Changes in the Lineup

New
- 200 All About Dogs
- 383 Club Leadership 2
- 550 Young Engineers in Solar Energy
- 610GPM Climate Explorations Teacher Guide
- 610RI and Climate Explorations Logbook
- 715 My 4-H Cloverbud Year

Revised or Replaced New Title (Old Title)
- 201 Dog Project and Record Book (same)
- 409 Sew Fun (same)

Discontinued
- 431M Clothing Master: Design and Construction (was online only)
- 511 CARTEENS Member Resource
- 511GPM 4-H CARTEENS

Awards and Scholarships
Ohio 4-H awards and scholarships recognize and reward individual excellence among 4-H youth who display exemplary leadership, community service, and personal development. To apply online or to learn more, visit ohio4h.org/awards. Visit cfaes.osu.edu/scholarships for a listing of scholarships available through the College of Food, Agricultural, and Environmental Sciences at The Ohio State University.

This Family Guide is provided by 4-H cost recovery funds.
The Ohio State University is an Affirmative Action/Equal Opportunity Institution. For more information: 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,

Greetings and welcome to Ohio 4-H 2017! You may not realize it, but you provide invaluable contributions to the success of 4-H. If it were not for parents, 4-H could not thrive and grow. You provide information and opportunity for your children to initially enroll in 4-H. You provide encouragement and assistance in guiding 4-H members through their 4-H projects and 4-H club experiences. And you often transport 4-H members to and from 4-H meetings, events, competitions, and other important components of the 4-H learning experience.

We are preparing youth for success—in their individual lives, with their families, in their future employment and in their communities. Thanks for helping us achieve our mission!

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 beyond the county. 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 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 members. 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.
Understanding 4-H Membership

4-H Membership Eligibility
Ohio 4-H membership is based on a child’s age AND grade. Cloverbud eligibility begins when a child is enrolled in kindergarten and is five years old as of January 1 of the current year. Cloverbud participation ends when a child is eligible for competitive events, 4-H projects, and other older youth activities, which is age eight and in the third grade as of January 1 of the current year. Membership requires enrollment in an authorized Ohio 4-H club or group under the direction of an OSU Extension professional or an approved adult volunteer. A youth’s 4-H eligibility ends December 31 the year they turn 19. Joining Ohio 4-H is a privilege and responsibility for individuals and is subject to the Ohio 4-H Code of Conduct and applicable policies of The Ohio State University.

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 ohio4h.org/policies.

4-H and FFA Membership
Ohio 4-H members are sometimes also FFA members, often within the same county or 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 or non-livestock projects in the two organizations or, at the very least, to take market animals in one and breeding animals in the other. The idea is to refrain from exhibiting the same project more than once. See chart for allowable and not allowable examples.

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Please check your junior fair exhibition rules about exhibiting both 4-H and FFA projects and animals.

Project Enrollment for 4-H Members and Showing Animals at the Ohio State Fair
4-H members must be enrolled in their county in the project in which they enter to show at the Ohio State Fair Junior Livestock Shows (including poultry, rabbits, and dogs), regardless of whether that project is offered for county exhibition.

The same animal cannot be enrolled in two projects in the county (exception dog projects and 4-H PetPALS), with the youth planning to enter one or the other project at the Ohio State Fair. Decisions must be made by project enrollment deadline or county’s animal identification deadline (whichever comes first).

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.
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 member 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 (ohio4h.org/families/ohio-state-fair). 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 ohio4h.org/animalsciences.
4-H PetPALS
4-H PetPALS (People and Animals Linking Successfully) is an intergenerational 4-H program connecting youth and their pets with senior adults in various healthcare facilities. Members learn to select, socialize, and train appropriate pets to participate in animal-assisted activities. For more information, go to 4hpetpals.osu.edu.

Alumni and Friends
Special events, volunteer opportunities, updates about 4-H happenings, reconnecting with friends, and networking with new ones are only a few of the opportunities for Ohio 4-H Alumni and Friends. Join today at ohio4h.org/alumni.

Camping
4-H camping programs include day camps, overnight camps, and camps that focus on specialty areas such as animal science, creative arts, shooting sports, and STEM. 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 ohio4h.org/4-h-camps or contact your county Extension office.

CARTEENS
4-H CARTEENS, a traffic safety program conducted by 4-H teen leaders and their program partners, is for first-time juvenile traffic offenders referred by local courts.

The program’s goals are to reduce the number of repeat juvenile traffic offenders, increase teen awareness of traffic/vehicular safety, and improve public speaking and leadership skills of teen instructors. For information on 4-H CARTEENS, please go to ohio4h.org/families/just-teens/carteens 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). 4-H volunteers lead activities that explore topics such as health, earth and the environment, citizenship, plants and animals, science and technology, personal development, creative arts, and more! For more information visit ohio4h.org/cloverbuds or contact your county Extension office.

Dog Achievement Program
In this non-competitive program, 4-H members have fun, learn more about dogs, and earn certificates and pins by completing categories of achievement such as basic training, exercise, and health and safety. More information about DAP is available at ohio4h.org/DAP.

Health Heroes
As a Health Hero, you’ll learn how to be an advocate for change by teaching peers and younger youth, participating in health fairs, writing support letters, creating petitions, and influencing others to adopt a healthy lifestyle. After receiving training, you’ll develop an action plan to put the 4th H into practice in your local area. Pledge your health to better living and complete the application at ohio4h.org/healthyliving.

International Exchange
Open your world! Ohio families have the opportunity to share their lives and learn about another country without leaving home by hosting youth or adults from around the world for 3.5 weeks each July-August (applications due April-May). Interested in traveling? Ohio youth can live with host families in other countries for 1 month each summer, too. Traveler applications are due December 10 and partial scholarships are awarded to all selected candidates. For more information visit ohio4h.org/youth/international.

Ohio Military Kids
The mission of Ohio 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. To learn more or to serve as a volunteer or counselor for our youth programs, visit us at ohio4h.org/operation-military-kids and on Facebook (OhioMilitaryKids).

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. To learn more about these projects and shooting sports camp, go to ohio4h.org/shootingsports.

State Fashion Board
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, and serve as advocates for Ohio’s 4-H textiles and clothing projects and programs. To learn more please visit ohio4h.org/4-h-youth/teens or contact Laryssa Hook at hook.26@osu.edu.

STEM Pathways
Explore STEM Pathways challenges and programs in science, technology, engineering and math to enhance your curiosity, critical thinking, problem-solving, communication, and teamwork. Discover how these workforce skills are necessary to compete in a high-tech global society. The STEM Pathways formula is simple: Engagement + Problem Solving = Learning! For more information, contact your local Extension office or visit ohio4h.org/stem-pathways for challenge curriculum and videos.
Teen Leadership Council
This newly merged group of the Ambassador program and Teen Advisory Council is a statewide group of 4-H teens and young 4-H alumni that provides a youth stakeholder perspective in the planning, implementation, and evaluation of Ohio 4-H programming. Applications are due August 11. Visit go.osu.edu/TLC for more information.

Volunteers
At its heart, Ohio 4-H is an organization of volunteers dedicated to positive youth development. Learn more about joining our efforts at ohio4h.org/volunteer or by contacting your county Extension office. Already a volunteer? Take a look at the Ohio 4-H Volunteer Handbook at ohio4h.org/volunteerhandbook.

Statewide Events

Cloverbot Challenge
The Ohio 4-H Cloverbot Challenge occurs in May and gives 4-H Cloverbuds the opportunity to work cooperatively in teams to problem-solve using STEM skills. A new theme is selected each year. Teams research a topic, build a working model of their solution to the Challenge issue, and create a poster to illustrate their findings. Find out more at ohio4h.org/cloverbot-challenge.

Film Festival
Lights, camera, action! The Ohio 4-H Film Fest, which takes place in April, is your opportunity to learn the creative skills it takes to produce a short film. Consider making this the basis of a self-determined project. Learn more at ohio4h.org/filmfest.

Ohio Youth Institute (OYI)
Based on the World Food Prize, an international award that recognizes professionals who have improved access to food, OYI participants research a global food issue, write an essay, and present findings at a statewide competition. Consider making this the basis of a 4-H self-determined project. Learn more at ohio4h.org/ohio-youth-institute.

Science Saturdays
4-H Science Saturdays help kids explore science topics by connecting them with scientists and researchers at The Ohio State University who do cool science stuff every day! Designed for kids in grades 3–6 who want to discover new things and learn by doing, the program runs on selected Saturdays during the school year. Visit ohio4h.org/science for more information.

Ohio 4-H Conference
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 February 2017 and plan to attend on March 11, 2017.

Dairy
Dairy Palooza is a day-long event that includes quality assurance training in the morning and afternoon workshops covering showmanship, nutrition, the science of dairy foods, demonstrations, hoof trimming, and more. Registration includes complimentary equipment and a t-shirt. ohio4dairypalooza.com

Dairy Quiz Bowl provides an opportunity for youth enrolled in a 4-H dairy project to demonstrate their knowledge of the dairy industry in a competitive team setting with double elimination.

Dairy Judging Team activities promote dairy judging and communication skills. 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. ohio4h.org/dairy

National 4-H Dairy Conference: The 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. national4hdairyconference.org

Horse
Events include State 4-H Horse Bowl Team, Judging Team, Hippology Contest, and Communications Contest. Winners go on to compete in Louisville, KY. Runner-ups (excluding the judging team) compete at Quarter Horse Congress in Columbus in October. ohio4h.org/horse

Livestock Judging Teams
Junior and senior age division participants place market and breeding classes of livestock. Top three senior teams represent Ohio 4-H at national or regional contests. Refer to ohio4h.org/events/ohio-state-fair-4-h-livestock-judging-contest for details.

Poultry
Ohio 4-H members may participate in the Ohio State Fair 4-H Avian Bowl contest and 4-H Poultry Judging contest. The first place senior team in each contest has the opportunity to represent Ohio at the National 4-H Poultry and Egg Conference held with the North American International Livestock Exposition in Louisville, KY in November. poultry.osu.edu and ca.uky.edu/national4hpoultry

Welding Workshop
The Youth Welding Workshop provides a unique opportunity for youth ages 10-18 to develop their arc welding (stick or SMAW) skills or their oxyacetylene welding and cutting skills. Through one-on-one assistance students are able to begin at their own level and expand their skills throughout the day. ohio4h.org/science
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 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 with 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 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.

Animal Sciences
Beef
ohio4h.org/livestock

117 Beef Project and Record Book
Complete this required project book every year a beef project is taken. This streamlined publication can be used by members at all levels for all beef categories listed below. Use with 117R Beef Resource Handbook. ▼ 2011.

117B Beef Breeding
117BF Beef Feeder (Market)
117DF Dairy Beef Feeder (Market)
117M Market Beef

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 ohio4h.org/publications.

Companion Animals and Rabbits
ohio4h.org/companionanimals
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 26.

NEW 200 All About Dogs
Ever wonder how pre-historic dogs met pre-historic humans? Want to know how dogs think and the meaning behind their body language? Curious about what keeps dogs happy and healthy? Discover these answers and the valuable roles these furry companions play in our lives. For beginning-level members who may or may not have a dog. 2017. Available November 2016.

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. ▼ 2017.

Use 201 Dog 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
When participating in a county or state fair event, be sure to review the related age requirements and guidelines.

**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. This project can be taken for three years. 2005.

**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.

**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.

**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 4-Hmall.org.

**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
- Dairy
- Goat
- Dog
- Poultry
- Rabbit
- Sheep
- Swine
- +More!

For a complete list, descriptions, and prices, visit ohio4h.org/learninglabkits.
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. X 2011.

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)

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. X 2003.

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 holsteinfoundation.org.

Showring 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 holsteinfoundation.org.

Goats
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. X 2015.

Optional Supplements for Goat Projects
135BD Breeding—Dairy Goats X, r
135BM Breeding—Meat Goats X, r
135F Fiber Goats X
135H Harness Goats X
135M Market—Dairy, Meat, or Cross Goats X, r
135P Pack Goats X
135PY Pygmy Goats X
135C Companion—Pet Goats X
An animal in the Companion—Pet Goats project can be any breed and any sex, but it is kept as a pet and not enrolled in any other project category.

Dairy Cattle
ohio4h.org/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. X 2001.

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)

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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 holsteinfoundation.org.

Showring 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 holsteinfoundation.org.
When participating in a county or state fair event, be sure to review the related age requirements and guidelines.

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! 2016. ($17)

Horses

Learn how to qualify for state fair at 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.

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)

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.

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)

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.

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.

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.

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.

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)

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.

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)

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 members 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.

Don’t Forget to Say Thanks!
Take the time to express your gratitude towards the sponsors and donors of awards you receive.

11
Llamas and Alpacas

ohio4h.org/animalsciences

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 llama or alpaca projects, 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

ohio4h.org/poultry

150 Poultry Project and Record Book
Complete this required project and record book every year a poultry project is taken. 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.

150CE Chicken, Exhibition X
150CM Chicken, Market X
150CEP Chicken, Egg Production: Hens and Pullets X
150DE Duck, Exhibition X
150DM Duck, Market X
150GE Goose, Exhibition X
150GM Goose, Market X
150TE Turkey, Exhibition X
150TM Turkey, Market X
150H Helmeted Guinea Fowl X

Optional Supplements 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 amerpoultryassn.com.

154R 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 ohio4h.org/publications.

Sheep

ohio4h.org/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.

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.

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 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. Includes revised Good Production Practices. ☑ 2015.
When participating in a county or state fair event, be sure to review the related age requirements and guidelines.

**Veterinary Science**

140 Swine Breeding Project and Record Book

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! 2001. ($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 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 ohio4h.org/publications.

**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.

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.

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.

**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 4-Hmall.org.

**Helper Supplement for Child Development**
The Child Development Helper’s Guide features nine 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 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.
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.

Beginning-Level Projects (for members with little or no clothing experience)

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.

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. 2017.

410 Fun with Clothes
A great “first time” clothing project for members in grades 3-5. Decorate a sweatshirt 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.

413 Sundresses and Jumpers
If you have covered the basics and want to learn even more, 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.

419 Tops for Tweens
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.

Intermediate-Level Projects (for members with some 4-H clothing experience)

411 em-bel-lish: A 4-H Guide to Wearable Art
This intermediate-level project is for members 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 complete 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.

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.

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.

418 Loungewear
Items constructed for this project, which is designed for members with some clothing project experience, can be simple or complex. 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.

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.

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.

Advanced-Level Projects (for members who have mastered basic clothing construction or consumer projects and who are ready for new challenges)

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.

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.

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.

420 Outerwear for Anywhere
Take this project to use your advanced-level skills to make a coat, jacket, or other outer garment. Evaluate patterns and fabric to match your skill level and to master new sewing skills. Learn about support fabrics for shaping under-collars, constructing collars and coat linings, and new tailoring methods. This edition is streamlined and new references are included. 2016.

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.

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.

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 ohio4h.org/publications.

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.
Communication

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 the project below and communications events at the state fair.

377 Finding Your Voice: Public Speaking Made Easy
Want to learn a skill you can use for the rest of your life? This 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.

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.

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.

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 using visual aids. Available online at ohio4h.org/publications.

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.

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)

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)

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)

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)
When participating in a county or state fair event, be sure to review the related age requirements and guidelines.

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 ohio4h.org/publications.

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.

Theater Arts
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.

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.

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.

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 4-Hmall.org.

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

588 The Writer in You
Find the motivation you need to start or continue your exploration of the art of writing. Explore why to write, where to get ideas, theme, character, plot and setting, word choice, imagery and dialogue. Keep it all in one place to create a portfolio each year. 2016.

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 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.

483 Sports Nutrition 1: On Your Mark!
Be the best athlete you can be! In this beginning-level project 4-H members learn the importance of physical activity and nutrition. By understanding levels of physical activity, MyPyramid, and the importance of drinking plenty of fluids, members can prepare for 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.
484 Snack Attack!
In this beginning-level project 4-H members learn how to select and prepare healthful snacks. 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. Updated to include MyPlate. 2016. **B, I**

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 nutrition-focused project book. It is designed for members who have completed at least one other beginning-level 4-H food and nutrition project. 2000. **B, I**

**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. **I, R**

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, R**

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, R**

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, R**

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, R**

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, R**

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, R**

Want to learn about canning and freezing food? Check out 670 Canning and Freezing, an intermediate gardening and plant science project listed under Natural Resources on page 20.

**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. 2016. **A, R**

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, R**

469 Global Gourmet
Create rich and delicious meals from Mexico, Africa, Japan, India, Italy, Greece and Germany as you explore food history, customs, and nutrition to better understand our world. 2016. **A, R**

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, R**

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,
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.

351 Staying Healthy
Are you ready to learn how to keep your body healthy? Have fun learning to keep fit, increase your brain power, and express yourself in positive ways. 2005.

352 Keeping Fit
Develop a personal fitness plan to gain the benefits of exercise and test your fitness knowledge. 2005.

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.

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. 2016.

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. 2016.

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.

491 Adventures in Home Living
Learn to make simple furnishings and accessories that make living spaces in your home more pleasing and practical. 2009.

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.

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.

Leadership and Citizenship

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 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. Available online. 1994.

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.

383 Club Leadership 2
Make the best better in your 4-H club by improving your leadership skills and the way you assist advisors and club members. Use your life experiences to find your leadership strengths, assess past teamwork, improve your speaking skills, and build relationships. Also, discover innovative ways to get to know your team, to communicate to resolve issues, and to develop a team plan. Intended for current club officers or chairs of committees. 2017. Available October 2016.
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.

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.

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 how boards or committees work and functions of boards or people who are serving on a board for the first time. 2014.

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.

Optional Substitute for Leadership Road Trip (375i)
This project is also available as an iBook. For $5.99, you can keep your project records on your iPad. See ohio4h.org/publications for more information. 2016.

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.

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 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.

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.

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 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.
When participating in a county or state fair event, be sure to review the related age requirements and guidelines.
### Aerospace Science

**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 ohio4h.org/rocketsaway. Members wishing to launch solid-fuel model rockets should take 503. 2006.

**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. This project does not include radio-controlled airplanes or helicopters. 2006.

**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.

**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 ohio4h.org/publications.

### Optional Supplement for Rockets Away!
Sources for launchers Extension educators have found helpful are listed at ohio4h.org/rocketsaway. Your local Extension office may also have some to lend.

### All-Terrain Vehicles (ATV)

**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. Supervision by a certified ATV instructor and enrollment in an ASI RiderCourse is recommended but not required. 2011.

**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 ohio4h.org/publications.

### Bicycle

**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.

**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.

### 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 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.

Many 4-H activities are supported in part by Ohio State University Extension county endowment funds or by the Ohio 4-H Foundation. If you would like to contribute, please contact your county’s Extension office (see back cover) or the Ohio 4-H Foundation (ohio4hfoundation@osu.edu, 614-292-6943).

[ohio4h.org/foundation](http://ohio4h.org/foundation)
When participating in a county or state fair event, be sure to review the related age requirements and guidelines.
508 Robotics 2: EV3N More
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. The LEGO® EV3 robot constructed for Robotics 1 with EV3 is required (no new LEGO® purchase is necessary). A computer for running the programming software and internet access for watching videos are required. 2016.

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 LEGO® Mindstorms EV3). 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 ohio4h.org/publications.

Small Engines and Lawn Care

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.

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.

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.

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.

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 4-Hmall.org.

Tractor and Machinery Operation

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: mdc.itap.purdue.edu. In the Search box, type “tractor.” The tractor manuals are included in the results, identified as Level A, B, or C. 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.

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.

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.

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.

561 National Safe Tractor and Machinery Operation Program (NSTMOP), 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. Want to print your own copy? Each section is available for download at extension.org where you can search for “NSTMOP Student”. 2013. ($32)
When participating in a county or state fair event, be sure to review the related age requirements and guidelines.

**Welding**

*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.

**Woodworking**

*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.

*557 Making the Cut, Level 2*

Select a wood project that shows off your new skills with a T-level, a mitre 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.

*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.

*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.

*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 ohio4h.org/publications.

**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.

**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. You can download and print the guide or fill it out online and then print it at 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
365.12 Miniature Gardens
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
365.26 Hedgehogs
365.27 Ferrets
365.28 Chinchillas
365.29 Water Quality: Field to Faucet

**Workforce Preparation**

*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.
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 Leader’s Guide**

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)

**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 12 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 ohio4h.org/volunteers). 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 for free online at ohio4h.org/volunteers. 2013.

**714 Clover Cubes**

Clover Cubes combine creativity, cooperation, interaction, and fun into a great 4-H Cloverbud activity. Each Clover Cube has six discussion prompts that help children explore a particular topic and share answers with friends. Twelve cubes are included: All About Me, Animal Awareness, Art Adventures, Engineering Excellence, Fitness Fun, Food Favorites, 4-H FUN-damentals, Make Your Own, Math Mania, Technology Talk, and Words That Start With. Cubes are easily assembled from brightly colored, punch-out shapes on heavy duty card stock. 2016. ($13.50)

Cloverbuds

**Ohio4h.org/cloverbuds**

**710GPM The Big Book of 4-H Cloverbud Activities**

This revised classic includes updated versions of hundreds of activities for 4-H Cloverbuds in these topic areas: science and technology, communications/expressive arts, healthy lifestyle, environmental/earth science, personal development, citizenship/civic education, consumerism and family science, and plants and animals. Redesigned in an easier-to-manage, spiral-bound book. 2016. ($13.25)

**715 My 4-H Cloverbud Year**

This fun book is a great way for Cloverbuds to learn the basics of 4-H and keep track of their activities and events. Completion of this book is optional, and can be done with or without the help of an adult leader. It can be repeated each year a child is a Cloverbud member, and is especially appropriate for older Cloverbud members as they prepare to transition to regular membership. 2017. ($TBD for set of ten, $6 for single copies). Available November 2016.
When participating in a county or state fair event, be sure to review the related age requirements and guidelines.

**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 curriculum, a training video, and activity kits. Learn more at ohio4h.org/volunteers/cloverbud-leaders.

**Natural Resources**

**Junior Master Gardener: Growing Good Kids**

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).

**750 Rifle Member Record Book.** 2010.
**751 Archery Member Record Book.** 2015. *X, R*
Nationally Peer Reviewed!

**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.

**752 Shotgun Member Record Book.** 2007.
**753 Pistol Member Record Book.** 2011.
**754 Hunting and Wildlife Member Record Book.** 2000.
**755 Muzzleloader Member Record Book.** 2013.
Ohio 4-H strongly recommends youth complete a rifle, pistol, or shotgun project before taking muzzleloader.

**756 Living History Member Record Book.** 2011.
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 21.

**School Enrichment**

**Afterschool Agriculture**

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 childcare 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 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 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**

**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**

**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 Teacher Guide: A Classroom Journey Through the Life Cycle of Chickens**
What can we learn from a chick? This school enrichment program challenges youth to use science, technology, engineering, and math skills 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. 2016. ($19)

**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. 2015. ($6)

**167RI ChickQuest Logbook**
**167RS ChickQuest Logbook (set of 25)**
This 21-day classroom adventure starts with eggs and ends with chicks. Students are the scientists who 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 Teacher Guide: A Classroom Journey Through the Life Cycle of Chickens. 2016. ($40 for set, $6 for single copies)

**501GPM Rockets Away! Exploring the Science of Forces and Motion**
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 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).
When participating in a county or state fair event, be sure to review the related age requirements and guidelines.

**610GPM Climate Explorations Teacher Guide**
Climate Explorations challenges youth to use science, technology, engineering, and math (STEM) skills to investigate climate forces and climate change. Whether creating ice cores, simulating glacier movement, or building models of the atmosphere, these action-packed activities pique curiosity, encourage collaboration and communication, and provide young scientists with unforgettable experiences. 2017. ($TBD). Available January 2017.

**Supplement for Climate Explorations**

**610RI Climate Explorations Logbook**
**610RS Climate Explorations Logbook (set of 25)**
This personal logbook features hands-on activities, described in detail in the Climate Explorations Teacher Guide, that help develop a deep appreciation of planet Earth and its systems, which are all connected. Sold individually or in classroom sets of 25. For use with 610GPM Climate Explorations Teacher Guide. 2017. ($40 for set, $6 for single copies). Available January 2017.

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**Project Central**
Read 4-H project reviews at ohio4h.org/projectcentral

- It is a great project for any age group.
- A good project for anyone who is willing to do research.
- Building these robots were FANTASTIC! My only problem is that the kit is really expensive.
- [What] I liked most about this project is that I got to try new patterns and it helped me sew better.
- This project book does not have much reading. It has easy questions and FUN activities.
- This is my favorite project I have ever done.
- I would recommend this project to anyone who loves rabbits.
- The only suggestion I have for others taking this book is to get started early because many activities require indoor care before planting outside.

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When participating in a county or state fair event, be sure to review the related age requirements and guidelines.
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 with a lot of experience 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.

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New to 4-H?

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- 216 Purr-fect Pals, Level 1....................9
- 244 From Airedales to Zebras, Level 1........13
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### Horses

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### Creative and Leisure Arts

#### Cake Decorating
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#### Collecting
| 496   | My Favorite Things                        | B           |            |            | 16     |

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| 498   | Quilting the Best Better                  | I           |            |            | 16     |
| 499   | You Can Quit!                             | I           |            |            | 16     |
| 592   | Get Started in Art                        | X           |            |            | 16     |

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| 585   | Controlling the Image, Level 2            | I           |            |            | 16     |
| 586   | Mastering Photography, Level 3            | A           |            |            | 16     |
| 589M  | Photography Master                        | A           |            |            | 17     |

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| 497   | Scrapbooking: A 4-H Guide to Preserving Memories | B          |            |            | 17     |

#### 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   | The Writer in You                         | I           |            |            | 17     |

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| 461   | Let’s Bake Quick Breads                    | I           |            |            | 18     |
| 462   | Yeast Breads on the Rise                  | A           |            |            | 18     |
| 463   | Sports Nutrition 2: Get Set!              | I           |            |            | 18     |
| 467   | You’re the Chef                           | A           |            |            | 18     |
| 469   | Global Gourmet                            | A           |            |            | 18     |
| 472   | Grill Master                              | I           |            |            | 18     |
| 474   | Beyond the Grill                          | A           |            |            | 18     |

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| 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     |

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| 491   | Adventures in Home Living                 | B           |            |            | 19     |
| 494   | Makeover My Space                         | I           |            |            | 19     |
| 495   | Your First Home Away From Home            | A           |            |            | 19     |

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| 371   | Club Leadership 1                          | I           |            |            | 19     |
| 372   | Diversity: The Source of Our Strength      | A           |            |            | 20     |
| 373   | My Hands to Larger Service: Teen Leaders Building Our Communities | A | 20 |
| 374   | Teens on Board                             | I           |            |            | 20     |
| 375   | Leadership Road Trip: Where Are You Going? | I         |            |            | 20     |
| 375i  | Leadership Road Trip iBook                 | I           |            |            | 20     |
| 376   | Pantry Panic                               | A           |            |            | 20     |
| 378M  | Leadership Master                          | A           |            |            | 20     |
| 383   | Club Leadership 2                          | A           |            |            | 19     |

#### Money Management
<p>| 445   | Becoming Money Wise                        | B           |            |            | 20     |
| 448   | Teens . . . On the Road to Financial Success | A         |            |            | 20     |</p>
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**Natural Resources**

**Gardening and Plant Science**

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**Science, Technology, Engineering, and Math**

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**Electric Radio-Controlled Vehicles**

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**Small Engines and Lawn Care**

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### Group Projects

These projects are offered through a variety of group programs that may or may not be offered in your county.

### Animal Sciences

#### Companion Animals and Rabbits

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### Natural Resources

#### Junior Master Gardener: Growing Good Kids

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### Do a Project on What You Do

Did you know your involvement in 4-H can sometimes be used as the basis for a project? For example, if you are a camp counselor, you might decide to use 365.11 Camp Counseling for a self-determined project. Club officers can use the Self-Determined Project Guide to design custom projects based on their experiences too. To learn more, go to [ohio4h.org/selfdetermined](http://ohio4h.org/selfdetermined).

If you are in a leadership role in your club, in your county, or at the state level, consider taking Club Leadership 1, Club Leadership 2, Teens on Board, or My Hands to Larger Service.
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