Woodson County 4-H Project Selection Guide

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BEEF

The beef project is an excellent way to learn about an important industry. Learn all aspects of this industry by caring for a calf or building your own herd.

Beef Bucket Calf: BF100 (7 – 12 years old)
Most calves are orphaned at birth or shortly after and should be bottle fed
Calf must be born between January 1 and April 30 of current year

Market Beef: BF200
- Select, raise and show a market steer or heifer
- Member must own animal

Breeding Beef: BF201
- Select, raise and show a breeding heifer
- Learn the value of performance data to make breeding decisions

Things to learn/do in the project:
Ages 7 – 9
- Identify breeds of beef cattle
- Learn the parts of a calf
- Compare animal differences
Halter break a bucket calf
Ages 10 – 13
- Learn about cattle feeds and how they are digested
- Judge beef cattle and present oral reasons
- Show a calf and learn showing techniques
Ages 14 and older
- Use performance data to make breeding decisions
- Evaluate beef carcasses and identify meat products
- Explore impact of technology and career opportunities in the beef industry

CITIZENSHIP

The Citizenship project is designed to help members find out more about themselves, family, friends, community and world. The project will lead to opportunities for meeting people and working with groups. Learn about other countries and cultures.
Citizenship: CS100
World Citizenship: CS200

Things to learn/do in the project:
Ages 7 – 10
- Learn about self, family and friends
- Find out what good citizenship is
Ages 11 – 13
- Learn how to be a good neighbor
- Find out how groups and clubs work
- Study other cultures through exchanges
Ages 14 and older
- Learn about township, city and county government
- Explore careers in police and fire protection, health and sanitation, and tourism
- Attend Citizenship Washington Focus
- Consider an exchange or hosting from another country

CLOTHING AND TEXTILES

This project will introduce you to a whole new world of options with outfits, clothing and accessories. The clothing construction phase will teach you the basics like sewing a shirt or putting a zipper in a pair of pants. The advanced units will teach you how to take the design of your choice and customize it for the perfect look, color and fit. Buymanship will give you that edge on planning a budget for an outfit, choosing between different shades of colors and analyzing clothing advertisements. Members may participate in the Style Revue to model either their clothing construction or buymanship items

Things to learn/do in the project:
Clothing Construction: CT100
Ages 7 – 10:
- Learn how to select colors and styles
- Sew or serge an article
Ages 11 – 13:
- Sew on knits or wovens
- Make a garment from a pattern
Ages 14 and older:
- Try out new patterns and fabrics
- Update an old garment
- Sew polar fleece
- Investigate careers in the textile industry

Buymanship: CT101
Ages 7 – 10
- Plan a wardrobe, determine a clothing budget and shop for clothes
- Learn how to select colors and styles

Ages 11 – 13
- Record body measurements and determine appropriate clothing sizes
- Conduct a clothing inventory
- Learn differences between warm and cool colors

Ages 14 and older
- Identify wardrobe according to body shape, proportion and balance
- Make decisions about clothing purchases by comparing fiber, care requirements, cost, brand and style
- Analyze clothing advertisements

COMMUNICATIONS

Youth will learn to interpret verbal and nonverbal information, develop effective public speaking skills, enhance written and spoken communication, defend a point, design a presentation and much more.

Beginner: CM 100
Junior: CM200
Intermediate: CM 300
Senior/Public Speaking: CM301
Things to learn/do in the project:

Ages 7 – 10
- Learn responses to bullying
- Decode a message
- Write a letter
- Give a project talk

Ages 11 – 13
- Give and receive directions using directional and transitional words
- Write a speech and critique it
- Write a press release

Ages 14 and older
- Discover what causes a communication gap
- Plan, research, outline and present a speech

- Debate an issue
- Prepare a resume   and interview for a job or office

DAIRY CATTLE

Got milk or ever wonder about the power of cheese? Spend a little time with the animal that creates all of this goodness. This project is for members who want to learn more about dairy animals and caring for and raising one. Members usually start with a heifer calf or yearling heifer. Older members may start with a producing cow.
Dairy Bucket Calf: DC100
Dairy Heifer: DC200
Dairy Cow: DC300

Things to learn/do in the project:
Ages 7 – 9
- Identify the six breeds of dairy cattle
- Identify the body parts of a cow
- Obtain and raise a dairy calf

Ages 10 – 13
- Judge a class of dairy cows
- Discuss animal health issues
- Identify safe practices for handling milk and milk products

Ages 14 and older
- Evaluate the body conditions of dairy animals
- Debate animal welfare issues
- Determine the nutritional quality of dairy feed
- Explore career options in the dairy industry

DAIRY GOATS

Did you know that goat milk is used for human consumption? In fact, more people in the world drink goat milk than cow milk, although in the US the opposite is true. Dairy goats are a great project for members to learn about agriculture around the world and in your own backyard. Members may start with a doe and then raise kids to create their own dairy goat herd.
Dairy Goats: GD100
Things to learn/do in the project:

Ages 7 – 9
- Identify dairy goat breeds

- Accept responsibility for daily goat care
- Prepare a goat to show

Ages 10 – 13
- Learn to care for, train and handle goats safely
- Learn how to take care of equipment and facilities
- Keep track of a kid's growth

Ages 14 and older
- Develop a herd health calendar
- Keep milk production records
- Check out dairy goat careers and by-product uses

DOG CARE AND TRAINING

This project is for youth who are interested in learning more about dogs, how to care for a dog and how to train a dog in basic or advanced commands. Any kind of dog may be used in this unique project that is not designed to conform to AKC or other professional standards. Members without dogs may wish to participate in quiz bowls, conferences and other activities that do not require dog ownership. For more information, go to the Dog Action Team website at: www.kansas4h.org/DesktopDefault.aspx?tabid=133

Dog Care & Training: DG100

Things to learn/do in the project:

Ages 7 – 9
- Choose the right dog for your family
- Explore dog behavior and body language
- Learn grooming basics
- Begin obedience training

Ages 10 – 13
- Select nutritious dog foods
- Identify dog breeds and their purposes
- Show your dog in Showmanship

Ages 14 and older
- Continue advanced obedience training
- Learn local dog laws and ordinances
- Explore the value of assistance dogs and careers with working dogs

ENERGY MANAGEMENT

Learn important general electrical concepts as you experiment with making a light switch, testing voltages and even build motors. Study energy use, magnetism, electronics and transistors. Learn how small engines work and how to keep them running OR discover the power of the wind! Learn about where the wind blows and how its power can be used for sailing, lifting, pumping water and creating electricity.

Electric/Electronics: EL100
Things to learn/do in the project:
Ages 7 – 9
- Make a flashlight, switch or simple circuit.
- Find out about magnetism and make a compass

Ages 10 – 13
- Learn about Ohm's Law and use a volt-ohm meter
- Label a circuit diagram
- Build a three-way switch

Ages 14 and older
- Determine your family's electrical usage
- Measure electric usage of appliances
- Test grounded outlets
- Build simple radios, microphones, computers and other equipment
- Explore careers in Electronics and Engineering

Small Engines: SE100
Things to learn/do in the project:
Ages 7 – 9
- Learn major parts of engines
- Learn the importance of clean air to an efficient running engine
- Learn how to replace a spark plug

Ages 10 -13
- Learn safe ways to operate an engine
- Identify internal parts of an engine
- Learn different engine types and sizes

Ages 14 and older
- Learn to repair and rebuild an engine
- Use the Internet to find resources, rules and regulations for small engines
- Start your own business or career

Power of the Wind: EM101
Things to learn/do in the project:
Ages 11 – 13
- Design and build a wind powered boat
- Design and build wind turbines
- Discover where and why the wind blows
- Discover the wind in art and literature

ENTOMOLOGY

Have you chased butterflies or caught a ladybug to get a closer look? Do you think collecting bugs is a great way to spend your time? Then the 4-H Entomology project is right up your alley. Youth will learn about the world of insects in soil, on plants, in homes, on pets and other secret places.

Entomology: EN100

Things to learn/do in the project:

Ages 7 – 9

- Learn the main parts of an insect
- Make an insect net
- Collect, pin, label and exhibit an insect collection

Ages 10 – 13

- Understand how insects are used in advertising
- Find out how insects move
- Learn about insecticides

Ages 14 and older

- Learn about insect behavior
- Plant a butterfly garden
- Catch and observe a spider in its web
- Conduct an insect survey of your neighborhood

ENVIRONMENTAL SCIENCE

EV100

Earths Capacity *Ages 11 – 13*

Things to learn/do in the project:

- Analyze your environment for abundance and scarcity
- Determine carrying capacity for a specific area
- Study global climate change
- Figure your ecological footprint

Ecosystem Services *Ages 11 – 13*

Things to learn/do in the project:

- Study where your water comes from
- Learn how soil is formed
- Study the energy required to produce food

There's No New Water *Ages 14 – 18* **EV101**

Things to learn/do in the project:

- Explore natural water cycle
- Study human interventions that affect water quality and quantity
- Analyze rural to urban interventions in water cycle
- Identify and implement service – learning projects that address local water issues

EXPLORING 4-H *(7 – 8 year olds)*

This project is for first and second year members. It's a great way to "Explore" 4-H projects without enrolling in all of them. Members will be exposed to numerous project areas with the guidance of older members and adult helpers. **EX100**

Things to learn/do in the project:

- Discover project areas available
- Learn about learning opportunities and contests
- Develop life skills through activity involvement

FAMILY STUDIES

4-H members will learn about their own growth and development as well as that of others in the Family Studies project. It will help youth learn about children of different ages and appropriate activities that help children grow and develop physically, socially, mentally and emotionally. Youth will learn about building family strengths to nurture children.

Consumer Skills: FS100

Things to learn/do in the project

Ages 9 – 10

- Determine difference between needs and wants
- Develop a savings plan for a specific goal
- Practice comparison shopping
- Learn to make change

Ages 11 – 13

- Identify personal values
- Make a major purchase
- Understand peer pressure

- Learn to manage a checking account

Ages 14 and over
- Recognize target advertising
- Identify consumer rights
- Learn the value of employment

Child Development: FS101
Things to learn/do in the project:
Ages 7 – 9
- Learn where they fit in the family
- Observe how people express emotions
- Know risks of Internet use

Ages 10 – 13
- Learn to take care of self at home
- Identify characteristics of friends
- Learn socially accepted manners and customs

Ages 14 and older
- Observe child behavior
- Understand effects of TV on children
- Create intergenerational community service projects

Family Studies: FS102
Things to learn/do in the project:
Ages 7 – 8
- Learn behaviors that develop friendships
- Respect others and their belongings
- Understand need for family rules

Ages 9 – 11
- Express feelings in a positive way
- Learn to cope with change
- Know that family forms change

Ages 12 – 13
- Learn physical changes of adolescence
- Utilize the "Think-Feel-Do" cycle of stress
- Learn that choices have consequences

Ages 14 and older
- Study effects of employment on family and lifestyle
- Evaluate best uses of credit cards
- Learn to use consensus and compromise

FIBER ARTS

Have you ever wondered how your grandmother crocheted that scarf for you or embroidered the pillowcases? Have you looked at the quilt on your mother's bed and wondered how it was made? The Fiber Arts project will embrace how to make these things. Fiber Arts is defined as the practical skills passed down from preceding generations that were developed to provide basic family needs, such as appeal, home furnishings or decorations.

Things to learn/do in the project:
Crochet: FA101
- Learn single, double and many other stitches
- Advance to hair pin lace

Knitting: FA102
Needle Arts (Decorative Stitching): FA103
- Embroidery
- Cross-stitch
- Needlepoint
- Candlewicking
- Crewel
- Lacework
- Applique

Patchwork and Quilting: FA104
- Learn to stitch, tie and design quilts

Rug Making: FA105
- Do latch hook and braided rugs

Spinning: FA106
- Make a hand spindle
- Prepare wool fibers

Weaving: FA107
- Learn parts of a loom
- Figure yarn needs for specific items

Ethnic Arts: FA108
- Explore and share your favorite

Macramé: FA109
- Do ornamental knotting
- Learn terms, tools, techniques and cords

GEOLOGY

Did you find a rock at the park and don't know what kind it is? What about fossils? If you would like to learn more about rocks, minerals and fossils, then dive into the Geology project! Discover the types of minerals, rocks and fossils that can be found where you live. Learn about geological formations across the state and in other states.

Geology: GE100
Things to learn/do in the project:
Ages 7 – 8
- Learn how the earth was formed and its three main parts
- Learn the difference between a rock and a fossil
- Collect, clean, identify and label rocks, minerals and fossils found in Kansas
- Learn the types and impacts of erosion

Ages 9 – 11
- Use different tests to identify minerals by hardness and color
- Find out what rock types occur in Kansas
- Learn how to identify fossils
- Learn to display and evaluate geology exhibits

Ages 12 – 14
- Learn how mountains are formed
- Discover the impact of glaciers
- Learn to measure specific gravity
- Read and use a topographic map

Ages 15 and older
- Measure formation thickness
- Test to determine chemical properties of minerals
- Locate sites on a plat map
- Learn how to prepare for geology careers

HEALTH AND WELLNESS

Health, exercise and recreation are vital parts of our daily lives. You can focus on physical activity, healthy eating, exercise, sports and recreation or first aid in relation to any of the other phases.
Things to learn/do in the project:
Bicycle: HL100
- Learn and practice bicycle safety
- Identify parts of a bicycle
- Learn bicycle maintenance and repair
- Practice safe riding at night and in adverse conditions

Health: HL101
Ages 7 – 9
- Steps for treating cuts and scrapes
- How to prevent sprains, strains and bruises

Ages 10 – 13
- Design a First Aid kit
- Choose nutrient-rich "power foods" for snacks

- Learn how to improve personal strength, flexibility and endurance

Ages 14 and older
- Recognize fraudulent information about supplements and enhancers
- Design your personal fitness plan

Outdoor Adventures: HL102
Ages 7 – 9
- Learn the basics of camping
- Learn about camping gear
- The importance of caring for nature

Ages 10 – 13
- Plan nutritional and physical outdoor activities
- Learn what to take when you hike
- Learn about finding shelter and observing nature

Ages 14 and older
- Learn the basics of backpacking
- Learn how to find your way using a compass, GPS, or landmarks
- Apply the "Leave No Trace" ethics when backpacking and hiking

Recreation: HL103
- Identify personal areas of strength
- Learn about different types of recreation
- Learn the benefits of recreation for your body

HOME ENVIRONMENT

This project gives you the opportunity to examine space, both inside and out. Decorating a room, experimenting with colors and different types of patterns on your walls and creating the feeling of coziness in a family room are all part of this project. Being an interior designer is all about making a house a home, and the Home Environment project will give you this opportunity.
Home Environment: HE100

Things to learn/do in the project:
Ages 7 – 9
- Learn about color, texture and space
- Plan how to use home safety, recycling and reusable items
- Learn about the concepts of line

Ages 10 – 13
- Learn how color influences space, balance, proportion and scale
- Learn how to use neutrals and color schemes
- Learn how movement, light and sound are affected in different types of rooms

Ages 14 and older
- Compare buying versus making window treatments, bed covers, etc.
- Learn how to refinish and refurbish furniture
- Learn how to re-upholster chair seats

HORSE

If you love horses, then this project is for you! You will have the opportunity to learn about, handle, care for and ride horses. Members may own or lease a horse, but must have complete access to the horse at any time and provide full care and management 75% of the time, whether owned or leased. Horseless horse members do not own or lease a horse, but participate in judging, quiz bowl, hippology, presentations and may help with horse shows and trail rides.

Things to learn/do in this project:
Horse: HO100
Ages 7 – 9
- Practice safety and use proper equipment around horses
- Identify horse body parts
- Learn the breeds of horses

Ages 10 – 13
- Learn about grooming
- Learn how to bridle and saddle a horse
- Learn how to judge and give oral reasons

Ages 14 and older
- How to detect unsoundness in horses
- Learn to identify and treat equine diseases
- Learn about ethics and competition

Horseless Horse: HO101
- Learn basic coat colors, breeds and anatomy
- Study horse health, unsoundness and blemishes
- Visit a stable or farm

- Participate in judging, quiz bowl, presentations, clinics and trainings

MEAT GOATS

The 4-H Meat Goat project is designed for members who are interested in learning more about raising goats for meat. You can raise goats for milk, mohair or even packing and pulling carts, but there is an increasing demand for meat goat products.
Meat Goats: GM100
Breeding Meat Goats: GM200
Things to learn/do in the project:
Ages 7 – 9
- Identify parts of a meat goat
- Identify meat goat breeds
- Learn how to fit and show meat goats

Ages 10 – 13
- Recognize meat goat disease
- Work with a veterinarian
- Learn how to keep records for meat goats

Ages 14 and older
- Select breeding stock
- Learn key components in developing a goat herd
- Evaluate feed ingredients

PERFORMING ARTS

Do you enjoy being in the spotlight? Do you like to be creative while performing on-stage or setting up backstage? Then you should jump into this project! You will learn to express yourself in front of a crowd either on-stage,

backstage, as a puppeteer or writing your own script.

Performing Arts: PA100
Things to learn/do in this project:
Ages 7 – 9
- Learn to express yourself through movement, voice, speech and acting
- Create and present a play
- Do skits, pantomime, readings and clowning

Ages 10 – 13
- Learn about puppets
- Create a puppet, stage and skit
- Do puppet therapy

Ages 14 and older
- Create costumes, sets and props
- Create a stage setting
- Do makeup and stage management

PETS

Whether you're a fish, hamster or cat lover, this project is intended for members to learn more about their household friends. You will focus on hand or aquarium pets or cats as you learn the different species and how to keep them healthy. You will have the chance to be creative and design a toy for your pet, create a commercial or even a scavenger hunt.

Things to learn/do in this project:
Pets: PT100
Ages 7 – 9
- Identify hazards for pets around your home
- Invent a toy for your pet
- Learn about your pet's nutritional needs

Ages 10 – 13
- Learn about your pet's digestive tract
- Examine your pet to make sure it is healthy

- Create a commercial about pet ownership or care

Ages 14 and older
- Learn the symptoms and treatment of diseases
- Learn about taxonomic classification
- Plan a pet store scavenger hunt

Cats: PT101
Ages 7 – 9
- Factors to use when choosing a cat
- Practice cat grooming techniques
- Identify household cat hazards

Ages 10 – 13
- Recognize cat senses
- Learn about cat cousins
- Understand cat behavior

Ages 14 and over
- Study cat diseases affecting people
- Learn about cat genetics
- Practice cat showmanship

PHOTOGRAPHY

Capture your friends, family and important events through photography. Learn about basic and advanced film cameras, and/or digital cameras, and how to plan, compose, light and exhibit your photos. Advance into wide-angle and telephoto lenses, filters, light meters and computer enhancement.

Things to learn/do in this project:
1st year in project   **PH100**
- Learn more about a camera and how it works
- Learn basic photo composition
- Organize a photo story
- Learn to use a simple automatic or digital camera

2nd, 3rd years in project   **PH200**
- Learn shutter speeds and f-stops
- Use the Rule of Thirds
- Learn to capture a point in time

4 or more years in project   **PH300, PH400**
- Use filters and special film
- Learn how to use a light meter
- Create still-life photos
- Explain the differences between normal, wide angle, telephoto and zoom lenses

PLANT SCIENCE

This project focuses on activities related to raising a garden, flowers, forestry and field crops. This includes planning, planting, experimenting, understanding soils, seeds, insects, plant care, harvesting, weed identification and control, and processing.   You can also explore careers and the relationship between trees, people and communities.

Things to learn/do in the project:
Field Crops: PL101
- Experiment with soil testing
- Grow and harvest crops
- Plant a variety test plot
- Learn about herbicides and fertilizers

Forestry: FO100
Ages 7 – 9
- Learn to identify trees
- Determine differences between trees and shrubs
- Learn about different trees and tree parts

Ages 10 – 13
- Graft a bud to a living tree
- Learn the sounds and smells of the forest
- Discover health benefits trees have on people

Ages 14 and over
- Investigate forest changes and learn about forest health
- Study forests on a global scale
- Learn forest conservation techniques

Horticulture: PL100
Ages 7 – 9
- When, where and what to plant
- Differences between cool and warm-season vegetables
- Learn plant parts and how they are used
- Care and use of basic garden tools

Ages 10 – 13
- Learn about seed varieties and starting seeds indoors
- Use preventative pest control
- Learn about specialty harvests and selling your harvest

Ages 14 and older
- Learn about plant pollination
- Learn ways to preserve foods
- Study food industry careers
- Learn the effects of biotechnology

POULTRY

This project is designed to help you learn about chickens and other poultry. You will acquire an understanding of scientific poultry management and marketing practices. You will gain business experience and insight into the values and principles of purchasing, marketing, record keeping and exhibiting poultry.

Poultry: PO100
Things to learn/do in the project:
Ages 7 – 9
- Learn poultry breeds and body parts
- Learn how to care for and handle your birds
- Practice showmanship techniques

Ages 10 – 13
- Learn how eggs are formed
- Select and judge broilers
- Make an egg candler
- Learn about pecking orders

Ages 14 and older
- Lead younger members in egg experiences
- Learn how to process chickens for food
- Learn about biotechnology and poultry careers

RABBITS

The rabbit project will help you learn how to raise and care for your rabbits. It is suggested that you start with a doe and extend the project each year. It is best to enroll in the fall to prepare for receiving your first rabbit.

Rabbits: RA100
Things to learn/do in the project:
Ages 7 – 9
- Identify main breeds of rabbits
- Describe good feeding and watering practices
- Learn to groom and show a rabbit

Ages 10 – 13
- Gain skills to manage and care for rabbits
- Learn to care for newborn rabbits (kits)
- Judge best rabbits for show

Age 14 and older
- Learn breeding, genetics, culling and determining pregnancy
- Learn the anatomy of rabbits
- Learn best marketing practices

READING

Do you enjoy a good book? Do you like to read and study other project areas in 4-H? Check into the phases of the 4-H Reading project.

Reading: RD100
Things to learn/do in the project:
- Study a specific topic
- Read for pleasure
- Share a book review with others
- Create a diorama of a scene from a book

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 included in the 4-H project listing? Then this is your opportunity to create your own project. Research a sport, hobby or career – the sky is the limit!

Self-Determined: SD100
Things to learn/do in the project:
- Identify and pursue a personal passion or interest
- Set goals and evaluate the completion of your goals
- Share your hobby, interest or activity with others

SHEEP

The sheep project will help you learn more about the sheep industry. You will learn how to care for and feed a market lamb or build your own breeding flock. You can enroll in market lamb and/or breeding ewe.

Market Lamb: SH100
- Select, raise and show a market ewe or wether
- Member must obtain ownership of the animal
- Market ewes should not be returned to a breeding flock

Breeding Sheep: SH200
- Select, raise and show a breeding ewe
- Purchase a flock of breeding ewes

Things to learn/do in the project:
Ages 7 – 9
- Learn the parts of a sheep
- Identify breeds of sheep and their uses
- Take responsibility for care, handling and training of your sheep

Ages 10 – 13
- Learn safety procedures and management practices for maintaining a flock
- Identify symptoms, Causes and treatment of common diseases
- Study nutritional requirements for various ages of sheep

Ages 14 and over
- Study reproduction and genetics of sheep
- Investigate technology's impact on sheep production
- Explore career opportunities in the sheep industry

SHOOTING SPORTS

Whether you have an air rifle, .22 rifle, shotgun, air pistol or bow and arrow, the shooting sports project teaches you gun safety, hunting skills and the opportunity to test your skills. If you have an interest in guns and/or hunting in any form, this project is the best way to learn about them. Check with the Extension Office for the availability of certified leaders before enrolling.

BB: SS101, Ages 7 – 12
Air Rifle: SS102, Ages 7 – 18
Air Pistol: SS103, Ages 12 – 18
Archery: SS104, Ages 7 – 18
Shotgun: SS200, Ages 12 – 18
Hunting Skills: SS201, Ages 7- 18
Muzzle Loader: SS202, Ages 7- 18
Small Bore Rifle: SS300, Ages 12-18
Small Bore Pistol, SS301, Ages 13-18

Things to learn/do in the project:
- Practice care and safety of shooting sports equipment
- Demonstrate safe use of air rifle, shotgun, bow, etc. through practice, talks, demonstrations and exhibits
- Demonstrate shooting sports skills at local, district and state events

SPACE TECH

This project will help young people learn how to build rockets and robots and explore space through astronomy. There are also opportunities to learn more about GPS and GIS. Youth may also gain experiences in computer building, repair and networking. Experience the thrill of setting off rockets, developing robots and geo-caching.
Things to learn/do in the project:
Rocketry/Aerospace: ST100
Ages 7 – 9
- Learn how a model rocket works.

- Learn about equipment and procedures for a safe launch
- Build at least one skill-level-one rocket

Ages 10 – 13
- Build at least one skill-level-two rocket
- Learn the Model Rocket Safety Code
- Learn basic parts of a rocket

Ages 14 and over
- Learn about model rocket launch systems
- Understand engine types and classification
- Learn the art of the payload launch

Astronomy: ST101
- Learn the history of telescopes
- Learn about the kinds and uses of telescopes
- Build a simple telescope
- Learn planet order by making a key ring bead system
- View solar videos
- Build spectroscopes
- Distort light with lenses and prisms
- Learn display tips and how to set up public viewings

Robotics: ST102
- Learn about robot arms
- Learn about robots with legs, wheels or under water
- Explore sensors, analog and digital systems
- Build basic circuits
- Design a robot
- Program a robot to accomplish a specific task

Unmanned Aerial Systems (UAS)
- Learn about the foundation of drones and how they apply to the world around you.
- Discover applications and operations of drones.

- Advance your knowledge and gain experience in applying UAS applications to your world.

Computers: ST104
Things to learn:
Ages 7 and up (Newbie Know-How)
- Identify and use the basic components of a computer
- Identify the similarities and differences in office software applications
- Learn how to use the internet safely

Ages 9 and up (Newbie Know-How)
- Identify internal computer components, operating systems and their processes
- Develop a knowledge of the building, maintenance and repair of computers

Ages 11 and up (Peer to Peer)
- Learn the protocols and program languages that support networking
- Learn how to avoid viruses and hacking while networking

Ages 13 and up (Teens Teaching Technology)
- Develop computer-related community service goals
- Plan and teach computer skills to divers populations

SWINE

Learn about a nationally important industry by enrolling in the swine project. Feed out a market hog or start your own breeding herd. Learn to select and judge quality animals and meat products.

Market Swine: SW100

- Select, raise and show a market hog
- Members must obtain ownership of all animals

- Market gilts should not be returned to the breeding herd
- Market Pigs are purchased at 2-4 months of age and sold at 220-260 pounds.

Breeding Swine: SW200
- Select, raise and show a breeding gilt
- Manage your own breeding herd and raise and market your own market hogs

Things to learn/do in the project:
Ages 7 – 9
- Identify parts of a hog
- Identify breeds of swine
- Learn types of feeds

Ages 10 – 13
- Purchase, feed and care for a market hog
- Identify symptoms, causes and treatments of swine diseases
- Study pork production from farrow to finish

Ages 14 and older
- Learn effects of genetics on reproduction
- Study breeding systems and performance data
- Explore career opportunities in the swine industry

VISUAL ARTS

This project combines the likes of drawing, painting and working with clay or leather. You will explore art techniques, study art history and culture and discover artistic challenges. Develop your artistic skills and talents while learning the elements and principles of design.

Visual Arts: VA100
Ceramics: VA200
Leather: VA201
Other: VA202
Things to learn/do in the project:
- Learn drawing, painting and printing techniques in paint, pencil, chalk, charcoal or mixed media
- Learn sculpting techniques
- Make something from wood, leather, paper, or clay
- Weave a basket or wall hanging
- Etch glass or metal or make jewelry and wire sculptures
- Do mosaics or nature crafts

WILDLIFE

Kansas wildlife is a large part of our state ranging from buffalo to birds to fish to deer and more. In this project, you will learn about wildlife behavior, habitat requirements, how wildlife species fit into nature's scheme, how they are managed, and how they relate to humans.

Wildlife: WL100
Things to learn/do in the project:
Ages 7 – 8
- Learn characteristics of reptiles and amphibians
- Learn what a habitat is
- Discover the unique features of birds

Ages 9 – 11
- Learn to identify wildlife dwellings
- Learn about the importance of the insect/flower relationship
- Identify seed shapes and how they are dispersed

Ages 12 – 14
- Learn the characteristics of mammals, carnivores and omnivores
- Realize the significance of wetlands
- Learn about the protective coloring of wildlife

Ages 15 and over
- Learn how wildlife adapts to urban environments
- Find out about the effect of humans on wildlife habitat
- Learn about the prairie as an ecosystem

Sport Fishing: WL101
Ages 7 – 9
- Learn to tie fishing knots
- Identify types of fishing tackle
- Identify types of fish
- Identify the parts of a fish

Ages 10 – 13
- Learn the techniques of spin, bait and fly casting
- Enjoy cooking and eating what you catch
- Learn how to tie an artificial fly

Ages 14 and over
- Share fishing with a friend
- Clean a fishing reel
- Refurbish old equipment
- Investigate fishing careers

WOODWORKING

This project requires that you enjoy working with wood, using tools and building things. Can you see yourself building a table, a wood toy or a chair? As a beginning woodworker, you can build many items. As your skills grow, you will be able to make most of the objects in your house or even help build a home!

No matter what you make, the joy of completing a woodworking project is great! From the basic skills of measuring, to using advanced equipment such as routers and jointers, this project has something for everyone.

Woodworking: WW100
Things to learn/do in the project:
Ages 7 – 9
- Identify woodworking tools
- Practice woodworking safely
- Learn how to measure and mark boards, using a square, hand drill or hand saw
- Make a sandpaper block

Ages 10 – 13
- Learn to select wood based on grain
- Identify types of lumber
- Use a combination square and make a miter cut
- Make a bird house

Ages 14 and older
- Learn to use a powered circular saw and radial arm saw
- Discover technology in tools
- Explore career opportunities