

Understanding Projects

4-H Membership Expectations

The expectations for 4-H membership are a balance between 4-H project work, involvement in the 4-H club, participation in 4-H activities and events, and working towards improving one's personal growth. This section addresses the project work component of a member's 4-H experience.

Project Work Through 4-H

Each project book contained in this section is a guide for members conducting activities through an organized project group or at home under the guidance of a parent or adult. In it you will find a wealth of information and activities needed to plan and conduct a project.

Q. What is a 4-H Project?

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

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

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

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

Q. Where does a 4-H member start when choosing a project?

A: If you need or wish to take an individual project use the information in this section to help you decide.

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

A: Start by reading the section of the project manual called the Member Project Guide. Every project manual has one located near the front. It may also be a separate supplement. The Member Project Guide offers step-by-step instructions for conducting the three types of activities that make up a 4-H project.

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

A: Of course not. That decision is up to the member, parents and advisor. Members may plan to do a little or a lot based upon their interests and abilities. Project plans can also change as a member's interests and needs change.

Q. How much time can be spent on a project?

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

Q. Are there incentives for members who complete their project(s) as planned?

A: Members who complete their projects as planned can receive one of Ohio's 4-H Project Achievement Certificates (4-H 905-908). These are awarded based upon the level of difficulty of the project as listed in the Family Guide; e.g. beginning, intermediate, advanced. There is also a special certificate available if members plan and complete a self-determined project.

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

A: For some members, project completion can be nothing more than participating in project activities, completing a predetermined number of project goals and reviewing accomplishments with a parent or project advisor. If a member chooses to go to county-level judging or the county fair, check with your 4-H advisor for specific judging requirements. For example, sometimes it is necessary to bring an exhibit along with your project manual to interview judging.

Project Selection and Ordering

When choosing a project, consider your interests, background, what is necessary to start your project, and what is available to help you complete it. The At-A-Glance 4-H Project Selection Guide on pages 28 to 31 will help you choose a project. Review this as a family, club or group. A good rule of thumb is to select no more than two projects as a first-year member. Once you've selected your project(s) for the year, request your manual(s) using the form provided by your 4-H Club Advisor (if any) or the one provided on page 31. Some projects require project supplements. Look for the ® to see if the project you selected needs a supplement.

2001 4-H Project Update

WHAT'S BRAND NEW (Being Offered For The First Time)

349	Health A, Discovering Myself
350	Health B, Fun With Friends
695GPM	Go Plants
711GPM	Cloverbud II

WHAT'S NEW (But Replacing Something Previously In Print)

190R	Equine Record Book (replaces previous version of 190R Equine Record Book)
179AG	Uniform Rules for 4-H Horse Shows (replaces previous version of 179AG Uniform Rules for 4- H Horse Shows)
365	Self Determined Project Guide (replaces previous version of 365 Self Determined Project Guide)
412	Sew for Others (replaces 414 Sewing for Others)
426	Clothing for your Career (replaces 430 Dressing for the Job)

WHAT'S DISCONTINUED (But Being Replaced By Something New)

190R	Equine Record Book (Replaced by 190R Equine Record Book)
179AG	Uniform Rules for 4-H Horse Shows (Replaced by 179AG Uniform Rules for 4-H Horse Shows)
365	Self Determined Project Guide (Replaced by 365 Self Determined Project Guide)
414	Sewing for Others (Replaced by 412 Sew for Others)
430	Dressing for the Job (Replaced by 426 Clothing for your Career)

WHAT'S DISCONTINUED (And Not Being Replaced)

110R	Fitting and Showing Beef
136-8AG	Swine Group Activity Guide
353	Staying Healthy
354	Looking Good
AS001	Special Emphasis Handbook

Project Descriptions

The Discovering and Exploring projects are for first-year members who want a variety of project experiences. They familiarize young people with Ohio 4-H and allow them to discover and explore its many project areas.

Discovering 4-H

Projects in this series are written in sequence and are designed for members in need of simple-to-read, easy-to-use manuals. Members are encouraged to complete one level at a time before moving to the next. These can be completed in one year.

91 Discovering 4-H 1

Explore 4-H through activities involving community service, natural resources, animals, food and fun.

92 Discovering 4-H 2

Become more involved with basic 4-H projects to discover the meaning of the 4-H Pledge to you, your family and community.

93 Discovering 4-H 3

Examine what you've learned from previous projects to pick a special project that excites you and your family.

Advisor Resource for Discovering Projects

90AG Discovering Series, Advisor Guide

❖ Recommended for use by project advisors. Used with Discovering 4-H 1 (4-H 91); Discovering 4-H 2 (4-H 92); Discovering 4-H 3 (4-H 93) Provides an overview of the series; lesson plans for teaching it as a group project; the major areas in Discovering 1, 2 and 3; and the project completion and recognition system. (free)

Exploring 4-H

This is an excellent follow-up for members who have taken the Discovering 4-H sequence or for those who want a project that introduces them to a specific subject area. Four stand-alone manuals focus on Family & Consumer Science, Animal Science, Plant Science and Engineering. Nine and 10 year-old members will especially benefit from these projects.

94 Exploring Animals

Investigate the worlds of pets, farm animals, wildlife and even insects to learn their value in our environment and lives.

95 Exploring Energy

Research basic energy-use projects to help your family's budget and the planet's survival.

96 Exploring Me and My Home

Make a winter scarf. Explore your family history with your parents and grandparents. Do a load of family laundry. Do family activities. Make mini-pizzas. Do a presentation about something you learned in the project. Do a leadership/citizenship service activity. Keep records and evaluate your accomplishments.

97 Exploring Plants

Plant a seed to experience how its growth and survival gives us pleasure, food and a healthier world.

Aerospace Science

501 Rockets Away

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 and an IBM compatible program for designing and launching water rockets are available from your county Extension office.® Visit our Website at www.ag.ohio-state.edu/~rockets

501GPM Rockets Away

❖ Recommended for project advisors and middle school teachers.

For use when teaching rocketry as a group project. Contains lesson plans and photo-ready member materials. 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 and an IBM compatible program for designing and launching water rockets are available from your county Extension office. (\$2.75)

502 Science of Flight

Experiment with the forces of flight by building and flying a model airplane or glider to soar above the earth. Visit our Website at www.ag.ohio-state.edu/~flight

Required Supplement for Rockets Away Projects

501R The Alpha Book of Model Rocketry

Specific guidelines for building and launching Estes-type rockets. Specific water rocket guidelines are contained in the project manual. (\$2.00)

Optional Supplements for Rockets Away Projects

501CW 2-Liter Bottle Rocket Computer Program

This IBM compatible "Windows version" program allows members to design and launch 2-liter bottle rockets "on screen" as well as record and analyze

actual launch data. Designed for use with the Rockets Away manual. Requires 486 processor or better and ability to load program from a CD drive. (\$16.00)

2-Liter Bottle Rocket Launcher

Explore the science of rocketry with this inexpensive 2-liter bottle rocket launcher. Designed for use with the Rockets Away manual, this pre-assembled launcher attaches firmly to the ground. Includes instructions for the safe launch of 2-liter bottle rockets. To order, send check or money order to: Versey Enterprises, 1258 North 110 East, Shelly, Idaho 83274. Price includes shipping and handling. Allow 2 weeks for delivery. For additional information, call (208) 357-3428. Standard Launcher (\$40.00) or Launcher with built-in pressure gauge (\$50.00)

All Terrain Vehicles

555GPM ATV Group Project Leader Manual

❖ Recommended for use by project advisors. Use this guide book to conduct ATV project meetings and group activities. Use this each year in conjunction with 4-H 555 ATV Rider Handbook. (\$3.50)

555R ATV Rider Handbook (Group Project Workbook)

The All-Terrain Vehicle (ATV) project is appropriate for all ages, experienced or inexperienced, who have access to an ATV and is designed to be taken as a group project. It emphasizes safe operation, proper safety attire, "fitting" an ATV to the rider, maintenance of the machine, and mechanical features of an ATV. Lots of fun and educational activities are included in this workbook. (\$3.25)

Aquariums

625GPM Fishy Science

❖ Recommended for project advisors and third thru fifth grade teachers.

Explore the unique features and abilities of fish in four easy-to-use lessons. Includes activities on how fish breath, float, drink and swim. (\$2.50)

626 Keeping Fish Alive

Know more about a healthy environment by designing a functional aquarium for your fish. Ten-gallon aquarium needed for this project.

627 Special Aquarium Setups

Plan and study how to raise four types of fish in an artificial environment that will keep them alive. Twenty-gallon aquarium needed for this project.

628 Aquatic Plants

Design a natural environment by growing plants in an aquarium to keep your fish healthy in the tank.

Archery

631 Basic Archery

Aim your energy toward a sport that develops knowledge and skills in basic archery safety. This is a beginner level project for members who have an adult in the home or neighborhood who can supervise their shooting.

Beef

113 Market Beef Project and Record Book

Complete this required project book every year a market steer or market heifer project is taken. Use in conjunction with the 117R Beef Resource Handbook to monitor your management decisions.

114 Pilot Beef Breeding Project and Record Book

Complete this required project book every year a beef breeding project is taken. Use in conjunction with the 117R Beef Resource Handbook to monitor your production practices.

115 Feeder Calf

Care for and manage one or more beef cows and their calves or a purchased feeder calf. ® Plus monitor your management decisions.

Use in conjunction with the 117R Beef Resource Handbook

121 Dairy Market Feeder

Raise, keep records and market one or more male dairy animals from birth to a weight of 400 - 600 pounds. Use in conjunction with the #117R Beef Resource Handbook.

Required Resource Book for Beef Projects

117R Beef Resource Handbook for Market Beef, Beef Breeding, Feeder Calf, Dairy Beef Feeder and Dairy Steer Projects.

Order this book only once and use for several years. It contains essential subject matter information for members taking a market beef, beef breeding, beef feeder calf, dairy beef feeder or dairy steer project. This is an excellent resource for Skill-a-thons.

Optional Supplements for Beef Projects

101R Livestock Evaluation Reasons Note Tablet

This optional book for older youth will assist you in preparing notes for oral reasons in judging contests. Use this in conjunction with 103R Beef, Sheep and Swine Selection and Evaluation, (\$2.75), and 104R PA Judging Manual.

103R Beef, Sheep and Swine Selection and Evaluation

You may need this optional resource written for

beginners when selecting and evaluating livestock. Order it only once and refer to it when selecting projects or before attending a judging contest. (\$2.25)

104R Pennsylvania Livestock Judging Manual

This optional book will assist older youth with advanced evaluation skills in utilizing performance data in learning oral reasons. Order it once and refer to it for information on how to handle market animals and understanding expected progeny differences (EPDs). (\$2.00)

Beekeeping

641 Basic Beekeeping Manual

Learn of the nature and behavior of bees and techniques for keeping them. You also will explore the complexities of bee societies and how bees help our environment.

Bicycle

522 You and Your Bicycle

Cycle to safety and sporting success with bicycle equipment and accessory tips that fit your needs.

523 Caring for Your Bicycle

Maintain your bike to get the best performance from it and become a healthy rider.

524 Mastering Bicycle Skills

Customize your bike to maximize your skills for having fun and serving the community.

525 Your Bicycle Community

Ride your bike to “pump up” your community and yourself in activities like charitable fund-raising bike-a-thons.

Cage Birds

170 Cage Birds in Home

Raise one or more canaries, parakeets or other birds and provide the care needed for caged birds to flourish.®

Cats

216 Cat 1—Purrr-fect Pals

The activities in this project are for youth who may or may not have a cat. It is designed as a beginning level book for youth in the first three years of this project.®

217 Cat 2—Climbing Up

Own and care for one or more cats. This is an intermediate level book. Complete *Cat 1* before taking this project. *Cat 2* can be taken for three years.®

218 Cat 3—Cat Connections

Complete *Cat 1* and *Cat 2* before taking this project. This project is designed as an advanced level book. For youth who have taken this project for six or more years.®

Required Supplement for Cat and Cage Birds Projects

214R *Small Animal Record Book*

This resource must be ordered in conjunction with the appropriate member project book for cats, guinea pigs, cage birds, gerbils, hamsters, mice, rats, chinchillas, ferrets, and hedgehogs. A separate record book should be used for each species of pet projects taken. (\$2.00)

Advisor Supplement for Cat Projects

216-8AG *Cat Group Activity Guide*

❖ Recommended for use by project advisors. Use this guide book to assist with meeting plans and group activities. Answers to some of the technical questions asked in Projects 216, 217 and 218 are also provided. (\$2.00)

Child Care

431 *Living and Learning with Children*

8

Play a role in the growth and development of younger kids by organizing play experiences for preschoolers in your family or neighborhood. This project is designed as a beginning-level book.

432 *More Living and Learning with Children*

Find out how children grow through play experiences by planning a variety of activities to help them learn. This project is designed as an intermediate-level book.

433 *Teens Learn About Children*

Experience the changing needs of young children and learn how to be a responsible caregiver through baby-sitting experiences. This project is designed as an advanced-level book.

Citizenship/International

396 *...And My World I, The World Around Me*

Find out more about our planet and the global systems that affect each of us. Explore how you can make a difference through global citizenship and leadership.

397...*And My World II, Peoples and Customs of the World*

Explore who makes up the world by learning more about your family's heritage and different cultures to understand how we're different and alike.

Clothing

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

Multiple Projects: 4-H'ers 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 OUTFIT.** Using items from two or more projects to from one outfit will **not be considered** as a "completion" of either project during state fair evaluation.

Repeating Projects: Members may repeat any project, but should attempt new challenges each year such as doing more advanced experiments and surveys, and using more complicated patterns or harder-to-handle fabrics.

For Younger Members (ages 9 to 11)

409 *Ready Let's Sew—Beginner*

Are you ready to sew? This project is fun and exciting! You will learn to make your own clothing and accessories. Several patterns are included in the project book. They include a duffle bag, hat, head and wrist bands, hair scrunchie and enviro tote. Select and make one accessory from the patterns included in the project *and* select an "easy" or "beginner" commercial pattern to make elastic waist shorts, elastic waist skirt or simple vest. Complete additional learning activities in the project. This project is designed to be taken one time.

410 *Fun With Clothes—Beginner*

Decorate a sweat shirt or t-shirt by sewing or fusing on a decorative patch. Personalize clothing and do fun experiences in label reading, comparison shopping, assembling a complete outfit, doing a keeping neat checkup, sewing on a button, putting away clothes, and exploring current fashions. Complete leadership and service activities to share what you do with others. This project is designed to be taken one time.

427 *It's Time For Clothing—Beginner*

Do three activities related to wardrobe planning and maintenance, two buymanship activities, two advertising and store activities, two clothing care activities and at least one leadership/citizenship activity. No prior 4-H clothing experience is needed. For members age 11 and younger. No clothing construction required. This project is designed to be taken one time.

Especially for 'Tweens (ages 11 to 13)

413 Joyful Jumper—Intermediate

Make a jumper to be worn with a blouse or sweater, alone as a dress, or with pants as a tunic. Choose accessories and a top (if needed) to make a complete outfit which includes the jumper. Practice good grooming and posture. Do at least two leadership/citizenship activities. (Note: Pantsuits, jumpsuits, "skorts," "split skirt jumpers," etc. require fitting skills that are beyond the beginner level and should NOT be made in the Joyful Jumper project.) This intermediate project is designed to be taken one time.

419 Tops for 'Tweens—Intermediate

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. This intermediate project is designed to be taken one time.

424 Clothing For Middle School—Intermediate

In this intermediate level project you will 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. This intermediate project is designed to be taken one time.

428 It's Time For Clothing—Intermediate

Complete three clothing selection activities, two advertising and marketplace activities, two buymanship activities and two clothing care activities. Do at least one citizenship/leadership activity. No prior 4-H clothing experience is needed. No clothing construction required. This intermediate level project may be repeated.

Especially for Teens (ages 14 and older)

406 Clothes for High School and College—Advanced

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. This is an advanced level project for youth with previous sewing experience and is designed to be taken one time.

407 Accessories For Teens—Advanced

This project is designed as a beginner level project for teens. Make at least one accessory (bag/purse, belt, cummerbund, footwear/shoe covers, hat, gloves, jewelry, removable collar/dickey/jabot, scarf/tie, muffler/shawl, socks/hosiery, or suspenders) to achieve a more complete appearance in an outfit. Complete activities related to what accessories do for you, use accessories effectively, do a wardrobe inventory, and accessorize for a total look. Do at least one leadership/citizenship activity. This advanced level project is designed to be taken one time.

420 Outer Layers—Advanced

In "Outer Layers" you will be making coat, jacket, or cape. This is advanced level project for 4-H members 15-18 years old. Although a tailored garment is challenging to sew, it will provide many new learning experience and a sense of satisfaction and accomplishment when completed. This advanced level project is designed to be taken one time.

425 Frugal Fashion—Advanced

This project will challenge youth to use creativity and resourcefulness as they put together a total look outfit. Youth will purchase or put together outfits; however the focus will be on spending the least amount of money possible. Activities will involve youth in investigating sales merchandise, evaluating quality and use of second hand or resale clothes as well as recycling garments already in the wardrobe. This project will NOT involve sewing or clothing construction skills. This is an advanced level clothing selection project and is designed to be taken one time.

429 It's Time For Clothing—Advanced

Do four wardrobe planning activities, three clothing marketing activities, three buymanship activities and one clothing care activity. Do at least one citizenship/leadership activity. No prior 4-H clothing experience is needed. No clothing construction required. This advanced level project may be repeated.

For Intermediate Level 4-H Clothing Members of Any Age:

412 Sew For Others—Intermediate

Construct one complete outfit for the person of your choice, or adapt three different garments for a disabled or handicapped person. Include at least two new learning examples involving fitting, alterations, construction techniques, or fabric handling. 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. This project may be repeated, however a different category of "others" must be selected each time the project is repeated.

415 Active Sportswear—Intermediate

Make at least one garment in an outfit assembled for active sportswear. Compare the garment(s) made with similar ready-to-wear garments. Evaluate buying habits and the sportswear outfit. Complete an accessory plan. Do at least two leadership/citizenship activities. This intermediate project is designed to be taken one time.

423 Sportswear for Spectators—Intermediate

Make at least one garment in an outfit assembled for spectator sportswear. Compare the garment(s) with similar ready-to-wear garments. Rate personal buying ability. Identify spectator sportswear needs and preferences. Complete an accessory plan. Do at least two leadership/citizenship activities. This intermediate project is designed to be taken one time.

For Advanced Level 4-H Clothing Members of Any Age:

408 Creative Costumes—Advanced

Participants will choose to make the costume in one of four categories: Historical, Ethical/Cultural, Theatrical, or Special Interests. Goals of the project include understanding clothing and its significance to individuals and groups as well as applying new knowledge to planning and making costume related to the goals of the specific costume category. Projects will be evaluated according to the seven clues to a total look. In addition, evaluation will include authenticity of adoption and knowledge of costume history or background related to the specific costume chosen. This is an advanced project and may be repeated, however a *different category* of "costumes" must be selected.

416 Lounging Clothes & Undergarments—Advanced

Make the top layer of an outfit for lounging at home (robe, housecoat, jumpsuit, tunic and pants, or other garment suitable for lounging). Make or select other garments and accessories to wear with the outer garment (sleepwear, undergarments, slippers, or shoes) to complete your lounging outfit. Compare loungewear fabrics and garments in a shopping experience. Practice good grooming. This advanced level project is designed to be taken one time.

417 Dress Up Outfit—Advanced

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. This advanced level project may be repeated.

426 Clothing for Your Career—Advanced

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. Do an activity to learn about different body types and body proportions and what style looks best for you. Write a description of your job or one in which you are interested. Visit a job site and/or interview an employer about clothing in the workplace. Do a closet inventory and learn about wardrobe management. Plan a wardrobe that projects a positive image at work. Do at least two alteration/recycling experiences and compare costs with an alteration or repair service. This project is designed to be taken one time.

Optional Supplement for Clothing Projects

422R Clue Yourself Into Modeling

Learn more about how to properly model your outfit. (free)

Cloverbuds

710GPM Ohio Cloverbud Program Manual—Series I

❖ Recommended for use by Cloverbud advisors. These Ohio 4-H Cloverbud program curriculum materials include a series of short term, fun, cooperative, noncompetitive activities that can be used by adult volunteers with Cloverbud youth (K-2) to help them gain self-understanding, social interaction skills, experience achievement, and develop positive attitudes. The Cloverbud activities will enable adult volunteers to help youth relate to science and technology, expressive arts, health, the environment, personal development, citizenship, family science, consumerism, plants and animals. (\$13.00)

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

Second set of new instructional Cloverbud curriculum recommended for use by Cloverbud leaders and advisors with K-2 children. Same goals and objectives as the first Cloverbud Program Manual. There are 25 curriculum pieces with about 9 activities in each curriculum piece. (\$15.00)

Cloverbud Supplement

710AG Supporting Youth in Grades K-2

A valuable resource for Extension Agents and Key Volunteer Leaders of the 4-H Cloverbud Program. This material will be helpful for orienting and training volunteers working with the Cloverbud Program. (\$5.50)

Communications Resources

909R Demonstrations

Recommended as a resource for individuals and teams who are planning to participate in a demonstration contest. Learn the basics of giving an illustrated talk and utilizing visual aids. (free)

970R Tools for Public Speaking

A valuable resource for learning about the nine basic tools for public speaking. Recommended for individuals planning to participate in a public speaking contest.* (free)

Advisor Supplement for Public Speaking

971AG Tools for (Teaching) Public Speaking

A valuable resource for teaching about the nine basic tools for public speaking. Recommended for advisors planning to help members participate in a public speaking contest.* (\$2.00)

*Please refer to the actual 4-H award application form for additional selection and eligibility requirements.

Creative Arts

592 Art As Expression

Develop your creativity and learn elements of design by exploring many art mediums. Explore how art is used as a form of expression in areas such as literature, architecture and cultures.

Cultural Awareness

956GPM Invent; An African-American Inventors' Curriculum

Recommended for Project Advisors and Classroom Teachers (grades 4-8). This curriculum is designed to develop creativity and critical thinking skills in youth. The thirteen experiential units/lessons focus on life skills, science processes, and inventiveness as demonstrated by various African-American Inventors. (\$12.00)

Dairy Cattle

120 Dairy Veal

Develop business and personal skills while raising, feeding, showing and marketing one or more veal calves.®

121 Dairy Market Feeder

(See Beef Project Section on page 7.)

122 Dairy Calves and Heifers

Learn skills in selecting, feeding, management, genetics, reproduction and herd health.® Also complete 106R Dairy Record Book.

123 Dairy Cows and Management

Raise a healthy, productive dairy cow through responsible management and care.® Also complete 106R Dairy Record Book.

Required Record Books for Dairy Projects

106R Dairy Record

Complete the 106R Dairy Record Sheet(s) each time you are enrolled in 4-H 120, 4-H 122 or 4-H 123. You will also need to obtain a copy of the *Dairy Cattle Caring for Animals Discussion Guide* from your county OSU Extension office and attach it to your 106R Record Sheet or refer to the publications link on the Ohio 4-H web site at <http://www.ag.ohio-state.edu/~fourhoh>.

Optional Supplements for Dairy Projects

124R Techniques of Judging Dairy Cattle

You may need this optional resource when evaluating dairy cattle. This is a good reference to study before attending a dairy cattle judging contest. (\$11.50)

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 Skill-a-thon. (\$2.00)

Dog Care and Obedience

200 Dog Care

Involve your family with caring for your dog and training your pet to be a best friend. This project compliments the other dog projects.®

201 Dog Guides for the Blind

Participate in the Dog Guide program to help others see by raising and training a puppy provided by Pilot Dogs Inc. of Columbus.®

204 Grooming and Handling Dogs

Learn the basics of dog showmanship. Project 200 (Dog Care) should be either completed before taking this project or taken simultaneously with this project.®

206 Dog Obedience Training-Beginning

Begin the basics of obedience training to gain the rewards of what you and your dog can do together.®

207 Dog Obedience Training-Advanced

Advance to graduate novice, open and utility training levels as you and your dog improve as a team.®

Required Supplement for Dog Care and Obedience Projects

214R Small Animal Record Book

This resource is the required record book for 4-H Dog Projects unless the 4-H Dog Care Member's Record form on pages 65-69 of the Dog Care 200 project book is used. (\$2.00)

Electricity

527 Magic of Electricity

Look around and explore the world of electrical energy. Begin to build your own circuits using batteries, light bulbs and wire. You'll soon learn the difference between what's science and what's magic. This project may be repeated in order to complete all the activities.

528 Investigating Electricity

Put on your detective cap and try your hand at decoding circuit diagrams. Investigate the difference between series and parallel circuits as you build your own switches and learn to solder strong connections.

529 Wired for Power

Power up your knowledge on electrical energy used around the home. Test for grounding, trace the circuitry and calculate circuit load on the electrical outlets in your home.

530 Entering Electronics

Have fun exploring the fundamentals of electronics. Learn the difference between a resistor and a capacitor. Then race ahead and build your own intruder alarm or amplifier. This project can be taken after the member has successfully completed Electric Book 2 (528- Investigating Electricity) and has solid soldering skills and circuitry knowledge.

Advisor Supplement

531HG Electric Group Activity Guide

This guide is for volunteer leaders who are working with young people in any of the four levels of electricity. It has activities and ideas to make your group meetings more fun and educational. (\$2.00)

Field Crops

660 Corn

Cultivate a bumper crop as you learn about corn from seed to market and contribute to your family's productivity.

661 Small Grains

Reap the benefits of growing small grains like wheat, oats, barley and rye; whether you take them to market or feed your animals and family.

662 Soybeans

Plant, harvest and market soybeans to profit from the responsibility and the crop.

First Aid

352 Safety in Everyday Living (First Aid)

Be on call and prepared to treat injuries or accidents in everyday life.

Fishing

623 Fishing for the Beginner

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

624 Fishing for the Intermediate

Bait the hook again to learn more about fishing methods and equipment and fish in the ecology.

Food Science

489GPM Breads of the Harvest

❖ Recommended for project advisors or third and fourth grade teachers.

This three-lesson project teaches the science, history and nutrition of bread making since the pilgrims. Members conclude by making a loaf of colonial bread. (\$9.00)

489-1 Breads of the Harvest—Nutrition Education Book

This resource can be used as a supplement to the existing Breads of the Harvest curriculum (4-H 489GPM) or a stand-alone unit on nutrition. It includes a variety of simple nutrition activities that can be conducted during a club meeting or in a classroom setting. Activities are geared for 3rd-5th grade members. The book is available to Ohio counties for \$2.81 along with a 6' x 5' Food Guide Pyramid nylon playmat. (4-H 489-PM) for \$32.75. The playmat is necessary for conducting many of the activities contained in the Breads of the Harvest nutrition education book. (\$3.75)

490 Science Fun with Dairy Foods

Choose from a variety of experiments such as making yogurt, growing molds and ripening cheeses to explore the science behind the production of dairy foods.

490 GPM Science Fun with Dairy Foods

❖ Recommended for project advisors and junior and senior high teachers.

A series of nine easy-to-use lesson plans will introduce experiments such as making yogurt, growing molds and ripening cheeses to explore the science behind the production of dairy foods. (\$2.50)

Foods 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. Projects are available for both males and females with all levels of experience. Please refer to the individual project's member guides for more detailed information and consult your county OSU Extension office for specific requirements related to local and state evaluation opportunities.

For Beginning level ages 9 to 11

460 Adventures with Food

Use kitchen basics from shopping and measuring recipe ingredients to safely prepare and serve food.

466 Mini Meal Magic

Prepare balanced meals, tasty snacks, yummy deserts and special treats that you, your family and friends will enjoy.

481 Food & Fitness for Fun

Combine information, great recipes, and activities related to food and fitness with a goal for a healthier life.

487 Fast Break for Breakfast

This project focuses on the importance of starting each day with a nutritious breakfast and uses the Food Guide Pyramid as the basis for exploring breakfast options. Menu planning, food safety and nutrition topics are included in this sports-themed project book. It is designed for advanced-level beginners age 10-12 that have completed at least one beginning level 4-H food and nutrition project (examples: Adventures With Foods, Mini Meal Magic) prior to enrolling in this project.

For Intermediate Level ages 11 to 13

461 Let's Bake Quick Breads

Bake delicious quick breads while learning the principles of quick bread preparation. Learn how mixing techniques and ingredients determine product character and quality.

468 Meals In Minutes

Today's busy life-styles require new ways to prepare nutritious meals in a short time. You will learn how to manage time wisely while preparing foods that are easy, tasty, and good for you.

472 The Outdoor Chef

Eating outdoors has become as much a part of our lives as baseball or pizza. Whether it is a picnic table

on the patio, by the lake, or a campsite in the wilderness, food is always enjoyed when it is eaten or prepared outdoors. This project will guide you through a variety of outdoor food experiences suited to a fast-paced, casual life-style.

475 Star Spangled Foods

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

482 Food and Fitness Choices for You

The fitness and exercise choices you make when you are young may help you to a healthier and happier life. What food should you be eating to make sure your body has the nutrients it needs to grow and develop? In this project you will learn to be a better consumer, learn how to prepare tasty nutritious foods and learn lots of fun ways to make your body stronger and healthier.

For Advanced Level ages 14 and older

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.

467 You're The Chef

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

469 The Global Gourmet

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

471 Party Fun with Food

Everybody loves a party. Parties can be just as much fun to give as to attend. With a little knowledge you can be an excellent host(ess). This project will get you started with its many suggestions for different types of get togethers and party foods.

474 Great Grains

Experience cooking international grain recipes to discover their nutritional value and major role in world society and sports nutrition.

Forestry

613 Exploring Our Forests

Find out about forest products and identify trees and forest enemies by studying the healthy relationship of forests to wildlife, water and soil.

614 Tree Planting

Participate in forest management by planting 10 to 200 trees for wood products, to aid conservation and protect wildlife.

Gardening

673 From Seed to Flower

Enjoy the beauty and fun of an annual flower garden and learn about growing these flowers from seeds or from purchased plants.

674 Indoor Gardening

Learn about keys to successful house plant culture and discover the pleasures of indoor gardening.

691 Vegetable Gardening I

Start a garden plot or container garden of at least four vegetable varieties to learn what conditions are needed for them to grow.

692 Growing With The Seasons

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

Gardening—Junior Master Gardener

693 Junior Master Gardener Leader/Teacher Guide

This program is modeled after the highly successful Master Gardener program and offers horticultural and environmental science education, and leadership and life skills development through fun and creative activities. Group activities can be held with a school class, Junior Master Gardener (JMG) club, after-school program, home school or any group of interested young gardeners. Youth can become certified JMGs by completing one group and one individual activity for each teaching concept in the eight chapters of the JMG Handbook, and by participating in one leadership/community service project per chapter. Use this JMG Leader/Teacher Guide (\$38.00) in conjunction with the Junior Master Gardener Handbook (\$14.00) which is especially designed for youth in grades 3-5. Teacher Guide only available to adults who have completed training. Check with your OSU Extension office for details.

Genealogy

441 Family History Treasure Hunt

Discover your family history as you go on a treasure hunt to learn jewels of information from interesting relatives, special events, and curious stories of days gone by. This project may be repeated.

Goats

130 Angora Goats

Learn about rearing angora goats and marketing mohair including basic management practices, nutrition and health, fitting and showing, and mohair evaluating. Members should own or have access to Angora goats.® Use in conjunction with 131-1R Goat Record Book.

131 Goat Manual (Cream Cover)

Experience ownership responsibility for raising a dairy goat and find out how dairy, meat and harness goats contribute to our livelihood. This is a good resource for skill-a-thons. Order only once because it can be used for several years.® Goat project members need to complete the Goat Record Book #131-1R.

Required Record Books for Goat Projects

131-1R Goat Record Book

Use in conjunction with the Goat Manual #131R when taking a Dairy Goat, Angora Goat, Recreation Goat, or Market Goat Project. (\$2.00)

Grazing Management

100 Management Intensive Grazing

Practice the principles of rotational grazing with this beginning level project. Designed for members 12-18 years of age. First year project members must maintain 800 pounds of animal on one acre. Members repeating the project must maintain 1,200 pounds of animal per acre on two or more acres.®

Required Supplement for Grazing Management

100R Pastures for Profit

Members must order this project resource when taking 100 Management Intensive Grazing. Resource may be reused when repeating project. (\$3.25)

Gun Safety

630 Safe Use of Guns

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

Health

349 Health A, Discovering Myself

Are you ready to explore your body and learn how to keep it healthy? That's what "Discovering Myself" is all about. You'll have fun learning to keep fit,

increasing your brain power and expressing yourself in positive ways. Your project manual has six chapters each designed around one of the six wellness factors: Body Motion, Circle of Friends, Brain Power, Express Yourself, Dream On and My World. Wellness deals with the whole person and all parts of their lives, that is why the theme for this project is “Discovering Myself.”

350 Health B, Fun With Friends

Are you ready to explore your body and learn how to keep it healthy? That’s what “Fun With Friends” is all about. You’ll have fun learning to keep fit, increasing your brain power and expressing yourself in positive ways. Your project manual has six chapters each designed around one of the six wellness factors: Body Motion, Circle of Friends, Brain Power, Express Yourself, Dream On and My World. Wellness deals with the whole person and all parts of their lives, that is why the theme for this project is “Fun With Friends.”

352 First Aid (Safety In Everyday Living)

Be on call and prepared to treat injuries or accidents in everyday life.

355 Keeping Fit

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

357 Alcohol Decisions

Examine the dangers associated with alcohol consumption and abuse to avoid it becoming a problem for you.

358 Tobacco and You

Explore the hazards associated with tobacco products to prevent your health from going up in smoke.

362GPM Tobacco Risk Awareness Program (TRAP)

❖ Recommended for project advisors and classroom teachers.

Become aware of the potential health risks of tobacco products. Twenty-five teacher-ready lesson plans are complete with photo-ready handouts. (\$5.00)

Home Decorating and Designing

491 Adventures in Home Living—Beginner

Make simple furnishings or accessories to make the living spaces in your home more pleasing and practical.

493 Furniture and Woodwork Recycling—Intermediate

Restore an antique or finish or upholster a piece of furniture using appropriate treatments and materials.

494 Designing Interiors—Intermediate

Arrange and decorate a room or equivalent space by applying elements and principles of design to achieve attractive and useful results.

495 Your First Home Away from Home—Advanced

Plan your college dorm room, first apartment or house using housing, furnishing, equipment and management principles.

Horses

171 Basic 4-H Horsemanship

Feed and care for your own saddle horse or pony while becoming more responsible and learn safety with horses.

172 Basic 4-H Horse Science

Gain skills as a judge by recognizing breeds, coloring and markings and gaits as you work with horses and how to safely work with horses.

173 Horseless Horse

Learn about horses without owning one. Over 20 different horse related subjects are covered in easy to use worksheets. This project may also be used during the educational portion of club meetings. Written for the beginner but may be suited for members of all ages. (\$4.75)

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 in conjunction with 190R Equine Record Book.

178 Basic Horse Training

Train your horse in basic skills and discipline by becoming a disciplined teacher. Use in conjunction with the 190R Equine Record Book.®

180 Learning to Jump

Jump over fences by beginning on the flat and taking you and your horse through the course to self-confidence. Use in conjunction with the 190R Equine Record Book.®

181 Draft Horse

Learn the basics of care and showing of the gentle giants of the horse world. Use in conjunction with the 190R Equine Record Book.®

182 Horse Nutrition

Explore digestion, nutrients, feedstuffs, rationing and poison plant identification to protect the health of the horse you love. Use in conjunction with the 190R Equine Record Book.® Purchase Extension Publication 762 Horse Nutrition. (\$4.75)

183 Equine Reproduction and Genetics

Explore breeding and mare and foal management in a project that requires commitment. Purchase Extension Publication 797 Equine Reproduction and Genetics (\$3.50) as your project manual and 4-H 183MPG as your project planning resource. Use in conjunction with 190R Equine Record Book.® (\$2.00)

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 in conjunction with 190R Equine Record Book.®

188 Trail Riding

Team up with your horse for competition or pleasure trail riding. Learn the basics of conditioning your horse. Use in conjunction with the 190R Equine Record Book.®

189 Dressage

Develop your horse's physical abilities and learn how to control the horse's every move. Use in conjunction with the 190R Equine Record Book.®

Required Supplements for Horse Projects**183MPG Equine Reproduction**

Order as a resource for members taking 4-H 183 Horse Reproduction and Genetics. (\$2.00)

190R Equine Record Book

Required for horse project(s) # 175, 178, 180, 181, 182, 183, 184, 188 and 189 and Vet Science project(s) #241, 242 or 243. Complete one record book every year. This record book is not needed for members taking project #171 and #172 because these books contain their own record forms. (\$2.00)

Advisor Supplement for Horse Projects**179AG Uniform Rules for Horse Shows (Revised 2000)**

Used at 4-H horse shows throughout Ohio, although rules may vary at each location. When competing in the state horse show, these rules are followed. (\$2.00)

Insects**644 Exploring our Insect World I**

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

645 Exploring our Insect World II

Expand your insect collection and study insects' helpful and harmful effects on the environment.

Laundry**404 Laundry for Beginners**

Help your family by properly sorting clothes and operating appliances to keep your clothes and you looking good.

405 Laundry-Advanced

Master stains, sizings and presoaks to improve your laundry results.

Lawncare**548 Lawn Care**

Learn all you need to know about caring for your lawn. Includes activities on seeding, weeding, fertilizing, and mowing. Members can also explore the in's and out's of starting a lawn care business. Members should have access to lawn care equipment.

Leadership**370 One-On-One**

One-On-One is a mentoring project designed for teens age 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 protege.

371 4-H Club Teen Leadership

Teens age 13 or older work with a local 4-H advisor to develop and complete an individual plan to provide leadership within a club. A variety of activities and leadership learning experiences are provided.

372 Multi-Level Teen Leadership

In this project, teens complete responsibilities in local, county, and state 4-H programs; participate in study guide experiences; may mentor younger members; and take part in other 4-H teen leadership opportunities. This project is especially appropriate for teens in county 4-H Teen Leadership groups, Junior Leaders or similar leadership programs.

373 Teen Leadership On The Job

The Teen Leadership On The Job project is for teens who are employed and want to develop leadership to "make the best better" on the job. Experiences related to the real world of work, attaining goals and objectives, developing a work ethic, stress management, money management, time management, and performance assessment are included.

374 Teen Boardmanship

This project is designed for teens who serve or are interested in serving on boards or committees. Teens who serve on advisory committees, junior fair boards, student councils, church boards or other groups will gain skills for working on boards, skills in working

with groups, and new understanding for completing their roles and responsibilities through this project.

377 Speak Out

This project is for teens who are interested in serving on awareness teams, as ambassadors, on Speaker's Bureaus, and other public relations groups. Members plan, present, and evaluate at least one program.

Leadership Skills You Never Outgrow Series

In the Leadership Skills You Never Outgrow series youth develop skills in understanding self, communicating, getting along with others, learning to learn, making decisions, managing, and working with groups. Each of the four levels is designed to be completed with a helper or volunteer over a period of one to three years.

391 Leadership Skills You Never Outgrow I: Individual Skills for 9-11 Year Olds

392 Leadership Skills You Never Outgrow II: Individual Skills for 12-19 Year Olds

393 Leadership Skills You Never Outgrow III: Skills for Working in Groups

394 Leadership Skills You Never Outgrow IV: Skills for Leading Groups for Teens.

Advisor Supplement for Leadership Projects

395AG Leadership Skills You Never Outgrow Advisor Guide

Recommended for project advisors in supporting members and helpers in completing the above projects. (free)

390HG-Leadership Skills You Never Outgrow Helpers Guide

Used with all Leadership Skills You'll Never Outgrow projects. Each young person who enrolls in these leadership projects is expected to have a "helper" in completing the project. This guide provides direction for those individuals who serve as project helpers. (free)

511GPM CarTeens

❖ Recommended for use by advisors of 4-H CarTeens groups.

Used to develop and plan more effective programs with CarTeens members. The CarTeens project is for teens who are involved in providing leadership and instruction through the 4-H CarTeens program. The project includes information and experiences for planning, conducting, and evaluating 4-H CarTeens programs. (\$2.75) ®

Required Supplement for Leadership Project

511R CarTeens Member Resource

This resource is only for members who are taking 4-H CarTeens as a group project and is designed to serve as their project book. (\$2.00)

Leisure Activities

496 Collectibles

Investigate the world of collectibles. Explore sports cards, coins, figurines, leaves, autographs, rocks and minerals, and hundreds of other items. Learn collecting skills, and discover why collecting helps young people grow.

Microwave Cooking and Equipment

401 Mysteries of Microwave

Prepare simple recipes using microwave-safe utensils to achieve results your family will love to eat. This project should be the first in the microwave series. This beginning level project is designed for youth age 12 and older and to be taken one time.

402 Marvels of Microwave

Discover how a microwave works to cook, defrost and reheat foods to get your family through the mealtime rush. This intermediate level project is designed to be taken once.

403 Exploring the World of Small Appliances

There's always a new small appliance coming out on the market, do you really need it and where are you going to store it? This project is designed to provide you with knowledge, skills, and experiences related to small kitchen appliances, decision making, and resource management. You will explore the basic information about design, features, and use and care of small appliances. This intermediate level project may be repeated.

Money Management

445 Becoming Money Wise

Monitor your cash flow and see where your money goes by developing a budget and good records to become a responsible consumer. This project is designed as a beginner level book and may be taken one or two years.

448 Teens...On The Road To Financial Success

Teens ages 14-19 will organize their financial life 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.

Natural Resources

611 Let's Explore the Outdoors I

Take field trips and discover plants, trees, insects and animals that live in the woods, streams and fields to learn why conserving nature is important.

612 Let's Explore the Outdoors II

Do something about conserving natural resources after exploring how soils, water, forests and wildlife fit together.

615 At Your Disposal: A Cleaner Environment

Examine the problems and options of waste disposal and why a cleaner environment is important to our families and communities.

617 Exploring Ohio Ponds

Develop an appreciation of the water cycle and the impact of pond ecology on a healthy environment by visiting a pond and learning by observation.

621 Ohio Birds

Observe and identify birds with bird feeders in your yard and on field trips to see the many benefits our feathered friends provide.

Pet Care

215 Guinea Pig

Learn how to select, feed, manage and breed guinea pigs. Small Animal Record Book (214R) required.®

220 Small Animals Project Book

Complete the Interest Areas and age-appropriate activities relating to the small animal species taken as your project. Activities can be repeated or new animal species explored. Species include gerbils, hamsters, mice, rats, chinchillas, ferrets, and hedgehogs. Small Animal Resource Handbook (220R) and Small Animal Record Book (214R) required.®

Required Supplement for Pet Care Projects

214R Small Animal Record Book

This resource must be ordered in conjunction with the appropriate member project book for cats, guinea pigs, cage birds, gerbils, hamsters, mice, rats, chinchillas, ferrets, and hedgehogs. A separate record book should be used for each species of pet projects taken. (\$2.00)

Required Supplement for Small Animal Projects

220R Small Animal Resource Handbook

This project supplement covers the history, selection, handling, housing, nutrition, health, reproduction, grooming and showing of seven species of small animals. Learn about gerbils, hamsters, mice, rats, chinchillas, ferrets, and hedgehogs by using this small animal project resource. (\$8.00)

Photography

579 Adventures With Your Camera—A

Look at the world through your own special viewer by discovering your photography skills. Learn how to properly hold a camera, identify camera parts, properly care for your camera, identify the right film for the circumstances, choose good subjects, and much more. This beginning level project should not be repeated.

580 Adventures With Your Camera—B

Take successful shots with your camera by learning photography basics and advanced techniques in composition and film processing. Learn how to have better camera control, utilize lighting techniques, improve picture composition, improve photos through cropping, position your subject, determine proper film speeds, and much more. This intermediate level project may be repeated. Project #579—"Adventures With Your Camera—A" should be taken prior to doing this project.

583 Adventures With Adjustable Cameras

Refine your photography skills with an adjustable camera by realizing how taking each picture opens your eyes to choices. Learn how to control film exposure, adjust shutter speeds, control sharpness, take night photos, take double exposures, and much more. This intermediate level project is recommended for youth with access to an adjustable camera.

Plant Science

695GPM Go Plants!

"Go Plants!" activities are designed with the busy teacher in mind. This five-week, five-lesson unit focuses on a specific part of the plant each week - seeds, roots, stems, leaves, flowers. Lessons are designed to be taught in 60-minute intervals, with the potential to expand to 120 minutes if optional Digging Deeper and Going Beyond activities are conducted. The book includes student-ready worksheets and fact sheets to enrich the classroom experience. (\$7.00)

Poultry

151 Poultry Production: Raising Pullets

Become a poultry producer and manager through the experience of feeding, watering and caring for chickens for home use or market. Complete your records in the back of this project book to monitor your production decisions.

152 Poultry Production: Raising Broilers

Have fun raising baby chicks for broilers and your family will enjoy the nutritious delicious product. Complete your records in the back of this project book to monitor your management decisions.

153 Raising Fancy Poultry

Discover the many different types of poultry from all around the world to gain an appreciation for these colorful birds. Then, construct a pen, plan a budget, and raise your own Fancy Poultry. Complete your records in the back of the project book to monitor your management decisions.

165GPM The Incredible Egg

❖ Recommended for project advisors and classroom teachers.

Learn about the beginning of life as you study chick embryology. This four-lesson series includes hands-on activities. (\$2.75)

166 Raising Turkeys

Buy, brood and raise a healthy turkey flock with proper equipment and responsible care. Complete your records in the back of this project book to monitor your management decisions.

167 Ducks and Geese

Discover the breeds, markets and duck and geese industries while managing your flock to a healthy profit.

Optional Supplement for Poultry Projects

154R Poultry Judging

You may need this optional resource when evaluating poultry. This is a good reference to study before participating in a judging contest. (\$4.50)

Rabbits

211 Rabbits I

Hop into rabbit raising for business or pleasure by selecting a rabbit and learning about its history, housing and care.

212 Rabbits II and III

Raise and sell rabbits for a profit from show or meat animals to realize a reward from your work.

213 Rabbits-Advanced

Increase your profits and rabbit expertise by learning about genetics and breeding, marketing and tanning hides.

Radio-Controlled Vehicles

504 Radio Controlled Vehicles

Be your own pit crew and driver by assembling or modifying (battery operated) radio-controlled cars or trucks to take the checkered flag. Not for use with boats, aircraft or gas-powered vehicles.

Rope

540 Rope

Tie up loose ends with the rope artistry of knots, hitches, splices and special uses that help get the job done.

Self-Determined

365 Self Determined Project Guide (Free)

Each year, 4-H members use the Self Determined Project Guide to explore a topic that is presently unavailable as a statewide project. This publication allows members to outline the areas of interest and activities they wish to conduct over the course of their project. Order one “Self Determined Project Guide” for each self determined project that you wish to take. In 2001, counties will have the opportunity to send members to compete at the Ohio State Fair during Self Determined Project Day. (Note: Be sure to check out our list of Idea Starter topics for a Self Determined project.)

Idea Starters—Self Determined Project Resources (Free)

“Idea Starters” may be just the thing to get you started in an area that interests you. Use these two page publications as a resource for your Self Determined project. You may choose to do a little or a lot depending on your level of interest in any of these topics. Use in conjunction with the 4-H 365 Self Determined Project Guide. For the latest listing of Project Idea Starters, contact your county OSU Extension office or visit our web page at www.ag.ohio-state.edu/~idea. If an Idea Starter is unavailable for the topic you wish to explore, you can still explore the topic of your choice by using only the 4-H 365 Self Determined Project Guide.

365.01—Astronomy

365.02—Model Railroading

365.03—Weather

Sheep

198 Market Lamb Project and Record Book

Complete this required project book every year a market lamb project is taken.® Use in conjunction with the #194R Sheep Resource Handbook to monitor your management decisions.

199 Pilot Sheep Breeding Project and Record Book

Complete this required project book every year a sheep breeding project is taken.® Use in conjunction with the #194R Sheep Resource Handbook to monitor your production practices.

Required Resource Supplement for Sheep Projects

194R Sheep Resource Handbook for Market and Breeding Projects

Order only once and use for several years. It contains essential subject matter information for members taking a market lamb or sheep breeding project. This is an excellent resource for skill-a-thons. (Price to be determined.)

Optional Supplements for Sheep Projects

101R Livestock Evaluation Reasons Notebook

This optional book for older youth will assist you in preparing notes for oral reasons in judging contests. Use this in conjunction with 103R Beef, Sheep and Swine Selection and Evaluation. (\$2.75)

103R Beef, Sheep and Swine Selection and Evaluation

This optional resource is for beginners who want to learn more about selecting and evaluating livestock. Order it only once and refer to it when selecting projects or before attending a judging contest. (\$2.25)

104R Pennsylvania Livestock Judging Manual

This optional book will assist older youth 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 understanding EPDs. (\$2.00)

Shooting Sports

4-H Shooting Sports Program

❖ Recommended for use by project advisors. There are NO member manuals for this program. This leader-directed program is to be taught by certified volunteers only.

Teach young people the safe and responsible use of archery equipment and the fundamentals of firing air guns, .22 caliber and black powder rifles, pistol and shotguns and the basic principles of hunting. Project literature is available only to adults who have

completed a 4-H Shooting Sports Training Workshop. Check with your county Extension office for more details.

Shooting Sport Record Books

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

750 Rifle Record Book

751 Archery Record Book

752 Shotgun Record Book

753 Pistol Record Book

754 Hunting and Wildlife Record Book

755 Muzzle Loading Record Book

Small Engines

541 Crank It Up

Learn about basic small engine parts, tools of the trade, and safety. You'll have fun discovering how engines work.

542 Warm It Up

Go a little deeper in the world of small engines. Learn different engine types and sizes, internal parts, specialized tools, compression, seasoning your engine, and starting your own business.

543 Tune It Up

Take on new challenges with small engines as you learn how to tear down and rebuild engines. You'll also use diagnostic tools, learn about engine selection, and become familiar with small engine regulations.

Volunteer Supplement for Small Engine Projects

544HG Small Engine Helper's Guide

This guide is for volunteer leaders who are working with young people in any of the three levels of small engines. It has activities and ideas to make your group meetings more fun and educational. (\$2.25)

Sportfishing

760 4-H Sportfishing

The 4-H sportfishing program is based on the shooting sports model.

❖ Recommended for use by project advisors. There are NO member manuals for this program. This leader-directed program is to be taught by certified volunteers only. Project literature is available only to

adults who have completed a 4-H sportfishing training workshop. Check with your county extension office for more details. Fishing is a sport that can be enjoyed a lifetime. This program teaches fishing technique, tackle crafting, fishing ethics and environmental issues.

Swine

139 Market Hog Project and Record Book

Complete this required project book every year a market hog project is taken.® Use in conjunction with the #134R Swine Resource Handbook to monitor your management decisions.

140 Pilot Swine Breeding Project and Record Book

Complete this required project book every year a swine breeding project is taken.® Use in conjunction with the 134R Swine Resource Handbook to monitor your production practices.

Required Resource Supplement for Swine Projects

134R Swine Resource Handbook for Market and Breeding Projects

Order only once and use for several years. It contains essential subject matter information for members taking a market hog or swine breeding project. This is an excellent resource for skill-athons.

Optional Supplements for Swine Projects

101R Livestock Evaluation and Reasons Notebook

This optional book for older youth will assist you in preparing notes for oral reasons in judging contests. Use this in conjunction with 103R Beef, Sheep and Swine Selection and Evaluation. (\$2.75)

103R Beef, Sheep and Swine Selection and Evaluation

This optional resource is for beginners who want to learn more about selecting and evaluating livestock. Order it only once and refer to it when selecting projects or before attending a judging contest. (\$2.25)

104R Pennsylvania Livestock Judging Manual

This optional book will assist older youth 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 understanding EPDs. (\$2.00)

Tractor and Machinery Operation

550GPM Safe Operation of Agricultural Equipment

❖ Recommended for project advisors and classroom teachers. Discover why accidents occur on even conscientious farms. Then learn the importance of driving safely behind the wheel of a tractor. (\$6.50) ®

Required Supplement for Tractor Project

550R Safe Operation of Agricultural Equipment

Workbook for members who are taking 4-H 550 project as a group or part of the 4-H tractor certification program. (\$6.50)

Trapping

622 Trapping Muskrats in Ohio

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

Veterinary Science

241 The Normal Animal

Recognize basic veterinary practices and how they influence animals' health, comfort, recreation and livestock values. When using in conjunction with horses, purchase and complete 190R Equine Record Book.

242 Animal Disease

Recognize animal behavior as an indicator of disease that's much like a human's when treating sick animals. When using in conjunction with horses, purchase and complete 190R Equine Record Book.

243 Animal Health-Relation to World

Independently investigate veterinary medicine and animal behavior and health in relation to our changing world. When using in conjunction with horses, purchase and complete 190R Equine Record Book.

Water Science

601GPM SPLASH₂O

❖ Recommended for 3rd–7th grade teachers or project advisors. Science based program for learning about society and water. This one lesson unit is ideal for introducing youth to where water comes from, how it's used and where it goes. (\$2.75)

602GPM Beans About Water

❖ Recommended for 4th-8th grade teachers or project advisors. Learn about water, its properties and other states of matter with the help of soy-related products. Lessons include the study of water density, surface tension, cohesion, adhesion, coagulation, polymerization and suspension. Total of four lessons designed for groups of 25. Ages 10 and up. (\$2.00)

Welding

572 Arcs and Sparks—Shielded Metal Arc Welding

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

Wildlife

770 Wildlife Habitat Evaluation Program (WHEP)

❖ Recommended for use by project advisors. There are NO member manuals for this project. To be taught by certified volunteers only. Project literature is available only to adults who have completed a 4-H WHEP Coaches Training Workshop. Check with your county OSU Extension office for more details. 4-H WHEP is designed to teach youth the fundamentals of wildlife management. Components of 4-H WHEP are identifying wildlife foods, interpreting wildlife habitat from aerial photographs, prescribing wildlife management practices and developing urban and rural wildlife management plans.

Woodworking

556 Measuring Up—Level 1

Get started in woodworking by selecting a project helper and setting up a safe place to work with wood working tools such as: ear and eye protection, ruler or tape measure, a square (utility, try framing or combination), a hand cross cut saw, a coping saw, an electric drill, clamps, a screwdriver, a hammer and sand paper. Build and finish a project of your choice.

557 Making the Cut—Level 2

Select a wood project that will show off your new skills with: a T-level, a miter box, a wood chisel, a hand jig saw, a scroll saw, a hand stapler and a power sander. You will also learn more about the different species of wood.

558 Nailing it Together—Level 3

Build a more complex project using dowel joints, spline joints or tongue and groove joints. Learn to use a circular saw, radial arm saw, table saw, router, hand plane, power stapler, pipe clamps, and adjustable bar clamps to complete a project activity of your choice.

559 Finishing Up—Level 4

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

Advisor Supplement for Woodworking Project

560HG Woodworking Helper's Guide

This guide is for volunteer leaders who are working with young people in any of the four levels of woodworking. It has activities and ideas to make your group meetings more fun and educational. (\$2.25)

Writing

587 Writing and Reporting for Teens

Write, report and photograph your way to fame! This project is designed to provide practical experience in news gathering and reporting and contains some basic activities designed to help youth become a good reporter and writer. This advanced level project is recommended for teens age 14-19 who have basic skills in English and a working knowledge of cameras.

588 Creative Writing

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