

# Kansas 4-H Project Materials Guide

2013

**Note: Ages listed with project pieces indicates the age of audience the manual was written or designed for. Parents and local leaders must determine the appropriate materials for each member based on their age and project skill level.**

**Science ready materials are highlighted in green.**

**Additional resources for all project areas are on the Kansas 4-H website: [www.kansas4h.org](http://www.kansas4h.org) Click on Publications and then 4-H Publications.**

## Beef

### **Bite into Beef**, ages 7-10 (4H717CCS)

Youth engage in activities to identify breeds, locate parts, judge, halter break a calf, show a calf, recognize a healthy animal, identify feed ingredients and shop for beef and beef by-products.

### **Here's the Beef**, ages 11-13 (4H718CCS)

Youth are challenged with activities in judging and oral reasons, feed ingredients, behavior, nose printing, parasites, fitting, ethical issues, beef carcass composition and retail meat cuts.

### **Leading the Charge**, ages 14 and older (4H719CCS)

Selection and judging, feeds, careers, health, reproduction, meats and marketing encourage youth to deepen their learning.

### **Additional Beef Resources**

Kansas 4-H Generic Record Form (P1106)

4-H Market Livestock Record (P1029)

Beef Project Promotional Brochure (4H1006)

Beef Helper's Guide (4H720 CCS)

Beef 4-H Project Leader Notebook, 2<sup>nd</sup> Ed. (S100)

Livestock Judging Guide (S92)

Youth Livestock Safety (<http://ylsp.bae.ksu.edu>)

## Citizenship

### **Me, My Family and Friends**, ages 7-8 (S55)

Learn life skills to form relationships with self and others in family and social environments.

### **My Neighborhood**, ages 9-11 (S57)

Learn how to form relationships with peers and other families in the local community.

### **My Clubs and Groups**, ages 9-11 (S58)

Develop relationships in social, political and physical environments in the community and at the county level.

**Public Adventures**, ages 12-14 (4H695 CCS)

Teens channel their energies toward solving problems in their community. Youth change a piece of the public world, discover the possibilities of democratic citizenship and build a commitment to taking action in new ways. They plan and conduct a project that will change or improve something valuable to many people.

**Service Learning -- Agents of Change**, ages 12-14 (4H922 CCS)

Youth become “special opportunity agents” as they follow a series of activities that engage them in their community and allow them to reflect on their experiences. Youth identify a community need, plan a service project and execute their idea.

**Service Learning -- Raise Your Voice**, ages 15 and older (4H923 CCS)

This guide engages older youth as leaders. Voices of young people engaged in service inspire youth and connect them with others who make an impact. Youth plan and implement a service project.

### **Additional Citizenship Resources**

Kansas 4-H Citizenship Record (P1086)

Kansas 4-H Generic Record (P1106)

Citizenship Helper’s Guide (4H696 CCS)

Service Learning Helper’s Guide (4H924 CCS)

My Heritage, ages 12-14 (4H827)

My Government, ages 15 and older (4H828)

Physical Properties of the World Around Me, ages 12-14 (4H635)

Peoples and Customs of the World, ages 15 and older (4H636)

## **Clothing & Textiles**

**Sewing Expressions, Under Construction**, ages 7-10 (4H813 CCS)

Youth have an opportunity to create garments and unique costumes.

**Sewing Expressions, Fashion Forward**, ages 11-13 (4H814 CCS)

Youth develop buying strategies, accessorizing, apparel design and recycling skills.

**Sewing Expressions, Refine Design**, ages 14 and older (4H815 CCS)

Advanced youth learn recycling, starting a business and the social and psychological influences of clothing.

### **Additional Clothing and Textiles Resources**

Kansas 4-H Generic Record (P1106)

Clothing and Textiles Member Guide and Annual Report (MG32)

Sewing Expressions Helper’s Guide (4H816 CCS)

Clothing and Textiles 4-H Project Leader Notebook (S107)

Guidelines for Quality Clothing Construction (Judge’s Guide) (4H490)

## **Communications**

**Picking up the Pieces**, ages 7-10 (4H912 CCS)

Youth engage in nonverbal, verbal and written activities that stretch and strengthen personal communication skills. Encrypting codes, writing songs, giving directions, dealing with bullies and making a statement through art are a few of the exciting

activities.

**Putting it Together**, ages 11-13 (4H913 CCS) Youth practice and gain confidence in communicating in a variety of situations. They gain confidence as strong communicators as they present oral reasons, plan and present speeches, communicate assertively, practice making a good first impression and mentor others.

**The Perfect Fit**, ages 14 and older (4H914 CCS) Youth polish their communication skills and develop a public presentation by speaking in public, exploring communication careers, writing resumes, interviewing for a job, developing presentations, dealing with anxiety and much more.

**Public Speaking**, ages 14 and older (4H460) This can be a great way to present an important message. Effective speakers are not necessarily polished or perfect. Instead, they are energetic, direct and open human beings. Youth will consider the occasion, the audience, their interests and capabilities as they plan, design and practice their speech.

### **Additional Communication Resources**

Public Speaking Record (P1062)

Kansas 4-H Generic Record (P1106)

Communications Helper's Guide (4H915 CCS)

Kansas 4-H Project Talk Score Sheet (4H975)

Kansas 4-H Demonstration and Illustrated Talk Score Sheet (4H976)

Kansas 4-H Public Speaking Score Sheet (4H977)

Kansas 4-H Presentation Overview (4H978)

4-H Project Talks (4H979)

4-H Demonstrations (4H980)

4-H Demonstration or Illustrated Talk Outline Planning Form (4H981)

4-H Illustrated Talks (4H982)

4-H Public Speaking (4H983)

Effective Presentation Tips (4H984)

Preparing and Using Visual Aids (4H985)

Presentation Brainstorming Activity (4H986)

## **Dairy Cattle**

**Cowabunga**, ages 7-10 (4H722 CCS)

Youth explore dairy cattle breeds, select calves, identify parts of dairy cattle, recognize desirable traits, identify stages of calf care, pack a show box and show a calf.

**Mooving Ahead**, ages 11-13 (4H723 CCS)

Youth deepen their learning by focusing on housing, hay quality, milking, keeping animals healthy, parasites, behavior and food safety. They explore ethical decision making, judging and careers.

**Rising to the Top**, ages 14 and over (4H724 CCS)

Advanced youth practice mastitis detection, balancing a ration, pregnancy detection, delivery of calf, body condition scoring, selecting cattle through production records, promoting dairy products and exploring career opportunities.

### **Additional Dairy Cattle Resources**

Kansas 4-H Generic Record (P1106)

Dairy Cattle Project Promotional Brochure (4H1012)  
Dairy Cattle Helper's Guide (4H725 CCS)  
Dairy Cattle Project Leader Notebook (S112)  
Learning About Dairy Cattle Resource Guide (Quiz Bowl Reference) (NCR 593)  
Youth Livestock Safety (<http://ylsp.bae.ksu.edu>)

## Dairy Goats

### **Getting Your Goat**, ages 7-10 (4H678 CCS)

Whether youth own a dairy goat or are just curious about goats, these activities provide enjoyable, hands-on experiences to introduce them to goats. Selection, feeding, management, fitting, showing and responsible goat ownership are emphasized.

### **Stepping Out**, ages 11-13 (4H679 CCS)

Youth explore how to keep their goats healthy, feed them for maximum production, prepare for kidding, develop judging skills, milk goat properly and much more. Exciting activities for teams and individuals are included.

**Showing the Way**, 14 and older (4H680 CCS) Experienced goat project youth will find these advanced activities challenging and fun as they delve into genetics, careers, national industry issues, diseases, bio-security, body condition scoring, linear appraisal, breeding programs, pedigrees, dystocia, quality assurance and leadership opportunities.

### **Additional Dairy Goat Resources**

Kansas 4-H Generic Record (P1106)  
Dairy Goat Project Promotional Brochure (4H1011)  
Dairy Goat Helper's Guide (4H681 CCS)  
Youth Livestock Safety (<http://ylsp.bae.ksu.edu>)

## Dog Care and Training

### **Wiggles and Wags**, ages 7-10 (4H726 CCS)

Youth learn basic skills for dog care and training. Activities include knowing breeds, selecting a dog, knowing the parts of a dog, keeping a dog healthy and groomed, training and much more.

**Canine Connection**, ages 11-13 (4H727 CCS) Youth explore more about dog health, nutrition, care, genetic problems, population control, showmanship, training, ethics and budgeting.

**Leading the Pack**, ages 14 and older (4H728 CCS) Experienced youth investigate responsible breeding, diseases, caring for geriatric dogs, training, service dogs, dog roles and careers related to dogs. This guide provides youth with numerous leadership opportunities.

### **Additional Dog Care and Training Resources**

Kansas 4-H Generic Record (P1106)  
Dog Care and Training Project Promotional Brochure (4H997)  
Dog Helper's Guide (4H729 CCS)  
Dog Care and Training 4-H Project Leader Notebook (S113)  
Kansas 4-H Dog Show Rule Book (S46)

Kansas 4-H Agility Dog Show Rule Book (S124)  
Kansas 4-H Dog Show Judge's Guidelines (For Leaders and Judges) (S82)  
Kansas 4-H Rally Obedience Rule Book (4H965)  
The Style of Rally Obedience, 3<sup>rd</sup> Edition (4H966)  
Rally Obedience Laminated Card Set (4H967)  
Dog Resource Handbook (4H968)

## **Energy Management**

### **Magic of Electricity**, ages 9-10 (4H765 CCS)

Electricity is everywhere. Youth explore why certain things insulate from electricity better than others, the effect that magnetism has on various substances, how to build a flashlight, build and test a compass, build an electromagnet and an electric motor.

### **Investigating Electricity**, ages 11-12 (4H766 CCS)

Decoding circuit diagrams, sending messages by Morse code and building three-way switches are featured. Youth build circuits and test voltages, build a rocket launcher and a burglar alarm as they practice decision making and communication. This unit is designed for youth who understand magnetism, electron flow and circuit design.

### **Wired for Power**, ages 13-15 (4H767 CCS)

Youth build on skills learned in levels 1 and 2 plus learn some new ones, such as measuring electrical usage, replacing electrical switches and determining electrical loads. Youth also evaluate different light bulbs and test for electrical power.

### **Entering Electronics**, ages 16 and older (4H768 CCS)

Youth learn about diodes, LED's, photocells, SCRs, ICs, and amplifiers. This guide is designed for intermediate to advanced learners. An understanding of DC circuits, voltage, amperage, current flow, polarity and some soldering is needed.

### **Additional Electric Resources**

Kansas 4-H Generic Record (P1106)  
Electric Member Guide and Annual Report (MG46)  
Electric Helper's Guide (4H769 CCS)

### **Small Engines - Crank It Up**, ages 7-10 (4H703 CCS)

Youth focus on basic small engine knowledge, study external engine parts, discover tools of the trade and learn about the concepts behind what makes small engines work. They explore the uses of small engines and safety issues.

### **Small Engines - Warm It Up**, ages 11-13 (4H704 CCS)

Youth explore the internal parts of engines, learn about engine sizes, compression ratios, seasoning their engines and safety issues. Youth also learn about occupational possibilities and starting their own businesses.

### **Small Engines - Tune It Up**, ages 14 and older (4H705 CCS)

Youth tear down and rebuild an engine, use diagnostic tools, research rules and regulations about using small engine machines and select replacement engines.

### **Additional Small Engines Resources**

Kansas 4-H Generic Record (P1106)  
Small Engines Member Guide and Annual Report (MG43)  
Small Engines Helper's Guide (4H706 CCS)

**Power of the Wind, ages 11-13 (4H971CCS)** Youth learn the engineering design process as they learn about the wind and its uses.

### **Additional Power of the Wind Resources**

**Power of the Wind Facilitator Guide (4H972 CCS)**

## **Entomology**

**Creepy Crawlies, ages 7-9 (4H770 CCS)**

Youth learn how to make an insect collection, where to look for insects and how to identify and classify insects.

**What's Bugging You, ages 10-13 (4H771 CCS)**

Youth develop communication skills, identify insects to orders, design insects, complete an insect collection table, plan an insect collection trip, rear meal worms, explore insect legs and collect insects with an extractor.

**Dragons, Houses and other Flies, ages 14 and older (4H772 CCS)**

Youth keep an insect journal, determine the effect of food meal worm larvae production, test ant food preferences, conduct honey bee learning experiments, organize an insect club, use an insect key, plan a butterfly garden, record insect observations, identify insect mouth parts, rear mosquitoes and make a spider web display.

**Project Butterfly Wings, ages 9-12 (4H989 CCS)**

Youth explore butterfly habitats, learn how to identify common butterflies, become a citizen scientist and contribute data as they enter their findings on the web site. Youth create investigations to answer questions or solve problems and share their findings with others.

### **Additional Entomology Resources**

Entomology Insect Collection Record (P1105)

Kansas 4-H Generic Record (P1106)

Entomology Member Guide and Annual Report (MG47)

Entomology Helper's Guide (4H773 CCS)

**Project Butterfly Wings Facilitator Guide (4H990 CCS)**

4-H Entomology: Collecting and Exhibiting (4H829)

Entomology Labels-Orders (4H567)

Entomology Labels (4H568)

<http://www.entomology.ksu/DesktopDefault.aspx?taboid=89>

## **Environmental Science**

**Exploring Your Environment – Earth's Capacity, ages 11-13 (4H999 CCS)**

Focusing on environmental stewardship, youth will learn scientific research techniques, responsible practices and innovative technologies that positively address environmental issues such as air and water quality, land use, carrying capacity, product life cycle and ecological sustainability.

### **Exploring Your Environment – Ecosystem Services, ages 11-13 (4H1000 CCS)**

Youth will have the opportunity to engage in hands-on activities that focus on how living and non-living organisms interact within the ecosystem and provide benefits for humans and other living beings.

### **There's No New Water, ages 14-18 (4H1012 CCS)**

This water conservation and water quality curriculum is grounded in a simple yet powerful concept that water is a finite natural resource whose quantity and quality must be responsibly preserved, used, and reused. The curriculum includes six sequential learning modules and is intended for delivery in out-of-school group settings to be facilitated by an adult.

### **Additional Environmental Science Resources**

Kansas 4-H Generic Record (P1106)

### **Exploring Your Environment, Helper's Guide (4H1001 CCS)**

## **Exploring 4-H – 7-9 Year Olds**

### **Exploring the Treasures of 4-H, ages 7-9 (4H916 CCS)**

This youth activity guide provides a “treasure hunt” for youth to explore the joys of 4-H by discovering their interests, potential 4-H projects and finding 4-H where they live with the guidance of parents or other adult helpers.

### **Additional Exploring 4-H Resources**

Treasures of 4-H Helper's Guide (4H917 CCS)

## **Family Studies**

**Consumer Savvy -The Consumer in Me, ages 7-10 (4H884 CCS)** Youth experience what it means to be a consumer through saving, spending and sharing.

**Consumer Savvy - Consumer Wise, ages 11-13 (4H885 CCS)**

Youth realize the influence of peer pressure and the power of advertising as they learn to make independent decisions when shopping.

**Consumer Savvy - Consumer Roadmap, ages 14 and older (4H886 CCS)** Teens navigate the potholes in the marketplace en route to becoming savvy consumers.

**Kids on the Grow – Growing on My Own, ages 7-10 (4H754 CCS)**

Youth explore how they grow and develop, how to inspect toddler's toys and make their home hazard-free. They also learn more about their roles in life, how to handle their emotions and accept differences in others.

**Kids on the Grow – Growing With Others, ages 11-13 (4H755 CCS)**

Youth learn about self care, rules, responsibility and safety and are introduced to babysitting. They learn to work with others and gain awareness of common dangers in their world.

**Kids on the Grow – Growing in Communities, 14 and older (4H756 CCS)**

Youth explore child development careers, gain experience as a teacher or coach, participate in a community service project and learn that children with different abilities have different needs.

**Reading Makes Cents, ages 8-10 (4H973 CCS)** Fifty-three activities about money.

**Financial Champions - Money FUNdamentals**, ages 7-9 (4H843 CCS) Youth learn money management skills in purchasing, affordability and living within a spending plan.  
**Financial Champions - Money Moves**, ages 7-9 (4H842 CCS) Youth learn about wants and needs, values, goal-setting, communications, ways to use and save money, the benefits and drawbacks of credit, advertising influences, consumer decision making and how to select financial services.

### **Additional Family Studies Resources**

Kansas 4-H Generic Record (P1106)  
Family Studies Member Guide and Annual Report (MG24)  
Consumer Savvy Helper's Guide (4H887 CCS)  
Kids on the Grow Helper's Guide (4H757 CCS)  
Family Studies 4-H Project Leader Notebook (S105)  
Financial Champions Helper's Guide (4H844 CCS)

## **Fiber Arts**

**[Crochet Member's Manual](#)**, all ages (4H854CO) Youth will learn to express their creativity in a productive way while developing a skill that is relaxing and fun. They will have the opportunity to learn more about the history of crochet. Members will learn basic single and double stitches plus many more and finally advancing to hairpin lace, etc.

- <http://www.crochet.org/teach/toc/html>

**Knitting Member's Manual** all ages (4H855CO) Learn the history of knitting as you develop skill in basic stitches including making seams and buttonholes. Advance to using up to four needles to form tubular (seamless) patterns.

- "Beginning to Knit.pdf" on Kansas 4-H website under "Resources"

**Needle Arts Member's Manual**, all ages (4H856CO) Youth will learn the history of various needle arts or decorative stitching. Master such things as embroidery and cross-stitch, needlepoint, candle wicking, crewel, lacework and appliqué.

**Patchwork and Quilting Member's Manual**, all ages (4H857CO) Quilting is unique form of needle work incorporating decorative stitching. Quilt making is very old, with evidence of quilted fabric dating back to dynastic Egypt, circa 3400BC. Patchwork has also been discovered in the archeological remains on the Silk Road between China and India. Learn to stitch and tie quilts, form designs and master machine quilting.

**Rug Making Member's Manual**, all ages (4H858CO) Rug making is an ancient craft and is shrouded in mystery. As our ancestors moved indoors, the desire to create a warmer, more comfortable atmosphere emerged. Begin by making latch hook rugs and advance to making braided rugs.

**Spinning Member's Manual**, all ages (4H859CO) Spinning fiber into yarn is an ancient process thought to have begun as early as 6300 BC. Learn to make a hand spindle, prepare wool fibers and spin various items.

**Weaving Member's Manual**, all ages (4H860CO) Learn the history of weaving and the basic process. Learn the parts of a loom, decide on a project, learn weaving terminology and figure amounts of yarn needed for your project.

**Ethnic Arts Member's Manual**, all ages (4H861CO) This project enables members to explore a wide variety of crafts from across the country and around the world. Members are encouraged to explore their favorite craft and share it with others.

**Macrame Member's Manual**, all ages (4H862CO) Macrame, the art of ornamental knotting, originated as a decorative way of securing the ends of a piece of woven fabric,



creating a lacy edge. Later macramé was worked separately and attached to both household items and garments as a trim. Finally entire items were made. Learn terms, techniques, tools and cord types.

### **Additional Fiber Arts Resources**

Heritage Arts Record (4H863)

Kansas 4-H Generic Record (P1106)

Quilt Quest (NE 4H 1300) Order from: Nebraska State 4-H Department, Phone: 402-472-9016 or FAX: 402-472-9024

Advanced Visual Arts – Sketchbook Crossroads, ages 12 and older (4H910 CCS)

## **Food, Nutrition and Food Science**

### **Choice, Control, & Change: Using Science to Make Food and Activity Decisions.**

ages 11-13, (ISBN 978-0-915873-55-5) Order from National Gardening Association [www.garden.org](http://www.garden.org) or [www.kidsgardening.org](http://www.kidsgardening.org) Nineteen hands-on investigations of our complex food system and how to use scientific evidence to make healthy food and activity choices.

### **Choice, Control, & Change “Hands-on Minds-on” Lesson Supplements.** ages 11-13.

Lesson adaptations for the “Choice, Control, & Change” curriculum to increase the quantity and quality of 4-H Science Ready hands-on learning in each of the 19 lessons.

#### **Foods – Six Easy Bites**, ages 7-8 (4H782 CCS)

Youth prepare foods, do fun experiments and go on fact-finding missions.

#### **Foods - Tasty Tidbits**, ages 9-11, (4H784 CCS)

Youth learn healthy food selection, food safety and smart food purchasing through exciting and challenging activities.

#### **Foods -You’re the Chef**, ages 12-14 (4H786 CCS)

Youth explore food careers and learn food preservation and preparation through activities.

#### **Foods - Foodworks**, ages 15 and older (4H788 CCS)

Youth learn about foods and more advanced food preparation. They have access to the fun new website where they can download recipes from across the country and around the world.

**Microwave Magic - Bags of Tricks**, ages 7-8 (4H894 CCS) Youth learn how the microwave works, use the microwave safely and prepare foods such as scrambled eggs, apples, popcorn treats, fudge and desserts.

**Microwave Magic - Micro Magicians**, ages 9-11, (4H895 CCS) Youth participate in activities on understanding watts and prepare foods such as potatoes, vegetables, pudding bar cookies, beans, upside down cake and brownies.

**Microwave Magic - Amazing Rays**, ages 12-14 (4H896 CCS) Youth practice more advanced microwave techniques such as shielding, defrosting and browning.

**Microwave Magic - Presto Meals**, 15 and older (4H897 CCS) Youth learn techniques such as adapting recipes for the microwave, blanching fruits and vegetables and stacking whole meals.

**Food, Culture and Reading**, ages 9-11 (4H998 CCS) This nutrition education curriculum uses a wide variety of experiential activities to help youth recognize healthful foods within food groups, taste new foods, explore the similarities of foods and develop an understanding and appreciation of different cultures.

### **Additional Foods and Nutrition Resources**

Kansas 4-H Generic Record (P1106)

Foods and Nutrition Member Guide and Annual Report (MG22)

Foods Helper's Guide (4H852 CCS)

Microwave Helper's Guide (4H898 CCS)

Food Safety Recommendations for Acceptable Fair Exhibits (4H712)

Judge's Guide for Foods and Nutrition Exhibits (4H488)

Choose My Plate <http://www.choosemyplate.gov/>

## **Geology**

**Kansas 4-H Geology Leader Notebook, Level 1**, ages 7-8 (S149)

Beginning youth learn basic parts of the earth, importance of particle size in rock formation, basic Geologic Laws of Original Horizontality and Superposition, the water cycle and basic plant and animal fossil types.

**Kansas 4-H Geology Leader Notebook, Level 2**, ages 9-11 (S149)

Youth explore continental drift and plates, faults and folds, time periods and eras, cleavage and fractures, crystal shapes, the rock cycle and limestone. They learn to identify fossils, geologic products and prepare and display specimens they have collected.

**Kansas 4-H Geology Leader Notebook, Level 3**, ages 12-14 (S149)

Advanced youth study how mountains are formed, effect of glaciers and how eras are defined by life forms. They conduct specific gravity tests and identify types of sedimentary rocks. They learn to use topographic maps and prepare road logs for collecting trips.

**Kansas 4-H Geology Leader Notebook, Level 4**, ages 15 and older (S149)

Experienced youth discuss weathering forces and terminology, measure formations and test for chemical properties of minerals. They identify igneous rocks, study paleobotany, use plat maps and explore geology careers.

### **Additional Geology Resources**

Kansas 4-H Generic Record (P1106)

Scorecard for Judging Geology Fair Exhibits (MG18)

Rock, Mineral and Fossil Labels (MG20)

## **Health and Wellness**

**Bicycling for Fun**, ages 7-10 (4H750 CCS)

Beginning riders learn the essentials for getting started safely and successfully. This guide contains creative hands-on activities and connections to DVD and web resources. Youth begin exploring the basics toward lifelong cycling. Activities help youth learn safety, road rules and planning for a pleasant ride.

**Wheels in Motion**, ages 11-13 (4H751 CCS)

Youth who are riding learn advanced skills as they explore their surroundings. This guide includes activities that will last a lifetime. Youth choose a bike that's right for them and practice bike maintenance and road rules to make their ride safe and fun.

**Keeping Fit and Healthy - First Aid in Action**, ages 7-10 (4H918 CCS)

Youth practice first aid skills to treat cuts, scrapes, nosebleeds and bee stings. They learn how to respond to someone who is choking or has broken a bone, assemble a first aid kit and interview members of the medical profession.

**Keeping Fit and Healthy - Staying Healthy**, ages 11-13 (4H919 CCS) Youth use a self-assessment tool to identify personal talent areas; explore hygiene, nutrition and physical activities; and share what they discover with a new appreciation of personal interests and talents.

**Keeping Fit and Healthy - Keeping Fit**, ages 14 and older (4H920CCS) Youth design their personal fitness plan and track it using their fitness file. Through interviews and personal experiences, youth discover the benefits of being fit as they practice making decisions, managing themselves and speaking with others.

**Hiking Trails**, ages 7-10 (4H899 CCS)

Youth learn shelter selection, Leave No Trace camping skills, outdoor cooking, and environmental awareness and appreciation.

**Camping Adventures**, ages 11-13 (4H900 CCS)

Youth experience planning and taking a day hiking trip. Activities include clothing needs, what to pack in a daypack, reading topographic maps and orienteering skills.

**Backpacking Expeditions**, ages 14 and older (4H901 CCS)

Through these activities youth focus on being on the trail for an extended period of time. They consider clothing needs, setting up tents, using backcountry stoves, basic nutritional needs, menu planning for multi-day hikes, personal hygiene and basic first aid.

**So you are Recreation Leader of Your Club** (4H929) This manual will help the club recreation leader lead group building and fun games. Youth will concentrate on teamwork and good sportsmanship as they play familiar and new games. Your club may even want to have a committee to guarantee a variety of activities for all ages.

### **Additional Health and Wellness Resources**

Kansas 4-H Generic Record (P1106)

Bicycle Adventures Member Guide and Annual Report (MG49)

Bicycle Helper's Guide (4H753 CCS)

Bicycle "Don't Get Stuck: Fix It" (DVD) (4H938 CCS)

Outdoor Adventures Helper's Guide (4H902 CCS)

Health Rocks Level 1 (4H969 CCS) Leaders Guide aimed at 8 -12 year olds.

Health Rocks Level 2 (4H970 CCS) Leaders Guide aimed at 12-14 year olds.

## **Home Environment**

### **Unit 1, Beginning** (4H864CO)

Youth focus on color, texture, space, home safety, recycling and reusing home items. Exhibits should use recycled materials to make things for the home, such as, a centerpiece, planter, room or desk organizer, wall hanging, etc.

### **Unit 2** (4H865CO)

Youth learn the effects of color, texture, organization and use of space as well as recycling and reusing items around the home. Exhibits should be items for the home. Materials used may be new or recycled.

### **Unit 3, Intermediate** (4H866CO)

Youth learn how color influences a feeling of space and how balance, proportion and scale work to make the project more attractive. The unit also includes one safety exercise for the family home. Exhibits should be a room design drawing or items for

the home (wall hanging, decorative pillows, table linen, picture frame, etc.) Materials used may be new or recycled.

**Unit 4** (4H867CO)

Youth focus on using neutrals, color schemes, movement, texture and line in the element of design to provide a more pleasing home. The unit also includes a safety exercise for the family home or vehicle. Exhibits should display one or more accessories you have made, refurbished or purchased to use in your room or home.

**Unit 5, Advanced** (4H868CO) Youth learn about window treatments and bed covers which includes exercises in measuring, selecting and installing a variety of window treatments (draperies, valences, blinds, shades) and bed covers. Exhibits should display one piece of a window treatment or bed cover you have made or purchased.

**Unit 6** (4H869CO)

Youth learn to refinish and refurbish furniture which includes sessions on wood repair, refinishing, caning and upholstery. Exhibits should be an item which has been refinished or refurbished.

**Additional Home Environment Resources**

Kansas 4-H Generic Record (P1106)

## HORSE

**Giddy Up & Go**, ages 7-8 (4H731 CCS)

Youth who may or may not have a horse or pony, but want to learn about horses, will enjoy this manual. They will learn the basics of horse behavior, breeds, and safety around horses through a variety of activities, including teaching others.

**Head, Heart and Hooves**, ages 9-11 (4H732 CCS)

Youth learn more about acquiring and raising a horse including selecting a horse, horse nutrition and care, equine teeth and bones, judging, including giving oral reasons and much more.

**Stable Relationships**, ages 14 and older (4H733 CCS)

Youth explore horse reproduction, diseases and health care, pasture management, providing appropriate shelter and building a financial plan.

**Riding the Range**, ages 12-14 (4H907 CCS)

Youth learn nine basic riding skills and ten horsemanship skills, training techniques, trail riding and selection and use of tack.

**Jumping to New Heights**, ages 12 and older (4H908 CCS)

Youth learn more advanced riding skills, the Quarter System, horse showmanship, ethics and leadership.

**Additional Horse Resources**

Kansas 4-H Generic Record (P1106)

Horse Project Promotional Brochure 4H1005)

Horse Helper's Guide (4H734 CCS)

Kansas 4-H Horse Standard of Excellence, Achievement Level 1, ages 7-8 (MG55)

Kansas 4-H Horse Standard of Excellence, Achievement Level 2, ages 9-11 (MG56)

Kansas 4-H Horse Standard of Excellence, Achievement Level 3, ages 12-14 (MG57)

Kansas 4-H Horse Standard of Excellence, Achievement Level 4, ages 15 and older

(MG58)

Kansas 4-H Horse Standard of Excellence Skill Test Evaluator Guide (4H935)

Kansas 4-H Horse Show Rule Book (S133)

American Youth Horse Council (AYHC) Leader's Handbook

Youth Livestock Safety (<http://ylsp.bae.ksu.edu>)

## Leadership

**My Leadership Workbook**, ages 7-10 (4H881 CCS)

Youth practice leadership through this action-packed workbook. From “putting themselves in someone else’s shoes” to “gathering up loose ends” and “freezing a conflict”, youth actively learn about individual leadership skills.

**My Leadership Journal**, ages 11-13 (4H882 CCS)

Continuing on the leadership journey, youth learn the importance of understanding themselves as a leader. Teamwork is emphasized as the youth walk the teamwork tightrope and search for team talent. Youth are encouraged to keep a “journal” of their leadership journey.

**My Leadership Portfolio**, 14 and older (4H883 CCS)

Older youth focus on “real life” leadership activities. Youth are encouraged to develop a portfolio of their leadership experiences. Through youth directed activities, individuals assume greater leadership responsibilities.

### Additional Leadership Resources

Kansas 4-H Generic Record (P1106)

Leadership Member Guide and Annual Report (MG21)

Leadership Mentor Guide 1, ages 7-10 (4H879 CCS)

Leadership Mentor Guide 2, ages 11 and older (4H880 CCS)

Leadership Project Leader Notebook (S102)

## Meat Goats

**Just Browsing**, ages 7-10 (4H873 CCS)

Youth will do more than just browsing. They’ll learn goat breeds and selection, feeding and management, goat health, body parts, record keeping, meat goat conformation, show preparations and sportsmanship.

**Get Growing with Meat Goats**, ages 11-13 (4H874 CCS)

Youth actively explore goat diseases, identifying poisonous plants, determining body condition, water quality, goat predators, kidding, goat reproduction, the veterinary profession, selecting stock and showing meat goats.

**Meating the Future**, ages 14 and older (4H875 CCS) Youth discover how to select breeding sires, balance a ration, prevent diseases, control internal and external parasites, practice bio-security, practice sound ethics, conduct a meat goat judging clinic, judge goats, give oral reasons and explore meat goat products.

### Additional Meat Goat Resources

Kansas 4-H Generic Record (P1106)

4-H Market Livestock Record (P1029)

Meat Goat Project Promotional Brochure (4H1010)  
Meat Goat Helper's Guide (4H876 CCS)  
Official Kansas 4-H Meat Goat Showmanship Scorecard (4H974)  
Youth Livestock Safety (<http://ylsp.bae.ksu.edu>)

## Performing Arts

### **Theatre Arts-Play the Role**, ages 7-10 (4H818 CCS)

Through creative dramatic activities, youth bring imagination to life. The guide emphasizes movement, voice and speech, characterization, play building and playing a scene. Activities range from warm-ups to improvisation, from pantomime to monologue making, from clowning to theatre visits.

### **Theatre Arts - Become a Puppeteer**, ages 11-13 (4H819 CCS)

Youth learn types of puppets (e.g. hand, rod, marionette, shadow, etc.), how to create a puppet and puppet stage, development of their puppet character, how to create and present a puppet skit and puppet therapy.

### **Theatre Arts - Set the Stage! - Stagecraft**, 14 and older (4H820 CCS)

Youth learn stagecraft options which tap into their unique skills and talents behind the scenes, including costumes, sound, lighting, props, set design, makeup and stage management.

### **Additional Performing Arts Resources**

Kansas 4-H Generic Record (P1106)  
Theatre Arts Helper's Guide – Sidecoaching (4H822 CCS)

## Pets

### **Pets - Pet Pals**, ages 7-10 (4H686 CCS)

Youth learn about pets through activities such as selecting a pet, identifying pet parts, pet art, handling pets, providing the right kind of housing and meeting the daily needs of pets.

### **Pets -Scurrying Ahead**, ages 11-13 (4H687 CCS)

Youth develop planning and decision making skills as they practice feeding and caring for their pets, observing pet behavior, exhibiting pets, debating pet sayings and creating a story about a pet.

### **Pets -Scaling the Heights**, ages 14 and older (4H688 CCS)

Through these activities youth explore genetics, pet issues, reproduction, caring for newborns, starting a business and entering exciting careers.

### **Cats -Purr-fect Pals**, ages 7-10 (4H682 CCS)

As youth begin their learning about cats, they engage in activities to select a cat, identify breeds, name the parts of a cat, handle and groom a cat, care for its health and budget for its care.

### **Cats -Climbing Up!**, ages 11-13 (4H683 CCS)

Youth step up their learning through activities on cat senses, the meaning of cat sounds, tricks they can teach a cat, signs of illness and health, emergency situations, feeding, special diets, traveling with a cat and showing it.

**Cats - Leaping Forward**, ages 14 and older (4H684 CCS) Youth explore veterinary procedures, cat body systems, diseases, reproduction, genetics, older cat needs, behavior, showmanship, community laws, animal welfare and personal strengths.

### **Additional Pet Resources**

Kansas 4-H Generic Record (P1106)  
Pets and Cats Project Promotional Brochure (4H1009)  
Pet Helper's Guide (4H689 CCS)  
Cat Helper's Guide (4H685 CCS)

## **Photography**

### **Focus on Photography**, ages 7-10 (4H955)

Youth will focus on equipment basics, taking sharper pictures, concepts of lighting and flash, photo composition approaches, sequencing and evaluating photographs.

### **Controlling the Image**, ages 11-13 (4H956)

Youth will explore depth of field, aperture and shutter speeds, hard and soft lighting, silhouettes and flash techniques. Youth will learn to evaluate composition using the Rule of Thirds, the Golden Triangle and the Golden Rectangle, use different viewpoints and understand positive and negative space. Additional topics include taking candid photos, adjusting shutter speeds, panning techniques and taking close ups and panoramas.

### **Mastering Photography**, ages 14 and older (4H957)

Youth will learn to use wide-angle and telephoto lenses, filters and special film, light meters and special lighting techniques. Youth will learn to shoot reflections, using framing and viewpoints, still-life, formal and informal portraits. Symmetry, patterns and texture, color composition, pictures with a purpose and much more.

### **Additional Photography Resources**

Photography Project Record (P1093)  
Kansas 4-H Generic Record (P1106)  
Photography Member Guide and Annual Report (MG39)  
Kodak Pocket Guide to Digital Photography (check local bookstore)  
4-H Film Making – DVD 584 CCS

## **Plant Science**

### **Forestry - Follow the Path**, ages 7-10 (4H890 CCS)

Youth explore types of trees and tree parts, characteristics of various forests, what forests need to grow and thrive and the products people get from trees and forests.

### **Forestry - Reach for the Canopy**, ages 11-13 (4H891 CCS)

Youth take a closer look at the inner-workings of trees, explore forest change, learn about forest health concerns and discover the health benefits that trees have on people.

**Forestry - Explore the Deep Woods**, 14 and older (4H892 CCS) Youth examine and distinguish types of trees, look at forests on a global scale, learn to care for trees and think about how to conserve forests.

### **Additional Forestry Resources**

Kansas 4-H Generic Record (P1106)  
Junior 4-H Forester Record (P1089)  
Forestry Helper's Guide (4H893 CCS)  
List of Native Kansas Trees (4H334)

**Gardening - See Them Sprout**, ages 7-8 (4H790 CCS)

Youth learn to plan a garden as well as plant the seeds, use garden tools safely and harvest crops. Youth autograph pumpkins, grow plants from roots, make a rain gauge and roast pumpkin seeds.

**Gardening - Let's Get Growing**, ages 9-11 (4H791 CCS)

Youth use transplants in a garden, start seeds indoors, observe how plants respond to light and grow new plants from plant parts. They make a worm box, freeze vegetables and make a compost pile.

**Gardening - Take Your Pick**, ages 12-14 (4H792 CCS)

Youth learn to test and improve soil, extend the growing season, cross-pollinate flowers and assist others in garden projects. Youth also explore photosynthesis, plant, harvest and dry herbs and learn to pickle vegetables.

**Gardening - Growing Profits**, 15 and Older (4H793 CCS) Youth explore double crop planting methods, the effect of pollination on plants, plant genetics, pest management and starting a plant business. Youth learn how to construct raised beds for planting, investigate hydroponics and spuds in space.

**Junior Master Gardener curriculum Grades 3-5 (Purchase at: [www.jmgkids.us](http://www.jmgkids.us))**

The "*Level 1 Junior Master Gardener Teacher/Leader Guide*" is designed to accompany and correspond with the student handbook, "*Junior Master Gardener Handbook*". The "Teacher/Leader Guide" covers a broad base of gardening topics and includes work sheets, rhythms, and standardized reading passages. Both the "Teacher/Leader Guide" and the student handbook are available in Spanish versions.

"*Health and Nutrition from the Garden*" is also designed for use with students in grades 3-5, and is a combination leader/youth handbook. "Health and Nutrition" emphasizes basic gardening techniques and nutrition education.

"*Wildlife Gardener*" was developed in cooperation with the National Wildlife Federation. It features lessons on how to design and implement a wildlife garden. Specific chapters focus on mammals, insects, and birds, as well as reptiles and amphibians.

"*Literature in the Garden*" makes books come alive by cultivating the connection between gardening and great children's literature. The curriculum utilizes six garden- and ecology-themed children's books to inspire learning through hands-on activities.

**Junior Master Gardener curriculum Grades 6-8 (Purchase at: [www.jmgkids.us](http://www.jmgkids.us))**

"*Operation Thistle: Seeds of Despair*" and "*Operation W.A.T.E.R.: Dr. Thistle Goes Underground*" The Level 2 curricula is designed for use by middle school students, grades 6-8, and is published in module form that combines the leader and youth handbooks. Each chapter includes group activities, independent projects and an online activity. "*Operation Thistle: Seeds of Despair*" focuses on plant growth and development activities, while "*Operation W.A.T.E.R.-Dr. Thistle Goes Underground*" features soils and water activities.

**Field Crops - Plant Science 4-H Project Leader Notebook**, Level I, ages 7-8; Level II, ages 9-11; Level III, ages 12-14; Level IV, ages 15 and older (S103)



### **Additional Plant Science Resources**

Kansas 4-H Generic Record (P1106)  
Plant Science Member Guide and Annual Report (MG19)  
Gardening Helper's Guide (4H794 CCS)  
Gardening Exhibit Guide (4H795 CCS)  
Exhibiting Fruits and Vegetables (C405)  
Preparing Cut Flowers for Exhibit (4H826)  
Wheat Plot Record (P1099)  
Wheat Variety Plot Brochure (4H565)  
Wheat Variety Plot Handbook (4H566)  
4-H Crops and Weed Judging Contest (4H713)  
Revised Land Judging and Homesite Evaluation Manual (S34)  
Scorecard for Homesite Evaluation (S95)  
Scorecard for Land Judging (S96)

## **Poultry**

### **Scratching the Surface**, ages 7-10 (4H736 CCS)

Youth participate in activities such as identifying poultry species and breeds, selecting poultry, feeding and handling, washing and showing poultry, exploring an egg and cooking eggs.

**Testing Your Wings**, ages 11-13 (4H737 CCS) Youth select layers, keep their poultry healthy, identify pecking order in a flock, read a feed tag, explore retail products, identify poultry bones, grade carcasses, use the Standard of Perfection to evaluate poultry, make a budget and examine an egg using an egg candler.

### **Flocking Together**, ages 14 and older (4H738 CCS)

Youth develop leadership skills by managing a flock, processing chickens, exploring careers, planning a judging clinic, conducting poultry games and discussing values and ethics.

### **Additional Poultry Resources**

Kansas 4-H Generic Record (P1106)  
Poultry Project Promotional Brochure 4H1008)  
Poultry Helper's Guide (4H739 CCS)  
Poultry 4-H Project Leader Notebook (S104)  
A Guide for Selecting and Preparing Poultry for Exhibition (L771)  
National Poultry Judging Manual (S71)  
Beginner's Guide to Raising and Showing Chickens (4H954 – DVD)

## **Rabbits**

### **What's Hopping?**, ages 7-10 (4H740 CCS)

Youth learn selection, handling, breeds, parts, management, equipment, feeding, health, breeding and kindling.

### **Making Tracks**, ages 11-13 (4H741 CCS)

Through activities, youth learn to select a rabbit, detect diseases, tattoo their rabbit, keep records, show rabbits and judge rabbits including giving oral reasons.

### **All Ears**, 14 and older (4H742 CCS)

Advanced youth fully explore rabbit management practices through breeding, genetics,

culling, designing a rabbitry, marketing rabbits, preventing diseases and registering a rabbit.

### **Additional Rabbit Resources**

Kansas 4-H Generic Record (P1106)  
Rabbit Project Promotional Brochure (4H1004)  
Rabbit Helper's Guide (4H743 CCS)  
Rabbit 4-H Project Leader Notebook (S101)

## **Reading**

**4-H Reading Project**, all ages (4H988) Youth will learn more of the “whys” as well as the “hows” of their projects. They will learn about the use of the library and the Internet, broaden their interests and understanding, learn to read critically and evaluate what they read, discover the enjoyment of reading and have the opportunity to read and share ideas with others.

### **Additional Reading Resources**

Kansas 4-H Generic Record (P1106)  
4-H Reading Project Record (P1068)  
Reading Makes Cents (4H973 CCS)

## **Self-Determined**

The following curriculum items are only samples of what might be studied. Youth can research and study any subject they are interested in that is not listed as a project area.

### **Entrepreneurship - Be the E**, ages 12-14 (4H888 CCS)

Youth discover the world of Entrepreneurship with this multi-level guide. Activities assist youth in learning what it takes to be an entrepreneur and whether they have the right stuff to meet the challenges. Youth practice the skills needed to function successfully as an entrepreneur and explore types of businesses, products and pricing, marketing, partnerships, agreements and contracts. Youth create a business plan and start their own business.

### **Workforce Readiness - Get in the Act! Take 1 Youth Guide & CD** (4H925 CCS)

This innovative program is designed to help middle school youth explore what it takes to get their first paying job. This interactive experience, combining CD and activity guide formats with activities presented in the context of a movie set, helps youth recognize their learning styles and personal qualities. Youth make real life choices using video scenarios in the on-the-job choices game. Youth discover how to assess job possibilities in the community and create job scenarios.

### **Additional Self-Determined Resources**

Kansas 4-H Generic Record (P1106)  
Entrepreneurship Helper's Guide (4H889 CCS)  
Workforce Readiness – Get in the Act! Take 1 Helper's Guide (4H926 CCS)

## Sheep

### **Lambs, Rams and You**, ages 7-10 (4H745 CCS)

Youth are introduced to a wide variety of fun and challenging activities including identifying parts of a lamb, selecting a project lamb, identifying lamb cuts, selecting feed and showing sheep.

### **Shear Delight**, ages 11-13 (4H746 CCS)

Youth present oral reasons, determine yield grades, compare digestive systems, explore a feed tag, deliver a lamb, treat parasites and discuss ethical decision making.

### **Leading the Flock**, 14 and older (4H747 CCS)

Youth engage in activities related to judging, budgeting, web surfing, reproduction and genetics, surveying consumers, career exploration, marketing products and teaching others.

### **Additional Sheep Resources**

Kansas 4-H Generic Record (P1106)

4-H Market Livestock Record (P1029)

Sheep Project Promotional Brochure (4H1003)

Sheep Helper's Guide (4H748 CCS)

Sheep 4-H Project Leader Notebook (S117)

Livestock Judging Guide (S92)

Official Kansas 4-H Sheep Showmanship Scorecard (4H830)

Youth Livestock Safety (<http://ylsp.bae.ksu.edu>)

## Shooting Sports

The 4-H Shooting Sports Program teaches young people the safe and responsible use of guns and the fundamentals of firing air pistol, air rifle, black powder rifles, shotguns, archery, and hunting skills.

The 4-H Shooting Sports Program uses the skills and disciplines of shooting to assist young people and their leaders to attain knowledge and develop essential life skills. In learning the rules of firearms safety and safe firearms handling, a young person will learn decision making and safety, science and technology, and youth development as well as social interactions and interpersonal communication skills.

In learning the rules of firearms safety and safe firearms handling, a young person will learn decision-making, develop an inquiring mind, and acquire and cultivate a knowledge of wildlife and natural resources.

Appealing to young people and volunteers from a wide range of urban and rural backgrounds, the curriculum uses a multi-disciplinary approach involving natural resources, wildlife, outdoor recreation and health. **Check with the local Extension Office for certified leaders before enrolling.**

**4-H Shooting Sports Leader Notebooks are available only when leaders attend a certification workshop.** Disciplines include: BB, Air Rifle, Air Pistol, Archery, Shotgun, Hunting Skills, Muzzleloading, Small Bore Rifle and Small Bore Pistol.

## Space Tech

### **Rocketry/Aerospace**

#### **Pre-Flight**, ages 7-9 (4H697 CCS)

Wow! Talk about fun! Youth and their helpers have a great time working together as youth learn how to talk like a real astronaut, find out how an airplane works and have fun at the same time.

#### **Lift-Off**, ages 9-11 (4H698 CCS)

Youth blast off with this guide as they fly kites, participate in airplane contests, launch rockets, explore space, make a glider, construct a straw rocket and experience disorientation.

#### **Reaching New Heights**, ages 12-14 (4H699 CCS)

Youth soar as they learn to fly an airplane, launch a rocket, conquer space and become an astronaut or pilot. Controlling flight direction and experiencing shuttle technology add to the fun in this experiential curriculum. Youth make a shuttle on a string, a Japanese kite, a hang glider and a control panel of an aircraft.

#### **Pilot in Command**, 15 and older (4H700 CCS)

Youth create an altitude tracker, determine the most fuel efficient routes between airports and make a box kite. Youth also explore pilot certification requirements, evaluate past and present navigation systems and learn about airport issues in their community or state.

## Astronomy

Astronomy is the scientific study of the universe beyond the earth. In 4-H, astronomy takes many practical forms to accomplish this study. Telescopes are essential to the astronomy project. Through telescopes, we can explain the history of the telescope, the different kinds of telescopes, their uses today (including NASA's great telescopes), and how to construct a simple one. Because of the great telescopes that exist today, i.e., the Hubble and others, we can also introduce nebulas. In fact, it is even possible to have a group of younger youth make their own nebula using black paper and glitter glue or fabric paints in a fun activity. Astronomy also can teach the order of the planets by making a key ring system using beads to give an idea of relative distance between the planets of our solar system. We can introduce solar study with a video from the Solar Center, and build spectroscopes that each member can use for their own exploration. This year we will be trying to conduct experiments using different lenses and prisms to show how light is distorted as it comes through the atmosphere. Because 4-H is not only a learning experience, but also a sharing experience, we will also give tips on how to display what members have learned at the fair and other tips for public viewing and displays.

**Astronomy, Its Out of This World** (Cornell Publication) Download at: [www.Kansas4-H.org/p.aspx?tabid=52](http://www.Kansas4-H.org/p.aspx?tabid=52) Look under SpaceTech Resources and Information (Right Column)

**Astrological Society of the Pacific (ASP) web site:**

<http://www.astrosociety.org/education.html>.

#### **1. Programs:**

<http://www.astrosociety.org/education/programs.html>.

#### **A. Family Astro:**

<http://www.astrosociety.org/education/family.html>.

**B. Click on Take Home Activities:**

<http://www.astrosociety.org/education/family/materials/takehome.html>.

**C. Information for Educators and Astronomers:**

<http://www.astrosociety.org/education/family/involve/educators.html>

**D. Information for Parents, Families and Friends:**

<http://www.astrosociety.org/education/family/involve/families.html>

**2. Activities:**

**A. A sampling of hands-on astronomy activities from the ASP:**

<http://www.astrosociety.org/education/activities/handson.html>

**B. Surfing the Solar System game:**

<http://www.astrosociety.org/education/surf.html>

**C. Good astronomy activities on the web – over 15 activities are shared:**

<http://www.astrosociety.org/education/activities/astroacts.html>

**3. Other Resources:**

<http://www.astrosociety.org/education/resources/resources.html>

**Robotics – Engineering for Today and Tomorrow, Ages 9-18**

**Virtual Robotics Track (4H1013 CCS) (DVD – Includes a Facilitator Guide PDF)**

Youth will have opportunities to build and test virtual robots. Participants interact in a virtual environment as they learn basic science and robotics concepts without investing in expensive materials or supplies. This track makes use of videos, simulations, animations and other media to convey content in a meaningful and engaging manner.

**Junk Drawer Robotics Track**

**Level 1, Give Robots a Hand (4H1014 CCS)**

Youth explore and learn about robot arms. Concepts covered include pneumatics, arm designs and three-dimensional space. Big ideas include form and function, scientific habits of mind and engineering design.

**Level 2, Robots on the Move (4H1015 CCS)**

Youth learn about robots that move with legs, wheels and underwater. Concepts covered include friction, basic electrical power and motors, engineering constraints, gear systems and buoyancy.

**Level 3, Mechatronics (4H1016 CCS)**

Youth will explore sensors, analog and digital systems. This level introduces simple electronic components; youth will build basic circuits to see how the components work. They will investigate basic elements of programming and instructions for robotic computer control.

**Robotics Youth Notebook (4H1017 CCS)**

There is one **Robotics Notebook for the three levels of the Junk Drawer Robotics** curriculum. The notebook encourages youth to think and act like scientists and engineers. In their notebook, they will record their ideas, collect data, draw designs and reflect on their experiences. It also provides specific information for the challenges.

**Each youth should have his or her own Robotics Notebook.**

**Robotics Platforms Track (4H1018 CCS) (DVD – Includes a Facilitator Guide PDF and Youth Notebook PDF)**

Youth will use commercial robotics kit to explore the world of robots. The activities developed for this track can be used with a variety of commercial kits, including NXT and Vex. As participants experience each module, they will develop scientific knowledge and technological understanding that will enable them to master the challenge presented at the

culmination of that level. As they progress through the activities, the Robotics Notebook will help youth to keep a record of their progress and serve as an important learning tool.

## **Geospatial**

**Exploring Spaces, Going Places CD** contains three levels and a Helper's Guide (4H947 CCS). The three levels are:

**Getting Out** – Where in the world are you? Youth are introduced to new ways of thinking about geographic positions, navigational tools (like GPS, compasses, maps and globes), identifying locations, measuring distances and more.

**On the Trail** – Maps, maps, everywhere! Future map-makers will learn how to collect data, combine data with geographical positions and then make new maps. Maps of school grounds, neighborhoods, farms or towns, states and beyond can be made. The choice is theirs!

**Reaching Your Destination** – Can maps solve problems? Can they lower traffic congestion, pin-point pollution sources, boost tourism, reduce disease and control crime? Advanced learners find solutions to problems like these as they develop and use multi-layered maps to solve complex problems within their communities.

### **Additional SpaceTech Resources**

Kansas 4-H Generic Record (P1106)

Aerospace Member Guide and Annual Report (MG41)

Aerospace Helper's Guide (4H701 CCS)

Aerospace CD (4H832 CCS)

Oklahoma 4-H Website: <http://oklahoma4h.okstate.edu/scitech/rockets.htm>

All About Water Rockets (NASA):

<http://exploration.grc.nasa.gov/educational/rocket/BottleRocket/about.htm>

Rockets Away Web Site (Ohio 4-H): <http://www.ag.ohio-state.edu/~rockets/>

Geospatial Helper's Guide (Part of the CD 4H947 CCS)

## **Swine**

**The Incredible Pig**, ages 7-10 (4H690 CCS)

Naming breeds, learning body parts, judging market hogs, exploring a digestive system, examining a healthy pig, identifying pork chops, practicing fitting and showing are just a few of the activities for youth.

**Putting the Oink in Pig**, ages 11-13 (4H691 CCS)

Exciting challenges for youth include managing baby pigs, balancing a ration, exploring swine diseases, preparing pork, discovering swine careers and packing a show box.

**Going Whole Hog**, ages 14 and older (4H692 CCS)

Advanced youth plan a breeding system, judge breeding gilts, design a swine operation, complete a job application plus many more activities.

### **Additional Swine Resources**

Kansas 4-H Generic Record (P1106)

4-H Market Livestock Record (P1029)

Swine Project Promotional Brochure (4H1007)

Swine Helper's Guide (4H693 CCS)

Livestock Judging Guide (S92)

Youth Livestock Safety (<http://ylsp.bae.ksu.edu>)

## Veterinary Science

Veterinary Science lessons are included in all animal project materials. This is not a state recognized 4-H project but may be offered in your Extension Unit. Suggested materials are:

**From Airedales to Zebras**, ages 7-10 (4H903 CCS)

Youth learn about the normal animal, basic anatomy and systems, elementary principles of disease and careers with animals.

**All Systems Go**, ages 11-13 (4H904 CCS)

Youth examine health and disease topics, normal and abnormal conditions in animals and veterinary careers.

**On the Cutting Edge**, 14 and older (4H905 CCS)

Youth participate in deeper investigations of normal and abnormal systems, preparation for college and exploration of the diversity of the veterinary profession.

### Additional Veterinary Science Resources

Veterinary Science Helper's Guide (4H906 CCS)

Nebraska State 4-H Department, Phone: 402-472-9016

## Visual Arts

**Sketchbook Crossroads**, ages 11-13 (4H910 CCS)

Youth practice drawing, fiber arts and sculpting to develop their artistic skills and talents.

**Portfolio Pathways**, 14 and older (4H911 CCS)

Youth learn painting, printing and graphic design techniques.

### Additional Visual Arts Resources

Kansas 4-H Generic Record (P1106)

Arts and Crafts Member Guide and Annual Report (MG51)

## Wildlife

**Kansas 4-H Wildlife Project Leader Notebook, Level I**, ages 7-8 (S136)

Younger youth learn about reptiles, amphibians, bats, raptors and mammals. They will explore basic habitats, unique features of birds and wildlife food webs.

**Kansas 4-H Wildlife Project Leader Notebook, Level II**, ages 9-11 (S136)

Youth explore characteristics of mammals and birds, habitat needs for various species, galls for insects, symbiotic relationships and effects of pollution on wildlife.

**Kansas 4-H Wildlife Project Leader Notebook, Level III**, ages 12-14 (S136)

Youth discover differences between carnivores, omnivores and owls. They learn the value of wetlands, protective coloring and wildlife management. Youth learn the difference between extirpated and extinction, threatened and endangered.

**Kansas 4-H Wildlife Project Leader Notebook, Level IV**, ages 15 and older (S136)

Advanced youth determine effect of humans on wildlife habitats, value of wetlands and discuss wildlife issues, ecosystems and wildlife photography.

**Fishing for Adventure - Take the Bait**, ages 7-10 (4H835 CCS)

Youth have fun tying knots, casting to a target, rigging various lines, selecting tackle, identifying where the fish are, using different baits and lures, identifying fish, cooking fish and naming internal and external fish parts.

**Fishing for Adventure - Reel in the Fun**, ages 11-13 (4H836 CCS)

Youth locate fishing information on the web, cast using a spinning rod and fly rod and bait casting reel, practice responsible citizenship, research fishing regulations, decorate a lure, sew a fly wallet, tie an artificial fly and test a water sample.

**Fishing for Adventure - Cast into the Future**, ages 14 and older (4H837 CCS)

Youth develop their leadership skills as well as their fishing skills as they take a friend fishing, demonstrate how to disassemble and reassemble a fishing reel, design and conduct a sport fishing skillathon, make artificial flies, design and craft a lure, customize tackle, build and use a kick net, respond to ethical situations and interview a professional fisherman.

**Additional Wildlife Resources**

Kansas 4-H Generic Record (P1106)

Wildlife Member Guide and Annual Report (MG53)

Field Checklists/Birds (4H612)

The Birds Around You (4H825)

Let's Go Fishing (4H427)

Fishing for Adventure Helper's Guide (4H838 CCS)

Wildlife Evaluation Handbook (MF2265)

Wildlife Habitat Evaluation Handbook (MF2266)

## **Woodworking**

**Measuring Up**, ages 7-8 (4H707 CCS)

Youth will develop the basic skills that woodworkers use such as measuring, squaring and cutting a board, driving nails, and using clamps and screws. The final project may be a picture frame, a letter holder, a box or an airplane.

**Making the Cut**, ages 9-11 (4H708 CCS)

More experienced youth who have used basic hand tools will measure, cut, sand, drill, use advanced hand and power tools, apply paint and use bolts and staples. Woodworking project choices include building a sawhorse, birdhouse, tool box or stool.

**Nailing It Together**, ages 12-14 (4H709 CCS)

Youth who are competent with hand tools and have used power tools practice measuring angles, cutting dado and rabbet joints; use a circular saw, a table saw and a radial arm saw; smooth lumber with a hand planer and sand and stain wood.

**Finishing Up**, ages 15 and older (4H710 CCS) Youth who are wood craftsmen and competent with a table saw, radial arm saw, drill press and jig saw, move up to using a router, portable planer and jointer; making a blind mortise and tenon joint; making dovetail joints; and experimenting with adhesives and various chemical wood strippers.

**Additional Woodworking Resources**

Kansas 4-H Generic Record (P1106)

Woodworking Member Guide and Annual Report (MG42)

Woodworking Helper's Guide (4H711 CCS)

Kansas 4-H Woodworking Plans (4H167)