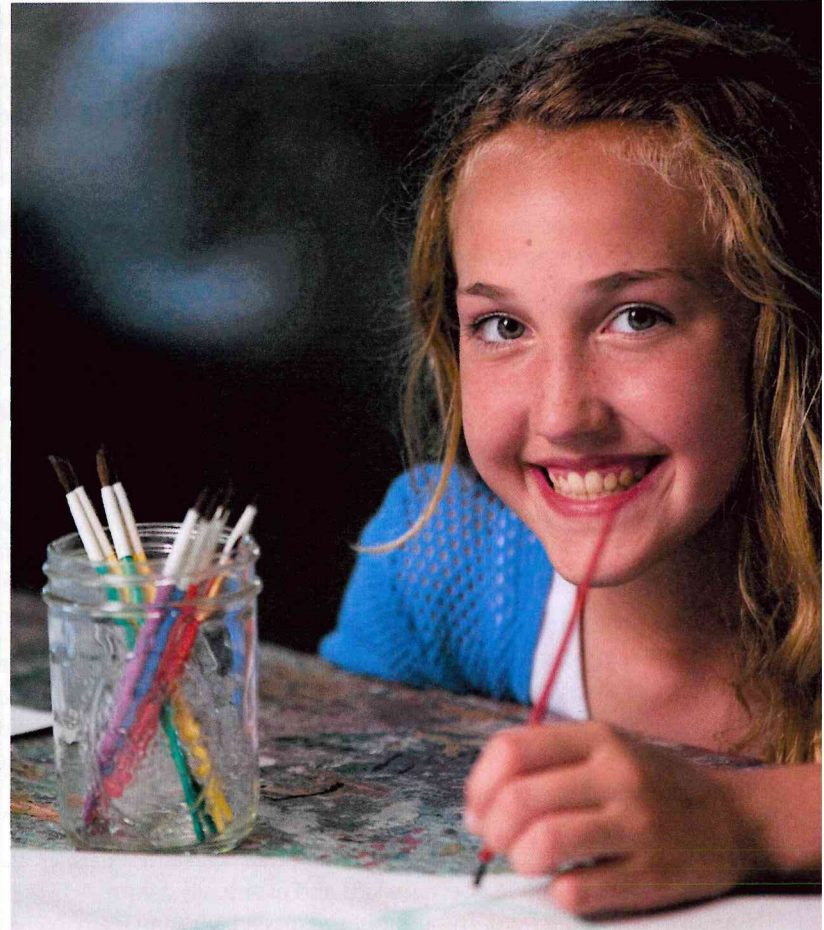


**4-H**

**PROJECT  
SELECTION  
GUIDE**



**K-STATE**  
Research and Extension



In 4-H, young people learn about topics that interest them! These are referred to as a member's "projects." Exploring your interests through 4-H project work is an excellent way to discover new skills and potential careers. While projects can vary depending on your local program and availability, this guide offers a starting point for each of the official Kansas 4-H projects. Resources for each project can be ordered through your county or district K-State Research and Extension Office.

## Animal Science

### Beef

Learn about raising, caring for and managing beef cattle. You may start with a bucket calf and work toward building your own herd with breeding beef or learn more about feeding out cattle through the market beef project. You'll learn about different breeds and anatomy of beef cattle; how to feed, groom and show your animal; how to judge beef cattle for market and/or breeding; how to produce high-quality beef; and how to use performance data and technology in an efficient beef-cattle operation.

#### Beef Bucket Calf

This project is open to 7- to 12-year-olds. Calves may be purchased or orphaned but are to be bottle/bucket fed.

#### Learning by Doing

Participate in Junior Beef Producer Day, exhibit at local beef shows, State 4-H Livestock Sweepstakes, (includes livestock judging, quiz bowl, Skillathon, and meats judging), Kansas State Fair State Beef Show, and the Kansas Junior Livestock Show.

### Dairy Cattle

Learn about raising and managing dairy animals by selecting, grooming and showing a heifer calf or yearling heifer. Along the way, you'll learn about dairy cattle breeds and anatomy, judging and presenting oral reasons, animal health and welfare, and safe practices for handling milk and milk products. Members with mature cows learn about animal feeds and nutrition, milk production, and careers in the dairy industry. Specific projects include dairy bucket calf, dairy heifer and dairy cow.

#### Learning by Doing

Participate in Kansas All-Breeds Junior Dairy Show, Judging Contest, Skillathon, and Dairy Quiz Bowl.

### Dairy Goats

The dairy goat project is great for smaller properties since goats are typically easy to train and handle. Goat milk can be consumed by the family, fed to bucket calves or fed to other market animals. You might start with one doe, raise kids and eventually create your own dairy goat herd. Throughout the project, you can learn about breeds and anatomy of dairy goats, proper care and welfare of animals, record keeping and more.

#### Learning by Doing

Participate in local and state dairy goat shows or join a regional dairy goat organization.

### Dog

Whether you have a dog or hope to own one, this project will help you learn more about your family's best friend, from basic care and grooming to advanced training commands. Learn about different dog breeds and choose the best breeds for your family. Explore dog behavior, body language, and obedience training while learning about proper nutrition to keep your dog happy and healthy.

#### Learning by Doing

Show your dog at local shows and the Kansas State Fair 4-H Dog Show. Members without dogs may participate in quiz bowls and other activities that do not require dog ownership, such as the Kansas 4-H Dog Conference.

### Horse

If you love horses and want to learn how to safely handle, care and ride a horse that you own or lease at least 75 % of the time, the horse project is for you. In this project you will learn basic coat colors, breeds, and horse anatomy; study horse health; participate in judging contests, quiz bowl, and hippology; and give presentations. Achievement Levels allow 4-H Horse members to learn more about the project and advance through their skills and knowledge. Achievement Level I focuses on safe handling of horses. Then once completed Achievement Level I, Achievement Levels II, III, and IV can be taken to advance your educational knowledge of horses. 4-H Horse Identifications are due June 1 into the local Extension Office.

#### Learning by Doing

Visit a stable or farm; participate in the State Horse Judging Contest, State Horse Quiz Bowl, Horse Panorama, horse presentations, and hippology; and exhibit at local and state horse shows.

### Meat Goat

The 4-H Meat Goat project is quickly growing as demand increases for meat products. You'll learn how to select, raise, and care for a meat goat; study breeds and anatomy; learn how to fit and show meat goats; recognize diseases; keep records; select breeding stock; learn key components in developing a goat herd; and evaluate feed ingredients.

#### Learning by Doing

Participate in Junior Meat Goat Producer Day at K-State, Livestock Sweepstakes, Kansas Junior Livestock Show and the State Meat Goat Show at the Kansas State Fair.

### Pets

Whether you love fish, hamsters, cats, or other pets, these projects can help you learn more about your household friends and what different pet species need to stay healthy.

#### Learning by Doing

Identify hazards for pets around your home, and learn about your pet's feeding and care. Learn the symptoms and treatment of diseases as well as taxonomic classification.

## Poultry

This project is designed to help you learn about chickens, turkeys, ducks, geese, pigeons and other poultry. This is an excellent project to expose both rural or urban youth to basic animal husbandry skills. You will learn species, breeds and anatomy and how to care for and handle your birds. Learn how eggs are formed, how to select and judge broilers, make an egg candler, and understand pecking orders. Lead younger members in egg experiments, process chickens for food, and learn about biotechnology and poultry careers.

### Learning by Doing

Participate in the Poultry Judging Contest at the Kansas State Fair.

## Rabbit

The rabbit project will allow you to learn to raise and care for your rabbits. Identify main breeds of rabbits and their anatomy, learn feeding and watering practices, learn to groom and show a rabbit, and care for newborn rabbits. It is best to enroll in the fall to prepare for receiving your first rabbit.

### Learning by Doing

Take part in rabbit shows, try rabbit judging, participate in showmanship, or start with a doe and grow your project.

## Sheep

In the sheep project, you will learn to identify sheep breeds and anatomy, manage and train sheep for show, learn safety and management practices for maintaining a flock, identify symptoms and treatment of diseases, study nutritional requirements, study technology's impact on sheep production, and explore career opportunities in the sheep industry.

### Learning by Doing

Participate in Junior Sheep Producer Day, exhibit at a local sheep show, participate in the Kansas 4-H Livestock Sweepstakes, or Kansas Junior Livestock Show.

## Swine

If you want to learn about raising, caring for, and managing a market or breeding hog, enroll in the swine project where you will study pork production from farrow to finish. Throughout the project you will identify different swine breeds and anatomy; types of feeds; identify symptoms, causes, and treatments of swine diseases; study breeding systems and performance data; and explore career opportunities in the swine industry.

### Learning by Doing

Exhibit at a local swine show or participate in K-State's Junior Swine Producer Day or Bob Hines Swine Classic; Kansas Junior Livestock Show; or the Kansas State Fair Swine Show.

## Veterinary Science

The 4-H Veterinary Science project provides an excellent way for young people who care for animals and may want to follow a career in veterinary medicine to explore the topic. In this project, members will learn about animal health, behavior, and visit with veterinarians. You do not have to own an animal to be in this project.

### Learning by Doing

Document your pet's daily health, spend a day shadowing a local

veterinarian, visit with a veterinary technician and learn what it takes to take care of the animals we love.

## Communication & Expressive Arts

### Communications

4-H is famous for helping youth improve their communication skills. Being a better speaker, writer, or record keeper will help you throughout your life. The communications project will help you interpret verbal and nonverbal information, develop effective public speaking skills, enhance written and spoken communication, defend a point, design a presentation, and more.

### Learning by Doing

Discuss your other 4-H projects in an illustrated talk or demonstration to club members, write a thank-you note, run for a club office, complete a record book, or present a speech.

### Performing Arts

Those who enjoy being in the spotlight on stage or being creative off stage may enjoy this project. Learn to express yourself in front of a crowd.

### Learning by Doing

Express yourself by creating and presenting a theatrical play or musical performance; participate in camp's talent show, create a puppet show; create costumes, sets and props; and enter your local Club Days or other contests.

### Photography

Photography is a great way to create art, preserve memories, and have fun, all at the same time. Don't have a camera? Cell phones work just fine for the photography project too! You will learn the basic functions of a camera and how those functions transfer to a cell phone. More importantly, you'll learn how to use the elements of composition when capturing photos (depth of field, rule of thirds, leading lines, etc.) and then learn what photo judges look for in their favorite photos. Once you have mastered photography, you may be interested in taking it a step further with videography or other digital media.

### Learning by Doing

Document your family or club activities through photos; volunteer as a sports photographer at school; take photos for the school yearbook; enter a photo contest or fair exhibit; enter the photography judging contest at the Kansas State Fair.

### Visual Arts

Encourage your creative skills in learning how to draw, paint, and work with different media. Explore art techniques, study art history and culture, or challenge yourself to discover new artistic talents. The visual arts project teaches artistic skills and the elements and principles of design. Projects may vary depending on your local 4-H program.

### Learning by Doing

Practice drawing, painting, and printing techniques in paint, pencil, chalk, charcoal, or mixed media; learn sculpture techniques; make something from wood, leather, paper, or clay; weave a basket or wall hanging; etch glass or metal; make jewelry and wire sculptures; create mosaics or nature crafts; discover new

media. Enter your best work in the fair and teach others the new skills you've learned.

## Consumer & Family Science

### Sewing & Textile Design

Learn to create and sew your own clothing and accessories while exploring the world of fashion in Sewing and Textile Design. This project will teach you the basics, such as sewing a pillowcase or shirt, learning different stitches or putting in a zipper. Learn to select appropriate fabrics, use patterns, sew quality seams, and care for your garments. In advanced units, you can learn how to take the design of your choice and customize it for the perfect look, color, and fit.

#### Learning by Doing

Design and/or create fair exhibits; make items for community service; participate in Fashion Revue to model constructed garments.

### Shopping in Style

The Shopping in Style project will help you understand your wardrobe; plan a clothing budget; select colors and styles that complement your body shape, proportion, and balance; choose different shades of colors; compare fiber, care requirements, cost, brand, and style; and analyze clothing advertisements.

#### Learning by Doing

Complete a clothing inventory, organize a clothing drive, assemble outfit(s) for county fair; participate in Fashion Revue to model purchased outfits.

### Family Studies

Learn about growing and maintaining a healthy family by learning about child development, building family strengths and managing a household. Learn how children grow and develop physically, socially, mentally, and emotionally. Study the effects of employment on family and lifestyle, and learn to use consensus and compromise. Learn to determine differences between needs and wants, develop a savings plan for a specific goal, practice comparison shopping, learn to manage a checking account, recognize target advertising, identify consumer rights and learn the value of employment.

#### Learning by Doing

Partner with a peer to explore and discover solutions to today's consumer topics, create an intergenerational community-service project, and establish a baby-sitting service.

### Fiber Arts

The Fiber Arts project is filled with different techniques, all based on manipulating fiber into an art piece. If you've ever wondered how to crochet a scarf, embroider a pillowcase or make a quilt, this project can help you learn these skills and more. Fiber Arts focuses on skills passed down through generations to provide basic family needs, such as apparel, home furnishings and decorations. Skills such as knitting, needle arts, quilting, weaving, macramé, and spinning are just as important today as they ever have been!

#### Learning by Doing

Create items for fair exhibits or to donate to hospitals, shelters or nursing homes.

## Foods and Nutrition

In this project, you will have fun learning how to cook the basics and then advance to gourmet and international meals. Develop baking skills, learn about food preservation, explore the heritage of many foods, and understand consumer buying skills. Learn how to make healthy snacks and modify recipes to fit a healthy lifestyle.

#### Learning by Doing

Enter a foods exhibit in the fair, plan and prepare snacks and meals for your family, incorporate exercise into daily life, and learn about food safety through activities like working in a club concession stand.

## Health and Wellness

Explore health and wellness in your personal life as well as in your club, community, country, and world. Health, exercise and recreation are vital parts of your daily lives. In these projects you can focus on physical activity, healthy eating, exercise, sports and recreation, or first aid.

#### Learning by Doing

Present ideas to community leaders for walking paths and bike trails in your town. Volunteer at a nursing home or hospital. Organize a project to assemble first aid kits in your community. Enter a project exhibit in your local county fair demonstrating what you have learned.

## Interior Design & Architecture

This project gives you the opportunity to examine your environment, both inside and outside of the home. Designing a new layout for a room, refreshing your porch, refurbishing a family heirloom or even creating something brand new are all examples of ways to incorporate the design process in your living environment. Learning and experimenting with the elements of design (color, line, value, space, shape, form and texture) in all areas of a room or space or furniture piece are all part of this project. Being a designer (architect, furniture, product design or interior designer, etc.) is not only about how a space looks but also how it feels. The end goal is to create a space that feels inclusive, functional, and inviting to all.

#### Learning by Doing

Refurbish furniture or makeover a room in your home. Volunteer to redesign and rearrange a room at your school to make the area more functional. Organize a community day for the free disposal of paint, refinishing materials, and solvents. The home environment project will give you the opportunity to design, create and implement what you've learned by creating a notebook, project board or item.

## Engineering & Technology

### Aerospace/Rocketry

Discover how a model rocket works, study equipment and procedures for a safe launch, build and launch your own model rockets.

#### Learning by Doing

Build a rocket or educational displays. Take a field trip.

## Ag Mechanics Welding

The Ag Mechanics project allows youth to explore areas of Ag mechanics and metallurgy from repairing or re-purposing items to the fabrication of new items. The intent is for this program start with foundational areas, some of which youth may already have, and allow them to continue to build on this knowledge, becoming more experienced.

### Learning by Doing

In the project, you'll identify welding equipment, learn about electrodes, learn basic arc welding skills, and demonstrate appropriate welding skills.

## Astronomy

Study the different kinds and uses of telescopes, build a simple telescope, learn planet order by making a key ring bead system, build spectrosopes, distort light with lenses and prisms, and learn how to set up public viewings.

### Learning by Doing

Have a star or space watch party, set up and educational displays, or take a field trip.

## Building Block Engineering

The Building Block Engineering project is designed to help youth explore architectural design in a three-dimensional space. The project starts with foundational ideas of architecture, some of which youth may already have, and allows them to continue to build on this knowledge, becoming more and more experienced.

### Learning by Doing

Youth demonstrate their architectural skill and knowledge through the creation of "Lego" construction projects.

## Computer Science

Learn the basic components of a computer; identify the similarities and differences in office software applications; learn Internet safety. As you get older, learn to build, maintain, and repair computers. Learn programming languages and network security.

### Learning by Doing

Explore careers in computer science. Teach your 4-H club coding or other elements of computer science.

## Electric & Renewable Energy

Learn general electrical concepts as you experiment with making light switches and circuits, test voltages and even build motors. Study energy use, magnetism, electronics and transistors. Later, you can determine your family's electrical usage; measure electric usage of appliances; test grounded outlets; explore electronics; build simple radios, microphones, computers, and other equipment; and explore careers in electronics and engineering. Learn how wind can be used for sailing, lifting, pumping water and creating electricity.

### Learning by Doing

You can design and build a wind-powered boat and wind turbines; discover where and why the wind blows; and explore

the wind in art and literature.

## Robotics

Learn about robot arms, legs, wheels, or under-water propulsion; explore sensors, analog and digital systems; build basic circuits; design a robot; and program a robot to do a task.

### Learning by Doing

Explore careers and companies that use robotics. Research medical uses of robotics. Design and build a robot that solves a problem.

## Small Engines

Learn how small engines work as well as how to service them safely. You'll start by learning the parts and cycles of engines and exploring the importance of clean air to an efficiently running engine. Later, you will learn to troubleshoot, repair, and rebuild an engine; understand rules and regulations for small engines; and explore starting a small engine business or career.

### Learning by Doing

Teach other youth about small engines, start your own business, and exhibit at fair.

## Uncrewed Aircraft Systems

Explore the world from above the trees and discover new frontiers with Unmanned Aerial Systems (UAS). This project provides the opportunity to safely expand your understanding of UAS and the world around them.

### Learning by Doing

You can explore the uses and applications of UAS, including how they link to other projects such as geology, robotics, electronics, crop science, and more.

## Woodworking

Whether you want to build a bookshelf or a whole house, you'll need similar skills, tools, fasteners, and joints. In this project you'll learn how to accurately measure and mark boards, use various tools, safety practices, identify types of lumber, and select wood based on grain. As you get older, you'll learn to use power tools, discover technology in tools, and explore career opportunities.

### Learning by Doing

Select and build an item to exhibit at the fair; use your new skills to volunteer or help a neighbor; and teach others something you learn in the woodworking project.

## Leadership & Personal Development

### Civic Engagement

Take an active role in your community, country and world while learning about yourself and those around you. This project will encourage you to meet people and work with groups while learning about local, state and national governments. You also can make new friends from other countries and cultures through exchange programs.

### Learning by Doing

Volunteer in your community; take part in a community conversation; attend Citizenship in Action in Topeka; participate in

exchange trips or host youth from another country.

## Leadership

Learn what it takes to be a leader through skills including understanding yourself, considering others' feelings, encouraging others, being responsible, communicating, making decisions, and managing and working with groups.

### Learning by Doing

Learn and practice new skills, volunteer for a committee, run for office in your 4-H Club or school group, share your knowledge with others, or attend a camp, event, or training focused on leadership skills.

## Reading Adventures

This project encourages you to harness your love of reading to learn more about your 4-H projects, research new topics, or entertain yourself. As Dr. Seuss wrote, "The more that you read, the more things you will know. The more that you learn, the more places you'll go."

### Learning by Doing

Get a library card for your local public library, tour your library to know what they offer, explore a new genre of books, share a book review with others, and read with younger kids at an elementary school or after-school program.

## Self-Determined

The self-determined project is just that — you decide what you do or study. Is there something you have a passion for that is not listed? This is your opportunity to create your own project. Research a sport, hobby, or career. Find your spark!

### Learning by Doing

Identify and pursue a personal passion or interest; set goals and evaluate the completion of your goals; and share your hobby, interest, or activity with others.

## Natural Resources

### Environmental Science

Our growing environmental science curriculum helps you not only learn about your environment, but also explore ecosystems; understand conservation; learn how water can be responsibly preserved, protected, used and reused; expand recycling efforts; and understand your ecological footprint.

### Learning by Doing

Organize a park, highway, or waterway cleanup; research an environmental topic of your choice and make a video or do a project talk; locate credible research on climate change to decide what you believe and why.

### Geology

If you enjoy learning about interesting rocks or fossils, then dig into this project. Discover the types of minerals, rocks, and fossils in your area and other geological formations across Kansas and in other states.

### Learning by Doing

Participate in field trips to various Kansas locations and collect, identify, and display specimens. Lead other youth to an interest in geology with talks, demonstrations, and educational displays.

## Shooting Sports

If you want to learn to shoot, you should check out the 4-H shooting sports projects. Safety is the first priority of these projects. After that, the firearm or bow is used as a tool for positive youth development including teaching responsibility, discipline, and a host of other life skills. These projects teach gun safety, care and safety of shooting sports equipment, hunting practices, and provide an opportunity to test your skills. To participate, youth must be 8 years of age as of January 1 of the current year.

Check with your county or district extension office about which projects are offered in your area as 4-H certified instructors are required for each discipline (project). Counties/Districts will only offer Shooting Sports Projects for which they have a Certified Coordinator and Certified Discipline(project) Leader.

**BB Gun** – This is a great place for youth to start to learn firearm safety and responsibility.

**Air Rifle** – Air Rifle allows youth to learn to shoot safely and responsibly while shooting longer distances

**Small Bore Rifle** – Youth learn to be safe and responsible while learning the technical skills of shooting even longer distances.

**Air Pistol** – Youth learn target shooting and pistol safety.

**Small Bore Pistol** – Youth will learn safety, stance, and target shooting with a pistol.

**Archery** – The 4-H Archery Discipline covers the basics of archery. We give the beginning archer a broad, sound foundation for learning the sport and being able to enjoy it for a lifetime.

**Muzzleloading** – Find out about muzzleloading history as you get a chance to learn to safely fire a muzzleloader.

**Shotgun** – Whether it's trap, skeet, or sporting clays, youth will learn the lifetime sports involved in the shotgun project.

**Hunting Skills** – this project is all about teaching youth to make responsible and ethical decisions while hunting. It also involves other opportunities such as wildlife identification, and orienteering.

**Western Heritage** – provides youth with a chance to study historical firearms, take on a persona, and get a taste of cowboy action shooting.

### Learning by Doing

Demonstrate safe use of air rifle, shotgun, bow, etc., through practice, talks, demonstrations, and exhibits. Exhibit shooting sports skills at local and district events. State matches for the different disciplines are held in the fall and spring, or participate in the Instructors Junior Apprentice Training Program (ages 14 and older). Promote firearm safety with educational displays and make shooting accessories.

## Wildlife

Kansas wildlife is an important part of the state's heritage and environment, ranging from buffalo to birds and fish to deer. In this project you'll learn about wildlife behavior, habitat requirements, how wildlife species fit into nature's scheme, how they are managed and how they relate to humans. Some local units also offer sport fishing as an additional project.

### Learning by Doing

Create wildlife habitat; participate in the Hunting, Fishing and Fur Harvesting School; and enter the Wildlife Habitat Evaluation Contest.

## Plant Sciences

### Agronomy

Experiment with soil testing, grow and harvest crops, plant a wheat variety test plot, and learn about herbicides and fertilizers. Agronomy and field crops gives 4-H members the opportunity to learn about one of Kansas' most valuable industries- agriculture- and what it takes to feed the world.

#### Learning by Doing

Participate in the 4-H Wheat Variety Plot program, take part in an area or state Crops ID contest, attend the 4-H Wheat Expo to learn more about Kansas agriculture, visit a local co-op or feed mill, shadow a local grain producer or agronomist.

### Entomology

If you've ever chased butterflies, caught a ladybug for a closer look, or started a bug collection, the entomology project may be a great fit. You'll learn the anatomy of an insect; make an insect net; and collect, pin, label, and exhibit an insect collection. Later, you'll study how insects move, learn about insecticides and explore insect behavior.

#### Learning by Doing

Plant a butterfly garden, catch and observe a spider in its web, conduct an insect survey, and start an insect collection for exhibit at the fair.

### Forestry

Learn to identify trees, determine differences between trees and shrubs, learn about different trees and tree parts, graft a bud to a living tree, discover health benefits of trees, investigate forest changes and learn about forest health and learn forest conservation techniques.

#### Learning by Doing

Collect leaves for an exhibit, visit an arboretum, help plant trees in your community and research the best trees for Kansas.

### Horticulture & Landscape Design

Learn when, where and what to plant; learn the difference between cool and warm-season vegetables; learn plant parts and how they are used; learn how to use basic garden tools; study seed varieties and starting seeds indoors; study preventative pest controls; learn about specialty harvests and selling your produce; study plant pollinations; study food industry careers; and learn about biotechnology.

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#### Learning by Doing

Take part in a horticulture judging contest, grow a vegetable or flower garden, donate extra produce to the food bank, research the best vegetable and flower varieties for Kansas, inventory your home landscape or tour a garden center.



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