

Project Descriptions

Aerospace Science

4engineering.osu.edu

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 and an IBM compatible program for designing and launching water rockets may be available from your county Extension office. Visit our website at www.ag.ohio-state.edu/~rockets. Members wishing to launch Estes-type rockets should take 503. 2006.

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 for studying the science of rocketry through a variety of hands-on experiments. Suitable for members of all ages, who 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 may be available from your county Extension office. 2006. (\$7.50)

502 Fun with Flight

Experiment with the forces of flight by building and flying a model airplane or glider to soar above the earth. Visit our website at www.ag.ohio-state.edu/~flight. 2006.

503 Rockets Away (Estes-type)

Study the science of rocketry through a variety of hands-on experiments for all ages. Members conclude this project by building and launching an Estes-type rocket from scratch or a kit. Note: Members wishing to build and launch 2-liter bottle rockets should take 501. 2006.

Optional Supplements for Rockets Away (2-liter bottles)

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 the ability to load program from a CD drive. 1999. (\$18.50)

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. Select from the standard launcher (\$58.00) or launcher with built-in pressure gauge (\$68.00). To order, send check or money order to: Versey Enterprises, 1258 North 110 East, Shelley, Idaho 83274. Price includes shipping and handling. Allow two weeks for delivery. For additional information, call (208) 357-3428.

Afterschool Agriculture

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

760GPM Acres of Adventures 1

❖ Club helpers enjoy using these lesson plans to quickly engage youth in learn-by-doing agriculture activities within the following thematic units: Plant Detectives, Mystery Agriculture, All About Agriculture, Fast Food Agriculture. (100 pages) 2006. (\$11.75)

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, Frontier Living. (100 pages) 2006. (\$11.75)

All-Terrain Vehicles

4engineering.osu.edu

Advisor Supplement for ATV

554GPM ATV Safety, Leader's Guide

❖ New in 2009! Directs leaders on how to implement service learning projects, involve parents in supervision/education of young riders, and much more. 2007. (18.25)

Aquatic Science

625GPM Fishy Science

❖ Recommended for project helpers and 3rd through 5th 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. 1993. (\$6.25)

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. 1995.

Athletics

300 You're the Athlete

This project is 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. 2003.

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 with 117R Beef Resource Handbook. © 2000.

114 Beef Breeding Project and Record Book

Complete this required project book every year a beef breeding project is taken. Use with 117R Beef Resource Handbook. © 2006.

116 Beef Feeder Calf Project and Record Book

Complete this required project book every year a beef feeder calf project is taken. Care for and manage one or more beef cows and their calves or a purchased feeder calf. Use with 117R Beef Resource Handbook. © 2002.

119 Dairy Beef Feeder Project and Record Book

Raise, keep records, and market one or more dairy beef feeder steer calves to a specific weight as determined by your county. Use with 117R Beef Resource Handbook. © 2002.

**Ohio 4-H Teen Conference
Saturday, February 21, 2009**

**Join teens from around Ohio
to share ideas, training and friendship!**

**More than 100 workshops focusing on
leadership, team building, 4-H projects and
issues that teens face everyday.**

**This event is made possible by the
generous sponsorship of
The Wendy's International Foundation**



**WENDY'S
INTERNATIONAL
FOUNDATION**

Required Supplement for Beef Projects

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

Order this book once and use it for several years. Contains essential subject matter information for members taking a market beef, beef breeding, beef feeder calf, dairy beef feeder, or dairy steer project. An excellent resource for skillathons! 2000. (\$12.00)

Optional Supplements for Beef Projects

828 Livestock Evaluation Reasons Notebook

This optional book for older youth assists in preparing notes for oral reasons in judging contests. Use this with 103R Beef, Sheep and Swine Selection and Evaluation and with 104R PA Judging Manual. (\$7.75)

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. 1995. (\$8.50)

104R Pennsylvania Livestock Judging Manual Advisor Supplement for Career Projects

This optional book for older youth assists with advanced evaluation skills in using 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). 1997. (\$5.00)

Bicycle

4hengineering.osu.edu

517 Bicycle Adventures, Level 1

Cycle to safety and sporting success with bicycle equipment and accessory tips that fit your needs. This beginning level project is designed for younger members. Not available to Cloverbud members. 2000.

518 Bicycle Adventures, Level 2

Tips on buying and maintaining your bike to get the best performance from it. Learn new skills for safe riding on trails and in traffic. 2000.

519 Bicycle Adventures, Level 3

Customize and maintain your bike to maximize your skills for having fun and serving the community. 2000.

The above Bicycle Adventures series is no longer available through National 4-H. The series they currently offer does not correspond with this one.

Career Exploration

379 Get in the Act! Take 1

This innovative program is designed to help middle school youth explore what it takes to get their first “paying” job. This interactive experience, combining CD and activity guide formats with activities presented in the context of a movie set, helps youth recognize their learning styles and personal qualities. Youth make real life choices using video scenarios in the on-the-job choices game. Youth discover how to assess job possibilities in the community and create job scenarios. 2005.

Helper Supplement for Career Projects

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

Helpers both in and out of the classroom enjoy using this guide with the CD to incorporate workforce skills in their work with youth. It's an interactive experience, making it exciting for youth. Activities reinforce and extend learning with emphasis on personal qualities, working with others, and thinking skills. Youth create their own work plan by applying what they learned to get that first job and attaining future career goals. All activities and skill areas support the national SCANS Workforce skills and educational standards. 2005. (\$8.50)

**The 4-H Motto is
"To Make The
Best Better"**

Cats

southcenters.osu.edu/4h/sm_animal

216 Purr-fect Pals, Level 1

Learn about being a good cat owner by taking this beginning-level cat project. You also learn about cat breeds, behavior, good health, grooming, and feeding. Designed for youth in grades 3 to 5, but can be taken by any youth in the first three years of this project. 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 cats, health and nutritional needs of cats, and responsible cat ownership. Designed for youth in grades 6 to 8, but may be taken by youth in any grade after they complete Cat 1. Cat 2 can be taken for three years. 2005.

218 Leaping Forward, Level 3

Delve 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 various 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. 2005.

Helper Supplement for Cat Projects

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

Child Development

434 Growing on My Own

This beginner-level 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. This project may be taken for two years. 2004.

435 Growing with Others

In this intermediate-level 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. Important life skills used in this unit are planning and organizing, critical

thinking, concern for others, accepting differences, teamwork, leadership, self-responsibility, and personal safety. This project may be taken for two years. 2004.

436 Growing in Communities

In this advanced-level 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, self-responsibility, and personal safety are the life skills emphasized in this unit. This project may be taken for two years. 2004.

Helper Supplement for Child Development

Are you a club helper in need of group activities that focus on child development? The Child Development Helper's Guide features nine engaging group activities that encourage youth to work with younger kids in after-school programs, day care centers, day camps, and kids in their own 4-H clubs. Available from the National 4-H Council Source Book and at www.4-Hmall.org.

Clothing

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 more detailed information and consult your county 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 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.

For Younger Members

409 Ready Let's Sew

Are you ready to sew? This project is fun and exciting! You learn to make your own clothing and accessories. Several patterns are included in the project book: 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 a beginner-level project for members ages 9 to 11. A member who successfully completes this project is ready to move on to 413 Joyful Jumper or 419 Tops for Tweens. 1996.

410 Fun with Clothes

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 for younger 4-H members in grades 3 to 5. 1995.

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. 1998.

Especially for 'Tweens

413 Joyful Jumper

This project is designed as a beginner-level project for ages 11-13. Plan and make a jumper, select a top to wear with it if needed or desired and choose other items to complete your outfit. Choose accessories and a top to make a complete outfit that 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.) 1991.

419 Tops for Tweens

This project is designed as a beginner-level project for youth ages 11 to 13. 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.

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.

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 project is designed for youth ages 12 to 14. 1998.

Especially for Teens

406 *Clothes for High School and College*

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

407 *Accessories for Teens*

This project is designed as a beginner level project for teens with no previous sewing experience. 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, using accessories effectively, taking a wardrobe inventory, and accessorizing for a total look. Do at least one leadership/citizenship activity. 1995.

420 *Outer Layers*

This is an advanced-level project for older 4-H teens in which you will make a coat, jacket, or cape. Although sewing a tailored garment is challenging, it provides a new learning experience and a sense of satisfaction and accomplishment when complete. 1997.

425 *Frugal Fashion*

This project challenges older 4-H teens to use creativity and resourcefulness as they put together a total look outfit. Youth purchase or put together outfits; however, the focus is on spending the least amount of money possible. Activities involve investigating sales merchandise, evaluating quality and use of second

hand or resale clothes, recycling garments already in the wardrobe. This project does NOT involve sewing or clothing construction skills. 2000.

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 project is designed for youth ages 15 to 18. 1998.

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

412 *Sew For Others*

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. If this project is repeated, a different category of "others" should be selected each time. 2000.

415 *Active Sportswear*

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 project may be repeated. 1990.

423 *Sportswear for Spectators*

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 project may be repeated. 1990.

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

408 *Creative Costumes*

Participants choose to make a costume in one of four categories: historical, ethical/cultural, theatrical, or special interest. Goals of the project include understanding clothing and its significance to individuals and groups as well as applying new knowledge to planning and making a costume related to the goals of the specific costume category. Projects are evaluated according to the seven clues to a total

Travel the World!

Invite the World Home!

The Ohio 4-H International Program provides outstanding opportunities for youth to travel overseas and live with host families.

Ohio families can host youth and adults from many countries here at home too!



Refer to page 28 for more information.

look. In addition, evaluation includes authenticity of adoption and knowledge of costume history or background related to the specific costume chosen. This project is recommended for teens and may be repeated, however a different category of “costumes” must be selected. 1995.

417 Dress Up Outfit

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.

418 Lounging Apparel

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, slippers, or shoes) to complete your lounging outfit. Compare lounge wear fabrics and garments in a shopping experience. 2003.

426 Clothing for Your Career

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. 2000.

Optional Supplement for Clothing Projects

422R Clue Yourself into Modeling

Learn more about how to properly model your outfit. Available on the web at www.ohio4h.org/publication.

Cloverbuds

710GPM Ohio Cloverbud Program Manual—Series I

❖ Recommended for use by 4-H Cloverbud helpers. This Ohio 4-H Cloverbud curriculum includes hundreds of short-term, fun, cooperative, noncompetitive activities that can be used by adult volunteers with 4-H Cloverbud youth (age 5 and in kindergarten until age 8 and in the third grade) to help them gain self-understanding, social interaction skills, achievement, and positive attitudes. The 4-H Cloverbud activities 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. Pages are color coded and 3-hole punched for easy organization 1994. (\$15.00)

2008 National
4-H Program of
Distinction

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

❖ This is a second set of instructional 4-H Cloverbud curriculum recommended for use by 4-H Cloverbud leaders and advisors with 4-H Cloverbud children (age 5 and in kindergarten until age 8 and in the third grade). Same goals and objectives as the first 4-H Cloverbud Program Manual. There are 25 curriculum pieces in the set with about 9 activities per piece which totals over 225 activities. Pages are color coded and 3-hole punched for easy organization. 2000. (\$18.00)

2008 National
4-H Program of
Distinction

Helper Supplement for Cloverbuds

711AG 4-H Cloverbud Volunteer Guidebook

❖ This concise reference piece 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 program participants. 2005.

Communications Resources

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

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. (web only)

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. (web only)

Helper Supplement for Public Speaking

971AG Tools for (Teaching) Public Speaking

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

Creative Arts

10

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. 1998.

Dairy Cattle

119 Dairy Beef Feeder

(See Beef on page 5.)

122 Dairy Heifer Project and Record Book

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

126 Dairy Cow Project and Record Book

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

Required Supplement for Dairy Projects

127R Dairy Resource Handbook

This resource handbook contains important information for members taking a dairy heifer or dairy cow project. Needs to be purchased only once and can be used for several years. This is an excellent resource for skillathons. 2003. (\$11.25)

Optional Supplements for Dairy Projects

828 Livestock Evaluation Reasons Note Tablet

This optional book for older youth assists in preparing notes for oral reasons in judging contests. Use this with 124R techniques of Judging Dairy Cattle. (\$7.75)

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. 1996 (\$14.00)

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.

Discovering 4-H

91 Discovering 4-H

New in 2009! 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 a 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. Available December 2008.

Dogs

southcenters.osu.edu/4h/dog

201 Dog Project and Record Book

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

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

201D *You and Your Dog*. Recommended as a first-year dog project and also as a complement to other dog projects. Can be taken every year.

201O *Obedience*. Covers beginning and advanced obedience training and Rally.

201S *Showmanship*. Learn the basics of dog showmanship.

201P *Performance*. Includes agility, drill team, canine freestyle, and other performance events.

201W *Working Dogs*. Includes assistance dogs such as Pilot Dogs, Inc., Canine Companions for Independence, and other service dog organizations.

Required Supplement for Dog Projects

201R Dog Resource Handbook

This resource handbook contains essential information for members taking a dog project and includes everything from selecting a dog that's right for you, proper care, training techniques, dog anatomy, competition, and much more. Purchase it just once and use it for several years. 2008 (\$14.00)

Electricity

4hengineering.osu.edu

527 Magic of Electricity, Level 1

Look around and explore the world of electrical energy. 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. 2002.

528 Investigating Electricity, Level 2

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. 2002.

529 Wired for Power, Level 3

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. 2002.

530 Entering Electronics, Level 4

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 successfully completed 528 Investigating Electricity and has solid soldering skills and circuitry knowledge. 2002.

531 Science Fun with Electricity

New in 2009! This beginning electricity project book includes eleven kid-friendly and time-tested experiments about static electricity, currents, electromagnetism, electric motors, and electric light. Each experiment has a brief introduction, a supply list, and step-by-step instructions that bring an electrical concept to life. Journal questions for each section ensure understanding and learning. Includes a complete list of supplies and a cross-reference with Ohio science education standards. Project requires additional supplies. 2009. Available December 2008.

Advisor Supplement for Electricity Projects

Electric Group Activity Guide

This guide is for helpers 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. Available from the National 4-H Council Source Book at www.4-Hmall.org.

Fishing

623 Fishing for the Beginner

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

624 Fishing for the Intermediate

Bait the hook again to learn more about fishing methods and equipment and fish in the ecology. 1991.

Food Science

489GPM Breads of the Harvest

❖ Recommended for project helpers or third and fourth grade teachers. This three-lesson project teaches the science, history, and nutrition of bread making since the pilgrims. Members conclude by making a loaf of colonial bread. Individual members do NOT need a separate project book. 1999. (\$11.50)

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. 2000.

498GPM Science Fun with Dairy Foods

❖ Recommended for project helpers and junior and senior high teachers. A series of nine easy-to-use lesson plans introduces experiments such as making yogurt, growing molds, and ripening cheeses to explore the science behind the production of dairy foods. Individual members do NOT need a separate project book. 2000. (\$7.25)

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 member guides for more detailed information and consult your county Extension office for specific requirements related to local and state evaluation opportunities.

The MyPyramid symbol and interactive food guidance system was released by USDA on April 19, 2005, to replace the 1992 Good Guide Pyramid. MyPyramid encourages Americans to eat healthier and move more by giving individualized recommendations. Ohio 4-H uses MyPyramid in all nutrition projects. Additional information is available by going to <http://www.mypyramid.gov>.

Beginning Level

459 I Spy In the Kitchen

Everyone enjoys good food, but preparing good food involves solving a few mysteries! In this project you learn about the Food Guide Pyramid and the foods you need to eat each day to be healthy. You also learn to prepare simple recipes that you will enjoy serving to your friends and family. For youth ages 9 to 11. 2001.

12

466 Mini Meal Magic

In this project, members learn to prepare balanced meals, tasty snacks, yummy desserts, and special treats that you, your family, and friends will enjoy. This project also teaches good shopping skills and the nutritional value of the foods prepared. For youth ages 8 to 11. 1995.

481 Food and Fitness for Fun

Combine cooking, nutrition, food safety information, great recipes, and activities related to food and fitness with a goal for a healthier life. For youth ages 9 to 11. 1995.

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 youth age 10 to 12 who have completed at least one beginning-level 4-H food and nutrition project (examples: I Spy in the Kitchen, Mini Meal Magic). 2000.

Intermediate Level

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. For youth ages 11 to 13. 2001.

468 Meals In Minutes

Today's busy life-styles require new ways to prepare nutritious meals in a short time. In this project you learn how to manage time wisely while preparing foods that are easy, tasty, and good for you. For youth ages 11 to 13. 1996.

472 Outdoor Chef

Eating outdoors has become as much a part of our lives as baseball and pizza. Whether it is a picnic table on the patio, a blanket by the lake, or a campsite in the wilderness, food is always enjoyed when it is eaten or prepared outdoors. This project guides you through a variety of outdoor food experiences suited to a fast-paced, casual life-style. For youth ages 12 to 14. 1997.

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. For youth ages 12 to 14. 1996.

482 Food and Fitness Choices for You

The fitness and exercise choices you make when you are young help you to reach 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 learn to be a better consumer, to prepare tasty nutritious foods, and to have lots of fun while making your body stronger and healthier. For youth ages 12 to 14. 1997.

Advanced Level

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. For youth ages 14 and older. 2000.

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. For youth ages 14 and older. 1998.

469 *Global Gourmet*

Enjoy the many flavors of foods from around the world! You explore the food history, customs and nutritional needs around the globe to better understand our world. For youth ages 14 and older. 1996.

476 *Pathways to Culinary Success*

This project explores a variety of new experiences to gain a basic understanding of culinary arts. Learn techniques used by cooks and chefs, the use of basic equipment, and the art of meal presentation. Prepare meats; stocks and sauces; pies and pastries; and garnishes! Career exploration, advanced recipes, and lots of activities are included in this project. Members taking this advanced-level project should have completed projects at the beginning and intermediate levels. For youth ages 14 and older. 2001.

488GPM *Team Up for Good Nutrition*

❖ Team Up For Good Nutrition is a designed for in-school classroom activities that also can be used to enhance 4-H club activities and out-of-school time programs. The goal of this program is to improve the health of children by empowering them to choose a variety of foods, eat more grains, vegetables, and fruits; and construct a diet lower in fat. Helps teachers and leaders teach the basics of healthful eating in a lively way that engages youth and takes the message beyond the classroom to the school cafeteria and into students' homes. Designed for use in 3rd or 4th grade classrooms. 2003. (\$13.50)

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. 1991.

614 *Tree Planting*

Participate in forest management by planting 10 to 200 trees for wood products, to aid conservation, and to protect wildlife. 1991.

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. 1998.

674 *Indoor Gardening*

Learn about keys to successful house plant culture and discover the pleasures of indoor gardening. 1989.

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. 1994.

692 *Growing With The Seasons*

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

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. (\$10.75)

Genealogy

442 *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. 2003.

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. Expanded quality assurance and animal records sections help you learn how to care for and manage your animal or herd. Use with 135R Goat Resource Handbook. © 2007.

135D *Dairy Goats*

135F *Fiber Goats*

135H *Harness Goats*

135M *Meat Goats*

135PA *Pack Goats*

135PY *Pygmy Goats*

Required Supplement for Goat Projects

135R *Goat Resource Handbook*

This resource handbook contains essential information for members taking a goat project, starting with breeds, ending with careers, and including everything in between. This book needs to be purchased only once and is an excellent resource for skillathons. 2008. (\$15.00)

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. 1996.

Health

351 Staying Healthy

Are you ready to explore your body and learn how to keep it healthy? That's what this project is all about. 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 Decisions

Examine the dangers associated with alcohol consumption and abuse. Learn about this problem so you can avoid it. 1988.

358 Tobacco and You

Explore the hazards associated with tobacco products to prevent your health from going up in smoke. 2000.

Home Decorating and Designing

491 Adventures in Home Living

Revised in 2009! In this beginner-level project, you learn to make simple furnishings or accessories to make the living spaces in your home more pleasing and practical. 2009. Available December 2008.

494 Designing Interiors

In this intermediate-level project, you learn to arrange and decorate a room or equivalent space by applying elements and principles of design to achieve attractive and useful results. 1988.

495 Your First Home Away from Home

Plan your college dorm room, first apartment, or house using housing, furnishing, equipment, and management principles. This is an advanced-level project. 1990.

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 also may be used during 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. 2006. (\$11.25)

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

Training horses from birth to maturity. Understand horse behavior and how to use it to create a good relationship between horse and horseman. This book includes the CD Basic Horse Training by Dr. Robert Kline. Use with the 190R Equine Record Book. ® 2003 (\$10.00)

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 with 190R Equine Record Book. ® 1987.

181 Draft Horse

Learn the basics of care and showing of the gentle giants of the horse world. Use with 190R Equine Record Book. ® 1985.

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. ® 2000.

189 Dressage

Develop your horse's physical abilities and learn how to control the horse's every move. Use with 190R Equine Record Book. ® 1999.

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. (\$8.50)

Required Supplements for Horse Projects

190R Equine Record Book

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

Additional horse resources are located on the next page.

191R Horses, Safety, and You

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

Helper and Youth Supplement for Horse Projects

179 Uniform Rules for Horse Shows (Revised 2009)

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. 2009. Available November 2008.

Insects

644 Exploring Our Insect World 1

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

645 Exploring Our Insect World 2

Expand your insect collection and study insects' helpful and harmful effects on the environment. 1991.

Lawn Care

4hengineering.osu.edu

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.

Leadership

370 One on One

One on One 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 protégé. 1994.

371 4-H Club Teen Leadership

Teens ages 13 and 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. 1994.

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. 1994.

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. 1994.

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 gain skills for working on boards, skills in working with groups, and new understanding for completing their roles and responsibilities through this project. 1996.

377 Speak Out

This project is for teens who are interested in serving on awareness teams, as ambassadors, on speaker bureaus, and other public relations groups. Members plan, present, and evaluate at least one program. 1994.

511GPM CARTEENS

❖ Recommended for use by helpers 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. © 1994.

Required Supplement for CARTEENS

511R CARTEENS Member Resource

Revised in 2009! This resource is for members who are taking the group project 4-H CARTEENS and who want to add to the experience by also taking it as an individual project. After setting goals, build on the skills you are already using as a CARTEENS teen leader: public speaking, teaching, professionalism, and leadership. 2009. Available November 2008.

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. 2000.

Llamas and Alpacas

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.

Required Supplement for Llama and Alpaca Projects

132R Llama and Alpaca Resource Handbook

This resource handbook contains essential information for members taking a llama or alpaca, starting with their uses and selection, ending with training, and including everything in between. This book needs to be purchased only once. 2008. (\$13.00)

Money Management

441GPM Real Money, Real World CD

❖ Real Money, Real World is an active, hands-on simulation that gives young people the opportunity to make lifestyle and budget choices similar to what 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 the following 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. 2008. (\$13.50)

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. This project is designed as a beginner-level book and may be taken one or two years. 1995.

446 Money Fundamentals

Book 1 for tweens ages 12 to 13. Did you know you have a "money personality?" Identify your money personality and values and apply this information on setting goals, identifying wants and needs, and communicating about money issues. This project prepares you to begin to make money decisions. 2003.

447 Money Moves

Book 2 for teens ages 14 to 15. We all need money. This project prepares you to become confident in your uses of money, the benefits and drawbacks of credit, use of banking services, how advertising influences you, and the art of being a savvy consumer. (Money Fundamentals should be taken before this project). 2003.

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 Financial Champions

Are you a club helper who would appreciate group activities for your Financial Champions? The Financial Champions Helper's Guide includes leader-directed experiences and activities. An interactive web-based game reinforces the concepts. Available from the National 4-H Council Source Book and at www.4-Hmall.org.

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. 1989.

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. 1988.

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. 2000.

Pet Care

southcenters.osu.edu/4h/sm_animals

215 Guinea Pig

Learn how to select, feed, manage, and raise guinea pigs. 1987.

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. This book is a one-time purchase that is useful for many projects, regardless of the kinds of small animals you have over the years. Small Animal Resource Handbook (220R) and Small Animal Record Book (214R) required. © 1997.

Required Supplements for Small Animals Projects

214R Small Animals Record Book

This resource must be ordered with the appropriate member project book for gerbils, hamsters, mice, rats, chinchillas, ferrets, and hedgehogs. A separate record book should be used for each species of pet projects taken each year. 1994.

220R Small Animals 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. This book is a one-time purchase that is useful for many projects, regardless of the kinds of small animals you have over the years. 1997. (\$19.25)

(4-H) PetPals

230GPM 4-H PetPALS

❖ 4-H PetPALS is an intergenerational program that links youth and their pets with senior adults. Specially-trained master 4-H volunteer leaders teach youth the skills they need to interact with residents in health care facilities such as assisted living and nursing home facilities. By applying the power of the human-animal bond, 4-H members learn to select, socialize, and train their pets. Youth apply the lessons in this 214-page, experientially-based curriculum to develop their leadership and citizenship skills. 4-H PetPALS allows young people to be models for residents in health care facilities and the community at large as they demonstrate the significance of human-animal interactions and the importance of inter generational relationships. Check with your county Extension office for more details. 2003. (\$25.75)

230 4-H PetPALS Member Resource

This required member resource helps 4-H members set goals for the year and keep records of their PetPALS activities and accomplishments. Youth must belong to a 4-H club or group with a trained master 4-H PetPALS volunteer leader. This resource cannot stand alone as a 4-H project. Contact your county Extension Educator for more details. 2003.

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. The comprehensive introduction to the world of photography covers camera settings, lighting techniques, and composition skills. *Fixed lens, or "point and shoot," cameras are OK.* 2007. (\$8.00)

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. (\$8.00)

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 (\$8.00)

Plant Science

695GPM Go Plants!

❖ Recommended for project helpers and 3rd to 5th grade teachers. 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 minutes, with the potential to expand to 120 minutes if optional Digging Deeper and Going Beyond activities are conducted. Includes student-ready worksheets and fact sheets to enrich the classroom experience. Individual members do NOT need a separate project book. 2000. (\$12.00)

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. 1991.

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. 1992.

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. 1992.

166 Raising Turkeys

Revised in 2009! 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. 2009. Available December 2008.

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

New in 2009! Recommended for project helpers and classroom teachers. What can we learn from a chick? Find out this school enrichment program that challenges youth to use science, engineering, and technology to investigate the life cycle of an embryonic chicken egg. From monitoring living eggs to observing fluffy chicks, these lively activities pique curiosity, encourage collaboration and communication, and provide young scientists with unforgettable experiences. Full-color poster of a chicken cycle is included. A ChickQuest Log Book (167R) is required for each student. 2009. Available December 2008. (\$TBD)

167R ChickQuest Logbook

New in 2009! This 21-day classroom adventure starts with eggs and ends with chicks. Students are the scientists that help make it happen! This personal ChickQuest Logbook is used to record data and observations. Sold in classroom sets of 25 with one full-color, write-on poster of 21-day chick embryo development. For use with 167GPM ChickQuest: The Scientific Journey through a Life Cycle (Teacher Guide). Cost per student is approximately \$1.50. 2009. Available December 2008. (\$TBD)

168 Duck or Goose

Discover the breeds, markets, and duck and geese industries while managing your flock to a healthy profit. 2005.

State 4-H Leadership Camp

July 13 – 17, 2009
4-H Camp Ohio

Become one of a select group of teens sharpening your leadership abilities, learning new skills and making new friends.

Scholarships for campers from each of Ohio's 88 counties are provided by the Nationwide Foundation and Ohio Farm Bureau Federation, Inc.



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. 1999. (\$11.00)

Rabbits

southcenters.osu.edu/4h/sm_animal

225 Breeding Rabbit Project and Record Book

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

226 Market Rabbit Project and Record Book

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

227 Pet Rabbit Project and Record Book

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

Required Supplement for Rabbit Projects

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

Order this book only once and use for several years. It contains essential subject matter information for members taking a market rabbit, breeding rabbit, or pet rabbit project. This is an excellent source for skillathons. 2003. (\$10.00)

Radio-Controlled Vehicles

4hengineering.osu.edu

504 Radio Controlled Vehicles

Be your own pit crew and driver by researching, purchasing, 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. 1994.

Robotics

507 Robotics Explorer, Level 1

New in 2009! Programming concepts are introduced using the LEGO's RoboLab language. Youth learn what a robot is, how to build one using a LEGO robotics kit, and how to program their LEGO robot to use sensors to interact with its environment. Working collaboratively as members of a team, they make decisions and organize information to complete the 14 activities. Online support information on the 2009 State Fair 4-H Robotics Invitational and the 2009 National 4-H Robotics Challenge in Marion, OH are available at www.getsetsite.org/robokids.

508 Robotics Probe, Level 2

New in 2009! More advanced topics in both programming and mechanics take shape in this second level book. Youth advance their programming techniques, use subroutines and variables to achieve more precise movements of their LEGO robots, and build their own custom functions. Youth practice and develop creative thinking, decision making, and leadership skills. Online support information on the 2009 State Fair 4-H Robotics Invitational and the 2009 National 4-H Robotics Challenge in Marion, OH are available at www.getsetsite.org/robokids.

Optional Supplement for Robotics Projects

National 4-H produces a companion CD called Exploring 4-H Robotics: Robotics and You that contains over a dozen step-by-step videos designed to teach ROBOLAB programming software. Available from the National 4-H Council Source Book and at www.4-Hmall.org.

Advisor Supplement for Robotics

Robotics Coach is designed to provide helpers with additional group activities related to the life skills and robotics skills introduced in the youth guides. Available at www.4-hmall.org.

Rope

4hengineering.osu.edu

540 Rope

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

Self-Determined

365 Self-Determined Project Guide

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 want to conduct over the course of their projects. Print one Self-Determined Project Guide for each self-determined project that you take. Counties have the opportunity to send members to compete at the Ohio State Fair on Self-Determined Project Day. Be sure to check out our list of Idea Starter topics for a self-determined project at: www.ohio4h.org/publications.

Idea Starters—Self-Determined Project Resources

“Idea Starters” may be just the thing to get you started in an area that interests you. Use these short 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. Must be used with 4-H 365 Self-Determined Project Guide. For the latest listing of Idea Starters, contact your county Extension office or visit our web page at

www.ohio-state.edu/~idea. If an Idea Starter is unavailable for the topic you want to explore, you can still explore the topic of your choice by using only the 365 Self-Determined Project Guide that can be found at: www.ohio4h.org/publications.

365.01—Astronomy

365.02—Model Railroading

365.03—Weather

365.04—Clowning

365.05—Rocks, Minerals and Fossils

365.06—Quilt Making

365.07—Computers

365.09—Canoeing

365.10—Scrapbooking

365.11—Camp Counseling

365.12—Digital Imaging

365.13—Reptiles and Amphibians

365.14—Global Climate Change

365.15—Cake Decorating

365.16—Plant Pathology

} Available December 2008

Sheep

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

Order only once and use for several years. Contains essential subject matter information for members taking a market lamb or sheep breeding project. This is an excellent resource for skillathons. 2000. (\$11.25)

Optional Supplement for Sheep Projects

828 Livestock Evaluation Reasons Notebook

This optional book for older youth assists in preparing notes for oral reasons in judging contests. Use this with 103R Beef, Sheep and Swine Selection and Evaluation. (\$7.75)

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. 1995. (\$8.50)

An additional sheep resource is located on the next page.

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 understanding EPDs. 1997.

Shooting Sports

ohio4hshootingsports.org

4-H Shooting Sports Program

❖ Recommended for use by certified project helpers. There are NO member manuals for this program beyond the member record books listed below. **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 muzzle loading rifles, pistols, and shotguns, and the basic principles of hunting. Living History enables youth to explore historical lifestyles and heritage crafts. Youth may choose to research any decade from ancient times to the space age. **Project literature is available only to adults who have completed a 4-H Shooting Sports Training Workshop.** Check with your county Extension office for more details.

Shooting Sport Record Books

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

20

750 Rifle Member Record Book. 2000.

**751 Archery Member Record Book. 2009.*

752 Shotgun Member Record Book. 2007.

753 Pistol Member Record Book. 2000.

754 Hunting and Wildlife Member Record Book. 2000.

755 Muzzle Loading Member Record Book. 2000.

756 Living History Member Record Book. 2003.

*New in 2009! In addition to record-keeping pages, this revised edition contains information about planning activities, setting goals, bow and arrow parts, safety, archery, games, and project evaluation. A handy list of resources and a glossary also are included. Available December 2008.

Small Engines

4hengineering.osu.edu

541 Crank It Up

Learn about basic small engine parts, tools of the trade, and safety. Have fun discovering how engines work. 2005.

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. 1999.

❖ Designed to be taken as a group project. May or may not be offered in your county.
® Requires additional resources.

543 Tune It Up

Take on new challenges with small engines as you learn how to tear down and rebuild engines. Use diagnostic tools, learn about engine selection, and become familiar with small engine regulations. 1999.

Helper 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. Available from the National 4-H Council Source Book and at www.4-Hsmall.org.

Swine

139 Market Hog Project and Record Book

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

140 Swine Breeding Project and Record Book

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

Required Supplement for Swine Projects

134R Swine Resource Handbook for Market and Breeding Projects

Order only once and use for several years. Contains essential subject matter information for members taking a market hog or swine breeding project. This is an excellent resource for skillathons. 2000. (\$12.00)

Optional Supplements for Swine Projects

828 Livestock Evaluation and Reasons Notebook

This optional book for older youth assists you in preparing notes for oral reasons in judging contests. Use this with 103R Beef, Sheep and Swine Selection and Evaluation. (\$7.75)

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. 1995. (\$8.50)

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 EPDs. 1997.

Theater Arts

4-hmall.org

596 *Play the Role*

Learn about acting, puppetry, sound effects, color, and stage make-up. Complete at least seven project activities and three "Call Board" activities each year. This project can be repeated up to three years. 2004.

597 *Become a Puppeteer*

Expand on activities and experiences related to theater arts, including costuming, props, voice, and stage presence. Complete at least seven project activities and three "Call Board" activities each year. This project can be repeated up to three years. 2004.

598 *Set the Stage*

Do advanced acting skills and practice organization skills, character development, and set design. Complete at least seven project activities and three "Call Board" activities each year. This project can be repeated twice. 2004.

Helper Supplement for Theater Arts

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

Tractor and Machinery Operation

4hengineering.osu.edu

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. Cost is \$5.00 each.

Ordering information

Online: www.ces.purdue.edu/new. Click on "Education Store." In the Search box, type "tractor". The tractor manuals are listed near the bottom, identified as Level A, B, C, or D. Add to shopping cart as desired. Visa and Master Card are accepted. Shipping is \$3.50 for an order up to \$25; slightly higher for larger orders. Phone orders: call toll free 1-888-398-4636 and ask for Media Distribution Center. Visa, Master Card, or Discover accepted.

551 *Tractor 1: Starting Up*

Starting Up is 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 2: Gearing Up for Safety*

Builds on Tractor 1 and is 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 *Tractor 3: Moving Out*

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 *Tractor 4: Learning More*

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 Program, Student Manual*

Take safety seriously! This newly developed handbook is a long awaited update of Safe Operation of Agricultural Equipment. 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 helpers's guide. 2006. (\$28.00)

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. 1997.

Veterinary Science

This series leads youth through an exploration of the exciting world of veterinary science.

244 *From Airedales to Zebras, Level 1*

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

245 *All Systems Go! Level 2*

Explore a wide range of activities related to veterinary sciences. Research proper environments for animals, examine parasite life cycles, conduct a food safety experiment, and investigate disease-causing agents, just to name a few of the activities offered in this project. All Systems Go! is designed for youth in grades 6 to 8, but may be taken by any youth who has completed From Airedales to Zebras. All Systems Go! can be taken for three years. 2004.

246 *On the Cutting Edge, Level 3*

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

Helper Supplement for Veterinary Science

These supplemental materials provide activities to facilitate learning for various ages of youth. Group activities help youth develop essential life skills as they pursue their interest in veterinary medicine. Available from the National 4-H Council Source Book and at www.4-Hmall.org.

Water Science

602GPM *Beans About Water*

❖ Recommended for 4th-8th grade teachers or project helpers. Learn about water, its properties, and other states of matter with the help of soy-related products. Lessons include water density, surface tension, cohesion, adhesion, coagulation, polymerization and suspension. Total of four lessons designed for groups of 25. Ages 10 and up. Individual members do NOT need a separate project book. 1996. (\$5.50)

Weather

603GPM *Weather Together*

❖ Recommended for 4th grade teachers or project helpers. This group project is ideal for teaching youth about weather. Included are activities that focus on what makes the weather and constructing instruments that accurately measure its changes. Also provided is an opportunity to forecast the weather using folklore predictors and a web-based weather forecaster. Group project only. Individual members do NOT need a separate project book. 2001. (\$11.75)

Welding

4hengineering.osu.edu

573 *Arcs and Sparks—Shielded Metal Arc Welding*

Recommended for use by 4-H members wanting 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

4hengineering.osu.edu

556 *Measuring Up, Level 1*

Get started in woodworking by selecting a project helper and setting up a safe place to work with woodworking 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. 2003.

557 *Making the Cut, Level 2*

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

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 on a project activity of your choice. 2002.

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. Learn about veneer and common adhesives as well as stripping and repairing wood. 2002.

Helper Supplement for Woodworking

The woodworking helper's 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. Available from the National 4-H Council Source Book and at www.4-Hmall.org

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 competent reporter and writer. This advanced-level project is recommended for teens ages 14 to 19 who have basic skills in English and a working knowledge of cameras. May be taken more than once. 1994.

588 *Creative Writing*

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