

2015 FAMILY GUIDE



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

www.ohio4h.org



2015 FAMILY GUIDE

Ohio 4-H Family Guide

This guide is designed especially for volunteers, members, and families involved in 4-H through community and project clubs, EFNEP groups, and special school and community enrichment programs.

Changes in the Line Up

New

150R	Poultry Resource Handbook
382	Am I Ready for Work?
405	The Laundry Project
498	Quilting the Best Better
500	Science Fun with Physics
507	Robotics 1 with LEGO® EV3

Revised *New Title (Old Title)*

150	Poultry Project and Record Book (Poultry Production: Raising Pullets; Poultry Production; Raising Broilers; Raising Fancy Poultry; Raising Turkeys; Duck or Goose)
179	Uniform Rules for 4-H Horse Shows (same)
202	Dog Achievement Program (201A Dog Achievement Program)
459	Let's Start Cooking (I Spy in the Kitchen)
461	Let's Bake Quick Breads (same)
611	Explore the Outdoors (Let's Explore the Outdoors)
751	Archery Member Record Book (same)

Discontinued

124R	Techniques for Judging Dairy Cattle
481	Food and Fitness for Fun
482	Food and Fitness Choices for You
488GPM	Team Up for Good Nutrition
554GPM	ATV Safety Leader's Guide (available only online)
613	Exploring Our Forests
617	Exploring Our Ponds
625GPM	Fishy Science
645	Exploring Our Insect World 2

Contents

Welcome to Ohio 4-H	3
Understanding 4-H Membership.....	4
A Note About Cost Recovery.....	4
Understanding 4-H Projects	5
Ohio 4-H Statewide Programs.....	6
Individual Projects	8
About 4-H	8
Animal Sciences.....	8
Child and Family Development	13
Clothing and Textile Science	14
Creative and Leisure Arts	16
Food and Nutrition.....	17
Healthy Living.....	18
Home Living	19
Leadership and Citizenship.....	19
Money Management	20
Natural Resources	21
Science, Technology, Engineering, and Math	22
Self-Determined	26
Workforce Preparation	26
Group Programs	27
Animal Sciences.....	27
Cloverbuds	27
Leadership and Citizenship.....	28
Natural Resources	28
School Enrichment.....	29
Scholarship Opportunities	30
2015 Opportunities and Awards for Members	31
Project Guide.....	34
For Younger Members.....	38
For Members in the City	38
Subject Index.....	39
OSU Extension Offices.....	40

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The Ohio State University, College of Food, Agriculture, and Environmental Science provides research and related educational programs to clientele on a nondiscriminatory basis. For more information: <http://go.osu.edu/cfaesdiversity>.

Welcome to Ohio 4-H

About 4-H

4-H is a non-formal educational youth development program offered to individuals ages 5 to 19.

Among all the fun things to learn about in 4-H are animals, computers, public speaking, cooking, art, gardening, natural sciences, and much more. You can participate in 4-H in many ways—through clubs, camps, your school, and short-term programs offered through your county or the state office.

No matter what you select or how you participate, all 4-H programs focus on active involvement and quality experiences that stimulate lifelong learning of values and skills.

Pledge

I pledge
My HEAD to clearer thinking,
My HEART to greater loyalty,
My HANDS to larger service, and
My HEALTH to better living
For my club, my community, my country and my world.

Motto: To Make the Best Better

The 4-H motto refers to each member. It means that each member will do the “best” that he/she possibly can in whatever is attempted. The member will then strive to improve the next time so his or her initial “best” becomes “better.” The 4-H motto encourages members to stretch their abilities and capacities to reach greater achievement within their own potential.

Message from State 4-H Leader

Dear Parents,

Welcome to Ohio 4-H 2015! The 4-H experience could not happen without adult and teen volunteers advising and leading our local 4-H programming. These dedicated 4-H people provide the framework in which youth grow. Just as important is parental involvement. Making the 4-H experience truly successful requires that parents assist their children in participating in 4-H activities and completing 4-H projects. As a result of the partnership of volunteers and parents, 4-H youth learn leadership, citizenship, life skills, and more. The ultimate result will be successful young adults. For over one hundred and ten years we have known that 4-H is a fun and enjoyable family adventure. This will continue in 2015.

Sincerely,



Tom Archer
Ohio 4-H State Leader

Member Recognition

Each county 4-H program in Ohio has a standard for measuring youth success. Many counties recognize members with a certificate of achievement for attending regular club meetings, taking part in club and project events, presenting a project demonstration, and participating in community service. Additionally, members who achieve their goals in leadership, citizenship, and service activities, often called “honor members,” also receive certificates of achievement.

County-level project judging assesses the quality of the member’s project performance. A member receives a grade ribbon for how well the project is completed. As a result, some members earn the opportunity to compete at regional contests or at the state fair. Typically trophies, rosettes, and state fair participation honors are awarded to 4-H members who succeed at these levels.

Additional opportunities for recognition are available through county, state, and national award programs. These awards include state trips, national conferences, and educational scholarships. To learn more about awards and scholarships, go to www.ohio4h.org/awards.

Expressing Thanks

Volunteers and donors are vital to the overall success of 4-H. They give their time, talent, and money to support current 4-H’ers. Members receiving medals, certificates, scholarships, trips, and other awards are encouraged to make it a priority to express appreciation to the donors and sponsors who made the awards and scholarships possible. If you are a winner, remember to take a few moments to write a “Thank You!” and tell your donor or sponsor how your award or scholarship has benefited you.

Ohio 4-H Project Central

Project Central is an easy way for 4-H members to preview Ohio 4-H project books and resources. Take a closer look at a book, find out what others have to say, and share your experiences!



www.ohio4h.org/projectcentral

Understanding 4-H Membership

4-H Membership Eligibility

Eligibility for 4-H membership begins when a child is enrolled in kindergarten and is age 5 as of January 1 of the current year (Cloverbuds). Membership to the 4-H club program begins when a child is enrolled in 3rd grade and is at least age 8 as of January 1 of the current year. Ohio 4-H membership ends December 31 of the year in which an individual attains the age of 19. Membership begins when an eligible individual is enrolled in a club or group that is under the direction of a trained adult who has completed the OSUE volunteer selection process, and that is within the scope of Ohio State University Extension.

4-H Membership Expectations

The expectations for 4-H membership are a balance of 4-H project work, involvement in a 4-H club, participation in 4-H activities and events, and working towards improving one's personal growth. 4-H members and their parents/guardians are also expected to abide by the Ohio 4-H Code of Conduct throughout the year, and sign off on this Code as part of the annual membership process. For more information on the membership process, contact your local 4-H professional. For more information about expectations for completing projects, see page 5.

Cross-County Lines Membership

Youth are expected to affiliate with the 4-H program in their county of residence or receive approval for membership outside their county of residence.

- 4-H membership in two counties simultaneously is not permitted.
- Youth must ask the county they would like to participate in if they may participate in that county instead of in their county of residence.
- In situations where the county of residence does not have a 4-H program, youth may not join 4-H in another county.
- If county financial support for Ohio State University Extension ceases to exist, 4-H membership status already established in that county will end on the date the funding ends (established by Extension Administration). 4-H membership of youth, residing in a county that has lost funding, who have pre-established cross-county line 4-H membership agreements in place will be permitted to continue participation in their non-resident county through December 31 of that 4-H membership year.

For more information, contact your local Extension office or go to www.ohio4h.org/policies.

4-H and FFA Membership

Ohio 4-H members are often also FFA members, sometimes within the same county and sometimes in an adjacent county. These members especially need to keep in mind the 4-H policy about 4-H projects being separate from school projects. To keep work in both organizations clearly separate, 4-H members are advised to take different species in the two organizations or, at the very least, to take market animals in one and breeding animals in the other. See chart for allowable and not allowable examples.

	4-H	FFA
Allowable	Breeding Gilt	Market Hog
Allowable	Market Steer	Market Hog
Not Allowable	Market Steer	Dairy Beef Feeder (Market)
Not Allowable	Market Lamb	Market Lamb

A Note About Cost Recovery

Club leaders, project helpers, and other volunteers often ask about the cost of project books and why 4-H members are required to buy one for each project in which they enroll. The cost of a project book, which is usually \$6, covers the cost of curriculum development, printing, storage, and delivery.

This cost recovery plan is seen as the most desirable option among alternatives such as state membership or other fees. Each book purchased supports the Ohio 4-H program at the state and county levels.

Ohio 4-H depends on your support in delivering high-quality, experiential education to its members. We strive to provide project books that offer value. Unless specifically stated otherwise, please help us by purchasing a new book each year for every project in which your son or daughter enrolls.

2015 Ohio 4-H Conference

Bringing volunteers and teens together

March 14, 2015

Greater Columbus Convention Center

Join your peers for a full day of educational seminars, a luncheon, a silent auction, vendors, and time to get to know others involved in 4-H throughout the state!

Special thanks to our
volunteer luncheon sponsor:

Bob Evans
FARMS®

Understanding 4-H Projects

Project Work Through 4-H

Each project book contains a wealth of information and activities for planning and conducting a project. The projects can be completed by participating in activities through organized project groups or by carrying out the activities individually under the guidance of a parent or other adult.

Frequently Asked Questions

What is a 4-H Project?

A 4-H project is made up of three types of activities:

- Hands-on activities: making, producing, practicing, observing, testing, interviewing, caring for, etc.
- Organized activities: demonstrations, speeches, workshops, camps, county judging, project activities, exhibits, etc.
- Leadership/Citizenship activities: conducting, planning, teaching, assisting, informing, organizing, etc.

Does a 4-H member have to take a project?


Yes. However, there are two ways to take a project, either as an individual project or as a group project.

How does a member select a project?

When choosing a project, consider your interests, background, what is necessary to start your project, and what is available to help you complete it. Review this guide as a family, club, or group. A good rule of thumb is to select no more than two projects as a first-year member.

Included in the description of each project is a level—beginning (B), intermediate (I), or advanced (A). These are primarily skill levels, so that if you have little or no experience in a project area, for example, you are a beginner, regardless of your age. Intermediate-level projects are for members with some experience in a project area, and advanced-level projects are for members experienced in a project area. There are exceptions though! Some projects were written with certain ages in mind. In those cases, the project descriptions give the ages. Also, some projects are described with an “X,” meaning they are appropriate for all skill and age levels.

County fairs and the state fair often have age requirements different than those for project enrollment. When participating in a fair event, be sure to review the related guidelines.

Once you’ve selected your project(s) for the year, request the project book(s) from your 4-H club leader. Look for the  to see if the project you selected needs an additional resource book. Each project book is \$6 unless stated otherwise here or by your county Extension office.

Where does a member begin when planning a 4-H project?

Once a member has selected a project, he/she should

start by reading the section of the project book called the Member Project Guide, usually located near the front. The Member Project Guide offers step-by-step instructions for conducting the activities that make up the 4-H project.

Can a school project be used as a 4-H project too?

No. In order for a member to achieve the progression of knowledge, attitudes, skills, and aspirations necessary for positive youth development, all 4-H experiences in which a 4-H'er is involved must be separate and different from previous or simultaneous experiences in other programs, groups, businesses, and organizations.

Does a member have to do everything the Member Project Guide suggests?

No, although completing the Member Project Guide in the recommended time frame is the best way to succeed in fair judging. How much to complete is up to the member, parents, and advisor. Depending upon their interests and abilities, members may plan to do a little or a lot. Project plans also can change as a member's interests and needs change.

How much time can be spent on a project?

It can be a matter of days, weeks, or even months, depending on the size and scope of the member's plan. Some projects also can be repeated to accomplish additional project goals.

Is it necessary to attend county-level judging to complete a project?

For some members, project completion is nothing more than participating in project activities, completing a predetermined number of project goals, and reviewing accomplishments with a parent or project helper. Some counties require attendance at county-level judging. Always check with your project helper for specific judging requirements. For example, sometimes it is necessary to bring an exhibit along with your project book to interview judging.

How can a 4-H member qualify to compete at the Ohio State Fair?

For non-animal and non-livestock events, qualifying for the state fair involves competing at the county level and being selected as state fair representative. Some counties hold events that are not state fair events, and some counties do not hold all of the events that take place at the state level. In addition, if you are taking a project with age guidelines and are outside of the recommended age range, be sure to double-check county and state fair regulations about participating (www.ohio4h.org/state_fair/guidebook.html). Generally speaking, youth outside the recommended age range are not eligible for competition. For animal and livestock events, be sure to check state fair guidelines at <http://4hansci.osu.edu>.

Ohio 4-H Statewide Programs



Ambassadors

Ohio 4-H Ambassadors are the youth spokespersons for Ohio 4-H. Each year outstanding 4-H teens who demonstrate excellence in 4-H achievement, citizenship, and leadership in their counties can apply to become Ohio 4-H ambassadors. Serving is up to a two year commitment for those who are interested in giving back to the Ohio 4-H organization. Leadership trainings set the stage for newly appointed Ohio 4-H Ambassadors to have a fun filled and successful appointment. To learn more about becoming a 4-H ambassador including the application process and the expectations once you have been appointed, please go to www.ohio4h.org/4-h-youth/teens/4-h-ambassadors or contact your county Extension office.



Camping

4-H camp provides an opportunity for youth to have fun, learn new things, connect with nature, develop responsibility and independence in a supervised environment, and foster friendships that may last a lifetime, all in an outdoor learning laboratory. 4-H camping programs include day camps, overnight camps, and camps that focus on specialty areas such as animal science, creative arts, dogs, horses, leadership, sea, sewing, science, shooting sports, watersports, and space. Other camps focus on specific groups of youth, including children of those serving in the military, Cloverbuds, teens, and youth with special needs. For more information on 4-H camps and their facilities, go to www.ohio4h.org/4-h-camps or contact your county 4-H professional.



CARTEENS



4-H CARTEENS is a traffic safety program conducted by 4-H teen leaders and their program partners for first-time juvenile traffic offenders. In partnership with local juvenile court judges, teen traffic offenders have a single opportunity to attend the program and learn about topics such as drinking and driving, seatbelt safety, consequences of unsafe driving, tips for safer driving, and driving distractions. The goals of the 4-H CARTEENS program include reducing the number of repeat juvenile traffic offenders, decreasing the number of teen traffic offenders, increasing teen awareness of traffic/vehicular safety, and increasing public speaking and leadership skills of teen instructors. For information on CARTEENS, please go to www.ohio4h.org/youth/carteens.html or contact your county Extension office.



Cloverbuds



4-H's youngest members are called Cloverbuds (youth age 5 and in kindergarten to age 8 and in the third grade). Led by 4-H volunteers, Cloverbud

members explore topics such as health, earth and the environment, citizenship, plants and animals, science and technology, personal development, creative arts, and more! The primary goal of the Cloverbud program is to promote children's healthy development—mentally, physically, socially, and emotionally. For more information visit www.ohio4h.org/cloverbuds or contact your county Extension Office.



Dog Achievement Program

Young people who have dogs as family pets and who might not otherwise join 4-H with a dog, are encouraged to join 4-H through this unique, non-competitive 4-H project. DAP offers opportunities for rewards (certificates and pins) separate from project judging, show, and fair environments. A 4-H dog club, access to volunteers with dog experience or dog training facilities, and enrollment in another 4-H dog project are NOT required! By completing categories of achievement such as basic training, exercise, health and safety, etc., 4-H members have fun, learn, earn personal bests, and receive the benefits of the 4-H program. More information about DAP is available at www.ohio4h.org/dap.



Science Saturdays

4-H Science Saturdays help kids explore science topics by connecting them with the scientists and researchers at The Ohio State University who do cool science stuff everyday! Designed for kids in grades 3-6 who want to discover new things and learn by doing, the program runs from 9:30-11:30 a.m. on selected Saturdays during the school year at the Nationwide & Ohio Farm Bureau 4-H Center. For more information about 4-H Science Saturdays or other youth programs at the Ohio 4-H Center, visit www.ohio4h.org/science or contact Sally McClaskey at mcclaskey.12@osu.edu.



State Fashion Board

The State 4-H Fashion Board is a small group of outstanding 4-H youth involved in 4-H textiles and clothing projects. State 4-H Fashion Board members are selected from across the state to: assist in conducting the Ohio State Fair 4-H Fashion Revue; assist with educational programming efforts related to textiles and clothing at county, regional, and state-wide events; and serve as advocates for Ohio's 4-H textiles and clothing projects and programs. To learn more about the State Fashion Board please visit www.ohio4h.org/4-h-youth/teens or contact Cindy Shuster at shuster.24@osu.edu.



Film Festival

Lights, camera, action! The Ohio 4-H Film Fest is your opportunity to learn the creative skills it takes to produce a short film. In April, attend a project day in Columbus, featuring hands-on sessions all about creating your video. You can have your film screened later in the summer at the Ohio 4-H Film Fest with the opportunity to attend the national FilmFest 4-H. Consider making this the basis of your own unique 4-H self-determined project. Learn more at www.ohio4h.org/filmfest.



International Exchange

Open your world! Ohio families have the opportunity to host youth or adults from around the world, and Ohio youth can live with host families in other countries. Most programs last one month during the summer. Host families are asked to simply “live their everyday life,” treating their visitors as regular family members. Visitors bring personal spending money, as well as medical and other insurance coverage. Small scholarships are available for traveling 4-H members. Travel and hosting application deadlines vary from December to April. For more information visit www.ohio4h.org/youth/international or contact Mary Lynn Thalheimer at 614.247.8162 or thalheimer.1@osu.edu.



Operation: Military Kids

The mission of Ohio’s Operation: Military Kids is to support the children and families of all Branches of the Military by delivering a wide range of recreational, social and educational programs as they cope with the stresses of knowing their deployed family members may be in harm’s way. If you are interested in learning more or serving as a volunteer or counselor for our camps and youth programs, visit us at www.ohio4h.org/operation-military-kids and on Facebook ([OhioOperationMilitaryKids](https://www.facebook.com/OhioOperationMilitaryKids)) or contact Candie Glover at 614.292.3758 or glover.94@osu.edu.



PetPALS

4-H PetPALS (People and Animals Linking Successfully) is an intergenerational 4-H project connecting youth and their pets with senior adults in various healthcare facilities. The core curriculum relies on trained master 4-H PetPALS volunteer leaders to teach youth skills needed to interact with residents of healthcare facilities, specifically assisted living and skilled nursing environments. Members learn to select, socialize, and train appropriate pets to participate as youth-pet teams in animal-assisted activities. Youth participate in aging sensitivity simulation activities and learn how to meet and communicate with senior adults. 4-H members and their pets, accompanied by adult volunteers, visit senior health care facilities, thus enhancing intergenerational relationships. For more information, go to www.4hpetpals.osu.edu.



Shooting Sports

The Ohio 4-H Shooting Sports program teaches young people the safe and responsible use of archery equipment; the fundamentals of firing air guns, .22 caliber and muzzleloading rifles, pistols, and shotguns; the basic principles of hunting; and the value of studying historic lifestyles and heritage crafts. Administered only through certified shooting sports instructors, this program is open to 4-H members ages 9 and above. To learn more, please go to www.ohio4hshootingsports.org, contact your county Extension office, or contact Larry Harris at 740.286.4058 or harris.870@osu.edu.



Teen Advisory Council

The Ohio 4-H Teen Advisory Council is the highest 4-H youth leadership body in the state, representing all 4-H members by leading youth-focused initiatives and relaying Ohio youth perspectives about organizational and national youth topics. The Council seeks the best of the best youth leaders from across the state. Applications are due July 15. To learn more about the Teen Advisory Council, contact Hannah Epley at epley.24@osu.edu.



Volunteers

At its heart, Ohio 4-H is an organization of volunteers dedicated to positive youth development. Through the Ohio 4-H Volunteer Program, caring adults lead clubs, organize and support programs, guide 4-H members in their projects, and otherwise collaborate in delivering the 4-H program. Volunteers are expected to follow standards of behavior, a contractual agreement accepted by volunteers who commit to an Ohio State University Extension program. Just as it is a privilege for Ohio State University Extension to work with individuals who volunteer their time and energies to the organization, a volunteer’s involvement with Ohio State University Extension is a privilege and a responsibility, not a right. Learn more about becoming a 4-H volunteer at www.ohio4h.org/volunteers or contact your county Extension office.




World Food Prize


Want to make a difference? The World Food Prize is an international award that recognizes the achievements of individuals who have improved the quantity, quality or availability of food in the world. By researching a global food issue, writing an essay and attending the annual Ohio Youth Institute you will be eligible to attend the Global Youth Institute in Iowa. Participants are qualified for scholarships upon enrollment in the College of Food, Agricultural and Environmental Science at The Ohio State University and world-wide internships. Consider making this the basis of your own unique 4-H self-determined project. Learn more at <http://www.ohio4h.org/4-h-youth/teens/ohio-youth-institute>.

Individual Projects

Project Resources

Unless otherwise indicated, each project book costs \$6 when purchased through a local county Extension office. For a slightly higher price plus shipping, all 4-H books and other Extension publications are available at <http://estore.osu-extension.org>. Projects that require resources in addition to the project book, such as a resource handbook, member project guide, or livestock record, are indicated with a .

State Competition

Projects that have a corresponding event at the Ohio State Fair are indicated with a . Although participation in fairs is optional, we encourage family participation in this type of learning activity. To participate in 4-H events at the Ohio State Fair, whether livestock or non-livestock events, a 4-H member must be enrolled in the project in the county. (Some state fair events operate independently of 4-H and thus do not require enrollment.) For some events, 4-H members are selected for state fair as a result of county fair competition. For others, youth can enter on their own. Specific rules and regulations can be found by clicking on Competitions at www.ohiostatefair.com.

About 4-H

91 Discovering 4-H


This project book is for young first-year members and others who want to discover and explore the broad array of topics offered by 4-H. Any member in need of an easy-to-read, easy-to-use introduction to animals, health, food and nutrition, nature, insects, plants and soils, machines and tools, recreation, and clothing benefits from doing this project, which is easily completed in one year. 2009. **B**

Animal Sciences

Beef

4hansci.osu.edu/livestock

117 Beef Project and Record Book

Complete this required project book every year a beef project is taken. This streamlined version of four previously separate publications allows for multiple animals and can be used by members at all levels. Use with 117R *Beef Resource Handbook*.  2011.

117B Beef Breeding

X, 

117BF Beef Feeder (Market)

X, 

117DF Dairy Beef Feeder (Market)

X, 

117M Market Beef

X, 

Required Supplement for Beef Projects

117R Beef Resource Handbook

This one-time purchase contains essential subject matter information for members taking a market beef, beef breeding, beef feeder or dairy beef feeder project. An excellent resource for skillathons! 2011. (\$15)

Optional Supplements for Beef Projects

103R Beef, Sheep and Swine Selection and Evaluation

This optional resource is for beginners who want to learn more about selecting and evaluating livestock. Purchase only once and refer to it when selecting projects or before attending a judging contest. 1995. (\$9)

104R Pennsylvania Livestock Judging Manual


This optional book for older youth assists with advanced evaluation skills in using performance data in learning oral reasons. Refer to it for information on how to handle market animals and understanding expected progeny differences. 1997. Available online at www.ohio4h.org/publications.

Companion Animals and Rabbits

4hansci.osu.edu/companion


Want to share your love of animals? No matter how old you are or what kind of animal you care for, you may be able to participate in the Ohio 4-H PetPALS program, a group program that links youth and their pets with senior adults. For more information, see page 27.

201 Dog Project and Record Book


Complete this required project and record book every year a dog project is taken. Get to know all aspects of dog care and welfare while keeping complete records of your experience as a dog owner. Use one project book each year, even if your dog is involved in more than one project and even if you have more than one dog. Appropriate for dogs who are family pets and for dogs who are used for show. Use with 201R *Dog Resource Handbook*.  2007.

Use this project and record book for all of these dog projects:

201D You and Your Dog

Recommended as a first-year dog project and also as a complement to other dog projects. Can be taken every year. X, 


201O Obedience

Covers beginning and advanced obedience training and Rally. X, 


201S Showmanship

Learn the basics of dog showmanship. X, 


201P Performance

Includes agility, drill team, canine freestyle, and other performance events. X, 

201W Working Dogs

Includes assistance dogs such as Pilot Dogs, Inc., Canine Companions for Independence, and other service dog organizations. X, 

202 Dog Achievement Program



Earn pins and certificates as you select from hundreds of online activities that cover basic training, exercise, health and safety, etc. Perfect for youth who do not have access to a dog club or to volunteers with dog experience and for those who are not interested in competing. Use with 201R *Dog Resource Handbook*.  2015. (\$TBD). Available November 2014. Also available free online at www.ohio4h.org/publications. X

Required Supplement for Dog Projects

201R *Dog Resource Handbook*

This one-time purchase contains essential information for members taking a dog project and includes everything from selecting a dog that's right for you, proper care, training techniques, dog anatomy, competition, and much more. An excellent resource for skillathons! 2012. (\$16.50)

215 Cavy Project and Record Book

Complete this required project and record book every year a cavy (also known as a guinea pig) project is taken. Use with 215R *Cavy Resource Handbook: A 4-H Guide to Guinea Pigs*.  2012. X, 

Required Supplement for Cavy Project


215R *Cavy Resource Handbook: A 4-H Guide to Guinea Pigs*

This one-time purchase contains essential information for members taking a cavy (also known as a guinea pig) project. Topics covered include general care, history, anatomy, selection, housing and equipment, records, nutrition, health, reproduction, grooming and showing, marketing, and careers. An excellent resource for skillathons and for every cavy enthusiast! 2012. (\$11)


Optional Supplement for Cavy Projects

The *Standard of Perfection 2011-2015* from the American Rabbit Breeders Association is the ultimate resource for anyone breeding or exhibiting rabbits or cavies. Available online in the ARBA Store at www.arba.net.


216 Purr-fect Pals, Level 1

Learn about being a good cat owner by taking this beginning-level project. You learn about cat breeds, behavior, good health, grooming, and feeding. Designed for youth in grades 3 to 5, but may be taken by youth in the first three years of this project. Cat 1 can be taken for three years. 2005. B, 

217 Climbing Up! Level 2

Build on what you learned in Cat 1 by taking this intermediate-level cat project. Learn more about cat identification and characteristics, training and showing, health and nutrition, and responsible cat ownership. Designed for youth in grades 6 to 8, but may be taken by youth in any grade after completing Cat 1. Cat 2 can be taken for three years. 2005. I, 



218 Leaping Forward, Level 3

Dig deeper into some of the cat topics you've already explored in Cat 1 and Cat 2 (breeds, nutrition, health, and behavior) and meet some new topics (genetics and aging cats). Investigate cat-related careers and practice your organization and presentation skills. Designed for youth in grades 9 to 12, but may be taken by any youth after completing Cat 1 and Cat 2. Cat 3 can be taken for three or more years. 2005. A, 

Helper Supplement for Cat Projects

The *Cat Group Helper's Guide* provides club helpers ways to involve everyone in learn-by-doing cat project sessions. Available from the National 4-H Council Source Book and at www.4-Hmall.org.

220 Pocket Pets Project and Record Book



Complete this required project and record book every year a pocket pet project is taken. Species include gerbils, hamsters, mice, and rats. Use with 220R *Pocket Pets Resource Handbook*.  2011. X, 

Required Supplement for Pocket Pets Projects



220R *Pocket Pets Resource Handbook*

This one-time purchase contains essential information for members taking a pocket pet project. Species include gerbils, hamsters, mice, and rats. Topics covered include history, selection, handling, housing, nutrition, health, reproduction, grooming, and showing. An excellent resource for skillathons and for the small animal enthusiast! 2011. (\$9.50)



225 Breeding Rabbit Project and Record Book

Complete this required project book every year a breeding rabbit project is taken. Use with 228R *Rabbit Resource Handbook*.  2003. X, 

226 Market Rabbit Project and Record Book

Complete this required project book every year a market rabbit project is taken. Use with 228R *Rabbit Resource Handbook*.  2003. X, 

227 Pet Rabbit Project and Record Book

Complete this required project book every year a pet rabbit project is taken. Use with 228R *Rabbit Resource Handbook*.  2003. X, 

Required Supplement for Rabbit Projects

228R Rabbit Resource Handbook for Market Rabbit, Breeding Rabbit, and Pet Rabbit Projects

This one-time purchase contains essential subject matter information for members taking a market rabbit, breeding rabbit, or pet rabbit project. An excellent source for skillathons! 2003. (\$10.50)

Optional Supplement for Rabbit Projects

The *Standard of Perfection 2011-2015* from the American Rabbit Breeders Association is the ultimate resource for anyone breeding or exhibiting rabbits or cavies. Available online in the ARBA Store at www.arba.net.

Dairy Cattle

4hansci.osu.edu/dairy

Dairy Beef Feeder

(See Beef on page 8)

122 Dairy Heifer Project and Record Book

Complete this required project and record book every year a dairy heifer project is taken. Learn how to raise, care for, manage, and keep records for one or more dairy heifers. Use with *127R Dairy Resource Handbook*. [] 2001. X, []

126 Dairy Cow Project and Record Book

Complete this required project and record book every year a lactating dairy cow project is taken. Learn how to care, manage, and keep records for one or more dairy cows. Use with *127R Dairy Resource Handbook*. [] 2003. X, []

Ohio 4-H Learning Lab Kits

Yes, you've found them! Learning Lab Kits are your answer for species-specific, hands-on, durable learning materials. Use for teaching and evaluating knowledge of livestock and companion animals. Perfect for 4-H clubs, FFA chapters, skillathons, agricultural association activities, and more.



Kits offered cover:

- Beef • Horse • Rabbit
- Dairy • Goat • Sheep
- Dog • Poultry • Swine

For a complete list, descriptions, and prices, visit www.ohio4h.org/learninglabkits.

Required Supplement for Dairy Projects

127R Dairy Resource Handbook

This one-time purchase contains important information for members taking a dairy heifer or dairy cow project. Purchase only once and use it for several years. An excellent resource for skillathons! 2004. (\$13)

Optional Supplements for Dairy Projects

125R Learning About Dairy

Resource book for older 4-H members and leaders. Covers all aspects of the dairy animal project, excellent in-depth study resource for quiz bowl or skillathon. 1997.


Dairy Judging

An excellent introductory reference for anyone interested in learning more about evaluating dairy cattle. Covers the PDCA Unified Scorecard, terminology, preparing and presenting oral reasons, and linear evaluation. Practice exercises and resources are provided. Available online at www.holsteinfoundation.org.

Showing Ready

Serves as a guide for youth, parents, and dairy project leaders who are interested in learning the basic skills associated with caring for and exhibiting dairy cattle at fairs and other shows. Along with the basics, such as washing and halter training, detailed sections cover clipping and showmanship skills. Available online at www.holsteinfoundation.org.

135 Goat Project and Record Book

 Complete this required project and record book every year a market, dairy, or specialty goat project is taken. Updated good production practices (GPPs) and animal records sections help you learn how to care for and manage your animal or herd. Use with *135R Goat Resource Handbook*. [] 2015.

135BD Breeding—Dairy Goats

X, []

135BM Breeding—Meat Goats

X, []

135F Fiber Goats

X

135H Harness Goats

X

135M Market—Dairy, Meat, or Cross Goats

X, []

135P Pack Goats

X

135C Companion—Pet Goats

X

Required Supplement for Goat Projects

135R Goat Resource Handbook

This one-time purchase contains essential information for members taking a goat project, starting with breeds, ending with careers, and including everything in between. An excellent resource for skillathons! 2008. (\$17)

Horses

Learn how to qualify for state fair at www.horse.osu.edu


173 Horseless Horse

Learn about horses without owning one. Over 20 different horse-related subjects are covered in easy-to-use worksheets. Also useful for the educational portion of club meetings. Written for the beginner but suitable for members of all ages. 1994. **B**


174 Beginning Horse Management

This beginning-level project is for ALL youth starting in the 4-H horse program. The basics of caring for a horse, learning to ride, and showmanship are covered in 170 pages, many with color photographs. There is no time limit to complete this project. 2006. (\$13) **B**


175 Light Horse Selection

Judge horses and classes after studying basic horse anatomy for a sound basis in the selection of pleasure or breeding stock. Use with 190R *Equine Record Book*.  1997. **I**

177 Horse Training: How to Talk to Your Horse

Train horses from birth to maturity. Understand horse behavior and how to use it to create a good relationship between horse and horseman. Includes the CD Basic Horse Training by Dr. Robert Kline. Use with 190R *Equine Record Book*.  2003. (\$15) **I**


180 Learning to Jump

Want to put your horse skills to work on something new? This project starts with a foundation of proper riding techniques, then teaches you the basics of how to jump in an easy-to-understand sequence of exercises. Expert tips and a trouble-shooting guide keep you on track to have fun and stay safe while learning to jump. Use with 190R *Equine Record Book*.  2014. **I**


181 Draft Horse

Are you fascinated with draft horses and want to know more about these magnificent giants? Learn about their care, feeding, harnessing, hitching, showing, and much more. Complete 4-H 190R *Equine Record Book* each year project is taken. 2013. **I**

184 Standardbred Horses

Learn how to safely harness your horse to a cart and drive, whether it is a Standardbred racehorse or a pleasure driving horse. Use with 190R *Equine Record Book*.  2000. **I**

185 Equine Reproduction and Genetics


Explore breeding and mare and foal management in a project that requires commitment. Use with 190R *Equine Record Book*.  2005. **A**

188 Trail Riding


Team up with your horse for competition or pleasure trail riding. Learn the basics of conditioning your horse. Use

with 190R *Equine Record Book*.  2007. (\$8) **I**

189 Dressage

By patiently developing a horse's mental and physical abilities, youth work toward a perfect understanding between horse and rider. This project asks youth to complete a "Planning Your Project" section, several activities, learning experiences, and citizenship/leadership activities; keep records; and write a one-page report. Requires access to a horse. Use with 190R *Equine Record Book*.  2011. **I**

762 Horse Nutrition

Explore digestion, nutrients, feedstuffs, rationing, and poison plant identification to protect the health of the horse you love. Use with 190R *Equine Record Book*.  2000. (\$11) **A**

Required Supplements for Horse Projects

190R *Equine Record Book*

Required for horse projects 175, 177, 180, 181, 184, 185, 188, 189, and 762. Complete one record book every year. 1997.

191R *Horses, Safety, and You*

This is required reading for all 4-H'ers and their parents to acquaint them with the safety issues involved with a 4-H horse project. Viewing videos on safety and ethics and on helmet use is required with this publication. 2003.

Helper and Youth Supplement for Horse Projects


179 *Uniform Rules for 4-H Horse Shows*

Contains updated rules and regulations including these new divisions: Ranch Pleasure, Western Dressage, and Small Equine Hunter and Jumper in Hand. Required for all 4-H horse shows and events throughout Ohio. 2015.

Llamas and Alpacas

4hansci.osu.edu

132 *Llama and Alpaca Project and Record Book*

Complete this required project and record book every year a llama or alpaca project is taken. Get to know all aspects of llama and alpaca care while keeping complete records of your experience as a llama or alpaca owner. Use with 132R *Llama and Alpaca Resource Handbook*.  2007. **X**

Required Supplement for Llama and Alpaca Projects



132R *Llama and Alpaca Resource Handbook*

This one-time purchase contains essential information for members taking a llama or alpaca project, starting with their uses and selection, ending with training, and including everything in between. An excellent resource for skillathons and for the llama and alpaca enthusiast! 2008. (\$12)

Poultry

4hpoultry.osu.edu

150 Poultry Project and Record Book

 Are you interested in raising chickens, ducks, geese, turkeys, or guineas? This project can help you take better care of your birds through the experience of feeding, watering, and monitoring your animal's health. Use with 150R *Poultry Resource Handbook*.  2015. Available January 2015.

150CE Chicken, Exhibition (Fancy)

X, 

150CM Chicken, Market

X, 

150CEP Chicken, Egg Production:

Hens and Pullet

X, 

150DE Duck, Exhibition

X, 

150DM Duck, Market

X, 

150GE Goose, Exhibition

X, 

150GM Goose, Market

X, 

150TE Turkey, Exhibition (Fancy)

X, 

150TM Turkey, Market


X, 

150H Helmeted Guinea Fowl

X, 

Required Supplement for Poultry Projects

150R Poultry Resource Handbook

 New in 2015! This one-time purchase contains everything a member needs to know for a poultry project. Species include chickens, ducks, geese, turkeys, and helmeted guinea fowl. Topics include breeds and anatomy, care, meat and egg production, exhibition and showmanship, and breeding. An excellent resource for skillathons! 2015. Available February 2015. (\$TBD)

Optional Supplement for Poultry Projects

The *American Standard of Perfection 2010* from the American Poultry Association is the ultimate resource for anyone raising chickens, ducks, geese, turkeys, and guinea fowl. Current edition and price are available online from APA at www.amerpoultryassn.com.

The *Bantam Standard 2011* from the American Bantam Association supports bantam breeders and their special interests. Current edition and price are available online from ABA at www.bantamclub.com.


154R National 4-H Poultry Judging

You may need this optional resource when evaluating poultry. This is a good reference to study before participating in a judging contest. 1999. (\$13)

Sheep


4hansci.osu.edu/livestock

198 Market Lamb Project and Record Book

Complete this required project book every year a market lamb project is taken. Use with 194R *Sheep Resource Handbook*.  2000.

X, 

199 Sheep Breeding Project and Record Book

Complete this required project book every year a sheep breeding project is taken. Use with 194R *Sheep Resource Handbook*.  2000.

X, 

Required Supplement for Sheep Projects

194R Sheep Resource Handbook for Market and Breeding Projects

This one-time purchase contains essential subject matter information for members taking a market lamb or sheep breeding project. An excellent resource for skillathons! 2011. (\$22)

Optional Supplements for Sheep Projects

103R Beef, Sheep and Swine Selection and Evaluation


This optional resource is for beginners who want to learn more about selecting and evaluating livestock. Purchase only once and refer to it when selecting projects or before attending a judging contest. 1995. (\$9)

104R Pennsylvania Livestock Judging Manual

This optional book for older youth assists with advanced evaluation skills in using performance data in learning oral reasons. Refer to it for information on how to handle market animals and understanding expected progeny differences. 1997. Available online at www.ohio4h.org/publications.


Swine

139 Market Hog Project and Record Book

Complete this required project book every year a market hog project is taken. Use with 134R *Swine Resource Handbook*.  2000.

X, 

140 Swine Breeding Project and Record Book

Complete this required project book every year a swine breeding project is taken. Use with 134R *Swine Resource Handbook*.  2000.

X, 

Revised Good Production Practices



Be sure to use the updated list of good production practices (GPPs) when working on your food animal project. Ask your local county Extension office for a copy of the updated GPPs or find them online at www.ohio4h.org/aqca.

Required Supplement for Swine Projects

134R Swine Resource Handbook for Market and Breeding Projects

This one-time purchase contains essential subject matter information for members taking a market hog or swine breeding project. An excellent resource for skillathons! 2000. (\$15.50)

Optional Supplements for Swine Projects

103R Beef, Sheep and Swine Selection and Evaluation

This optional resource is for beginners who want to learn more about selecting and evaluating livestock. Purchase only once and refer to it when selecting projects or before attending a judging contest. 1995. (\$9)

104R Pennsylvania Livestock Judging Manual

This optional book for older youth assists with advanced evaluation skills in utilizing performance data in judging contests. Order it once and refer to it for information on how to handle market animals and for understanding expected progeny differences. 1997. Available online at www.ohio4h.org/publications.

Veterinary Science

244 From Airedales to Zebras, Level 1

This is the first in a series of three veterinary science projects to help you learn all about animals. Complete a variety of activities to learn about animals' basic needs, the purpose of body systems, how to improve biosecurity in your home or farm, identify common veterinary tools, and so forth. Designed for youth in grades 3 to 5, but may be taken by any youth in the first three years of this project. 2004.

B, 

245 All Systems Go! Level 2

Explore a wide range of activities related to veterinary sciences. Research proper environments for animals, examine parasite life cycles, conduct a food safety experiment, investigate disease-causing agents, and more. Designed for youth in grades 6 to 8, but may be taken by any youth who has completed *From Airedales to Zebras*. May be taken for three years. 2004.

I, 

246 On the Cutting Edge, Level 3

Learn more about animal behavior, animal diseases, genetics, and anatomy and physiology. Delve deeper into careers in veterinary medicine and other animal-related careers. Designed for youth in grades 9 to 12, but may be taken by any youth who has completed Veterinary Sciences 1 and 2. 2004.

A, 

Helper Supplement for Veterinary Science

The *Veterinary Science Helper's Guide* is for volunteer leaders looking for ideas to make meetings fun and educational. Available from the National 4-H Source Book and at www.4-Hmall.org.

Child and Family Development

434 Growing on My Own, Step 1

This project is for youth who want to learn about the ways they grow, their different feelings, and their roles and responsibilities. Fun activities include making a Me Hat to show one's life as a son, daughter, student, sister, brother, cousin, grandchild; and making a choke-tube tester. Life skills practiced in this project are personal safety, critical thinking, motivation, concern for others, accepting differences, and planning and organizing. May be taken for two years. 2004.

B, 

435 Growing with Others, Step 2

In this project, youth learn how to prepare themselves for self-care, select age-appropriate toys, create a group of friends, develop family rules, prepare healthy meals, and check the home for safety hazards. Youth enjoy making a home alone box, a friendship chain, a friendly kite, and clay to use for constructing family symbols. Life skills used in this unit are planning and organizing, critical thinking, concern for others, accepting differences, teamwork, leadership, responsibility, and personal safety. May be taken for two years. 2004.

I, 

436 Growing in Communities, Step 3

In this project, youth have opportunities to consider 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. Other enjoyable activities include evaluating TV programs and commercials aimed at children, creating a puppet show for young children, and planning a neighborhood Movin' and Shakin' Olympics. Planning and organizing, critical thinking, concern for others, accepting differences, teamwork, leadership, self-motivation, responsibility, and personal safety are emphasized. May be taken for two years. 2004.

A, 

Helper Supplement for Child Development

The *Child Development Helper's Guide* features nine engaging group activities that encourage youth to work with younger kids in after-school programs, day care centers, day camps, and kids in their own 4-H clubs. Available from the National 4-H Source Book and at www.4-Hmall.org.

442 Family History Treasure Hunt (Genealogy)

Discover your family history as you go on a treasure hunt for jewels of information such as interesting relatives, special events, and curious stories of days gone by. May be repeated. 2004. **X, I**

Clothing and Textile Science

The Ohio 4-H clothing program helps develop knowledge, skills, and understanding about clothing appearance, buymanship, and construction. Projects are available for males and females with all levels of experience. Please refer to the individual project member guides for detailed information and consult your county Extension office for specific requirements related to local and state evaluation opportunities.

Multiple Projects: 4-H members who take more than one clothing project must complete separate learning experiences related to each, **including creating a separate, complete, Total Look outfit for each clothing project.**

Repeating Projects: Members who repeat clothing projects should attempt new challenges each year such as doing more advanced experiments and surveys and sewing more complicated patterns or harder-to-handle fabrics.

Want to learn about sewing by making your own quilt? Check out 499 You Can Quilt! and 498 Quilting the Best Better, listed under Creative and Leisure Arts on page 16.

Optional Supplement for Clothing Projects

422R Clue Yourself into Modeling

Learn more about how to properly model your outfit. Available online at www.ohio4h.org/publications.

For Younger Members

409 Sew Fun

This project will have you sewing in no time! Members of any age learn basic sewing skills with an easy introductory project—fully elastic-waisted skirt, shorts, pants, or capris. A member who successfully completes this project can repeat it or move on to 413 *Sundresses and Jumpers* or 419 *Tops for Tweens*. 2013. **B, I**

410 Fun with Clothes

A great “first time” clothing project for members in grades 3-5. Decorate a sweat shirt or T-shirt by sewing or fusing on a decorative patch. Personalize clothing and do fun experiences in label reading, comparison shopping, assembling a complete outfit, doing a keeping neat checkup, sewing on a button, putting away clothes, and exploring current fashions. Complete leadership and service activities to share what you do with others. 1995. **B, I**

Especially for ‘Tweens

413 Sundresses and Jumpers

If you have beginning-level sewing skills and a little clothing project experience, this is the book for you. Plan and make a sundress or jumper (with or without a top), and choose accessories. Then, learn how to present your best self. 2011. **B, I**

419 Tops for Tweens

This project is designed as a beginning-level project. Select a pattern and make a top (a shirt, blouse, vest, tank top, poncho, sweater, or T-shirt). Collect and organize sewing, knitting, crochet, or other needed equipment. Select from the wardrobe or buy garment(s) and accessories to wear with the top to form a Total Look outfit. Evaluate ready-to-wear garments and their labels. Check and improve posture. Do at least two leadership/citizenship activities. 1996. **B, I**

424 Clothing for Middle School

In this intermediate level project for youth in grades 5 to 8 or 9, you make (a) at least one garment with sleeves or (b) a skirt or pants plus a top such as a vest, collarless jacket, sweater, blouse, shirt, or other top with or without sleeves. Assemble a total outfit featuring the garments made to wear to school. Check and improve personal grooming habits and posture. Strive for a Total Look each school day, and do needed repairs. Do at least two leadership/citizenship activities. 2000. **I, I**

Especially for Teens

406 Clothes for High School and College

This project is an advanced-level project designed for members in high school with some clothing experience. Construct an outfit with a minimum of two pieces, or a one-piece garment with sleeves, plus some other style detail not tried before. Do a wardrobe inventory and analyze personal color, texture, and lines. Practice good grooming and repair clothing. Do at least two leadership/citizenship activities. 1993. **A, I**

407 Accessories for Teens

This project is designed as a beginning-level project for teens. Make at least one accessory to achieve a more complete appearance in an outfit. Complete activities related to using accessories effectively, taking a wardrobe inventory, and accessorizing for a Total Look. Do at least one leadership/citizenship activity. 1995. **B, I**

420 Outer Layers

In this advanced-level project, members who are 15 to 18 years old make a coat, jacket, or cape. Although sewing a tailored garment is challenging, it provides a new learning experience and a sense of satisfaction and accomplishment when complete. 1997. **A, I**

425 Look Great for Less

In this advanced-level project, members are challenged to use creativity and resourcefulness to pull together a Total Look outfit as inexpensively as possible. Compare different types of clothing stores, explore second-hand shopping, learn when sales are most likely to occur, evaluate clothing quality, then shop for an outfit! This project does not require sewing skills. 2013. **A, I**

For Intermediate Level 4-H Clothing Members of Any Age (with some 4-H clothing experience)

411 em-bel-lish: A 4-H Guide to Wearable Art



This intermediate-level project is for members with some clothing experience who want the opportunity to embellish clothing. Numerous possibilities include appliqué, batik, beading, dyeing, embroidery, and many other techniques. Not a clothing construction book and not a how-to book, this is a general project guide that involves exploring embellishment ideas, identifying likely clothing items, learning a few techniques, and putting together a completed outfit. This project can be completed in lots of fun ways, all depending on what you want to learn. Interested members without clothing experience should start with 410 *Fun with Clothes*. 2012. **I, I**

412 Sew For Others

This intermediate project is for members of all ages with some experience in clothing construction. Construct one complete outfit for the person of your choice or adapt three different garments for a disabled or handicapped person. Analyze coloring, figure type, size, and preferences of the “other.” Compare styles, colors, fabrics, workmanship, cost, and special features of ready-to-wear outfits with the outfit constructed for the other. Do at least one leadership/citizenship activity. If this project is repeated, a different category of “others” should be selected each time. 2000. **I, I**

415 Active Sportswear

This intermediate project is for members with some clothing project experience. Make at least one garment in an outfit assembled for active sportswear and compare the garment(s) made with similar ready-to-wear garments. Evaluate buying habits, complete an accessory plan, and do at least two leadership/citizenship activities. This project may be repeated. 1990. **I, I**

418 Loungewear

This all-level project is designed for members with some clothing project experience. Plan and make the outer layer of an outfit for lounging such as a cotton robe, a fleece shawl, or a terry cloth cover-up—whatever fits your sewing ability, lifestyle, and loungewear needs. Make or select other garments and accessories (sleepwear and footwear) to complete your loungewear outfit. 2011. **X, I**

430 Shopping Savvy

This fun and informative project is for members with some clothing project experience. After members take stock of their current wardrobe, they compare different brands of the same clothing item, study current fashion trends, learn proper clothing care and, of course, go shopping! This project does NOT involve sewing or clothing construction skills. 2011. **X, I**

For Advanced Level 4-H Clothing Members of Any Age (who have mastered basic clothing construction and are ready for new challenges)

408 Creative Costumes

Participants choose to make a costume in one of four categories: historical, ethnic/cultural, theatrical, or special interest. Goals include understanding clothing and its significance and applying new knowledge to planning and making a costume. Projects are evaluated on the seven clues to a Total Look and on fit, construction, design, accessories, authenticity, and knowledge of the costume’s history. This advanced project is for teens and may be repeated, however, a different category of “costumes” must be selected. 1995. **A, I**

417 Dress-Up Outfit

This advanced-level project is for members who have mastered basic clothing construction techniques and who are ready for new challenges. Make at least one dress-up garment to be worn as part of a total dress-up outfit. Visit stores and examine ready-made dress up garments. Analyze personal coloring, body build, image, and personality. Do at least one leadership/citizenship activity. 1990. **A, I**

426 Clothing for Your Career

This project is for advanced-level members of any age. Using the seven clues to a Total Look, make and evaluate an outfit that has a minimum of two pieces, provides several new challenges, and fills a job or interview need. Learn about styles that look best on different body types, explore a job in which you are interested, and learn about planning a wardrobe that projects a positive image. Do at least two alteration/recycling experiences and compare costs with an alteration or repair service. 2000. **A, I**

431M Clothing Master: Design and Construction

This project is for members who want to make clothing in a category that is different from other 4-H clothing project categories or that requires specialized or professional-level skills beyond those typically used in other 4-H clothing projects. 4-H members of any age can complete this project, but should have previous clothing construction experience (comparable to what is required for other advanced-level 4-H clothing projects) and be able to plan and complete the project on their own with minimal supervision or assistance. 2013. Available online at www.ohio4h.org/publications. **A, I**

432M Sewing and Textiles (non-Clothing) Master

This project is for members who want to sew something other than clothing, namely home decor, and requires specialized or professional-level skills. 4-H members of any age can complete this project, but should have considerable previous sewing experience and be able to plan and complete the project on their own with minimal supervision or assistance. (State fair judging is on Home Decorating and Design Day.) 2014. Available online at www.ohio4h.org/publications.

A,

Creative and Leisure Arts

Cake Decorating

492 Cake Decorating Project and Record Book

Track your learning as you gain new skills and showcase your cake decorating talent! Complete this project and record book every year a cake decorating project is taken. Includes separate Skills and Techniques Record. Use with 492R *Cake Decorating Resource Handbook*. 2012.

X,

Required Supplement for Cake Decorating

492R *Cake Decorating Resource Handbook*

This all-inclusive cake decorating book from Wyoming 4-H includes everything from baking the cake to decorating with special effects. 2001. (\$6)

Collecting

496 *My Favorite Things*



Are you interested in creating a personal collection? Want to take a collection you already have to the next level? Learn about various types of collections, the ins and outs of the collecting process, and how to best display your items. Appropriate for members of all ages. 2014.

B,

Fine Arts

499 *You Can Quilt!*

Curious about quilting but don't know where to start? Look no further! Members gather quilting tools, select and cut fabrics, stitch pieces together, and before they know it—they're quilting! Choose from two patterns to make a mini quilt. 2011.

I,

498 *Quilting the Best Better*



This project is for 4-H members who have completed *You Can Quilt!* Now you can practice and refine your quilting skills by using the half-square triangle method on a built-in community service project and on your own lap quilt. Use some advanced tools and gadgets too! 2015. Available December 2014.

I,

You can go beyond these quilting project books by taking a 365 Self-Determined project. Define a project according to your own interests and still be eligible for Quilt Day at

the state fair. See page 26 for more information on self-determined projects.

592 *Get Started in Art*

Explore the basic elements of visual art through activities on color, line, space, balance, and more, and then complete your own work of art. Ceramics, drawing, painting, sculpture, printmaking, design, and crafts are all possibilities. Appropriate for members of all skill levels and ages, this project can be repeated as long as new learning takes place and new works of art are completed. 2012.

X,

Photography

584 *Focus on Photography, Level 1*

Learn how to use your digital or film camera to take quality pictures and how to evaluate them before and after you take them. This comprehensive introduction to the world of photography covers camera settings, lighting techniques, and composition skills. Fixed lens, or "point and shoot," cameras are okay. 2007. (\$10)

B,

585 *Controlling the Image, Level 2*

Practice different techniques in lighting, image focus, and composition. Learn how to get quality candid pictures, action shots, and creative artistic images. Improve your photography skills with assignments that require creativity, problem-solving, patience, and practice. Need film or digital, adjustable lens camera. 2007. (\$10)

I,

586 *Mastering Photography, Level 3*

Choose a theme and take photos that display your mastery of camera equipment, lighting techniques, and unusual composition. Create a professional portfolio that demonstrates your proficiency in a photography career area. Need film or digital, adjustable lens camera. Additional equipment such as wide angle and telephoto lenses, filters, and light meter is useful. 2007 (\$10)

A,

589M *Photography Master*

This project is for members who want to make a photography project in a category that is different from other 4-H photography project categories or that requires specialized or professional-level skills beyond those typically used in other 4-H photography projects. Members of any age may complete this project, but should have previous photography experience (comparable to what is required for other advanced-level 4-H photography projects), and be able to plan and complete the project on their own with minimal supervision or assistance. 2013. Available online at www.ohio4h.org/publications.

A,

Scrapbooking

497 *Scrapbooking: A 4-H Guide to Preserving Memories*

This project is designed for youth with limited or no experience in scrapbooking. Requires completion of project activities and creation of a scrapbook. Can be repeated by

completing additional activities and a new scrapbook each year. 2010. **B, ♀**

Theater Arts

www.n4hccs.org

596 Play the Role

Learn about acting through activities in movement, voice and speech, characterization, playbuilding, and playing a scene. Complete at least six project activities and/or “Call Board” activities each year. Can be repeated up to three years. 2004. **I**

597 Become a Puppeteer

Learn about puppeteering through activities on the origins and types of puppets, constructing puppets, puppets with character, and more. Did you know that puppets have healing power? Complete at least six project activities and/or “Call Board” activities each year. Can be repeated up to three years. 2004. **I**

598 Set the Stage

Learn about stagecraft through activities on costumes, makeup, sets, props, sound, lighting, and stage management. Then use your knowledge to appreciate actual stage productions. Complete at least six project activities and/or “Call Board” activities each year. Can be repeated up to three years. 2004. **I**

Helper Supplement for Theater Arts

The *Theater Arts Helper's Guide* helps club leaders engage youth in the creative process of “imagination in action.” Available from the National 4-H Source Book and at www.4-Hmall.org.

Writing

587 Writing and Reporting for Teenagers

Write, report, and photograph your way to fame! This project is designed to provide practical experience in news gathering and reporting and contains some basic activities designed to help youth become a competent reporter and writer. This advanced-level project is recommended for teens ages 14 to 19 who have basic skills in English and a working knowledge of cameras. May be taken more than once. 1994. **A**

588 Creative Writing for Teens

Take the first step as a writer or poet and exercise your creativity with activities designed to stimulate your imagination and writing skills. This intermediate-level project is recommended for youth ages 12 to 19 years old and may be taken more than once. 1990. **I**

Food and Nutrition


The Ohio 4-H Food and Nutrition program helps develop knowledge, skills, and understanding of nutrition, menu planning, safe food handling, kitchen equipment safety, consumer knowledge, fitness, meal and time management, and food and nutrition-related careers. Please consult your county Extension office for specific requirements related to local and state evaluation opportunities.

All Ohio 4-H food and nutrition projects use MyPlate, which incorporates current USDA recommendations about eating and exercise. Depending on a project book's publication date, it may refer instead to the older MyPyramid or Food Guide Pyramid, but 4-H members should still know the MyPlate recommendations. For information about MyPlate, go to www.choosemyplate.gov.

Beginning Level

Beginning-level projects are for members of any age with little or no experience in food preparation and nutrition.

459 Let's Start Cooking

 This project takes a fresh look at basic cooking and baking skills. You'll learn about kitchen equipment and food prep, and how to read recipes and measure ingredients. Then you'll tackle how to slice and dice food, and how to cook in a microwave oven, on the stove, and in a conventional oven—all while keeping safety in mind. 2015. Available November 2014. **B, ♀**

483 Sports Nutrition 1: On Your Mark!

Want to be the best athlete you can be? In this beginning-level project 4-H members learn the importance of physical activity and good nutrition. By understanding levels of physical activity, MyPyramid, and the importance of drinking plenty of fluids, 4-H members can prepare themselves for mild or intense workouts. Easy food preparation skills are included in the five activities and related recipes. This is a one-year project with the option of additional learning in a second year. 2010. **B, ♀**

484 Snack Attack!

In this beginning-level project 4-H members learn how to select and prepare healthful snacks while learning the ins and outs of MyPyramid, an important guide to making healthful food choices and being physically active. Designed to be completed in one year, this project includes seven activities and related recipes. Members who complete this project are encouraged to take other beginning-level food and nutrition projects. 2010. **B, ♀**

487 Fast Break for Breakfast

This project focuses on the importance of starting each day with a nutritious breakfast and uses the Food Guide Pyramid as the basis for exploring breakfast options. Menu planning, food safety, and nutrition topics are included in this sports-themed project book. It is designed for members who have completed at least one other beginning-level 4-H food and nutrition project. 2000. **B, ♀**

Intermediate Level

Intermediate-level projects are for members of any age with some experience in food preparation and nutrition.

461 Let's Bake Quick Breads



Learn how and why quick bread recipes are so tasty as you bake your way through updated activities. See what makes a wheat kernel tick and learn how the quick bread ingredients react with one another. You'll also explore careers in the kitchen, and learn how to alter a recipe for more healthful benefits. Includes gluten-free recipes. 2015. Available December 2014.

I,

463 Sports Nutrition 2: Get Set!

Expand your knowledge of being the best athlete you can be with this intermediate-level project book. In this second book, members learn how to increase their fitness levels, identify nutrient-rich foods, select the best beverage when exercising, and gauge how and when to fuel their bodies for physical activity. Fun and healthful recipes accompany each activity. 2011.

I,

472 Grill Master

Progress from grill apprentice to grill master as you focus on the safe use of a grill while preparing delicious meals. By completing six activities and a selection of recipes, you'll learn about appropriate portion sizes, cooking meat to safe temperatures, and using gas and charcoal accessories, all while learning to prepare a complete meal. Includes six activities and related recipes. Because of the grill, recommended for youth ages 11 and above. 2011.

I,

475 Star Spangled Foods

Discover the customs and traditions that influence some favorite regional American foods and the way we like them by experimenting with keeping and serving food at its best. Includes MyPlate guidelines. 2012.

I,

477 Party Planner: A 4-H Guide to Quantity Cooking

The secrets of successful party planning can be yours. These eight activities and a selection of recipes show you how to plan, budget, and safely prepare foods for large groups. 2011.

I,

485 Racing the Clock to Awesome Meals

This project focuses on the knowledge and skills needed to prepare quick, nutritious, low-cost meals. It builds on basic food preparation skills so that youth can tackle difficult recipes while being creative with ingredients. This project, which includes seven activities and related recipes, can easily be completed in one year. 2010.

I,

486 Dashboard Dining: A 4-H Guide to Healthful Fast Food Choices

Look at fast food in a whole new light! This project book shows you how to make fast food menus part of a healthy lifestyle. From understanding true food portions and

healthful choices to "designing" your meals with your new nutrition knowledge—you will learn skills to last a lifetime! 2012.

I,

Want to learn about canning and freezing food? Check out 478 Canning and Freezing, an intermediate gardening and plant science project listed under Natural Resources on page 21.

Advanced Level

Advanced-level projects are for members with substantial experience in food preparation and nutrition.

462 Yeast Breads on the Rise

Master the art of baking delicious yeast breads. Learn the principles of yeast bread preparation, and learn how mixing techniques and ingredients determine product character and quality. Includes MyPlate guidelines. 2013.

A,

467 You're the Chef

Prepare creative, nutritious meals using the oven, range top, microwave, slow cooker, and stir-fried foods. Vegetarian foods and selecting foods at the deli are included in this project. Includes MyPlate guidelines. 2014.

A,

469 Global Gourmet

Enjoy the many flavors of foods from around the world! You explore the food history, customs and nutritional needs around the globe to better understand our world. 1996.

A,

474 Beyond the Grill

Explore a variety of outdoor cooking skills while finding easy ways to follow the USDA's MyPlate guidelines. Experiment with a pie iron, solar cooker, and rotisserie, and hone your skills on the grill, then throw a cookout party and use what you've learned! 2013.

A,

476 Pathways to Culinary Success

Explore a variety of new experiences to gain a basic understanding of culinary arts. Learn techniques used by cooks and chefs, the use of basic equipment, and the art of meal presentation. Prepare meats, stocks and sauces, pies and pastries, and garnishes! Career exploration, advanced recipes, and activities are included. Youth taking this project should have completed projects at the beginning and intermediate levels. 2001.

A,

Healthy Living

300 You're the Athlete

For youth who participate in sports and for the adults who work with them. Learn the fundamentals of being a well-rounded athlete with up-to-date, research-based information and lots of fun activities that develop important knowledge, attitudes, skills, and aspirations in sportsmanship, time management, goal setting, nutrition and sports, strength and conditioning, leadership, conflict

resolution, and careers in athletics. Activities are designed for use in developing your personal sport-specific interests. Complete the project activities individually, with team members, or with other groups. For members ages 11 and older. 2003. I, 🌱

351 Staying Healthy

Are you ready to explore your body and learn how to keep it healthy? Have fun learning to keep fit, increase your brain power, and express yourself in positive ways. 2005. B, 🌱

352 Keeping Fit

Develop a personal fitness plan to gain the benefits of exercise and test your fitness knowledge. 2005. I, 🌱

353 First Aid in Action

Ideal for 3rd to 5th grade 4-H members. Learn about first aid and create your own family first aid kit. 2005. B, 🌱

357 Alcohol and Drug Abuse

Designed for advanced-level youth interested in learning about this growing problem. In addition to how alcohol and drugs affect brain performance, this project covers the nature of addiction, how alcohol is marketed, why teens use, and how best to respond to the problem. 2012. A, 🌱

358 The Truth About Tobacco

The nicotine in cigarettes and other tobacco products threatens the health of those who use tobacco and those exposed to secondhand smoke. So why does anyone smoke? In this project, youth learn more than just physical effects of tobacco use, but how tobacco products are made, marketed, and consumed in America. 2011. A, 🌱

Home Living

405 The Laundry Project



Everyone loves clean laundry but how do you do it? Learn about laundry machines and products, how to be environmentally friendly in the laundry room, and how to sort and clean laundry items.

Conduct an experiment to learn how heat affects different types of fibers too! Appropriate for members of all ages with no experience in doing laundry. 2015. Available December 2014. B, 🌱

491 Adventures in Home Living

Learn to make simple furnishings and accessories that make living spaces in your home more pleasing and practical. 2009. B, 🌱

494 Makeover My Space

Ready to make a big change in your bedroom or in a common room in your home? This project, which is all about room makeovers, is intended for members with little or no design experience who are old enough to complete a significant interior decorating project independently. Ten project activities cover planning, design basics, color, flooring, walls, windows, and lighting. 2012. I, 🌱

495 Your First Home Away from Home

Plan your college dorm room, first apartment, or house using housing, furnishing, equipment, and management principles. Specifically for youth ages 15 and above. 1990. A, 🌱

Leadership and Citizenship

JOIN THE REVOLUTION OF RESPONSIBILITY



To learn more about The Revolution of Responsibility, go to www.4-h.org.

Optional Supplements for Club Officers

Club Officer Resources

Club officer handbooks for president, vice president, secretary, treasurer, news reporter, health officer, safety officer, and recreation leader are available online. To access these and other club resources, go to www.ohio4h.org/members/officers.

370 One on One

This is a mentoring project designed for teens ages 13 and older with at least two years of 4-H experience. Teens mentor at least one beginner 4-H member and complete a series of learning experiences with their protégés. 1994. A, 🌱

371 Club Leadership 1



Would you like to become a 4-H club officer, or are you one already? This project is for members who have some experience in leadership and who want to learn more about what it takes to become a well-balanced and successful leader in 4-H and in life. You'll look at inspirational leaders and various leadership styles, then develop your skills through a series of fun activities using real-life examples from your club experiences. 2014. I, 🌱

372 Diversity: The Source of Our Strength



Explore the many forms diversity takes in your daily life. See life from various perspectives and have fun learning about new situations and people who are different from you. Finally, show what you have learned with a capstone project in any creative format you choose. 2014. A, 🌱

373 My Hands to Larger Service: Teen Leaders Building Our Communities

Teen leaders in 4-H have been leading community service projects for years. Here's a project book that supports their efforts. No matter what the specifics of your particular project are, this book takes you through the nature of service, making plans, recruiting a "crew," getting it done, and evaluating your accomplishments. Yes, you DO make a difference! 2014. A, 🌱

374 Teens on Board



Learn to arrange more productive meetings and to participate in them more effectively. Great for teens with some leadership experience who are interested in learning more about the purpose and functions of boards or who are serving on a board for the first time. 2014. I, ♀

375 Leadership Road Trip: Where Are You Going?



Are you interested in learning about what it takes to become a good leader? Begin your leadership adventure by answering questions about yourself and the people close to you, by setting goals, by practicing communication, and by making a commitment to lead. Intended for youth old enough to explore the nature of leadership. 2013. I, ♀

376 Pantry Panic

This advanced-level project is for community-minded youth who want to take a step back and look at food in a broader context. "Food insecurity" is an issue affecting much of the world's population and many people right here in our own communities. Learn about hunger in your community and develop the skill and imagination to prepare healthful meals from ingredients you have on hand or might receive from a food pantry. Consider it a challenge! 2014. A, ♀

377 Finding Your Voice: Public Speaking Made Easy



Want to learn a skill you can use for the rest of your life? This newly revised project shows members with little or no public speaking experience how to prepare and deliver speeches in front of crowds, large and small, with confidence. Take a look at how the pros manage this skill, then learn how to handle various speaking situations, deliver different types of speeches, and resolve problems you may experience along the way. Your confidence builds with each activity! 2014. B, ♀

378M Leadership Master

This project is for teens who want leadership experiences different from the opportunities provided through other 4-H leadership projects. 4-H teens who complete this project should have enough previous leadership experience to be able to plan and complete this advanced-level project on their own with minimal supervision or assistance. 2012. Available online at www.ohio4h.org/publications. A, ♀

380 and 381 Project Citizen

Have a great idea for improving something in your community? Make it a 4-H project! Project Citizen guides you through a step-by-step process that starts with defining the problem and ends up with developing an action plan. Instead of sitting back, work for positive change in your school, town, state, or other organization.

380 Project Citizen, Level 1 (Grades 5-8) 2008 I, ♀

381 Project Citizen, Level 2 (Grades 9-12) 2010 A, ♀

511 CARTEENS Member Resource

This resource is for members who are taking the group project 4-H CARTEENS and who want to add to the experience by also taking it as an individual project. After setting goals, build on the skills you are already using as a CARTEENS teen leader: public speaking, teaching, professionalism, and leadership. 2009.

Optional Supplement for Leadership and Citizenship Projects

997 Camp Counseling Handbook

Camp counselors anywhere in the 4-H system will appreciate this resource, full of time-tested guidelines and advice. Interested in completing a related project? See idea starter 365.11 *Camp Counseling*. 1996. Available online at www.ohio4h.org/publications.

Communications Resources

Communication skills and activities are built into every project. Doing a demonstration for fellow club members, presenting to outside groups, and interviewing are common activities for 4-H members of all ages. If you are interested in a project that focuses on communication skills, please check to see if one is offered in your county. At the state level, Ohio 4-H offers communications events at the state fair and the following resources.

Optional Supplements for Communications

909R Demonstrations

Recommended as a resource for individuals and teams who are planning to participate in a demonstration contest. Learn the basics of giving an illustrated talk and utilizing visual aids. Available online at www.ohio4h.org/publications.

970R Tools for Public Speaking

A valuable resource for learning about the nine basic tools for public speaking. Recommended for individuals planning to participate in a public speaking contest. Available online at www.ohio4h.org/publications.

Helper Supplement for Public Speaking

971AG Tools for (Teaching) Public Speaking

A valuable resource for teaching about the nine basic tools for public speaking. Recommended for advisors to help members participate in a public speaking contest. Available online at www.ohio4h.org/publications.

Money Management

445 Becoming Money Wise

Designed for youth ages 10 to 13. Monitor your cash flow and see where your money goes by developing a budget and good records to become a responsible consumer. Designed as a beginning-level book. May be taken one or two years. 1995. B, ♀

446 Money Fun-damentals

Did you know you have a “money personality”? Identify your money personality and values and apply this information to set goals, identify wants and needs, and communicate about money issues. Prepares youth ages 12-14 to make money decisions. 2003. I, ♀

447 Money Moves

Teens ages 14-17 will learn about uses of money, the benefits and drawbacks of credit, banking services, the influences of advertising, and the art of being a savvy consumer. (*Money Fun-damentals* should be taken before this project). 2003. I, ♀

448 Teens . . . On the Road to Financial Success

Teens ages 14 to 19 have the opportunity to organize their financial lives by analyzing spending, obtaining and managing banking services, making consumer decisions, and exploring financial careers. This project is designed to be taken for one or two years. 2000. A, ♀

Helper Supplement for Money Management

Are you a group leader looking for individual or club activities to teach money management? The High School Financial Planning Program includes leader-directed activities, youth workbooks, and complete background information for the following topics: Money Management, Borrowing, Earning Power, Investing, Financial Services, and Insurance. Available for download or order, both free, at www.hsfpp.org.

Natural Resources

Gardening and Plant Science

670 Canning and Freezing

Explore water bath canning and freezing home preservation methods with this interesting and informative project. (Pressure canning is not included.) Learn how pH determines which canning method to use, become familiar with canning equipment, learn when fruits and vegetables are in season, and preserve produce using the freezing method. The last activity is an easy, step-by-step guide to water bath canning your own applesauce! Members must have access to a current, reliable home food preservation guidebook. 2012. I, ♀

671 How Does Your Garden Grow?

This beginning-level project is designed for youth with limited or no experience in flower gardening. Youth are required to complete five activities that guide decision-making and preparation of a flower garden, either in the ground or in containers. In the second year, youth should use a new project book to document decisions for a new and different flower garden. 2010. B, ♀

691 Vegetable Gardening for Backyards or Patios

Start a garden plot or container garden of at least four


vegetable varieties to learn what conditions are needed for them to grow. 1994. B

692 Growing with the Seasons


Learn to make the most of your garden space by planting seasonal crops. For those members with an interest in expanding their commitment to growing and preserving home-grown fruits and vegetables. 1994. I

The Natural World

611 Explore the Outdoors

 This project opens your eyes to the great outdoors, so get your backpack and field guides ready. The first activity shows how to prepare for an outdoor adventure so you can explore the woodlands, fields, wetlands, and the geology of Ohio. Once you see nature with new appreciation, you'll want to learn more! Intended for youth of all ages interested in Ohio's wildlife and ecosystems. 2015. Available December 2014. B, ♀

620 Why Trees Matter

 Members develop their interest in trees and our natural resources with cool experiments. Each activity highlights how trees function individually and how they play a role in our everyday lives. 2013. B, ♀

621 Ohio Birds

Observe and identify birds with bird feeders in your yard and on field trips to see the many benefits our feathered friends provide. This project book is intended to be used for two years. 2013. X, ♀

622 Trapping Muskrats in Ohio

In this project, learn about the biology and behavior of muskrats and how to ethically and humanely trap muskrats. 1997. I, ♀

623 Fishing for the Beginner

Drop a line to enjoy the fish of Ohio. Learn about fish and how to catch them. 1991. B, ♀

624 Fishing for the Intermediate

Bait the hook again to learn more about fishing methods, equipment, and fish in the environment. 1991. I, ♀

641 Beekeeping Project and Record Book

Beekeeping offers learning and fun for members of all ages. The beekeeping project and record book covers project requirements, colony care and management, and basic beekeeping records. 4-H members should complete this required project book every year a beekeeping project is taken. Requires additional resources. 2010. X, ♀

644 Exploring Our Insect World 1

Count, collect, mount, and label 25 different species representing eight orders. Learn how insects play an important role in ecology. 1990. B, ♀

Shooting Sports

630 Safe Use of Guns

Make sure you are safe by learning the importance of gun safety. You could save your life or the life of someone you love. This is a beginning-level, one-time project for 4-H members who have an adult in the home or neighborhood who can supervise their shooting. 1996. **B, I**

631 Basic Archery

Aim your energy toward a sport that develops knowledge and skills in basic archery safety. This is a beginning-level, one-time project for members who have an adult in the home or neighborhood who can supervise their shooting. 1995. **B, I**

Ohio 4-H offers exciting opportunities in rifle, archery, shotgun, pistol, hunting and wildlife, muzzleloader, and living history through the Ohio 4-H Shooting Sports Program. For more information, go to page 28 and www.ohio4hshootingsports.org.

Science, Technology, Engineering, and Math (STEM)

Aerospace Science

www.ohio4h.org/engineering

501 Rockets Away (2-liter Bottles)

Study the science of rocketry through a variety of hands-on experiments for all ages. Members conclude this project by building and launching 2-liter bottle water rockets. A bottle rocket launcher may be available from your county Extension office. Visit our website at www.ohio4h.org/rocketsaway. Members wishing to launch Solid-Fuel model rockets should take 503. 2006. **B, I**

502 Science Fun with Flight

Experiment with the forces of flight by building and flying a model airplane or glider to soar above the earth. Visit our website at www.ohio4h.org/flight. This project does not include radio-controlled airplanes or helicopters. 2006. **B, I**

503 Rockets Away (Solid-Fuel Model Rockets)

Study the science of rocketry through a variety of hands-on experiments for all ages. Members conclude this project by launching a solid-fuel model rocket built from a kit. Note: Members wishing to build and launch 2-liter bottle rockets should take 501. 2006. **B, I**

503M Solid-Fuel Rocketry Master

This project is for members who have completed 503 *Rockets Away!*—*Solid-Fuel Model Rockets* and who want to continue to develop specialized skills. Members of any age may complete this project, but they should have significant experience in rocketry (comparable to what is required for other advanced-level 4-H projects) and be able to plan and complete the project on their own with minimal

supervision or assistance. 2013. Available online at www.ohio4h.org/publications. **A, I**


Optional Supplement for Rockets Away!

Sources for launchers Extension educators have found helpful are listed at www.ohio4h.org/rocketsaway.

All-Terrain Vehicles (ATV)

www.ohio4h.org/engineering

555 ATV Safety

 This project book, designed for use by individual members, is appropriate for all age levels. Lessons rely in large part on information from the ATV Safety Institute and are designed to put safety first. Covers getting familiar with your ATV, protective gear, riding techniques, safe strategies and safe practices, and respecting the environment. Includes practice records. Enrollment in an ASI RiderCourse is recommended but not required. 2011. **X**

554GPM ATV Safety, Leader's Guide

Part of the Ohio 4-H ATV Safety Training Program, this resource directs leaders on how to implement service learning projects, involve parents in supervision/education of young riders, and much more. 2011. Available online at www.ohio4h.org/publications.

Bicycle

www.ohio4h.org/engineering

517 Bicycling for Fun, Level 1

Beginning riders learn the essentials for getting started safely and successfully! Activities cover cycling gear, bicycle parts, selection, fit, rules of the road, and more. Complete at least seven activities each year. Can be repeated once. 2006. **B, I**

518 Wheels in Motion, Level 2

Youth learn advanced skills as they explore their surroundings. Activities cover buying, maintenance, repair, road skills, and cycling for life. Complete at least seven activities each year. Can be repeated once. 2006. **I, I**

Helper Supplement for Bicycle

The *Bicycle Helper's Guide* is for helpers who are working with the Bicycle Adventures series (517-518 above). It has activities and ideas related to basic bicycle handling, traffic skills, and bicycle events for the entire group. Available from the National 4-H Source Book and at www.4-Hmall.org.

Chemistry

493 Science Fun with Kitchen Chemistry

Join the Terrestrial Alien Defense Academy and figure out how to outsmart the aliens by doing experiments in your

kitchen. Learn about what matter is and how it changes form; explore the different properties of matter; find out about acids and bases; and discover how everyday items and kitchen ingredients can be used in cool tests! 2014.

B, 

Electricity

www.ohio4h.org/engineering

527 Magic of Electricity, Level 1

Youth explore why certain things insulate from electricity better than others and the effect that magnetism has on various substances. Youth learn how to build a flashlight, a compass, an electromagnet, and an electric motor. 2002.

B, 

528 Investigating Electricity, Level 2

Youth build circuits and test voltages, and 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. 2002.

I, 

529 Wired for Power, Level 3

Youth build on skills learned in levels 1 and 2 plus learn measuring electrical usage, replacing electrical switches and determining electrical loads. Youth also evaluate different bulbs and test for electrical power. 2003.

I, 

530 Entering Electronics, Level 4

This unit introduces the basics of solid-state electronics and provides hands-on activities for practical experience in understanding modern day electronic equipment. This project can be taken after youth successfully completes 528 Investigating Electricity and has solid soldering skills and circuitry knowledge. 2003.

A, 

531 Science Fun with Electricity

This beginning electricity project book includes eleven kid-friendly and time-tested experiments about static electricity, currents, electromagnetism, electric motors, and electric light. Each experiment has a brief introduction, a supply list, and step-by-step instructions that bring an electrical concept to life. Requires additional supplies. 2009.

B, 

Helper Supplement for Electricity

The *Electric Group Helper's Guide* is for helpers working with the Electricity Excitement series (527-530 above). It has activities and ideas to make your group meetings more fun and educational. Available from the National 4-H Source Book and at www.4-Hmall.org.

Food Science

490 Science Fun with Dairy Foods: The Case of the Missing Milk

Your kitchen becomes a laboratory as you observe and experiment with dairy products. As a member of the Dairy Police Task Force, discover the science behind butter,

cheese, and curds while solving the mystery of The Missing Milk. After completing this project you are encouraged to explore other Science and Food and Nutrition project books. 2012.

B, 

Electric Radio-Controlled Vehicles

504 Electric Radio-Controlled Vehicles

Be your own pit crew and driver by researching, purchasing, assembling, and modifying an electric radio-controlled vehicle. This introductory project is designed for members 11 years old and above with some experience in toy grade radio-controlled vehicles, but who are interested in moving up to hobby grade. Most members need the direction of a knowledgeable adult. Not for use with ready-to-run cars, or with boats, aircraft, or gas-powered vehicles. Requires youth to buy a kit to build a car. The price of a kit and related materials starts at \$500. 2011.

I

Physics

500 Science Fun with Physics

Let your inner scientist come out and uncover the mysteries of physics at play in daily life. The amazing magician Franco Newtoni guides you through this project. As you try each experiment you'll see the forces of nature, energy, and the power of physics at work—or is it magic? This STEM project is the latest addition to the Science Fun series, and will satisfy your curiosity on many topics! 2015. Available December 2014.

B, 

Robotics

www.ohio4h.org/robotics

*As of Nov. 1, the price for the EV3 kit is \$433.95 + shipping.

507 Robotics 1 with LEGO® EV3

Use the newest LEGO® technology to learn about what a robot is, how to build one, and how to program it. Activities are based on the EVC Core Set available from LEGO® Education for about \$400*. Other EV3 kits may not be the same! (Go to www.ohio4h.org/robotics for details.) A computer for running the programming software and Internet access for watching videos are required. 2015. Available January 2015.

I, 

509 Robotics 1: NeXT Technology

Youth learn what a robot is, how to build one using LEGO®, and how to program it to interact with its environment via touch, sound, light, and ultrasonic sensors. Activities are based on a custom 4-H kit available from LEGO® Education for about \$400. (Go to www.ohio4h.org/robotics for details). Designed for individual members, although many 4-H members do this project in small groups. A computer for running the programming software and Internet access for watching videos are required. 2011.

I, 

510 Robotics 2: NeXT Steps

This second book in the Ohio 4-H robotics series guides youth through new robot configurations and programming challenges with activities in the book and with instructional videos online at the Carnegie Mellon Robotics Academy. The LEGO® NXT robot constructed for Robotics 1: NeXT Technology is required (no new LEGO® purchase is necessary). A computer for running the programming software and Internet access for watching videos are required. Designed for individual members, although many 4-H members do this project in small groups. 2012. **A, I**

512M Robotics Master

This project is for members who want to continue with robotics after completing the existing Ohio 4-H robotics projects or who want to explore robotics with a different platform (other than LEGOS®). Members of any age may complete this project, but should have previous robotics experience (comparable to what is required for other advanced-level 4-H projects), and be able to plan and complete the project on their own with minimal supervision. 2013. Available online at www.ohio4h.org/publications. **A, I**

Optional Supplements for Robotics Projects

The Ohio 4-H Robotics website offers useful resources for understanding and completing your project. To learn more, visit us at www.ohio4h.org/robotics.

Rope

www.ohio4h.org/engineering

540 Rope

Learn how to make many kinds of knots, hitches, and splices. Then apply what you have learned to make lassoes, halters, macramé, and wire rope. 1997. **X, I**

Small Engines and Lawn Care

www.ohio4h.org/engineering

541 Crank It Up, Level 1

Youth focus on basic small engine knowledge, study external engine parts, discover tools of the trade, and learn the concepts behind what makes small engines work. They explore the uses of small engines and safety issues. 2005. **B, I**

542 Warm It Up, Level 2

Youth explore internal parts of engines, learn about engine sizes, compression ratios, seasoning their engines and safety issues. Youth also learn about occupational possibilities and about starting their own business. 2005. **I, I**

543 Tune It Up, Level 3

Youth tear down and rebuild an engine, use diagnostic tools, research rules and regulations about using small engine machines and select replacement engines. 2005. **A, I**

548 Lawn Care

Learn all you need to know about caring for your lawn. Includes activities on seeding, weeding, fertilizing, and mowing. Members also can explore the ins and outs of starting a lawn care business. Members should have access to lawn care equipment. 1994. **X, I**

Helper Supplement for Small Engines

The *Small Engines Helper's Guide* is for helpers working with the Small Engines series (541-543 above). It has activities and ideas to make your group meetings more fun and educational. Available from the National 4-H Source Book and at www.4-Hmall.org.

Tractor and Machinery Operation

www.ohio4h.org/engineering

Tractor Series

We offer the series of four 4-H Tractor project manuals published by Purdue University, West Lafayette, IN. These manuals are interesting to most 4-H members because they cover more than just safety. Available only through Purdue University for \$5.50 each, plus shipping.

Ordering information

Online: www.ces.purdue.edu/new. In the Search box, type "tractor." The tractor manuals are listed near the bottom, identified as Level A, B, C, or D. Phone orders: call 1-888-398-4636. Ask for Media Distribution Center. Visa and Master Card accepted.

551 Starting Up: Getting to Know Your Tractor, Level A

Designed for youth with little or no prior agricultural tractor and equipment experience. Youth learn parts of a tractor, tractor maintenance, different fuels, engine cooling systems, safety with augers, and more. (Indiana Code: 4-H-961) 2005. **B, I**

552 Tractor Operations: Gearing Up for Safety, Level B

Designed for youth with some agricultural tractor and equipment experience. Includes farm and tractor safety, tractor maintenance, mechanics of the engine, accessory equipment, and functions of different operational systems. (Indiana Code: 4-H-962) 2005. **I, I**

553 Moving Out: Learning About Your Tractor and Farm Machinery, Level C

Designed for youth with some agricultural tractor and equipment experience. Teaches safety, maintenance, different types of oil systems, fuel safety, and PTOs. (Indiana Code: 4-H-963) 2005.

I, 

554 Learning More: Learning About Agricultural Tractors and Equipment, Level D

Contains more opportunities to learn about mechanics, operational systems, safety, maintenance, and farm equipment. (Indiana Code: 4-H-964) 2005.

A, 

561 National Safe Tractor and Machinery Program, Student Manual

Take safety seriously! Over 200 pages include color task sheets for 70-plus topics that help the young driver learn how to safely operate agricultural equipment. Each lesson includes safety activities that make learning fun and exciting. Youth 14 to 15 years old can receive their tractor certification cards by completing this course. (Consult your county office for details on testing requirements for this separate program.) This publication also serves as the helper's guide. 2006. (\$32)

A, 

Welding

www.ohio4h.org/engineering

573 Arcs and Sparks—Shielded Metal Arc Welding

Recommended for use by 4-H members who want to build, modify, or repair steel-based projects. Learn about safety, selection of equipment and materials, and fabricating techniques with shielded metal arc welding. Basic welding abilities are developed while constructing several useful projects. 2000.

I, 

Woodworking

www.ohio4h.org/engineering

556 Measuring Up, Level 1

Get started in woodworking by selecting a project helper and setting up a safe place to work. Covers ear and eye protection and these tools: a ruler or tape measure, a square, saws, an electric drill, clamps, a screwdriver, a hammer, and sand paper. Build and finish a project of your choice. 2003.

B, 

557 Making the Cut, Level 2

Select a wood project that shows off your new skills with a T-level, a miter box, a wood chisel, a hand jig saw, a scroll saw, a staple gun, and a power sander. Learn more about the different species of wood. 2002.

I, 

558 Nailing it Together, Level 3

Youth practice measuring angles, cutting dado and rabbet joints; using a circular saw, a table saw and a radial arm saw; smoothing lumber with a hand planer; and sanding and staining wood. 2002.

I, 

559 Finishing Up, Level 4

Challenge yourself to learn hand-cut dovetail, mortise and tenon joints. Use a power router, various planers, and a power jointer to create a project of your choice. Learn about veneer, common adhesives, stripping, and repairing. 2002.

A, 

560M Woodworking Master

The Woodworking Master project is for members who want to continue with woodworking after completing the Ohio 4-H woodworking projects (556 Measuring Up, 557 Making the Cut, 558 Nailing It Together, and 559 Finishing Up). Members of any age may complete this project, but must have completed the existing projects, must have woodworking experience comparable to what is required for other advanced-level 4-H projects, and must be able to plan and complete the project on their own with minimal supervision or assistance. 2013. Available online at www.ohio4h.org/publications.

A, 

Helper Supplement for Woodworking

The *Woodworking Helper's Guide* is for helpers working with the Woodworking series (556-559 above). It has activities and ideas to make your group meetings more fun and educational. Available from the National 4-H Source Book and at www.4-Hmall.org.

Do you know what project you will take next?

All Ohio 4-H project books are listed on Project Central. Preview the first few pages of every book and read reviews from project helpers and other members.



www.ohio4h.org/projectcentral

Self-Determined

365 Self-Determined Project Guide

Each year 4-H members use the *Self-Determined Project Guide* to explore a topic unavailable as a statewide project. Print and complete one *Self-Determined Project Guide* for each self-determined project you take. **X, I**

Idea Starters

"Idea Starters" may be just the thing to get your self-determined project started. You may choose to do a little or a lot depending on your level of interest. Must be used with 4-H 365 *Self-Determined Project Guide* available online at www.ohio4h.org/selfdetermined.

- 365.01** *Astronomy*
- 365.02** *Model Railroading*
- 365.03** *Weather*
- 365.04** *Clowning*
- 365.05** *Rocks, Minerals, and Fossils*
- 365.06** *American Sign Language*
- 365.07** *Computers*
- 365.08** *Discovering Genetics*
- 365.09** *Canoeing*
- 365.10** *Local Food: Does It Matter What You Eat?*
- 365.11** *Camp Counseling (see resource below)*
- 365.13** *Reptiles and Amphibians*
- 365.14** *Climate Change*
- 365.16** *Viruses, Bacteria, and Fungi, Oh My!*
- 365.17** *Babysitting*
- 365.18** *Ways of Knowing Water*
- 365.19** *The Work World Is Calling . . . Are You Ready?*
- 365.21** *Skateboarding*
- 365.22** *Pigeons*
- 365.23** *Native American Artifacts: Arrowheads*
- 365.24** *Shale Gas Extraction*
- 365.25** *Flower Gardening*

997 Camp Counseling Handbook


Camp counselors anywhere in the 4-H system will appreciate this resource, full of time-tested guidelines and advice. Interested in completing a related project? See idea starter 365.11 *Camp Counseling*. 1996. Available online at www.ohio4h.org/publications.

Workforce Preparation

379 Get in the Act! Take 1

This innovative program is designed to help middle school youth explore what it takes to get that first paying job. This interactive experience, 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. Includes CD. 2005. (\$10) **B, I**

382 Am I Ready for Work?

 This project is for 4-H members who are preparing for their first paid jobs. Activities cover everything from making a good first impression to managing money, including applying, getting references, creating a resume, and interviewing. Even social media posts can affect one's job prospects! 2015. Available December 2014. **I, I**

Helper Supplement for Workforce Preparation

379AG Get in the Act! Take 1 Helper's Guide

Helpers both in and out of the classroom enjoy using this guide with the CD to incorporate workforce skills in their work with youth. It's an interactive experience, making it exciting for youth. Activities reinforce and extend learning with emphasis on personal qualities, working with others, and thinking skills. Youth create their own work plan by applying what they learned to get that first job and attaining future career goals. All activities and skill areas support the national SCANS Workforce skills and educational standards. 2005.

Don't Forget to Say Thanks!

Members receiving medals, certificates, scholarships, trips, and other awards are encouraged to make it a priority to express appreciation to the donors and sponsors who made the awards and scholarships possible.



Group Programs



These projects are offered through a variety of group programs. Each contains ready-made lesson plans for project advisors. These may or may not be offered in your county.

Animal Sciences



Companion Animals and Rabbits

4hpetpals.osu.edu

230GPM 4-H PetPALS

4-H PetPALS is an intergenerational program that links youth and their pets with senior adults. Specially-trained master 4-H volunteer leaders teach youth the skills they need to interact with residents in health care facilities such as assisted living and nursing home facilities. By applying the power of the human-animal bond, 4-H members learn to select, socialize, and train their pets. Youth apply the lessons in this 214-page, experientially-based curriculum to develop their leadership and citizenship skills. 4-H PetPALS allows young people to be models for residents in health care facilities and the community at large as they demonstrate the significance of human-animal interactions and the importance of intergenerational relationships. Check with your county Extension office for more details. 2003. (\$26)  

230 4-H PetPALS Project and Record Book

This project and record book helps 4-H members set goals for the year and keep records of their 4-H PetPALS activities and accomplishments. Youth must belong to a 4-H club or group with a master 4-H PetPALS volunteer leader. PetPALS is the only statewide 4-H pet therapy program approved by American Kennel Club (AKC), and youth who take this project are eligible to earn an AKC therapy dog title. This project can be repeated as long as youth re-enroll in an established 4-H PetPALS club, or club or group with a master 4-H PetPALS leader, and activities are completed under the supervision of an adult (4-H PetPALS leader, project helper, health care facility staff, parent, etc.) Completion of a new project book is required each year. 2013.  

Cloverbuds

www.ohio4h.org/cloverbuds



710GPM Ohio Cloverbud Program Manual—Series I

Recommended for use by 4-H Cloverbud helpers. This Ohio 4-H Cloverbud curriculum includes hundreds of short-term, fun, cooperative, noncompetitive activities that can be used by adult volunteers with 4-H Cloverbud youth (youth age 5 and in kindergarten to age 8 and in the third grade) to help them gain self-understanding, social interaction skills, achievement, and positive attitudes.

Cloverbud activities enable adult volunteers to help youth relate to science and technology, expressive arts, health, the environment, personal development, citizenship, family science, consumerism, and plants and animals. Pages are color coded and 3-hole punched for easy organization 1994. (\$15)

711GPM Ohio's 4-H Cloverbud Program—Series II Curriculum Instructional Materials

This is a second set of instructional 4-H Cloverbud curriculum recommended for use by 4-H Cloverbud helpers with 4-H Cloverbud children (youth age 5 and in kindergarten to age 8 and in the third grade). Same goals and objectives as the first 4-H Cloverbud Program Manual. The set includes 25 curriculum pieces each with about 9 activities, for a total of over 225 activities. Pages are color coded and 3-hole punched for easy organization. 2000. (\$22.50)

712GPM Connect to College

This 4-H Cloverbud curriculum piece raises awareness of college among 4-H's youngest members through a series of engaging group activities. Includes twelve activities, supporting materials, and On Campus with Cornelius, an original, full-color storybook about an adventurous hedgehog who visits a college. (The activities and supporting materials, but not the storybook, are also available online at www.ohio4h.org/cloverbuds). 2012. (\$14)

713GPM Choose and Tell Cards

Winner of 2013 National 4-H Communicator Award! Use this colorful deck of 4" x 6" cards to introduce your Cloverbuds to public speaking and communication skills. Forty-nine easy and engaging activities allow young learners to have fun, gain confidence, and develop important leadership skills. Activities are divided into four levels—from easy to difficult—and are color coded, so that selecting and sorting cards is easy. Includes box for storage. Additional supplies/materials required. 2013. (\$13)

713 Bioenergy Education

This web-based resource helps our next generation of leaders develop an awareness and appreciation for a sustainable energy future. Targeting 4-H Cloverbuds (K-2) and youth through 5th grade, it covers three areas: 1) bioenergy sources, 2) bioenergy conversion, and 3) bioproducts, each with about nine educational activities. Available online at www.ohio4h.org/cloverbuds. 2013.

Helper Supplement for Cloverbuds

711AG 4-H Cloverbud Volunteer Guidebook

This concise reference piece is for current, new, and prospective 4-H Cloverbud helpers. The guidebook explores the goals and strategies for successfully implementing the 4-H Cloverbud program. It also suggests methods for guiding the healthy development and life-skills enhancement of our youngest 4-H members. 2005.

The Ohio 4-H Cloverbuds website offers useful resources for helpers, including activities in Spanish, a training video, and activity kits. Learn more at www.ohio4h.org/cloverbuds.

Leadership and Citizenship

CARTEENS

www.ohio4h.org/youth/carteens.html



511GPM 4-H CARTEENS

Recommended for use by helpers and potential/current instructors of 4-H CARTEENS groups. Used to develop and plan more effective programs with 4-H CARTEENS members. 511 CARTEENS is available to be taken as an individual project (see page 20). 1994.

Project Citizen

<http://new.civiced.org/programs/project-citizen>

Looking for a way to engage your club members in the community? *Project Citizen* is a portfolio-based civic education project that promotes competent and responsible participation in state and local government. Youth are engaged as they learn to monitor and influence public policy. Working in teams, they learn to interact with their government using a process that starts with identifying a problem and ends with developing an action plan. Successfully used by other state 4-H organizations, Project Citizen has potential as an excellent citizenship program for community 4-H clubs, county groups, and state teen leader efforts. Also available as an individual project (see page 20).

Although these books retail online for \$12 and above, they are available to 4-H members, their families, and volunteers for a \$6 handling fee.

380 Project Citizen, Level 1

Intended for youth in grades 5-8. 2008.

I,

381 Project Citizen, Level 2

Intended for youth in grades 9-12. 2010.

A,

Helper Supplement for Project Citizen

The *Project Citizen Teacher Guide* goes hand-in-hand with the student books above. Available from the Center for Civic Education at

<http://new.civiced.org/programs/project-citizen>.

Natural Resources

Junior Master Gardener: Growing Good Kids

www.jmgkids.us

Ohio 4-H is happy to promote these two introductory titles from the internationally-recognized Junior Master Gardener (JMG) series from Texas A&M Extension. JMG engages youth in novel, hands-on learning experiences that promote a love of gardening, develop an appreciation for the environment, and cultivate the mind. JMG encourages service learning and leadership development and rewards youth with certification.

672GPM Junior Master Gardener Level 1 Teacher/Leader Guide

This rich resource is for 4-H club advisors and others interested in guiding youth as they discover gardening. Covers plant growth and development, soils and water, ecology and environmental horticulture, insects and diseases, landscape horticulture, fruits and vegetables, and life skills and careers. Check with your local Extension office to see if there is a Master Gardener Volunteer to assist you. Enough activities for years of club meetings plus access to valuable online resources like certificates, etc. Intended for youth in grades 3-5. 416 pages. (\$42 plus shipping).

B

672 Junior Master Gardener Level 1 Handbook

This handbook, which corresponds to the teacher/leader guide above, covers the same topics and includes opportunities for leadership and recognition. Intended for youth in grades 3-5. 192 pages. (\$15 plus shipping).

B

Ordering Information

Online: www.jmgkids.us. Phone orders: 1-888-900-2577. Visa and Mastercard accepted.

Shooting Sports

ohio4hshootingsports.org

This leader-directed program is taught only by certified volunteers to 4-H members ages 9 and above. **Members must be 9 as of January 1 of the current year.** Teach young people the safe and responsible use of archery equipment and the fundamentals of firing air guns, .22 caliber and muzzle loading rifles, pistols, and shotguns, and the basic principles of hunting. Living History enables youth to explore historic lifestyles and heritage crafts in any decade from ancient times to the space age. Project literature is available only to adults who have completed a 4-H Shooting Sports Training Workshop. Check with your county Extension office for more details.

Shooting Sports Record Books

These record books help 4-H members set goals for the year and keep an accurate record of their work and accomplishments.

- 750 Rifle Member Record Book.** 2010. X, ♀
- *751 Archery Member Record Book.** 2015. X, ♀
- 752 Shotgun Member Record Book.** 2007. X, ♀
- 753 Pistol Member Record Book.** 2011. X, ♀
- 754 Hunting and Wildlife Member Record Book.** 2000. X, ♀
- 755 Muzzleloader Member Record Book.** 2013. Ohio 4-H strongly recommends youth complete a rifle, pistol, or shotgun project before taking muzzleloader. I, A, ♀
- 756 Living History Member Record Book.** 2011. X, ♀

*Now it's better than ever! The enhanced content of this *Archery Member Record Book* includes archery terms, kinds of bows and arrow points, and the opportunity for extra individual and group activities. 2015. Available December 2014.

Ohio 4-H offers beginning-level shooting sports projects that serve as introductions to gun safety and archery. For more information, please go to page 22.

School Enrichment

Afterschool Agriculture

www.ohio4h.org/afterschoolag

Looking for ways to introduce club members to the world of agriculture and life sciences while expanding your collection of fun-filled club activities? Then this series is for you. Each uniquely themed guide contains 40 hands-on lessons developed in cooperation with curriculum specialists from the National Consortium of State Agriculture in the Classroom programs, Extension 4-H professionals, and experts from the field of child-care education. It is designed to increase agricultural literacy among 3rd to 5th grade youth while developing understanding, appreciation, and application of science through a variety of agriculturally-based activities.

760GPM Acres of Adventures 1

Club helpers enjoy using these lesson plans to quickly engage youth in learn-by-doing agriculture activities within the following thematic units: Plant Detectives, Mystery Agriculture, All About Agriculture, and Fast Food Agriculture. Available only through 4-H Mall at www.4-Hmall.org or 301-961-2934.

761GPM Acres of Adventures 2

This group activity guide for club helpers provides ready-to-use lesson plans that quickly involve youth in experiential

activities related to the following thematic units: Insect Invasion, Farm Physics, Agriculture Gone Wild, and Frontier Living. Available only through 4-H Mall at www.4-Hmall.org or 301-961-2934.

Gardening and Plant Science

496AG Growing Together

This guidebook is designed for teaching garden-based science to kids. 4-H and master gardener volunteers, parents, and teachers find fun, interactive activities to include in their indoor or outdoor horticulture education efforts. Examples of subjects included in the ten units are pollination, soils, insects, trees, and decomposition. Individual members do NOT need a separate project book. 2001. (\$6)

Money Management

<http://realmoneyrealworld.osu.edu>

441GPM Real Money, Real World

Real Money, Real World is an active, hands-on simulation that gives young people the opportunity to make lifestyle and budget choices similar to those they need to make as adults. It is a partnership between the county OSU Extension office, the school, and the business community. How does the program work? Prior to the simulation, teachers prepare students by going through four simple lessons:

Lesson One: How Occupation Affects Income

Lesson Two: What You See is Not What You Get: Deductions

Lesson Three: How to Use Checking and Savings Accounts

Lesson Four: Making Real Money, Real World Choices

Revised with current labor and financial statistics. 2013. Please contact your local Extension office for information about delivering the program in your county.

Science Alive

www.ohio4h.org/sciencealive

This school-enrichment curriculum challenges youth to develop science, technology, engineering, and math (STEM) skills as they complete hands-on activities suitable for youth in grades 3 to 6.

167GPM ChickQuest: The Scientific Journey through a Life Cycle (Teacher Guide)

Recommended for project helpers and classroom teachers. What can we learn from a chick? Find out in this school enrichment program that challenges youth to use science, engineering, and technology to investigate the life cycle of an embryonic chicken egg. From monitoring living eggs to observing fluffy chicks, these lively activities pique curiosity, encourage collaboration and communication, and provide young scientists with unforgettable experiences. Full-color poster of a chicken life cycle is included. A *ChickQuest Logbook* (167R) is required for each student. 2009. (\$29)

Supplements for ChickQuest

167P ChickQuest 21-Day Calendar Poster

This 36" x 24" color, write-on poster covers each day of chick embryo development with detailed pictures and space for recording data. Included for no charge when you buy 167RS *ChickQuest Logbook*, Classroom Set. 2009. (\$6)

167RI ChickQuest Logbook

167RS ChickQuest Logbooks (set of 25)

This 21-day classroom adventure starts with eggs and ends with chicks. Students are the scientists that help make it happen! This personal ChickQuest Logbook is used to record data and observations. Sold individually or in classroom sets of 25 with one full-color, write-on poster of 21-day chick embryo development. For use with 167GPM *ChickQuest: The Scientific Journey through a Life Cycle* (Teacher Guide). 2009. (\$40 for set, \$6 for single copies)

489GPM Breads of the Harvest

Recommended for project helpers or third and fourth grade teachers. This three-lesson project teaches the science, history, and nutrition of bread making since the pilgrims. Members conclude by making a loaf of colonial bread. Individual members do NOT need a separate project book. 1999. (\$6)

501GPM Rockets Away!: Exploring the Science of Forces and Motion (Teacher Guide)

Recommended for teachers and other group leaders, this popular favorite is more effective than ever at teaching the concepts of forces and motion via rocketry. The project's exciting conclusion is building and launching 2-liter bottle water rockets. A *Rockets Away Logbook* is required for each student. A bottle-rocket launcher may be available

from your county Extension office. (Go to www.ohio4h.org/rocketsaway for information on how to purchase your own.) 2013. (\$13.50)

Supplement for Rockets Away

501RI Rockets Away! Logbook

501RS Rockets Away! Logbook (set of 25)

These ten lessons, described in detail in the *Rockets Away Teacher Guide* above, are a student's gateway to the practical knowledge behind Newton's Laws of Motion. Educational research shows that the practice of recording one's own data and observations helps students internalize concepts. Sold individually or in classroom packs of 25. For use with 501GPM *Rockets Away Teacher Guide*. 2013. (\$40 for set, \$6 for single copies).

603GPM Weather Together

Recommended for 4th grade teachers or project helpers and ideal for teaching youth about weather. Included are activities that focus on what makes the weather and constructing instruments that accurately measure its changes. Provides an opportunity to forecast weather using folklore predictors and a web-based weather forecaster. Group project only. Youth do NOT need a separate project book. 2001. (\$13)

695GPM GO Plants!

Recommended for project helpers and 3rd to 5th grade teachers. Five-week, five-lesson units focus on a specific part of the plant each week—seeds, roots, stems, leaves, flowers. Designed to be taught in 60 minutes with the potential to expand to 120 minutes. Digging Deeper and Going Beyond activities are conducted. Includes student-ready worksheets and fact sheets to enrich the classroom experience. Youth do NOT need a separate project book. 2000. (\$13)

Scholarship Opportunities

Strong commitment to the 4-H positive youth development program is common among 4-H alumni. Many adults credit their personal and professional success to 4-H experiences during their formative years. A few choose to strengthen their commitment by establishing scholarships with the Ohio 4-H Foundation. These scholarships are an important means of recognizing and rewarding individual excellence among 4-H youth who display exemplary leadership, community service, and personal development.

Each year, scholarships make the possibility of pursuing higher education a reality for dozens of youth from all across the state. In 2014, 36 youth were awarded scholarships and recognized at the Achievement Awards and Scholarship banquet on June 11, 2014.

While preference is often given to students who plan to attend The Ohio State University, some state scholarship opportunities are open to students attending other Ohio accredited post-secondary institutions. To apply online visit www.ohio4h.org.

Additional Scholarship Opportunities

Please visit <http://cfaes.osu.edu/scholarships> for a listing of scholarships available through the College of Food, Agriculture, and Environmental Sciences at The Ohio State University. Many scholarships are also available at the county level. Contact your local county Extension office for a list of county 4-H scholarships, their corresponding eligibility requirements, and the necessary application forms.

2015 Opportunities and Awards for Members

Participation in State Events

Activity	Sponsor	Description
Buckeye Leadership Workshop	Local county sponsors and/or individual members	Provides a powerful experiential learning environment in which anyone who works with people, professionally or informally, can develop education through recreation for youth and/or adults. Any 4-H member or volunteer age 15 or older may participate in this multi-generational workshop. March 18—March 22, 2015. www.buckeyeleadership.org
Ohio 4-H State Leadership Camp	Farm Credit Mid-America Nationwide	The premiere leadership skill development training for 4-H members age 14-18. www.ohio4h.org/leadership-camp
Ohio 4-H Teen Conference	Ohio 4-H Foundation Local county sponsors	This one-day event brings together hundreds of Ohio's older 4-H youth in a spirit of celebration, exploration, personal development and community service. Register in January 2015 and plan to attend on March 14, 2015.
Shooting Education Camp	4-H Shooting Sports Advisory Committee Federal Cartridge Company Friends of National Rifle Association National Wild Turkey Federation Ohio Department of Natural Resources Various other sponsors	4-H youth ages 12-18 enjoy a 6-day learning experience July 12-17, 2015 and 4-H members ages 9-12 participate in a 3-day weekend camp June 26- 28, 2015. Both camps are held at Canter's Cave 4-H Camp in Jackson, Ohio. Activities focus on the safe, responsible, and ethical use of firearms and archery equipment. Refer to the website for detailed descriptions of disciplines offered: www.ohio4hshootingsports.org

Participation in National Events

Citizenship Washington Focus	Local county sponsors and/or individual members	Citizenship Washington Focus gives 4-H members 15 years and older the opportunity to explore, develop, and refine the civic engagement skills they need to be outstanding leaders in their home communities and at the national level. Through the living classroom of Washington, D.C. youth learn about our nation's history, our leaders, and how they can apply leadership and citizenship skills.
Leadership Washington Focus	Local county sponsors and/or individual members	Leadership Washington Focus is a 4-H leadership program for youth entering grades 7 through 9. The program will take place at the National 4-H Youth Conference Center in Washington, D.C. For more than 50 years, thousands of 4-H'ers have participated in Citizenship Washington Focus and now 4-H is happy to introduce its precursor for middle school 4-H'ers.

Opportunities and Awards for Individuals

Dairy Quiz Bowl/ Dairy Judging Team/ National 4-H Dairy Conference	Various sponsors	<p>Dairy Quiz Bowl Contest provides an opportunity for youth enrolled in a 4-H dairy project to demonstrate their knowledge of the dairy industry in a competitive setting.</p> <p>Ohio 4-H Dairy Judging Team. To promote dairy judging skills, 4 separate clinics are offered during the year and the Ohio 4-H Dairy Judging Contest is held at Spring Dairy Expo in March. From these educational events, teams are selected to represent Ohio at various contests. The primary team competes at the All American Dairy Show contest in Harrisburg, PA and the World Dairy Expo national contest in Madison, WI. The “understudy” team travels to the North American International contest in Louisville, KY.</p> <p>National 4-H Dairy Conference hosts about 200 youth from 4-H dairy projects around the U.S. Participants learn about production, processing, marketing, and use of dairy products.</p> <p>www.4hansci.osu.edu/dairy www.facebook.com/Ohio4HDairyProgram</p>
Dairy Palooza	Various Sponsors	<p>A series of workshop sessions that focus on showmanship, grooming and fitting, project selection guidelines, sessions on pedigrees and genetics, and other timely topics of interest. It is action oriented with hands-on activities.</p> <p>www.ohiodairypalooza.com</p>
State 4-H Horse Bowl Team, Judging Team, Hippology Contest, and Communications Contest	Ohio 4-H Foundation Rod's Western Palace State 4-H Horse Committee	<p>Winners will compete in Louisville, KY. Runner-ups (excluding the judging team) will compete at Quarter Horse Congress in Columbus in October.</p> <p>4hansci.osu.edu/horse</p>
Health & Safety Speaking Award	Ohio Rural Electric Cooperative, Inc.	<p>Junior and senior age division participants compete at area and state level events; winners receive special recognition and a possible trip to a national event.</p>
Local Government Award	Ohio Township Association	<p>Two awards are available to 4-H high school seniors who complete a local government related activity with significant impact on the applicant's community, township, or county.</p>
State Livestock Judging Teams	Ohio Expositions Commission Ohio Cattlemen's Assn. Ohio Pork Producers Council Ohio Sheep Improvement Assn. OSU Saddle & Sirloin Club Franklin County Farm Bureau	<p>Top three State Livestock Judging Contest Senior teams are invited to participate in national or regional contests. Trips include, North American International Livestock Exposition in Louisville, KY; American Royal in Kansas City, MO; National Western in Denver, CO; and more. Refer to http://4hansci.osu.edu for details and how the trips are allocated.</p>

Opportunities and Awards for Individuals

National Poultry Conference/ Avian Bowl Team Contest	Various Sponsors	Ohio 4-H members are given the opportunity to participate in the National 4-H Poultry and Egg Conference in November held in Louisville, KY, by winning the State 4-H Senior Division Avian Bowl. In addition to the trip the winning senior team will compete in the National 4-H Avian Bowl Contest during the conference. www.ca.uky.edu/national4hpoultry
Ohio 4-H Ambassador	Ohio 4-H Foundation Local county sponsors	Eligible teens serve as Ohio's 4-H youth spokespersons based on documented accomplishments in 4-H, leadership, public speaking, and community service activities.
Ohio 4-H Teen Advisory Council	Jim and Marlene Helt Ohio 4-H Foundation	4-H members age 15-18 with 24 or more consecutive months of membership apply to represent their home clubs and counties on the highest youth leadership and governance body in Ohio 4-H. Contact Contact Hannah Epley at epley.24@osu.edu for details.
State Achievement Awards	Ohio 4-H Foundation Numerous other sponsors	Highlighting citizenship, leadership, and service achievement in 25 4-H program areas: Beef, CARTEENS, Citizenship & Community Service, Clothing & Textiles, Companion Animals, Dairy, Dairy Goat, Environmental Sciences, Family Life & Child Development, Foods & Nutrition, Gardening & Horticulture, Health & Safety, Horse, Leadership, Meat Goat, Mechanical & Engineering Science, Personal Development, Photography, Poultry, Rabbits, Sheep, Shooting Sports, Swine, Veterinary Science, and Woodworking. Winners travel to National 4-H Congress in Atlanta, GA.
State Fashion Board	Ohio 4-H Foundation	Older 4-H Youth involved in 4-H textiles and clothing projects interested becoming an advocate for textiles and clothing at the state level please contact Cindy Shuster at Shuster.24@osu.edu .

Become part of the Ohio 4-H Legacy

To learn more about the mission of Ohio 4-H Foundation visit www.ohio4h.org/foundation, e-mail ohio4hfoundation@osu.edu, or call 614.292.6943



**Thank you to our volunteers,
sponsors, and
donors! Your
support is key
to the success
of Ohio 4-H.**



Project Guide

Project Skill Level—Unless otherwise noted in the project description, skill levels for projects are defined as follows:

All Levels (X)—A project appropriate for all skill and age levels.

Beginning (B)—A beginning-level project for members with little or no experience in a project area, or 8 to 10 year olds.

Intermediate (I)—An intermediate-level project for members with some experience in a project area, or 11 to 13 year olds.

Advanced (A)—An advanced-level project for members experienced in a project area, or 14 or older.

County fairs and the state fair often have age requirements that are different than those for project enrollment.

When participating in a fair event, be sure to review the related guidelines.

Code	Title	Skill Level	State Fair	Supplement	Page #
About 4-H					
91	Discovering 4-H	B			8
Animal Sciences					
Beef					
117	Beef Project and Record Book				
	117B Beef Breeding	X			8
	117BF Beef Feeder	X			8
	117DF Dairy Beef Feeder	X			8
	117M Market Beef	X			8
Companion Animals and Rabbits					
201	Dog Project and Record Book	X			
	201D You and Your Dog	X			8
	201O Obedience	X			8
	201S Showmanship	X			8
	201P Performance	X			9
	201W Working Dogs	X			9
202	Dog Achievement Program	X			9
215	Cavy Project and Record Book	X			9
216	Purr-fect Pals, Level 1	B			9
217	Climbing Up, Level 2	I			9
218	Leaping Forward, Level 3	A			9
220	Pocket Pets Project and Record Book	X			9
225	Breeding Rabbit Project and Record Book	X			9
226	Market Rabbit Project and Record Book	X			9
227	Pet Rabbit Project and Record Book	X			9
230	4-H PetPALS Project and Record Book	X			27
Dairy Cattle					
122	Dairy Heifer Project and Record Book	X			10

Code	Title	Skill Level	State Fair	Supplement	Page #
126	Dairy Cow Project and Record Book	X			10
Goats					
135	Goat Project and Record Book				
	135BD Breeding — Dairy Goats	X			10
	135BM Breeding — Meat Goats	X			10
	135F Fiber Goats	X			10
	135H Harness Goats	X			10
	135M Market — Dairy, Meat, or Cross Goats	X			10
	135P Pack Goats	X			10
	135C Companion — Pet Goats	X			10
Horses					
173	Horseless Horse	B			11
174	Beginning Horse Management	B			11
175	Light Horse Selection	I			11
177	Horse Training: How to Talk to Your Horse	I			11
180	Learning to Jump	I			11
181	Draft Horse	I			11
184	Standardbred Horses	I			11
185	Equine Reproduction and Genetics	A			11
188	Trail Riding	I			11
189	Dressage	I			11
762	Horse Nutrition	A			11
Llamas and Alpacas					
132	Llama and Alpaca Project and Record Book	X			11
Poultry					
150	Poultry Project and Record Book				12
	150CE Chicken, Exhibition	X			12

Code	Title	Skill Level	State Fair	Supplement	Page #
	150CM Chicken, Market	X			12
	150CEP Chicken, Egg Production: Hens and Pullet	X			12
	150DE Duck, Exhibition	X			12
	150DM Duck, Market	X			12
	150GE Goose, Exhibition	X			12
	150GM Goose, Market	X			12
	150TE Turkey, Exhibition	X			12
	150TM Turkey, Market	X			12
	150H Helmeted Guinea Fowl	X			12
Sheep					
198	Market Lamb Project and Record Book	X			12
199	Sheep Breeding Project and Record Book	X			12
Swine					
139	Market Hog Project and Record Book	X			12
140	Swine Breeding Project and Record Book	X			12
Veterinary Science					
244	From Airedales to Zebras, Level 1	B			13
245	All Systems Go!, Level 2	I			13
246	On the Cutting Edge, Level 3	A			13
Child and Family Development					
434	Growing on My Own, Step 1	B			13
435	Growing With Others, Step 2	I			13
436	Growing in Communities, Step 3	A			13
442	Family History Treasure Hunt	X			14
Clothing and Textile Science					
406	Clothes for High School and College	A			14
407	Accessories for Teens	B			14
408	Creative Costumes	A			15
409	Sew Fun	B			14
410	Fun with Clothes	B			14
411	em'bel'ish: A 4-H Guide to Wearable Art	I			15
412	Sew for Others	I			15
413	Sundresses and Jumpers	B			14
415	Active Sportswear	I			15
417	Dress-Up Outfit	A			15











Code	Title	Skill Level	State Fair	Supplement	Page #
418	Loungewear	X			15
419	Tops for Tweens	B			14
420	Outer Layers	A			14
424	Clothing for Middle School	I			14
425	Look Great for Less	A			15
426	Clothing for Your Career	A			15
430	Shopping Savvy	X			15
431M	Clothing Master: Design and Construction	A			15
432M	Sewing and Textiles (non-Clothing) Master	A			16
Creative and Leisure Arts					
Cake Decorating					
492	Cake Decorating Project and Record Book	X			16
Collecting					
496	My Favorite Things	B			16
Fine Arts					
499	You Can Quilt!	I			16
498	Quilting the Best Better	I			16
592	Get Started in Art	X			16
Photography					
584	Focus on Photography, Level 1	B			16
585	Controlling the Image, Level 2	I			16
586	Mastering Photography, Level 3	A			16
589M	Photography Master	A			16
Scrapbooking					
497	Scrapbooking: A 4-H Guide to Preserving Memories	B			16
Theater Arts					
596	Play the Role	I			17
597	Become a Puppeteer!	I			17
598	Set the Stage	I			17
Writing					
587	Writing and Reporting for Teenagers	A			17
588	Creative Writing for Teens	I			17
Food and Nutrition					
459	Let's Start Cooking	B			17
461	Let's Bake Quick Breads	I			18
462	Yeast Breads on the Rise	A			18
463	Sports Nutrition 2: Get Set!	I			18

Code	Title	Skill Level	State Fair	Supplement	Page #
467	You're the Chef	A			18
469	Global Gourmet	A			18
472	Grill Master	I			18
474	Beyond the Grill	A			18
475	Star Spangled Foods	I			18
476	Pathways to Culinary Success	A			18
477	Party Planner: A 4-H Guide to Quantity Cooking	I			18
483	Sports Nutrition1: On Your Mark!	B			17
484	Snack Attack!	B			17
485	Racing the Clock to Awesome Meals	I			18
486	Dashboard Dining: A 4-H Guide to Healthful Fast Food Choices	I			18
487	Fast Break for Breakfast	B			17
Healthy Living					
300	You're the Athlete	I			18
351	Staying Healthy	B			19
352	Keeping Fit	I			19
353	First Aid in Action	B			19
357	Alcohol and Drug Abuse	A			19
358	The Truth About Tobacco	A			19
Home Living					
405	The Laundry Project	B			19
491	Adventures in Home Living	B			19
494	Makeover My Space	I			19
495	Your First Home Away From Home	A			19
Leadership and Citizenship					
370	One on One	A			19
371	Club Leadership	I			19
372	Diversity: The Source of Our Strength	A			19
373	My Hands to Larger Service: Teen Leaders Building Our Communities	A			19
374	Teens on Board	I			20
375	Leadership Road Trip: Where Are You Going?	I			20
376	Pantry Panic	A			20
377	Finding Your Voice: Public Speaking Made Easy	B			20

Code	Title	Skill Level	State Fair	Supplement	Page #
378M	Leadership Master	A			20
380	Project Citizen, Level 1	I			20
381	Project Citizen, Level 2	A			20
511	CARTEENS Member Resource	A			20
Money Management					
445	Becoming Money Wise	B			20
446	Money Fun-damentals	I			21
447	Money Moves	I			21
448	Teens . . . On the Road to Financial Success	A			21
Natural Resources					
Gardening and Plant Science					
670	Canning and Freezing	I			21
671	How Does Your Garden Grow?	B			21
691	Vegetable Gardening 1	B			21
692	Growing with the Seasons	I			21
The Natural World					
611	Explore the Outdoors	B			21
620	Why Trees Matter	B			21
621	Ohio Birds	X			21
622	Trapping Muskrats in Ohio	I			21
623	Fishing for the Beginner	B			21
624	Fishing for the Intermediate	I			21
641	Beekeeping Project and Record Book	X			21
644	Exploring Our Insect World 1	B			21
Shooting Sports					
630	Safe Use of Guns	B			22
631	Basic Archery	B			22
Science, Technology, Engineering, and Math					
Aerospace					
501	Rockets Away (2-liter bottle)	B			22
502	Science Fun with Flight	B			22
503	Rockets Away (Solid-Fuel Model Rockets)	B			22
503M	Solid-Fuel Rocketry Master	A			22
All-Terrain Vehicles (ATV)					
555	ATV Safety	X			22
Bicycle					
517	Bicycling for Fun, Level 1	B			22
518	Wheels in Motion, Level 2	I			22

Code	Title	Skill Level	State Fair Supplement	Page #
Chemistry				
493	Science Fun with Kitchen Chemistry	B		22
Electricity				
527	Magic of Electricity, Level 1	B		23
528	Investigating Electricity, Level 2	I		23
529	Wired for Power, Level 3	I		23
530	Entering Electronics, Level 4	A		23
531	Science Fun with Electricity	B		23
Food Science				
490	Science Fun with Dairy Foods: The Case of the Missing Milk	B		23
Electric Radio-Controlled Vehicles				
504	Electric Radio-Controlled Vehicles	I		23
Physics				
500	Science Fun with Physics	B		23
Robotics				
507	Robotics 1 with LEGO® EV3	I		23
509	Robotics 1: NeXT Technology	I		23
510	Robotics 2: NeXT Steps	A		24
512M	Robotics Master	A		24
Rope				
540	Rope	X		24
Small Engines and Lawn Care				
541	Crank It Up, Small Engines 1	B		24
542	Warm It Up, Small Engines 2	I		24
543	Tune It Up, Small Engines 3	A		24
548	Lawn Care	X		24
Tractor and Machinery Operation				
551	Starting Up: Getting to Know Your Tractor, Level A	B		24
552	Tractor Operations: Gearing Up for Safety, Level B	I		24
553	Moving Out: Learning About Your Tractor and Farm Machinery, Level C	I		25
554	Learning More: Learning About Agricultural Tractors and Equipment, Level D	A		25
561	National Safe Tractor and Machinery Program, Student Manual	A		25

Code	Title	Skill Level	State Fair Supplement	Page #
*Correction: Arcs and Sparks is eligible for state fair. (1/13/15)				
Welding				
573	Arcs and Sparks—Shielded Metal Arc Welding			25
Woodworking				
556	Measuring Up, Level 1	B		25
557	Making the Cut, Level 2	I		25
558	Nailing It Together, Level 3	I		25
559	Finishing Up, Level 4	A		25
560M	Woodworking Master	A		25
Self-Determined				
365	Self-Determined	X		26
365.01	Astronomy	X		26
365.02	Model Railroading	X		26
365.03	Weather	X		26
365.04	Clowning	X		26
365.05	Rocks, Minerals, and Fossils	X		26
365.06	American Sign Language	X		26
365.07	Computers	X		26
365.08	Discovering Genetics	X		26
365.09	Canoeing	X		26
365.10	Local Foods	X		26
365.11	Camp Counseling	X		26
365.13	Reptiles and Amphibians	X		26
365.14	Climate Change	X		26
365.16	Viruses, Bacteria, and Fungi, Oh My!	X		26
365.17	Babysitting	X		26
365.18	Ways of Knowing Water	X		26
365.19	The Work World Is Calling	X		26
365.21	Skateboarding	X		26
365.22	Pigeons	X		26
365.23	Native American Artifacts	X		26
365.24	Shale Gas Extraction	X		26
365.25	Flower Gardening	X		26
Workforce Preparation				
379	Get in the Act! Take 1	B		26
382	Am I Ready for Work?	I		26
Group Projects				
Animal Sciences				
Companion Animals and Rabbits				
230	4-H PetPALS Project and Record Book	X		27

Code	Title	Skill Level	State Fair Supplement	Page #
230GPM	PetPALS: Leader's Guide	X		27
Cloverbuds				
710GPM	Ohio Cloverbud Program Manual— Series 1			27
711GPM	Ohio's 4-H Cloverbud Program— Series II Curriculum Instructional Materials			27
712GPM	Connect to College			27
713GPM	Choose and Tell Cards			27
713	Bioenergy Education			27
Leadership and Citizenship				
511GPM	CARTEENS			28
Project Citizen				
380	Project Citizen, Level 1	I		28
381	Project Citizen, Level 2	A		28
Natural Resource				
Junior Master Gardener: Growing Good Kids				
672GPM	Junior Master Gardener Level 1 Teacher/Leader Guide	B		28
672	Junior Master Gardener Level 1 Handbook	B		28
Shooting Sports				
750	Rifle Member Record Book	X		29
751	Archery Member Record Book	X		29
752	Shotgun Member Record Book	X		29
753	Pistol Member Record Book	X		29
754	Hunting/Wildlife Member Record Book	X		29
755	Muzzleloader Member Record Book	X		29
756	Living History Member Record Book	X		29
School Enrichment				
Afterschool Agriculture				
760GPM	Acres of Adventures 1			29
761GPM	Acres of Adventures 2			29
Gardening and Plant Science				
496GPM	Growing Together			29
Money Management				
411GPM	Real Money, Real World (CD)			29
Science Alive				
167GPM	ChickQuest: The Scientific Journey Through a Life Cycle (Teacher Guide)			29
489GPM	Breads of the Harvest			30

Code	Title	Skill Level	State Fair Supplement	Page #
501GPM	Rockets Away!: Exploring the Science of Forces and Motion (Teacher Guide)			30
603GPM	Weather Together			30
695GPM	Go Plants!			30

For Younger Members

Do you have a beginning-level 4-H member who is just learning about 4-H projects? The following titles are good choices for our very youngest members:

91 Discovering 4-H	8
173 Horseless Horse	11
216 Purr-fect Pals, Level 1	9
244 From Airedales to Zebras, Level 1	13
409 Sew Fun	14
410 Fun with Clothes	14
459 Let's Start Cooking	17
484 Snack Attack!	17
490 Science Fun with Dairy Foods	23
493 Science Fun with Kitchen Chemistry	22
502 Science Fun with Flight	22
517 Bicycling for Fun, Level 1	22
531 Science Fun with Electricity	23

For Members in the City

4-H has great projects to offer members all over the state. The following titles are just a few good choices for members who live in a city or suburb:

230 PetPALS Project and Record Book	27
357 Alcohol and Drug Abuse	19
358 The Truth about Tobacco	19
372 Diversity: The Source of Our Strength	19
373 My Hands to Larger Service	19
375 Leadership Road Trip	20
376 Pantry Panic	20
377 Finding Your Voice: Public Speaking Made Easy	20
491 Science Fun with Dairy Foods	23
492 Cake Decorating Project and Record Book	16
493 Science Fun with Kitchen Chemistry	22
496 My Favorite Things	16
497 Scrapbooking: A 4-H Guide to Preserving Memories	16
501 Rockets Away!	22
531 Science Fun with Electricity	23
592 Get Started in Art	16
620 Why Trees Matter	21
621 Ohio Birds	21
691 Vegetable Gardening for Backyards or Patios	21

Subject Index

Topic	Page		
Acting.....	17	Families	13
Afterschool programs	29	Fast food.....	18
Airplanes.....	22	Financial literacy.....	20
Alcohol abuse.....	19	Firearms	22, 29
All-terrain vehicles (ATV).....	22	First aid.....	19
Alpacas.....	11	Fishing.....	21
Ambassadors.....	6	Flowers.....	21, 26
Archery	22, 29	Gardening.....	21, 28
Arrowheads	26	Geese	12
Art.....	16	Genetics	26
Astronomy	26	Geology	26
Athletics	18	Genealogy	14
Babysitting.....	26	Gerbils	9
Beef	8	Goats.....	10
Beekeeping.....	21	Guinea pigs	9
Bicycles	22	Gun safety	22, 29
Birds	21	Hamsters	9
Bread making	8, 31	Health	18
Camp counseling.....	26	Horses	11
Camping	6	Hunting and wildlife	29
Cake decorating	16	In-school programs.....	29
Canning and freezing	21	Insects	21
Canoeing	26	Interior design.....	19
Careers.....	15, 26	International.....	7
Carpentry.....	25	Laundry.....	19
CARTEENS.....	6, 20, 28	Lawn care	24
Cats	9	Leadership.....	19, 28
Cavies.....	9	Living history.....	29
Chickens.....	12	Llamas	11
Child development.....	13	Local foods	26
Citizenship.....	19, 28	Mice	9
Climate change	26	Model airplanes	22
Clothing	14	Model railroading.....	26
Cloverbuds	6, 27	Money management.....	29
Clowning.....	26	Muskrat trapping.....	21
Collecting.....	16	Muzzle loading.....	29
Communications.....	20	Native American artifacts.....	26
Companion animals.....	8, 27	Nutrition	17
Computers.....	26	Officer books (online)	19
Cooking	17	Operation Military Kids	7
Crafts	16	Outdoor recreation.....	21
Creative writing.....	17	Party Planning	18
Dairy cattle.....	10	Pets	6, 7, 8, 27
Dairy foods	23	Photography	16
Decorating	19	Physics	23
Discovering 4-H.....	8	Pigeons.....	26
Diversity.....	19	Pigs.....	12
Dogs	6, 8, 27	Pistol.....	29
Ducks.....	12	Plant pathology.....	26
Drinking and driving.....	19	Pocket pets.....	9
Drug abuse.....	19	Poultry	12
Electricity	23	Public speaking	20
Embryology.....	29	Quilting	16
Engines.....	24	Rabbits	9
		Radio-controlled vehicles	23
		Reptiles and amphibians	26
		Rifle	29
		Robotics.....	23
		Rocketry	22, 30
		Rope	24
		Scrapbooking.....	16
		Self-determined	26
		Sewing.....	14, 16
		Sheep	12
		Shooting sports.....	22, 29
		Shotgun	29
		Sign language.....	26
		Skateboarding	26
		Small animals	9
		Small engines	24
		Sports nutrition	17
		Sports	18
		Swine.....	12
		Textiles.....	14
		Theater arts	17
		Tobacco	19
		Tractors	24
		Trees	21
		Turkeys.....	12
		Veterinary science	13
		Volunteers.....	7
		Watersheds	26
		Wearable art.....	15
		Weather	26
		Welding.....	25
		Woodworking.....	25
		Workforce preparation	26
		World Food Prize.....	7

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