

Individual Projects

Project Resources

Projects that require resources in addition to the project book, such as a resource handbook, member project guide, or livestock record, are indicated with a ®.

State Competition

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

About 4-H

Discovering 4-H

91 Discovering 4-H

This project book is for young first-year members and others who want to discover and explore the broad array of topics offered by 4-H. Any member in need of 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. 2009. B

Animal Sciences

Beef

4hansci.osu.edu/livestock

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. X, ☆

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. X, ☆

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. X, ☆

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. X

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)

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. 1992. (\$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. Purchase 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. Refer to it for information on how to handle market animals and understanding expected progeny differences. 1997. Available online at <http://downloads.cas.psu.edu/4H/4HLivestockJudgingManual.pdf>.

Dairy Cattle

4hansci.osu.edu/dairy

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. X, ☆

126 Dairy Cow Project and Record Book

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

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. Purchase only once and use it for several years. 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 with 124R techniques of Judging Dairy Cattle. 1992. (\$7.75)

124R Techniques of Judging Dairy Cattle

You may need this optional resource when evaluating dairy cattle. A good study guide for dairy cattle judging contests. 1996. (\$14)

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.

Goats

4hansci.osu.edu

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	X, ☆
135F Fiber Goats	X
135H Harness Goats	X
135M Meat Goats	X, ☆
135PA Pack Goats	X
135PY Pygmy Goats	X

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. Purchase only once. An excellent resource for skillathons. 2008. (\$15)

Horses

4hansci.osu.edu/horse

173 Horseless Horse

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

174 Beginning Horse Management

This beginning-level project is for ALL youth starting in the 4-H horse program. The basics of caring for a horse, learning to ride, and showmanship are covered in 170 pages, many with color photographs. 2006. (\$11.25) B

175 Light Horse Selection

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

177 Horse Training: How to Talk to Your Horse

Training horses from birth to maturity. Understand horse behavior and how to use it to create a good relationship between horse and horseman. Includes the CD Basic Horse Training by Dr. Robert Kline. Use with the 190R Equine Record Book. © 2003 (\$10) I

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. I

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. I

184 Standardbred Horses

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

185 Equine Reproduction and Genetics

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

188 Trail Riding

Team up with your horse for competition or pleasure trail riding. Learn the basics of conditioning your horse. Use with 190R Equine Record Book. © 2000. I

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. I

762 Horse Nutrition

Explore digestion, nutrients, feedstuffs, rationing, and poison plant identification to protect the health of the horse you love. Use with 190R Equine Record Book. © 2000. (\$8.50) A

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.

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. State horse shows follow these rules. 2009.

Llamas and Alpacas

4hansci.osu.edu

132 Llama and Alpaca Project and Record Book

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

Required Supplement for Llama and Alpaca Projects

132R Llama and Alpaca Resource Handbook

This 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)

Poultry

4hpoultry.osu.edu

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. X, ☆

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. X, ☆

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. X, ☆

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. 2009. X, ☆

168 Duck or Goose

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

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)

Sheep

4hansci.osu.edu/livestock

198 Market Lamb Project and Record Book

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

199 Pilot Sheep Breeding Project and Record Book

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

Required Supplement for Sheep Projects

194R Sheep Resource Handbook for Market and Breeding Projects

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

Optional Supplements 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. 1992. (\$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. Purchase 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 using performance data in learning oral reasons. Refer to it for information on how to handle market animals and understanding expected progeny differences. 1997. Available online at <http://downloads.cas.psu.edu/4H/4HLivestockJudgingManual.pdf>. [edu/4H/4HLivestockJudgingManual.pdf](http://downloads.cas.psu.edu/4H/4HLivestockJudgingManual.pdf)

Companion Animals and Rabbits

4hansci.osu.edu/companion

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.

☆ State Fair eligible ® Requires additional resources.

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

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

201O Obedience. Covers beginning and advanced obedience training and Rally. X, ☆

201S Showmanship. Learn the basics of dog showmanship. X, ☆

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

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

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)

215 Guinea Pig

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

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. B, ☆

217 Climbing Up! Level 2

Build on what you learned in Cat 1 by taking this intermediate level cat project. Learn more about cat identification and characteristics, training and showing 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. I, ☆

218 Leaping Forward, Level 3

Dig deeper into some of the cat topics you've already explored in Cat 1 and Cat 2 (breeds, nutrition, health, and behavior) and meet some new topics (genetics and aging cats). Investigate 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. A, ☆

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.

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. X, ☆

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. 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. (\$19.50)

225 Breeding Rabbit Project and Record Book

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

226 Market Rabbit Project and Record Book

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

227 Pet Rabbit Project and Record Book

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

Required Supplement for Rabbit Projects

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

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. (\$10.25)

Swine

139 Market Hog Project and Record Book

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

140 Swine Breeding Project and Record Book

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

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. An excellent resource for skillathons. 2000. (\$12)

Optional Supplements for Swine Projects

828 Livestock Evaluation and Reasons Notebook

This optional book for older youth assists in preparing notes for oral reasons in judging contests. Use with 103R Beef, Sheep and Swine Selection and Evaluation. 1992. (\$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. Purchase 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 expected progeny differences. 1997. Available online at <http://downloads.cas.psu.edu/4H/4HLivestockJudgingManual.pdf>

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. **B, ☆**

245 All Systems Go! Level 2

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

246 On the Cutting Edge, Level 3

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

Helper Supplement for Veterinary Science

These supplemental group activities help youth develop essential life skills as they pursue their interest in veterinary medicine. Available from the National 4-H Source Book and at www.4-Hmall.org.

10

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. 2005. **B, ☆**

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. (\$9.75)

Child and Family 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. May be taken for two years. 2004. **B, ☆**

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. Life skills used in this unit are planning and organizing, critical thinking, concern for others, accepting differences, teamwork, leadership, responsibility, and personal safety. May be taken for two years. 2004. **I, ☆**

436 Growing in Communities

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, responsibility, and personal safety are emphasized. May be taken for two years. 2004. **A, ☆**

Helper Supplement for Child Development

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

442 Family History Treasure Hunt

Discover your family history as you go on a treasure hunt for jewels of information such as interesting relatives, special events, and curious stories of days gone by. May be repeated. 2003. X, ☆

Clothing and Textiles

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

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

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

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: a duffle bag; hat, head and wrist bands; hair scrunchie; and enviro tote. Select and make one accessory from the patterns included 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. B, ☆

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. Designed for 4-H members in grades 3 to 5. 1995. B, ☆

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. B, ☆

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. B, ☆

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. B, ☆

424 Clothing for Middle School

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

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. I, ☆

Especially for Teens

406 Clothes for High School and College

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

407 Accessories for Teens

This project is designed as a beginning-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. B, ☆

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. A, ☆

12

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. A, ☆

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. A, ☆

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. I, ☆

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. I, ☆

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. I, ☆

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

408 Creative Costumes

Participants choose to make a costume in one of four categories: historical, 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 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. A, ☆

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. A, ☆

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. A, ☆

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. A, ☆

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/publications.

Creative and Leisure Arts

Collecting

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. B

Fine 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. 1998. X, ☆

Photography

584 *Focus on Photography, Level 1*

Learn how to use your digital or film camera to take quality pictures and how to evaluate them before and after you take them. 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) B, ☆

585 *Controlling the Image, Level 2*

Practice different techniques in lighting, image focus, and composition. Learn how to get quality candid pictures, action shots, and creative artistic images. Improve your photography skills with assignments that require creativity, problem-solving, patience, and practice. *Need film or digital, adjustable lens camera.* 2007. (\$8) I, ☆

X=all levels, B=beginning level, I=intermediate level, or A=advanced level

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) A, ☆

Scrapbooking

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

New in 2010! This beginning/intermediate level project is designed for youth with limited experience in scrapbooking. Requires completion of project activities and creation of a scrapbook. Can be repeated by completing additional activities and a new scrapbook each year. 2010. X, ☆

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. Can be repeated up to three years. 2004. B

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. Can be repeated up to three years. 2004. I

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. Can be repeated twice. 2004. A

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 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. A

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

Food and Nutrition

The Ohio 4-H Food and Nutrition program helps develop knowledge, skills, and understanding of nutrition, menu planning, safe food handling, kitchen equipment safety, consumer knowledge, fitness, meal and time management, and food and nutrition related careers. 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.

All Ohio 4-H food and nutrition projects use MyPyramid, which incorporates current USDA recommendations about eating and exercise. Depending on a project book's publication date, it may refer instead to the older Food Guide Pyramid. For information about MyPyramid, go to <http://www.mypyramid.gov>.

Beginning Level

14

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. **B, ☆**

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. **B, ☆**

483 *Sports Nutrition 1: On Your Mark!*

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

484 *Snack Attack!*

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

487 *Fast Break for Breakfast*

This project focuses on the importance of starting each day with a nutritious breakfast and uses the Food Guide Pyramid as the basis for exploring breakfast options. Menu planning, food safety, and nutrition topics are included in this sports-themed project book. It is designed for 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*, *Snack Attack*). 2000. **B, ☆**

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. **I, ☆**

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 outdoor food experiences suited to a fast-paced, casual life-style. For youth ages 12 to 14. 1997. **I, ☆**

475 *Star Spangled Foods*

Discover the customs and traditions that influence some favorite regional American foods and the way we like them by experimenting with keeping and serving food at its best. For youth ages 12 to 14. 1996. **I, ☆**

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. **I, ☆**

485 *Racing the Clock to Awesome Meals*

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

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. A, ☆

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. A, ☆

469 *Global Gourmet*

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

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. A, ☆

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. A

Healthy Living

300 *You're the Athlete*

For youth who participate in sports and for the adults who work with them. Learn the fundamentals of being a well-rounded athlete with up-to-date, research-based information and lots of fun activities that develop important knowledge, attitudes, skills, and aspirations in sportsmanship, time management, goal setting, nutrition and sports, strength and conditioning, leadership, conflict resolution, and careers in athletics. Activities are designed for use in developing your personal sport-specific interests. Complete the project activities individually, with team members, or with other groups. For members ages 11-14. 2003. I, ☆

351 *Staying Healthy*

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

352 *Keeping Fit*

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

353 *First Aid in Action*

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

357 *Alcohol Decisions*

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

358 *Tobacco and You*

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

Home Living

491 *Adventures in Home Living*

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

494 *Designing Interiors*

Learn to arrange and decorate a room or equivalent space by applying elements and principles of design to achieve attractive and useful results. 1988. I, ☆

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. A, ☆

Leadership and Citizenship

Optional Supplements for Club Officers

Club Officer Resources

New in 2010! Revised club officer handbooks for vice president, secretary, treasurer, news reporter, health officer, safety officer, and recreation leader are available online. To access these and other club resources, go to <http://www.ohio4h.org/members/officers>.

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 protégés. 1994. A, ☆

371 4-H Club Teen Leadership

Teens 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. A, ☆

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. A, ☆

373 Teen Leadership on the Job

This 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. A, ☆

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, working with groups, and new understanding for completing their roles and responsibilities through this project. 1996. A, ☆

377 Speak Out

This project is for teens 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. A, ☆

☆ State Fair eligible ® Requires additional resources.

Optional Supplements for Leadership and Citizenship Projects

511R CARTEENS Member Resource

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

997 Camp Counselor's Handbook

Camp counselors anywhere in the 4-H system will appreciate this resource, full of time-tested guidelines and advice. Interested in completing a camp counseling project? See Idea Starter 365.11. (1996).

Communication Resources

Communication skills and activities are built into every project. Doing a demonstration for fellow club members, presenting to outside groups, and interviewing are common activities for 4-H members of all ages. If you are interested in a project that focuses on 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.

Optional Supplements for Communications

909R Demonstrations

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

Money Management

445 Becoming Money Wise

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

446 Money Fun-damentals

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. Prepares youth to make money decisions. 2003. I, ☆

447 Money Moves

Book 2 for teens ages 14 to 15. This project prepares you to become confident about your uses of money, the benefits and drawbacks of credit, banking services, the influences of advertising, and the art of being a savvy consumer. (Money Fun-damentals should be taken before this project). 2003. I, ☆

448 Teens...On the Road to Financial Success

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

Helper Supplement for 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 Source Book and at www.4-Hmall.org.

Natural Resources

Gardening and Plant Science

671 How Does Your Garden Grow?

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

674 Indoor Gardening

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

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. B

692 Growing With The Seasons

Learn to make the most of your garden space by planting seasonal crops. For those members with an

interest in expanding their commitment to growing and preserving home-grown fruits and vegetables. 1994. I

The Natural World

611 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. B, ☆

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. I, ☆

614 Tree Planting

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

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. B, ☆

621 Ohio Birds

Observe and identify birds with bird feeders in your yard and on field trips to see the many benefits our feathered friends provide. 2000. B, ☆

622 Trapping Muskrats in Ohio

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

623 Fishing for the Beginner

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

624 Fishing for the Intermediate

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

641 Beekeeping Project and Record Book

New in 2010! Back by popular demand, the beekeeping project now has a completely revised project and record book that covers project requirements, colony care and management, and basic beekeeping records. 4-H members should complete this required project book every year a beekeeping project is taken. Requires additional resources. 2010. X, ☆

644 Exploring Our Insect World 1

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

645 Exploring Our Insect World 2

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

X=all levels, B=beginning level, I=intermediate level, or A=advanced level

Shooting Sports

630 Safe Use of Guns

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

B, ☆

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.

B, ☆

For information about the Ohio 4-H Shooting Sports Program, go to page 24.

Science, Technology, Engineering, and Math (STEM)

Aerospace Science

4hengineering.osu.edu

18

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.

B, ☆

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.

B, ☆

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.

B, ☆

Optional Supplement for Rockets Away

2-Liter Bottle Rocket Launcher

You can explore the science of rocketry with any of these 2-liter bottle rocket launchers available from Pitsco, Inc.

- Backyard Blaster, Assembled (W31976), \$59
- Backyard Blaster, Unassembled (W32257), \$39
- AquaPort Launcher (W55499), \$139

Product details available at www.shop-pitsco.com. Place your order online or call toll-free 1.800.835.0686. Prices do not include shipping and are subject to change. Ohio 4-H members receive a 10% discount with this coupon code: 4HOH2009.

Thanks Pitsco!

(This does not constitute an endorsement of these products by Ohio 4-H.)

All-Terrain Vehicles (ATV)

4hengineering.osu.edu

554GPM ATV Safety, Leader's Guide

4-H members interested in taking the ATV project should enroll in 554GPM and plan to take the FREE, four-hour ASI RiderCourse, where they will receive their individual books. (Youth who have already taken the ATV project can use their old copies of the book.) The RiderCourse is for anyone enrolling in the ATV project and for anyone interested in participating in the state-level contest. For more information and a schedule of course offerings, go to 4hengineering.osu.edu

X, ☆

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.

B, ☆

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.

I, ☆

519 Bicycle Adventures, Level 3

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

A, ☆

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

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. B, ☆

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. I, ☆

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. I, ☆

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. A, ☆

531 *Science Fun with Electricity*

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

Advisor Supplement for Electricity Projects

Electric Excitement Helper's Guide

This guide is for helpers who are working with the Electricity Excitement series (527 through 530 above) It has activities and ideas to make your group meetings more fun and educational. Available from the National 4-H Source Book and at www.4-Hmall.org.

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 ready-to-run cars, boats, aircraft, or gas-powered vehicles. Requires youth to buy a kit to build a car. The price of a kit and related materials starts at \$500. 1994. X, ☆

Robotics

www.ohio4h.org/robotics

507 *Robotics Explorer, Level 1*

In this exciting project, youth learn what a robot is, how to build one using a LEGO MINDSTORMS robotics kit, and how to program a LEGO robot to interact with its environment. Fourteen activities are based on the LEGO RCX (not NXT) system, which is available from LEGO for \$270. Designed for individuals members, although many 4-H members decide to do this project in small groups. Members who prefer to use the newer LEGO NXT robotics system are encouraged to design their own 365 Self-Determined robotics project. B, ☆

508 *Robotics Probe, Level 2*

Using the LEGO MINDSTORMS RCX (not NXT) system, youth move on to advanced programming techniques, use subroutines and variables to achieve more precise movements, and build their own custom functions. Designed for individuals members, although many 4-H members decide to do this project in small groups. Members who want to use the newer Lego NXT robotics system are encouraged to design their own 365 Self-Determined robotics project. 2006. I, ☆

Optional Supplement for Robotics Projects

The following resources are available online at www.ohio4h.org/robotics:

Robotics Project Online

Contains easy, step-by-step instructions, record sheets, and diagrams that take you through every activity in Robotics Explorer and Robotics Probe.

Robotics and You CD

Contains short, clear training videos that demonstrate certain tasks and projects from Robotics Explorer and Robotics Probe and that highlight real-world robots.

LEGO Mindstorms RCX

Ready to buy LEGOs? See our website for a link to a complete description of the LEGO Mindstorms RCX Team Challenge Set.

Helper Supplement for Robotics

The Robotics Helper's Guide can be used in conjunction with Robotics Explorer, Level 1 and Robotics Probe, Level 2. Available online at www.ohio4h.org/robotics.

Rope

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540 Rope

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

Small Engines and Lawn Care

4hengineering.osu.edu

Youth who enroll in a small engines project also are eligible for the Lawn Tractor state fair event.

541 Crank It Up

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

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. I, ☆

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. I, ☆

20

548 Lawn Care

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

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. 1999. (\$5.75)

Tractor and Machinery Operation

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Tractor Series

We offer the series of four 4-H Tractor project manuals published by Purdue University, West Lafayette, IN. These manuals are interesting to most 4-H members because they cover more than just safety. Available only through Purdue University for \$5 each, plus shipping.

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. Phone orders: call 1-888-398-4636. Ask for Media Distribution Center. Visa and Master Card accepted.

Youth who enroll in a tractor project also are eligible for the Lawn Tractor state fair event.

551 Tractor 1: Starting Up

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

552 Tractor 2: Gearing Up for Safety

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

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. I, ☆

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. A, ☆

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. (\$31.50) A, ☆

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. Covers ear and eye protection, the use of a ruler or tape measure, and a square. Saws, an electric drill, clamps, a screwdriver, a hammer, and sand paper. Build and finish a project of your choice. 2003. B, ☆

557 *Making the Cut, Level 2*

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

558 *Nailing it Together, Level 3*

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. A, ☆

559 *Finishing Up, Level 4*

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

Helper Supplement for Woodworking

The woodworking helper's guide is for volunteer leaders looking for ideas to make your meetings more fun and educational. All levels. Available from the National 4-H Source Book and at www.4-Hmall.org.

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. I, ☆

Self-Determined

365 *Self-Determined Project Guide*

Each year 4-H members use the Self-Determined Project Guide to explore a topic unavailable as a statewide project. This publication allows members to outline their areas of interest and activities. Print and complete one Self-Determined Project Guide for each self-determined project you take. A, ☆

Idea Starters

“Idea Starters” may be just the thing to get your self-determined project started. You may choose to do a little or a lot depending on your level of interest. Must be used with 4-H 365 Self-Determined Project Guide available online at www.ohio4h.org/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*
- 365.11—*Camp Counseling*
- 365.12—*Digital Imaging*
- 365.13—*Reptiles and Amphibians*
- 365.14—*Global Climate Change*
- 365.15—*Cake Decorating*
- 365.16—*Plant Pathology*
- 365.17—*Babysitting - New in 2010!*

Optional Supplement for Cake Decorating

492R *Cake Decorating Resource Handbook*

This all-inclusive cake decorating book from Wyoming 4-H goes hand-in-hand with idea starter 365.15 above. Includes everything from baking the cake to decorating with special effects. 2001. (\$5.50)

Tell Us What You Really Think!

Ohio 4-H is committed to providing interesting projects that help youth learn, grow, and have fun. Our best feedback comes from the youth and project helpers who use 4-H project books and resources. As you complete a project, please take a moment to share your experience on our website: www.ohio4h.org/ratemyproject. Your responses are strictly confidential!