



**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.

## Agriculture and Natural Resources

### 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.

### 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

Geology field trips to various Kansas locations and collect, identify, and display specimens.

### Horticulture

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.

### Field Crops

Experiment with soil testing, grow and harvest crops, plant a wheat variety test plot, and learn about herbicides and fertilizers.

### 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.

### Shooting Sports

If you want to learn to shoot an air rifle, shotgun or bow and arrow, you should check out the 4-H shooting sports project. This project teaches gun safety, care and safety of shooting sports equipment, hunting practices, and provides 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 a certified program. Local certified shooting sports coordinators and instructors are required for each discipline. Disciplines include BB gun, air rifle, air pistol, archery, shotgun, hunting skills, muzzle loading, small bore rifle, small bore pistol, and western heritage.

#### 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).

### Sportfishing

The Sportfishing project provides hands-on learning experiences for youth and adult audiences interested in fishing and aquatic resource stewardship. It teaches fishing skills, conservation, ethical knowledge, aquatic ecology, tackle crafting, and much more.

#### Learning by Doing

Enter a sport fishing contest; participate in the Hunting, Fishing and Fur Harvesting School.

### 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.

# Animal Science

## Beef

Learn about raising, caring for and managing beef cattle as you start with a bucket calf and work toward building your own herd. 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 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.

### Market Beef

Select, raise and show a market steer or heifer.

### Breeding Beef

Select, raise and show a breeding heifer. Learn the value of performance data to make breeding decisions.

### Learning by Doing

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 Care and Training

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 percent 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. If you want to exhibit a horse in the District Show or State Fair, Achievement Level I is required to participate. 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 May 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 district and state horse shows.

## Meat Goats

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 Meat Goat 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 and other poultry. You will learn poultry 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.

## Rabbits

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 this project, 4-H members can enroll in either market or breeding. Throughout your 4-H years, 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.

### Market Lamb

Select, raise, and show a market lamb; member must obtain ownership of the animal; market ewes should not be returned to a breeding flock.

### Breeding Sheep

Select, raise, and show a breeding ewe or purchase a flock of breeding ewes.

### Learning by Doing

Exhibit at a local sheep show the 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.

### Market Swine

Select, raise, and show a market hog.

### Breeding Swine

Select, raise, and show a breeding gilt. As you grow in the project, you might manage your own breeding herd and sell market hogs to others.

### Learning by Doing

Exhibit at a local swine show or participate in K-State's Youth Swine Day; 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.

## Creative Arts

### 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

Capture your friends, family and important events through photography.

### Level 1

Learn how a camera works, basic photo composition, organize a photo story, and how to use a simple camera.

### Level 2

Learn shutter speeds and f-stops, the Rule of Thirds, and how to capture a point in time.

### Level 3

Use filters and a light meter and create still-life photos. See the differences between normal, wide angle, telephoto, and zoom lenses.

### Learning by Doing

Document your family or club activities through photos; 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.

### Fine Arts

Oil, chalk, charcoal, dyes, pastels, pencil, ink, acrylic, or watercolor on canvas, canvas board, paper, wood, metal, or textiles.

### Clay and Ceramics

Create items from clay, learn to form by hand or by wheel.

### Leather and Jewelry

Learn to stamp, carve, tool, lace or stitch leather. Create jewelry items made of any medium and a variety of techniques.

### Three-Dimensional

Create a free standing or hanging three-sided piece of art.

### Crafts

Learn a variety of crafting techniques, with any number of materials and mediums.

### 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.

## 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; attend Citizenship Washington Focus in Washington, D.C.; participate in exchange trips or host youth from another country.

## **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.

## **Exploring 4-H**

This project is for first- and second-year members. It's a great way to explore 4-H projects without officially committing. Members will be exposed to numerous project areas with the guidance of older members and adult volunteers.

## **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, share your knowledge with others, or attend a camp, event, or training focused on leadership skills.

## **Reading**

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, 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.

# **Family and Consumer Sciences**

## **Clothing and Textiles**

Learn to create and sew your own clothing and accessories while exploring the world of fashion in Clothing Construction. Or, develop your sense of style and value through Buymanship. These projects build your confidence in managing your wardrobe or may launch a career in fashion.

### **Clothing Construction**

The clothing construction project will teach you the basics, such as sewing a shirt 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.

### **Buymanship**

Buymanship 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**

Make fair exhibits; make items for community service; participate in Fashion Revue to model clothing construction or buymanship items.

## **Family Studies**

Learn about growing and maintaining a healthy family by learning about child development, building family strengths and managing a household.

### **Child Development**

Learn how children grow and develop physically, socially, mentally, and emotionally. Observe how people express emotions, identify characteristics of friends, learn socially accepted manners and customs, and observe child behavior.

### **Family**

Learn behaviors that develop friendships, develop respect for others and their belongings, understand the need for rules; express feelings in a positive way, cope with change and stress, learn physical changes of adolescence, study the effects of employment on family and lifestyle, and learn to use consensus and compromise.

### **Consumer Skills**

Responsible financial management is an important factor in successful families. 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**

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.

### **Crochet**

Learn single crochet, double crochet, and many other stitches; advance to hairpin lace.

### **Knitting**

Learn casting on, knit and purl stitches.

### **Needle Arts**

Learn embroidery, cross-stitch, needlepoint, candle wicking, crewel, lacework, and applique techniques.

### **Patchwork and Quilting**

Learn to stitch, tie, and design quilts.

### **Rug Making**

Create latch hook and braided rugs.

### **Spinning**

Make a hand spindle or prepare wool fibers.

### **Weaving**

Learn parts of a loom or figure yarn needs for items.

### **Ethnic Arts**

Learn textile art methods from different cultures that have been passed on throughout history.

### **Macramé**

Create ornamental knotting; learn terms, tools, techniques and cords.

### **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**

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.

### **Bicycle**

Learn and practice bicycle safety, identify parts of a bicycle, learn bicycle maintenance and repair, and practice safe riding at night and in adverse conditions.

### **Health/Fitness**

Learn basic first aid and create your own first aid kit; learn to choose nutrient-rich "power foods" for snacks; learn how to improve personal strength, flexibility and endurance; and design your personal fitness plan.

### **Recreation**

Go enjoy the great outdoors. Learn about hiking, camping, finding shelter and backpacking; observe and care for nature; find your way using a compass, GPS, or landmarks. Apply the "Leave No Trace" ethic when backpacking and hiking.

### **Outdoor Adventures**

Learn about different types of recreation identify personal areas of strength; and learn the benefits of recreation for your body and mind.

## **Home Environment**

Interior design is all about making a house into a home. This project will help you experiment with colors, textures, light, sound, and space to create the perfect feeling. You also can explore a career in interior design.

### **Learning by Doing**

Plan a room makeover, visit a design center and interview an interior designer.

## **STEM (Science, Technology, Engineering, and Math)**

### **Ag Mechanics**

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

### **Architectural Block Construction**

The Architectural Building Blocks (ABC) 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. Youth demonstrate their architectural skill and knowledge through the creation of "Lego" construction projects.

### **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.

### **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.

### **Electricity**

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.

### **Renewable Energy**

Learn how wind can be used for sailing, lifting, pumping water and creating electricity. You'll get to 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.

## Rocketry/Aerospace

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

## 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.

## 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.

## Unmanned Aerial 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. 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.

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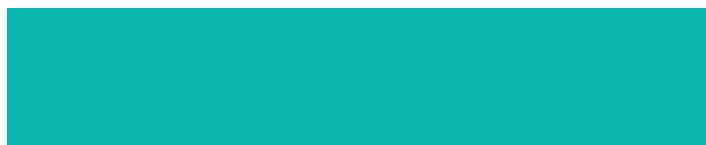
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