CLOVER

Head Heart Hands Health

for my club, my community, my country and my world.

18 U.S.C. 707

Montana 4-H Project Selection Guide 2017-2018

MONTANA STATE UNIVERSITY | EXTENSION

Dear 4-H Members, Leaders and Parents,

Welcome to the 2017-2018 4-H year! A new 4-H year means different things to different people. For leaders it's an opportunity to mentor, teach, and learn from volunteer development events and from 4-H members themselves. For Extension agents, it's a new start in a new season of 4-H. For members, a new 4-H year brings the excitement of trying new projects, setting challenging goals, making new friends, creating memories, and learning from caring and engaged volunteers who provide endless possibilities for the future. Take advantage of all the 4-H program has to offer. Participate in county events, present a speech or demonstration, learn about community needs, what you can do, and your role as a responsible citizen while serving others, developing leadership skills, going to 4-H summer camp, showing pride in your projects at the county fair, and experiencing the numerous activities available to 4-H families.

Project work is the foundation of the 4-H experience. As any 4-H alumni will tell you, completing a project teaches many life skills that you will rely on in the future. The Clover outlines hundreds of projects offered through the Montana 4-H program. Chances are you will find several projects that greatly interest you. These projects are designed to provide in-depth knowledge of your chosen topics, increase your personal abilities, and develop those life skills that you will apply to many new situations. Along the way, you will soon become contributors to your community by learning caring, character, connection, confidence, and competence. The development of the five C's and the opportunity for youth to contribute to their families, their communities, their schools, and their 4-H program is the pillar of 4-H youth development.

In these pages are opportunities you may have never considered. Challenge yourself, excel at what you do best, try something new, and don't miss out because you're afraid to fail – 4-H is a safe place. All the while, remember that youth, parents, volunteers, and Extension educators all play an important role in the partnership that is 4-H and our drive to "Make the Best Better." It is our hope that through 4-H we can help to build closer families, better citizens, and stronger communities.

Sincerely,

Todd Kesner
Director, *Montana 4-H Center for Youth Development*

4-H EVENTS CALENDAR

National 4-H Events

- Western 4-H Roundup (Award Trip): First week of January
- National Conference: Early April
- Citizenship Washington Focus (CWF): mid-June
- Leadership Washington Focus (LWF): Late June/July
- National Congress: Last week of November

Montana 4-H Events

- Legislative Breakfast: Early January
- Citizenship Seminar: In Conjunction with Legislative Breakfast
- State Shoot: First week of March
- Rec Lab: March/April
- Pre-Congress: Prior to Congress
- Congress: 2nd week of July
- State Horse Show: September/October
- Leadership Forum: Late September/Early October
- Ambassador Fall Training: 3rd weekend in October (MEA Weekend)

Award Due Dates

- Scholarships: April 1 (Recognition at Montana 4-H Congress)
- State Awards: May 1
- Volunteer Awards: May 1 (Recognition at 4-H Leadership)
- County Ambassador: June 1 Roster Opens*
- Officer Team Applications: June 15 (Officer Selection during Pre-Congress)*

*= Youth Leadership

Cover photo by Lisa Terry; Back cover photos: upper left by Jocelyn Snider; upper right by Elin Kittleman, bottom by Lisa Terry

Welcome to Montana 4-H…

The 4-H Center for Youth Development serves as a resource to county faculty, local leaders, and youth in all counties and reservations as they *learn by doing* and *make the best better*. Listed below are staff members and a few of the major areas of responsibility associated with their position.

4-H Center for Youth Development

Todd Kesner
Director,
Montana 4-H Center for Youth Development
Financial Management, Policies & Procedures, Evaluation, State Program Leader, Risk Management, Military Liaison, National Shooting Sports Liaison, Program Planning, Use of 4-H name and emblem.

Stephanie Davison
Citizenship, Sustainable Communities and International Programs Coordinator
International Exchange Programs, Citizenship Curriculum, Citizenship Seminar, Service Learning, International Program Guides, Citizenship Liaison, CYFAR grant, Bioscience

Brett Schomer
Event & Activity/FCS Coordinator
4-H Website, Recognition/Awards, Montana 4-H Congress, National 4-H Congress, Ambassadors, Leadership, Family and Consumer Science Projects, Healthy Living Liaison

Meghan Phillippi
Volunteerism and Program Delivery Associate Specialist
Volunteer Leader Training and Resources, Volunteer Certification, 4-H Delivery, Methods, Club management, 4-H Afterschool, Officer Training Resources

Catherine Schaefer
Communications Coordinator
Coordinate communications, social media and website

4-H Project Staff

Roni Baker
Curriculum Coordinator
Curriculum Review/Revisions, Training, Clover Project Selection Guide, Cloverbuds, Exploring 4-H, Family Adventures, New Family Handbook, Communications, Self-Determined

Sharla Sackman
Agriculture & Natural Resources Coordinator
Horse, Livestock and Small Animal, Veterinary Science, AQA, Congress Contests

Scott Francis
Shooting Sports Coordinator
Shooting Sports, Western Heritage

4-H Foundation

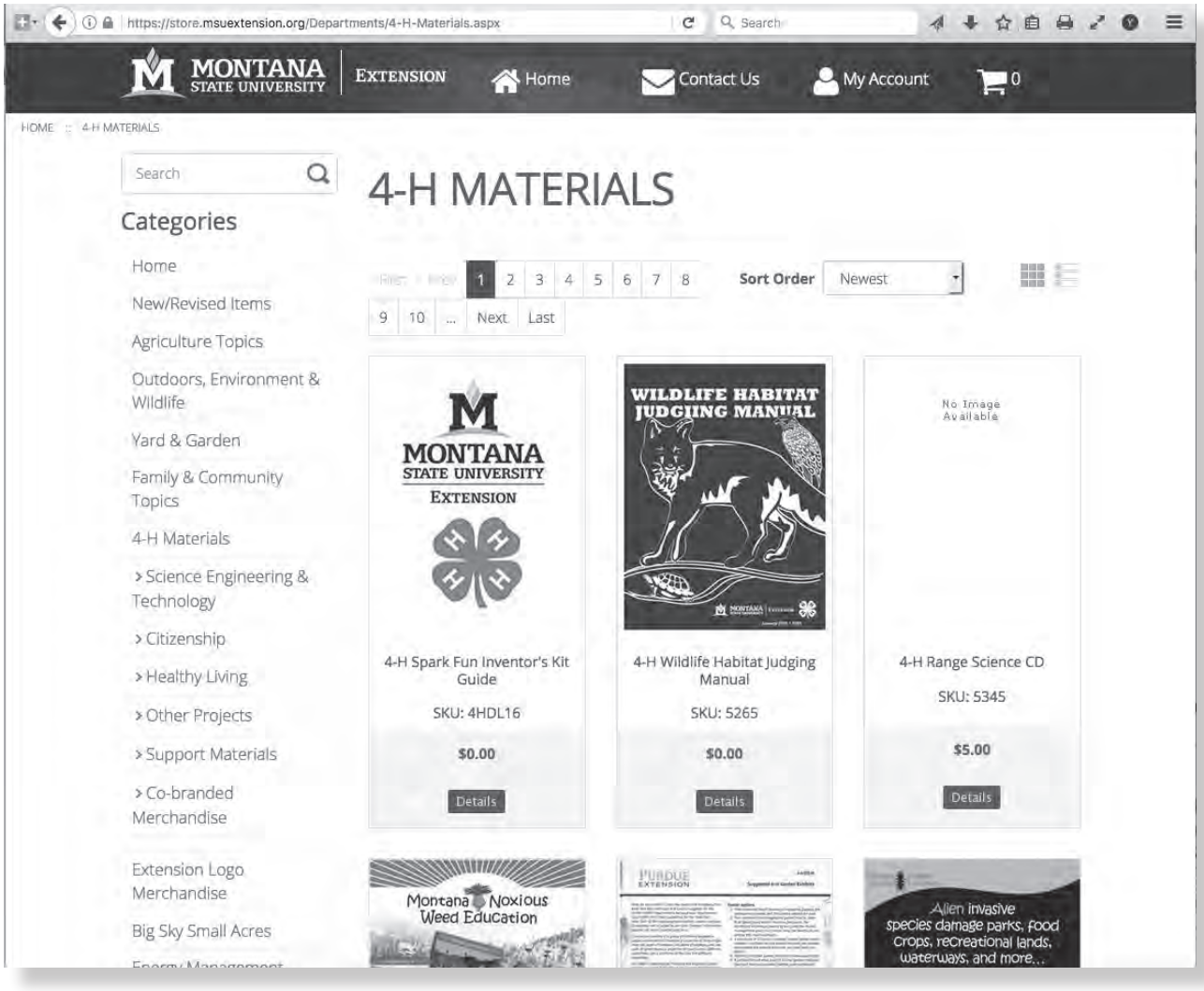
Sandra Germann
Executive Director, Montana 4-H Foundation
Major Gift Acceptance and Fundraising, Overseeing Investment Portfolio and Budget, Education and Marketing

Catherine Schaefer
Foundation Annual Fund Coordinator
Plan and implement annual fundraising activities
Organize 4-H alumni engagement events

Christy Huddleston
Office Manager, Montana 4-H Foundation
Bookkeeping and Fiscal Records, Database and Publications, Coordination of Board of Director Functions

Order Online

Visit MSU Extension's online store: store.msuextension.org



Shipping & Handling Fees

- Counties and reservations ***will not*** be charged postage on publications.
- All other groups ***will be charged postage*** based on exact charges from USPS.

4-H Publications

Jennifer Blessum
Extension Distribution Coordinator
Publications and curriculum ordering

Publications is located on the first floor of Culbertson Hall.

P.O. Box 172040 • Bozeman, MT 59717
Tel: (406) 994-3273 • Fax: (406) 994-2050
orderpubs@montana.edu

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As you review this guide, here are some things to consider:

4-H Clover GUIDELINES

This guide lists all projects that are offered on a statewide basis to youth enrolling in 4-H clubs in Montana. Statewide projects are under the priority initiatives of Science, Citizenship and Healthy Living. They are divided into project categories under the following main headings:

Science

- Animal Science
- Engineering and Technology
- Environmental/Natural Science
- Family and Consumer Science
- Plant Science

Citizenship

- Communication and Expressive Arts
- Leadership and Personal Development

Healthy Living

- Health
- Foods and Nutrition

Other Projects

- Cloverbuds
- Exploring 4-H
- Self Determined

Support Materials

- Organizational Support
- Leader Support
- Judging
- Additional Resources/ Enrichment

Some counties offer projects in addition to those listed in this publication. These projects are usually set up to meet a specific need within the county 4-H program. If you are interested in these kinds of projects, contact your county's MSU Extension Office to find out more about them. Many projects also have opportunities for sharing and learning about your unique skills and talents through project achievement programs. Contact your Extension Office to find out how to meet these goals.

4-H Membership/Age Requirement

- Any youth who is 5 years old on Oct. 1 may join a 4-H Cloverbud group.
- Cloverbuds is a non-competitive educational program for youth ages 5 to 8 years of age and is the ONLY project they can enroll in.
- Youth age 8 on Oct. 1 may join a regular 4-H club as a full member who can enroll in several different projects. Given the differing maturity and ability of youth this age, a family may choose to have their child continue in a Cloverbud group even though s/he will turn 8 during the coming year. If a youth turns 19 years of age prior to the beginning of the program year (Oct. 1), s/he is not eligible to re-enroll in 4-H unless still in high school.
- Individuals older than 18 years of age who have special needs are eligible to participate in 4-H provided they are still enrolled in high school.
- 4-H membership is open to all eligible youth. The U.S. Department of Agriculture (USDA), Montana State University and Montana State University Extension prohibit discrimination in all of their programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital and family status.
- In recognition of the educational and developmental needs of youth, a general guideline is listed below to help determine which level of projects a youth might be enrolled in based on age.

Classifications	Age Range
Cloverbuds	5 to 7 years old
Junior/ Intermediate	8 to 13 years old
Senior	14 to 19 years old

Youth who are 19 must be enrolled in high school to participate in 4-H.

County Projects: Some counties offer additional projects to members in their county, different than the state projects listed in this guide. Contact the county Extension office for a listing of these projects.

4-H Priority Initiatives

Science

For more than 100 years, 4-H has been a part of local communities trying new and innovative techniques to improve their quality of living. 4-H, with its connection to land-grant universities, has the ability to develop America's future generation of scientists and engineers. In 4-H, youth use a rich and diverse set of research-based curricula and activities that provide hands-on, real-world experiences delivered in both informal and formal settings. Delivered through the 4-H program, science curriculum offers an extraordinary range of engaging and challenging activities for youth of all ages and abilities. Some examples include Robotics, Animal Quality Assurance and Veterinary Science.

Healthy Living

A core belief of 4-H is health, as evidenced by the four H's in the 4-H clover: Head, Heart, Hands, and Health. 4-H is committed to the physical, mental and emotional health of our nation's youth so they may lead healthy and productive lives as youth and into adulthood. 4-H has become a national leader in health-related educational issues including chemical health, mental and emotional health, foods and nutrition, physical health and safety. Examples include *Cooking 1-4* and *Party Planning*.

Citizenship

Since its inception, 4-H has placed emphasis on the importance of young people being engaged, well-informed citizens. By connecting to their communities and leaders, youth understand their role in civic affairs and are able to expand their role in decision-making processes. It's clear that civic engagement provides the foundation that helps youth understand the "big picture" of life and learn the skill sets that allow them to become wise leaders for the 21st century. Citizenship Seminar, service learning and international programs are just a few of the many opportunities to learn about and contribute to our global society.

Using the Guide

As you look for projects that interest you, all the information you need to enroll in projects is right here in this guide. The example at right shows the kind of information provided.

ADDITIONAL NOTES:

- Projects should be completed in order, starting with Level 1.
- Publication number is needed to order materials
- **Prices subject to change**

CAT *(Project Title)*

The Project Title section gives 4-Her's a general description of what is involved and what will be learned by completing the project.

Cat, Level 1 *(Project Level)*

The Project Level section gives 4-Her's a more specific description of what is involved and what will be learned by completing the project. As levels increase, so do project requirements and learning challenges.

PROJECT REQUIREMENTS:

The Project Requirements section explains what you need to know to complete a project book in order to finish the project.

MATERIALS *(Material list for members and leaders. See the following page for letter key.)*
M .....Purrr-fect Pals!, BU8148, $6.00 *(Material name, publication number and cost)*
L .....Cat Group Helper's Guide, BU8151, $6.00

ADDITIONAL PROJECT MATERIALS
(Project resource material will be listed at the end of each project section)

4-H Volunteerism Opportunities

Volunteerism and Leadership involves youth and adults in significant roles where they can help facilitate the growth and success of others. Opportunities to contribute in meaningful ways to your club, your community, your country and your world can be varied and numerous. Through these projects, you can help others, serve as a mentor, tutor or coach, and fill important leadership roles that contribute to the overall vitality of your community.

Projects

The projects in this section list all state supported projects available to Montana 4-H members for 2016-2017. Each project is followed by a description and listing of the materials needed to complete the project.

IMPORTANT NOTE: Check with your 4-H leader or Extension agent to see which projects are offered in your area. Not all projects listed in this guide may be available in your community. Abbreviations are used to identify project materials. The following list explains what each abbreviation means.

M .....Materials for the 4-H member enrolling in the project.

L.....Materials for 4-H leaders.

S.....Supplemental materials for leaders and/or members. These materials are optional.

Web ..Find project/materials available on the 4-H website, **www.montana4h.org,** or on the Extension online store (publications) website, **www.msuextension.org/store**

Keeping Records

Keeping records is an important part of completing each project. They help you set goals, keep track of your attendance at meetings, record your demonstrations or talks and a whole lot more.

All 4-H projects require the use of record books, see page 40 for record keeping materials.

Independent Study

Independent study is for any youth who are looking for new challenges and opportunities in 4-H. This allows a member to take the personal initiative to explore topics that have not been investigated while remaining enrolled in a 4-H project. Members enrolling in the independent study phase of any project should develop a detailed learning plan for their work. They should be encouraged to identify an area of interest in the project area, set goals and locate resources (people, publications and materials) helpful in carrying out a project plan. They then determine specific experiences needed to accomplish project goals, establish a realistic timeline for completion, carry out the project learning plan, share experiences with others, evaluate the outcomes and determine what could be improved.

PROJECT REQUIREMENTS FOR INDEPENDENT STUDY

The individualized learning plan should be approved by a parent, 4-H adult volunteer leader or 4-H agent. For assistance in developing a personal learning contract, look at the self-determined project materials or other goal-setting materials. While independent study provides flexibility and creativity, it also requires serious planning, implementation and evaluation.

MATERIALS

M .....You Decide, 5314, $3.50 or Extension online store
L.....Helping Them Decide, 5315, $2.50 or Extension online store

SELF-DETERMINED

Self-determined offers an opportunity to develop and carry out a project of individual design. This means selecting a topic, deciding upon goals, obtaining resources and designing records. The member is responsible for developing this project with the advice or direction of an adult. This project can cover any subject and may be related to any current 4-H project. Examples include ceramics, bookkeeping, and outdoor cooking. In some areas, counties offer county projects. Check with your county. You'll want to design projects that have special interest for you. The success of the project depends upon your initiative. Those who select a worthwhile topic and become intrigued with it often do some of the best and most rewarding 4-H work. The member's manual and the leader's guide suggest ways to proceed.

PROJECT REQUIREMENTS

Evaluate your project by determining the extent to which the goals were accomplished, what was learned and how it could be improved.

Self-determined

MATERIALS

M .....You Decide, 5314, $3.50 or Extension online store
L.....Helping Them Decide, 5315, $2.50 or Extension online store

Animal Science

Animal Science projects teach subject matter related to each animal while helping you develop life skills. In each level, you may choose from a variety of learning goals as you develop an inquiring mind and a desire to seek out the scientific principles involved in raising and marketing livestock. You can develop leadership, initiative, self-reliance and sportsmanship through project activities. You'll learn to accept responsibility by having an animal to care for regularly and the principles of animal nutrition. Through animal science projects you also learn to care for, train and handle animals safely. You can practice taking care of equipment and evaluate several methods of performing a task. You'll better understand and apply research in making wise decisions and investments and use it in managing your animals and planning your goals. Animal science projects are designed to stimulate your interest as you explore the livestock industry or establish a profitable livestock business of your own.

ARE "WE" READY FOR A 4-H LIVESTOCK PROJECT?

Parents:
Showing an animal at the county fair is an educational and memorable experience for youth in the 4-H Livestock projects. Showing livestock builds confidence and character in young people. They learn how to select, care for and keep records on their project. From the time that an animal project is started until it is finished the youth is responsible for a major part of the daily care of their project.

Successful 4-H members have caring adults in their lives that are truly enthusiastic about the projects the member is taking. It is important that adults offer supervision, assistance and encouragement to the 4-H'ers . As an adult if you are willing to help in these ways, it will make a difference. However be aware that while having caring adults is clearly important, it is equally important that parents and other adults not go too far with the helping. It is important to support and assist to a reasonable extent, but do not do the various chores and requirements called for by the project for the child. It is also inappropriate for a professional to own, care for or groom the project animals.

Families are encouraged to have realistic conversations about the time and other resources that animal projects require. Animal projects will take a minimum of one hour daily to care for the basic needs, such as feeding, watering and vet care of the animal. Market beef projects typically start in November or December and continue through until July or August. Pig, sheep and goat market projects start in April or May and continue through July or August. Training and preparing an animal for show will take several additional hours per day. Breeding projects are a year-round commitment for both the member and family.

Each county fair or show in Montana will have its own unique rules and guidelines. It is the member's responsibility to read and understand the regulations and rules that govern their project and the shows they want to participate in. It is suggested that the youth obtain a copy of the county information that is specific to their project before they start the project.

MAKING A DECISION

The family has decided to commit to the responsibility of owning animals and supporting youth members in taking a livestock project. Which Project? Below are several questions that should be answered as a family, to help prepare you for ownership of an animal.

- What are the goals for this project?
- What species will be raised?
- Will only market animals be raised or will the project expand into breeding?
- How many animals can we feed at one time?
- How will we market the animal(s)? (both breeding and market)
- How much time and money do we have and want to invest?
- What are our facilities suitable for? Do they need improvement?
- Do we have the resources available to provide proper health care?
- Are we comfortable with selecting animals to purchase?
- Is there someone in the community that can help us select animals?
- What are the regulations at the local fair?
- Will we be showing in other fairs or jackpot shows?
- How will we transport the animals?

A great way to gather information is to attend and observe a show as a family. At the show you will see first-hand some of the work and commitment that is part of a livestock project. In addition, it is a great chance for you to meet and talk to exhibitors and producers. Most of these people are happy to share their thoughts and suggestions. It is important to develop good relationships with the other producers as they are a great source of information.

MONTANA 4-H ANIMAL QUALITY ASSURANCE POLICY

All 4-H members (and a parent or guardian) enrolled in any livestock project, including breeding projects, must become certified through Animal Quality Assurance training at least once as a junior 4-H member and recertify once as a senior 4-H member. All new members are required to complete a county Animal Quality Assurance training workshop in their first year.

Discuss options with your county agent to determine the requirements and recertification opportunities available in your county. In some counties, senior 4-H members, if previously certified, may recertify through county AQA training, by successfully completing an official online course offered by industry associations or universities, or by teaching AQA to younger members. Some counties require beginners (age 8-10) to take the class and then again as a junior (age 11-13).

GENERAL PROJECT REQUIREMENTS

By completing the minimum requirements at each level, you'll learn about every part of the project and be ready for the next level. The achievement program will help you set goals, record your successes and be recognized for your good work. Each level can take several years to complete. You are not expected to complete a level each year. In some projects, more than one level can be completed in a year if you are highly motivated. Remember, keeping records is an important part of every livestock project.

MATERIALS

S.....4-H Livestock Sale, 5310, $2.50
S.....Sheep Resource Handbook for Market and Breeding Projects, 4H194R, $28.00
S.....Swine Resource Handbook for Market and Breeding Projects, 4H134R, $20.00
S.....Beef Resource Handbook for Market, Breeding and Feeder Cattle, 4H117R, $19.00
L.....Livestock Quality Assurance for Youth Producers, 5300, $8.00
L.....Beef, Sheep, Swine Selection Guide, 4H103R, $11.50

BEEF

Beef is an excellent way to learn about an important industry in Montana and the rest of the nation. Through this project, you can learn about all aspects of the beef industry, either by directly caring for a calf or by learning about beef through the 4-H achievement program in each level. You may raise a market calf or manage a breeding animal at any level. **Youth wishing to enroll in Market Beef or Breeding Beef must also be enrolled in Level 1, 2, or 3.** If you enroll in independent study, you are expected to have already completed the three levels of the beef project and have set some learning goals for your independent work.

Beef, Level 1

Enroll in Market and/or Breeding on form if desired

Level 1 activities are for youth who may or may not have their own calf. If you don't own a calf, these activities will help you decide if you want to raise calves by learning more about them. In this level, you will learn about beef cattle, breed identification, locating parts on a steer, judging, halter breaking, fitting a steer, showing a calf, recognizing a healthy animal, selecting feed ingredients and how to shop for beef and beef by-products.

PROJECT REQUIREMENTS

It may take up to three years for you to complete this level. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M.....Bite Into Beef, BU8143, $6.00
L.....Beef Helper's Guide, BU8146, $6.00

Beef, Level 2

Enroll in Market and/or Breeding on form if desired

Once you've completed the achievement requirements in level one, you're ready for *Here's the Beef*. In this level, you'll learn about leg structure, how to present oral reasons in judging, feed ingredients, beef behavior, nose printing, parasites, fitting your market beef, ethical issues, beef carcass composition and retail meat cuts.

PROJECT REQUIREMENTS

It may take three years to complete this level. You must complete a minimum of seven activities and five learning experiences each year to complete this project.

MATERIALS

M.....Here's the Beef, BU8144, $6.00
L.....Beef Helper's Guide, BU8146, $6.00

Beef, Level 3

Enroll in Market and/or Breeding on form if desired

As an advanced member, you have several opportunities to share your knowledge and experience about beef cattle with other members. You'll also gain leadership skills as you help others learn about cattle. In this level, you will teach others about beef cattle, explore career opportunities, and learn about selection, judging, fees, health, reproduction, meats and marketing.

PROJECT REQUIREMENTS

It may take as long as three years to complete this level. You must complete a minimum of seven activities and five learning experiences each year to complete this project.

MATERIALS

M.....Leading the Charge, BU8145, $6.00
L.....Beef Helper's Guide, BU8146, $6.00

ADDITIONAL PROJECT MATERIALS

S.....Beef Resource Handbook for Market, Breeding and Feeder Cattle, 4H117R, $19.00

Beef Independent Study *(see pg 7)*

Beef Helper's Guide, BU8146, $6.00

Find a variety of group learning activities, including skill-a-thons, quiz bowls, games, presentations, Beef Bingo and several management skill activities.

CAT

Cat will help you learn more about one of our most common household pets. You will explore all kinds of things about cats-from nutrition to showing, and learn the basics about care and companionship.

Cat, Level 1

This level is for youth who may or may not have a cat of their own. The important thing is that you want to learn more about cats and care about animals. If you don't have a cat, the activities in this level will help you decide whether you want a cat in the future. In the project, you will learn about breeds of cats, cost of raising a cat, and how to care for and groom a cat.

PROJECT REQUIREMENTS

You may take up to three years to complete this level. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M.....Purrr-fect Pals! BU8148, $6.00
L.....Cat Helper's Guide, BU8151, $6.00

Cat, Level 2

After completing level one, you will advance to level two. Besides learning a lot about yourself and practicing important life skills, you will learn about organizations that have information about cats, how to show a cat, how to train a cat, about careers related to cats, how to read and understand a feed label, about external parasites that can affect cats and more.

PROJECT REQUIREMENTS

You may take up to three years to complete this level. You must complete a minimum of seven activities and five learning experiences each year to complete this project.

MATERIALS

M .....Climbing Up! BU8149, $6.00
L.....Cat Helper's Guide, BU8151, $6.00

Cat, Level 3

Designed for advanced members, this project offers you a variety of ways to share your knowledge and experience and develop leadership skills. In this level, you'll learn how to develop a business plan, learn about genetics, explore career choices, organize a cat quiz bowl, research cat laws, and learn about diseases, reproduction, behavior and showmanship.

PROJECT REQUIREMENTS

It may take up to three years to complete this level. You must complete a minimum of seven activities and five learning experiences each year to complete this project.

MATERIALS

M .....Leaping Forward, BU8150, $6.00
L.....Cat Helper's Guide, BU8151, $6.00

ADDITIONAL PROJECT MATERIALS

M .....4-H Cat Project, EM4809, $3.50
M .....Cat Fitting and Showmanship, EM4810, $3.50

Cat Independent Study *(see pg 7)*

Cat Helper's Guide, BU8151, $6.00

Find group activities in this guide–an excellent way to involve everyone in learn-by-doing cat project sessions.

DAIRY CATTLE

The Dairy Project is for members who want to learn more about dairy animals. If ownership is not possible, this project allows you to have a contract with a dairy to care for one or more animals. Members usually start with a heifer calf or yearling heifer. Older members may start with a producing cow. Keep milk production records on all producing cows, using Dairy Herd Improvement Association (DHIA) guidelines. This project also provides an opportunity to start with a calf and raise it to a producing cow.

Dairy Cattle, Level 1

This level is for beginning members who may or may not own a dairy animal. Through the activities in this level, you will learn about the parts of the dairy cow, various dairy breeds and the cost to raise a calf. You will also learn how to care for a dairy animal and how to recognize desirable traits when selecting calves. If you don't already have a dairy animal, some of the activities in this level will help you decide whether you want to raise dairy cattle in the future. It may take up to three years to complete this level.

PROJECT REQUIREMENTS

You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....Cowabunga!, BU8161, $6.00
L.....Dairy Cattle Helper's Guide, BU8164, $6.00
S.....Dairy Cattle Feed Sheet, 4-H website

Dairy Cattle, Level 2

Level 2 offers new challenges and opportunities to explore a range of activities related to dairy cattle and the dairy industry. In this level, you will learn about housing, hay quality, milking, animal health, parasites, behavior and food safety. You will also learn about ethical decision-making, judging and careers.

PROJECT REQUIREMENTS

You must complete a minimum of seven activities and five learning experiences each year to complete this project.

MATERIALS

M .....Moooving Ahead, BU8162, $6.00
L.....Dairy Cattle Helper's Guide, BU8164, $6.00
S.....Dairy Cattle Feed Sheet, 4-H website

Dairy Cattle, Level 3

Whether you raise one calf or several cows, you are in an excellent position to share your knowledge and experiences with others. You'll also find activities to help you manage your herd, practice mastitis detection, balance a ration, detect pregnancy and deliver a calf. You will also learn about body condition scoring, selecting cattle through records, promoting dairy products and exploring career opportunities.

PROJECT REQUIREMENTS

You must complete a minimum of seven activities and five learning experiences each year to complete this project.

MATERIALS

M .....Rising to the Top, BU8163, $6.00
L.....Dairy Cattle Helper's Guide, BU8164, $6.00
S.....Dairy Cattle Feed Sheet, 4-H website

ADDITIONAL PROJECT MATERIALS

L.....Dairy Resource Handbook, 4H127R, $16.75

Dairy Independent Study *(see pg 7)*

Dairy Cattle Helper's Guide, BU8164, $6.00

Four chapters include Cow Talk Glossary Terms, Pedigree Power, a dairy pyramid game and a dairy skillathon as well as many other resources.

DOG

Dog is perfect for youth who are interested in learning more about dogs, how to care for a dog, and how to train a dog in basic or advanced commands. The dog project is unique and not meant to conform to AKC dog show or other professional standards. Although beginners do not need to own a dog to participate in the first level of the project, the more advanced levels do require dog ownership. Each level may take up to three years to complete. **Youth can sign up for Dog Obedience and Dog/Agility to supplement their learning experience but must enroll in Level 1, 2 or 3.**

Dog, Level 1

Enroll in Obedience and/or Agility on form if desired

In level 1, the activities are for those who may or may not have a dog of their own, but want to learn more. If you don't have a dog, some of the activities in this level may help you decide whether you want to make the commitment to own and care for a dog. You will learn about basic care, training, breeds, parts of the dog, and how to keep a dog healthy and groomed.

PROJECT REQUIREMENTS

You may take up to three years to complete this level. You must complete a minimum of seven activities and three learning experiences each year to complete the project.

MATERIALS

M .....Wiggles and Wags, BU8166, $6.00
L.....Dog Helper's Guide, BU8169, $6.00

Dog, Level 2

Enroll in Obedience and/or Agility on form if desired

Level 2 offers opportunities and challenges to explore a wide range of activities related to dogs. Dog ownership is necessary to participate in this level. You will explore more about dog health, nutrition, care, genetic problems, population control, showmanship, training, ethics and budgeting.

PROJECT REQUIREMENTS

You must complete a minimum of seven activities and five learning experiences each year to complete this project.

MATERIALS

M .....Canine Connection, BU8167, $6.00
L.....Dog Helper's Guide, BU8169, $6.00

Dog, Level 3

Enroll in Obedience and/or Agility on form if desired

In this level, you will focus on advanced skills in dog training and management. By this level, you may be ready to compete in AKC trials. You will investigate responsible breeding, diseases, caring for geriatric dogs, training, service dogs, dog roles and careers related to dogs. You will also be presented with many leadership opportunities.

PROJECT REQUIREMENTS

You must complete a minimum of seven activities and five learning experiences each year to complete this project. It may take as many as three years for you to complete this level.

MATERIALS

M .....Leading the Pack, BU8168, $6.00
L.....Dog Helper's Guide, BU8169, $6.00

ADDITIONAL PROJECT MATERIALS

L.....Dog Resource Handbook 4H201R, $23.95

Dog Independent Study *(see pg 7)*

Dog Helpers Guide BU8169, $6.00

Group games and activities provide helpers with ideas for facilitating learning. Service learning opportunities are encouraged. Training activities and resources are highlighted.

DAIRY GOAT

Although beginners do not need to own a goat, the more advanced levels of the project are designed for those who have one or more goats to care for. Raise a goat for milk, mohair, meat or even for packing.

Dairy Goat, Level 1

You will learn about both dairy goats (raised primarily for milk) and Angora goats (raised for mohair). You'll learn about the parts of the goat, breeds, costs to raise a goat, and how to care for a goat while developing important life skills.

PROJECT REQUIREMENTS

This level may take up to three years to complete. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....Getting Your Goat, BU8352, $6.00
L.....Goat Helper's Guide, BU8355, $6.00

Dairy Goat, Level 2

You'll learn how to keep your goat healthy, feed them for maximum production, prepare for kidding, develop judging skills and milk a goat properly.

PROJECT REQUIREMENTS

Three years may be required to complete this level. You must complete at least seven activities and five learning experiences each year to complete this project.

MATERIALS

M .....Stepping Out, BU8353, $6.00
L.....Goat Helper's Guide, BU8355, $6.00

Dairy Goat, Level 3

Advanced 4-H members learn about genetics and breeding, careers in the goat industry, diseases, biosecurity, body condition scoring, pedigrees and quality assurance. At this level, you are in an excellent position to share your knowledge and experiences with others.

PROJECT REQUIREMENTS

You must complete a minimum of seven activities and five learning experiences each year to complete this project. (It may take up to three years to complete this level.)

MATERIALS

M .....Showing the Way, BU8354, $6.00
L.....Goat Helper's Guide, BU8355, $6.00

ADDITIONAL PROJECT MATERIALS

S.....Goat Resource Handbook, 4H135R, $21.75

Goat Independent Study *(see pg 7)*

Goat Helper's Guide, BU8355, $6.00

Plan group meetings to get youth involved and excited to learn about goats. Youth will enjoy playing goat-related games, conducting skillathons, giving demonstrations, participating in showmanship contests and other fun group activities.

MEAT GOAT

Meat Goat is designed for members who want to learn about breeds of meat goats, health care, grooming, production, reproduction, management, showmanship, marketing and careers. **Youth wishing to enroll in Market Goat or Breeding Goat must also be enrolled in Level 1, 2, or 3.**

Meat Goat, Level 1

Enroll in Market and/or Breeding on form if desired

You will learn about goat breeds and selection, feeding and management, goat health, goat body parts, record keeping, meat goat and dairy conformation, show preparations and sportsmanship.

PROJECT REQUIREMENTS

This level may take up to three years to complete. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....Just Browsing, BU7909, $6.00
L.....Meat Goat Helper's Guide, BU7912, $6.00

Meat Goat, Level 2

Enroll in Market and/or Breeding on form if desired

You will learn about goat diseases, identify poisonous plants, determine body conditions, water quality, goat predators, kidding, goat reproduction, the veterinary profession, selecting stock and showing meat goats.

PROJECT REQUIREMENTS

This level may take up to three years to complete. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....Growing with Meat Goats, BU7910, $6.00
L.....Meat Goat Helper's Guide, BU7912, $6.00

Meat Goat, Level 3

Enroll in Market and/or Breeding on form if desired

You will discover how to select breeding sires, balance a ration, prevent diseases, control internal and external parasites, practice biosecurity, practice sound ethics, conduct a meat goat judging clinic, judge goats, give oral reasons and explore meat goat products.

PROJECT REQUIREMENTS

This level may take up to three years to complete. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....Meating the Future, BU7911, $6.00
L.....Meat Goat Helper's Guide, BU7912, $6.00

ADDITIONAL PROJECT MATERIALS

S.....Goat Resource Handbook, 4H135R, $21.75

Goat Independent Study *(see pg 7)*

Meat Goat Helper's Guide, BU7912, $6.00

Groups will enjoy planning a program, completing project records, developing a management calendar, conducting a meat quality assurance program, participating in quiz bowls, skillathons, tours, giving a presentation and exploring goat-related careers.

HORSE

Horse projects provide youth with an opportunity to handle, care for, ride or drive horses. There are 10 horse projects. Members must have completed levels 1-3 in Horsemanship to participate in the Advanced Horse Projects. Members are eligible to participate in Horse projects according to ability and skill level. SKILL LEVELS DO NOT NECESSARILY CORRESPOND TO YEARS. It is possible to complete several levels in a year; or youth may take several years to complete one level. Assessment sheets are provided for leaders to determine when a member completes the levels.

Montana Horse Helmet Policy

A certified equestrian helmet with safety harness fastened is required in over fence classes and gymkhana events, activities and practice sessions. Gymkhana refers to horseback speed events (timed or untimed) that do not use livestock. Events in this category include, but are not limited to: barrel racing, pole bending, keyhole, stake, rescue races, pony express race, etc. Events not included in this policy are calf roping, team roping, goat tying, and team penning that may be timed, but use livestock. Participants in the 4-H Horse Project are required to attend a helmet education workshop and/or view the video "Every Time, Every Ride" once as a junior 4-H member (8-13) and once as a senior 4-H member (14 and up). It is the responsibility of the parent or guardian of the 4-H member to see that headgear complies with standards and is in good condition. The Montana 4-H Center for Youth Development encourages the use of ASTM certified/SEI approved safety helmets in all equine events. Protective headgear may be used in all classes and shall not be discriminated against. Helmet use is encouraged in all 4-H horse activities any time a 4-H member is around a horse. Counties may establish more stringent policies regarding helmet use.

MATERIALS

L.....Horse Education DVD "Every Time, Every Ride", 5324, $15.50
L.....Horse Helmet Safety "Slide show", 4-H Website

Horsemanship

Horsemanship is the basis for the horse project. All members must complete Horsemanship levels 1, 2 and 3 before entering another Horse project, with the exception of Horse Judging, Careers with Horses, Horse Showing and Packing, and Working Ranch Horse, which may be taken simultaneously with a mounted horse level. (See project descriptions for specific assessment requirements.) Horsemanship has seven levels. Depending on riding form, use the following to enroll in the appropriate level.

WESTERN	ENGLISH
Level 1	Level 1
Level 2	Level 2
Level 3	Level 3
Level 4	Level 4
Level 5	Level 5
Level 6	Level 6
Level 7	Level 7

NOTE: Remember, for the state horse show, you can show only one level above or below the level in which you are enrolled.

MATERIALS
M .....Horsemanship, Levels I–3, 5246, $5.50
M .....Horsemanship, Levels 4-7, 5262, $5.50
M .....Montana Horsemanship Projects Manual, 5346, $5.50
L.....Every Time Every Ride DVD (Horse Helmets), 5324, $15.50

ADDITIONAL PROJECT MATERIALS
S.....Understanding the Horse Trailer Rig: Steps for transporting horses safely on the highway, http://ppp.purdue.edu/wp-content/uploads/2017/02/ppp-114.pdf (NEW**)**

Horseless Horse

If you currently do not have a horse, but think that one day you will and will want to participate in other horse projects, you should enroll in this project. As a "Horseless Horse" project member, you can also participate in horse judging and horse career projects without your own horse.

Horseless Horse 1

In this level, learn how to identify parts of a horse, horse behavior, horse breeds, costs of raising a horse, how to care for a horse, horse facilities, horse safety rules and more. Learning about horses is not all you'll do. You'll also have the opportunity to present a demonstration, take tours, watch a horse show and attend a horse clinic.

PROJECT REQUIREMENTS

Do at least seven of the required and optional activities in Level 1. Complete at least 21 of the required and optional activities in Level 1 within three years to complete this program.

MATERIALS
M .....Giddy Up and Go, 01518Y, $6.45
L.....Horse Project Helper's Guide, 01523F, $6.45

Horseless Horse 2

In Horseless Horse 2, you will learn about selecting a horse, nutrition, care, teeth, bones, judging and how to give oral reasons.

PROJECT REQUIREMENTS

Do at least seven of the required and optional activities in Level 2. Complete at least 21 of the required and optional activities in Level 2 within three years to complete this program.

MATERIALS
M .....Head, Heart and Hooves, BU8054, $6.00
L.....Horse Project Helper's Guide, 01523F, $6.45

Horseless Horse 3

This level of the horseless horse project rounds your knowledge about horses and prepares you for eventual horse ownership. In this level, explore horse reproduction, diseases, health care and pasture management. You will learn about appropriate shelters and financial planning, and be equipped to teach others about horses.

PROJECT REQUIREMENTS

Do at least seven of the required and optional activities in Level 3. Complete at least 21 of the required and optional activities in Level 3 with three years to complete this program.

MATERIALS
M .....Stable Relationships, BU8055, $6.00
L.....Horse Project Helper's Guide, 01523F, $6.45

Horseless Horse 4

In level 4 you will learn nine basic riding skills and 10 horsemanship skills. You will also learn training techniques, all about trail riding and selection and use of tack.

PROJECT REQUIREMENTS

Do at least seven of the required and optional activities in Level 4. Complete at least 21 of the required and optional activities in Level 4 within three years to complete this program.

MATERIALS
M .....Riding the Range, BU08056, $6.00
L.....Horse Project Helper's Guide, 01523F, $6.45

Horseless Horse 5

In level 5 you will learn more advanced riding skills. You will also learn the Quarter System, horse showmanship, ethics and leadership.

PROJECT REQUIREMENTS

Do at least seven of the required and optional activities in Level 5. Complete at least 21 of the required and optional activities in Level 5 within three years to complete this program.

MATERIALS
M .....Jumping to New Heights, BU8057, $6.00
L.....Horse Project Helper's Guide, 01523F, $6.45

Horse Project Helper's Guide, 01523F, $6.45

Features group activities such as Horse Bingo, You be the Judge, Corral Your Character and Skill-a-thons.

Colt to Maturity

This project is for those who own or have available a colt or filly to care for and train. This is a five-year progressive project beginning with a yearling. The project is designed to help you select a foal and train it to maturity. You must be 11 on Oct. 1; have completed Horsemanship levels 1, 2 and 3; and demonstrated ability to handle the project to the county horse leader or designated person. Stallions will be allowed only in the yearling phase. Check with local county fair rules on exhibiting.

Level 1
Level 2
Level 3
Level 4
Level 5

PROJECT REQUIREMENTS

The Project Leader or Agent can assist the member in setting goals for each project year. Completion of these goals will satisfy the requirements of this project.

MATERIALS
M .....4-H Training Horses - Yearlings to Five-Year-Old, 5336, $3.50
M .....4-H Colt to Maturity Manual, 5248, $3.50

Working Ranch Horse

This project prepares you and your horse for general ranch work including roping, cutting, and penning. You will also learn the heritage and traditions of the American cowboy. Competitions (called gatherings) may be offered at the county or regional level.

Level 1 **Level 3**
Level 2 **Level 4**

PROJECT REQUIREMENTS

4-H members may enroll in the 4-H Working Ranch Horse Project independently or concurrently with the Horsemanship Project Levels 1-7 depending on county requirements. Skills assessments determine the project level of each participant and are conducted on the county level.

MATERIALS
M .....Montana 4-H Working Ranch Horse Manual (contains all 4 levels), 5250, $7.50

Horse Packing

This project develops your knowledge and skills in the art and science of using horses to transport materials. This project also provides opportunities for enjoying nature in a way that is otherwise difficult. Members may enroll in this project simultaneously with any other mounted horse project.

Level 1 **Level 4**
Level 2 **Level 5**
Level 3

PROJECT REQUIREMENTS

The Project Leader or Agent can assist the member in setting goals for each project year. Completion of these goals will satisfy the requirements of this project.

MATERIALS
M .....4-H Horse Packing Manual, 5251, $3.50

Horse Driving

This is a project to teach you basic horse driving skills, safety and training a horse to drive in single or multiple hitches. Members must have completed assessment for horse projects to participate in this project.

Level 1 **Level 3**
Level 2 **Level 4**

PROJECT REQUIREMENTS

The Project Leader or Agent can assist the member in setting goals for each project year. Completion of these goals will satisfy the requirements of this project.

MATERIALS
M .....4-H Horse Driving Project Manual, 5252, $3.50

Horse Showing

This project teaches you to select, train and maintain your horses for showing. This project will help you become an adept and knowledgeable horseman or horsewoman. It will also help you learn to plan and conduct shows and clinics. Members may enroll in this project simultaneously with any other mounted horse project.

Level 1 **Level 2** **Level 3**

PROJECT REQUIREMENTS

The Project Leader or Agent can assist the member in setting goals for each project year. Completion of these goals will satisfy the requirements of this project.

MATERIALS
M .....4-H Horse Showing Project Manual, 5253, $3.50

Horse Judging

This project teaches you to select and evaluate horses, give oral reasons and place classes of conformation horses and performance horses. Members may enroll in this project simultaneously with any mounted horse project.

PROJECT REQUIREMENTS

The Project Leader or Agent can assist the member in setting goals for each project year. Completion of these goals will satisfy the requirements of this project.

MATERIALS
M .... New Mexico 4-H Horse Judging Manual, NM200R48, $3.50

Green Horse

This project is for those who have horses that are not fully trained, but don't fit into the colt to maturity project because of age or ability. To participate in this project, you must be 11 on Oct. 1; have completed Horsemanship levels 1, 2 and 3; and have demonstrated an ability to handle the project to the county horse leader or designated person.

Level 1 **Level 3**
Level 2 **Level 4**

PROJECT REQUIREMENTS

The Project Leader or Agent can assist the member in setting goals for each project year. Completion of these goals will satisfy the requirements of this project.

MATERIALS
M .....4-H Green Horse Project Manual, 5256, $3.50
M .....4-H Training Horses - Yearlings to Five-Year-Old, 5336, $3.50

Careers with Horses

This project is intended to acquaint you with careers in the horse industry and may be taken simultaneously with any mounted horse project.

PROJECT REQUIREMENTS

The Project Leader or Agent can assist the member in setting goals for each project year. Completion of these goals will satisfy the requirements of this project.

MATERIALS
M .....4-H Horse Careers Manual, 5255, $2.50

Horse Independent Study *(see pg 7)*

POCKET PETS

Pocket Pets helps you learn about small hand pets and how to care for them. This is an excellent beginning project, especially if you are a younger member who wants to learn what it's like to care for an animal. You will develop important life skills and practical skills through hands-on activities that will teach you about your pet's needs. Pets included in these materials are ferrets, snakes and turtles, hamsters, gerbils, mice, fish, frogs and toads, lizards, birds, guinea pigs and others.

Pet, Level 1

This project will help you learn about different kinds of pets, costs to raise them and how to care for them. You'll also be learning about yourself, too. You'll learn how to communicate effectively with others, how to make good decisions, how to be responsible and how to plan and organize.

PROJECT REQUIREMENTS

You must complete at least seven activities and three learning experiences each year to complete this project. It may take up to three years to complete the project.

MATERIALS

M .....Pet Pals, BU6359, $6.00
L.....Pet Helper's Guide, BU6362, $6.00

Pet, Level 2

Level 2 will help you expand your knowledge of pets and improve your life skills. Some of the things you'll learn about include an animal's digestive system, pet breeding, nutritional requirements for pets, comparison shopping, signs of good animal health and how pets communicate.

PROJECT REQUIREMENTS

You must complete at least seven activities and five learning experiences each year to complete this project. It may take up to three years to complete the project.

MATERIALS

M .....Scurrying Ahead, BU6360, $6.00
L.....Pet Helper's Guide, BU6362, $6.00

Pet, Level 3

This project provides you with several opportunities to develop your leadership and communication skills as you strive to complete Level 3 of the achievement program. You'll also find activities to help you develop a business, explore careers and teach others. You'll learn about genetics, how to start your own business, the pet industry, explore animal welfare issues, think environmentally, investigate "pet" sayings and learn about pet diseases.

PROJECT REQUIREMENTS

You must complete at least seven activities and five learning experiences each year to complete this project. It may take up to three years to complete the project.

MATERIALS

M .....Scaling the Heights, BU6361, $6.00
L.....Pet Helper's Guide, BU6362, $6.00

ADDITIONAL PROJECT MATERIALS

S.....Pocket Pets Resource Handbook, 4H220R, $12.50

Pocket Pets Independent Study *(see pg 7)*

Pet Helper's Guide, BU6362, $6.00

Find many fun and engaging group games and activities to further expand the pet project experience for youth.

POULTRY

Poultry is designed to help you learn about chickens and other poultry. Through this project, you will acquire an understanding of scientific poultry management and marketing practices. You will also gain business experience and insight into the values and principles of purchasing, marketing, financial record keeping and obtaining credit. In addition, this project will help you understand the poultry industry and its role in agriculture and the economy.

Poultry, Level 1

Through the activities in this level, you will learn about poultry and egg parts, breeds, costs to raise poultry, how to prepare for chicks, how to care for and handle your birds, how to select pullets, showing poultry and more. You'll also be learning about yourself, too. Through your work in this level, you will learn how to speak to groups, work with other people, make decisions, take risks, plan, organize and be responsible.

PROJECT REQUIREMENTS

This level may take up to three years to complete. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....Scratching the Surface, BU6363, $6.00
L.....Poultry Helper's Guide, BU6366, $6.00

Poultry, Level 2

This level offers you new challenges and opportunities to explore a wide range of activities. You'll learn about egg production, the skeletal structure of birds, pecking orders, and how to: select and judge broilers, recognize a healthy flock, prevent diseases of poultry flocks, select breeding pens, read a feed tag, make an egg Candler and build a budget.

PROJECT REQUIREMENTS

This level may take up to three years to complete. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....Testing Your Wings, BU6364, $6.00
L.....Poultry Helper's Guide, BU6366, $6.00

Poultry, Level 3

Learn about how to organize a judging clinic, how to manage a laying flock, how genetics influence poultry characteristics, how to handle poultry products safely, how to process chickens for food, about advances in biotechnology and careers in the poultry industry.

PROJECT REQUIREMENTS

This level may take up to three years to complete. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....Flocking Together, BU6365, $6.00
L.....Poultry Helper's Guide, BU6366, $6.00

ADDITIONAL PROJECT MATERIALS

M .....4-H Poultry Production: Raising Pullets, OH151, $8.00
M .....4-H Poultry Production: Raising Broilers, OH152, $8.00
M .....Poultry Feed Sheet, 2FM093, 4-H website
S.....National Poultry Judging, 4H460, $7.50
S.....Beginner's Guide to Raising and Showing Chickens, DVD-3, $16.00
M .....4-H Poultry Fitting & Showmanship, 4HDL01, download only, Extension online store

Poultry Independent Study *(see pg 7)*

Poultry Helper's Guide, BU6366, $6.00

Guide youth by using this book to lead 15 learn-by-doing group activities.

RABBIT

You will gain knowledge and skills in managing and caring for rabbits, selecting quality rabbits, feeding balanced rations and maintaining management records on which to base decisions regarding feed, production and breeding. You will also have opportunities to participate and assume responsibility in the 4-H rabbit program.

Rabbit, Level 1

This project is designed for the beginning rabbit member with little or no experience in raising rabbits. By the end of the project, you will be able to name several breeds of rabbits, identify the parts of the animal, discuss the sanitation methods needed to raise rabbits, describe good feeding and watering practices, learn to keep feed and financial records and demonstrate proper showmanship procedures.

PROJECT REQUIREMENTS

This level may take up to three years to complete. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....What's Hoppening? BU8080, $6.00
L.....Rabbit Helper's Guide, BU8083, $6.00

Rabbit, Level 2

The intermediate level project is designed for 4-H members who wish to expand upon their knowledge gained in the previous level. The level is designed to be completed in 2-3 years.

PROJECT REQUIREMENTS

This level may take up to three years to complete. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....Making Tracks, BU8081, $6.00
L.....Rabbit Helper's Guide, BU8083, $6.00

Rabbit, Level 3

Level 3 of the rabbit project is designed for those who want to explore interest areas of rabbit production. Chapters include Breeding and Genetics, Diseases, Keeping Records, Marketing and Tanning Hides. Select four to five required activities each year to complete. Youth may participate in this level for three years.

PROJECT REQUIREMENTS

This level may take up to three years to complete. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....All Ears, BU8082, $6.00
L.....Rabbit Helper's Guide, BU8083, $6.00

ADDITIONAL PROJECT MATERIALS

S.....Rabbit Resource Handbook for Breeding, Market and Pet Projects, 4H228R, $13.50

Rabbit Independent Study *(see pg 7)*

Rabbit Helper's Guide, BU8083, $6.00

Fifteen exciting rabbit group activities make group learning fun and educational.

SHEEP

In this project, you will learn a lot about the modern sheep industry either by directly caring for a lamb or by learning about sheep through the achievement program in each level. You may enroll in either a market lamb or breeding project at any level. **Youth wishing to enroll in Market Sheep or Breeding Sheep must also be enrolled in Level 1, 2, or 3.** If you enroll in the independent study, you must have already completed all three levels of the sheep project and set learning goals for your independent work.

Sheep, Level 1

Enroll in Market and/or Breeding on form if desired

The activities in Sheep Level 1 are for youth who may or may not have their own lamb, but want to learn more about sheep. In this level, you will learn to identify the parts of a lamb, about the breeds of sheep, sheep behavior, uses of wool, about sheep by-products, fitting a sheep for show, showing a sheep, how to determine the health of a lamb, judging lambs and how to develop a management plan.

PROJECT REQUIREMENTS

It may take three years to complete this level. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....Rams, Lambs and You, BU6367, $6.00
L.....Sheep Helper's Guide, BU6370, $6.00

Sheep, Level 2

Enroll in Market and/or Breeding on form if desired

In level 2 you'll learn more about the sheep project, including sheep parasites, meat safety, judging, using medications safely, the digestive system of sheep, health problems, management practices, careers, sheep production cycles, managing money, meat cuts and more.

PROJECT REQUIREMENTS

It may take three years to complete this level. You must complete a minimum of seven activities and five learning experiences each year to complete this project.

MATERIALS

M .....Shear Delight, BU6368, $6.00
L.....Sheep Helper's Guide, BU6370, $6.00

Sheep, Level 3

Enroll in Market and/or Breeding on form if desired

As an advanced member in the sheep project you gain leadership skills as you help others learn about sheep. In this level you are encouraged to teach others about sheep, explore career opportunities in the sheep industry, set production goals and make a budget for a sheep enterprise. You can also plan and conduct a sheep event in your community, address contemporary issues related to sheep production, learn about marketing and reproduction, plan and organize a judging contest and explore genetics.

PROJECT REQUIREMENTS

It may take three years to complete this level. You must complete a minimum of seven activities and five learning experiences each year to complete this project.

MATERIALS

M .....Leading the Flock, BU6369, $6.00
L.....Sheep Helper's Guide, BU6370, $6.00

ADDITIONAL PROJECT MATERIALS

M .....Livestock Feed Sheet, 2FM099, 4-H website
S.....Sheep Resource Handbook for Market and Breeding Projects, 4H194R, $28.00

Sheep Independent Study *(see pg 7)*

Sheep Helper's Guide, BU6370, $6.00

Helpers will enjoy involving youth in sheep skillathons, sheep bingo, sheep pyramid, developing a management calendar and many more activities.

SWINE

The Swine Project is an excellent way to learn about the pork industry. Through this project, you can learn about all aspects of the pork industry, either by directly caring for a hog or by learning about swine. At any level you may enroll in market pig or breeding pig. **Youth wishing to enroll in Market Swine or Breeding Swine must also be enrolled in Level 1, 2, or 3.** If you enroll in the independent study, you are expected to have already completed the three levels of the swine project and to have set some learning goals for your independent work.

Swine, Level 1

Enroll in Market and/or Breeding on form if desired

Activities in Swine Level 1 are for youth who may or may not have their own pig. If you don't own your own pig, these activities will help decide if you really want to raise pigs or learn more. In this level, you will learn to identify the parts of a pig, breeds, how to judge market hogs, explore the digestive system, identify pork cuts and how to fit and show a hog.

PROJECT REQUIREMENTS

It may take three years to complete this level. You must complete a minimum of seven activities and three learning experiences each year to complete this project.

MATERIALS

M .....The Incredible Pig, BU8065, $6.00
L.....Swine Helper's Guide, BU8068, $6.00

Swine, Level 2

Enroll in Market and/or Breeding on form if desired

In this level, you'll learn about herd health, pork production from farrow to finish, cooking and preparing pork products, careers in agriculture, symptoms of swine disease, and how to: develop a pig health plan, balance a ration, and present oral reasons on a class of hogs.

PROJECT REQUIREMENTS

It may take three years to complete this level. You must complete a minimum of seven activities and five learning experiences each year to complete this project.

MATERIALS

M .....Putting the Oink in Pig, BU8066, $6.00
L.....Swine Helper's Guide, BU8068, $6.00

Swine, Level 3

Enroll in Market and/or Breeding on form if desired

You will be encouraged to teach others about pigs, explore career opportunities in the swine industry, organize a judging and showmanship clinic, plan a swine quiz bowl, operate and manage a swine breeding operation, learn about managing waste and explore genetics.

PROJECT REQUIREMENTS

It may take as long as three years to complete this level. You must complete a minimum of seven activities and five learning experiences each year to complete this project.

MATERIALS

M .....Going Whole Hog, BU8067, $6.00
L.....Swine Helper's Guide, BU8068, $6.00

ADDITIONAL PROJECT MATERIALS

S.....Swine Resource Handbook for Marketing and Breeding Projects, 4H134R, $20.00
S.....Livestock Feed Sheet, 2FM099, 4-H website

Swine Independent Study *(see pg 7)*

Swine Helper's Guide, BU8068, $6.00

Group activities such as quiz bowls, skillathons, glossary games, swine pyramid, exploring a meat contest and understanding quality assurance keep youth involved.

VETERINARY SCIENCE

Veterinary Science is designed to help you better understand animals. Knowledge in Veterinary Science assists in the protection of human welfare by applying the art and science of medicine to animals. Inspection of meat and poultry, the care of all food and pet animals, controls for diseases that already affect humans, and how to safeguard our food supply are some of the things you'll learn. You are not required to own an animal to enroll in this project, but it would be helpful if you had one available to study.

Veterinary Science, Level 1

No matter what kind of animal you have, or even if you don't have one, this project will help you learn about animals. It will also help you decide if you want to purchase and care for animals in the future. In this project, you will learn about the normal animal, basic anatomy and body systems, elementary principles of disease and careers with animals.

PROJECT REQUIREMENTS

You may take up to three years to complete this level. Each year you should identify at least four goals and complete a minimum of seven of the activities in Level 1.

MATERIALS

M ..... From Airedales to Zebras, BU8048, $6.00
L..... Veterinary Science Helper's Guide, BU8051, $6.00

Veterinary Science, Level 2

You will learn to create health records for your animal, investigate body systems, discover the importance of immunity, explore biosecurity measures, examine parasite life cycles, recognize the importance of quality assurance, conduct a food safety experiment, investigate disease-causing agents, apply math and science skills, and consider ethics and animal welfare.

PROJECT REQUIREMENTS

You may take up to three years to complete this level. Each year you should identify at least four goals and complete a minimum of seven of the activities in Level 2.

MATERIALS

M .....All Systems Go! BU8049, $6.00
L.....Veterinary Science Helper's Guide, BU8051, $6.00

Veterinary Science, Level 3

By now, you should be able to share your experience and knowledge with others through some leadership roles in veterinary science. You will learn about genetics and how to describe "typical" animal behavior, conduct an experiment about test reliability, compare reproduction in various species, consider the function of body organs and systems, investigate human-animal bonds, recognize the importance of animal population control and explore careers in veterinary science.

PROJECT REQUIREMENTS

You may take up to three years to complete this level. Each year you should identify at least four goals and complete a minimum of seven of the activities in Level 3.

MATERIALS

M .....On the Cutting Edge, BU8050, $6.00
L.....Veterinary Science Helper's Guide, BU8051, $6.00

Veterinary Independent Study *(see pg 7)*

Veterinary Science Helper's Guide, BU8051, $6.00

Numerous group activities help youth develop essential life skills as they pursue their interest in veterinary medicine.

Engineering and Technology

AEROSPACE

Aerospace involves the fascination of flying an airplane, launching a rocket, conquering space and becoming an astronaut or pilot. Through fun and challenging activities, you will learn about flying, kites, hot air balloons, remote control airplanes, gliders and space shuttles.

Aerospace, Level 2

Whether you have just started exploring aerospace or already know about rockets, hot air balloons, airplanes and kites, you'll enjoy the activities in Lift Off. In this project, you'll learn how to build a straw rocket, make a paper airplane, build a real model rocket, make and read a map, identify airplane models, investigate how weather affects flying, identify parts of a hot air balloon, discover how "angle of attack" affects kite flying and more. Explore your flight plan, select your aerospace helper and complete the Lift Off achievement plan.

PROJECT REQUIREMENTS

You should complete a minimum of seven activities and three leadership experiences each year (such as giving a demonstration, participating in a judging activity, taking a tour, exhibiting your project, or attending a workshop). You will need to complete a total of 20 activities to complete this level. You may take three years to complete this level of the aerospace program.

MATERIALS

M .....Lift Off, BU6843, $6.00
L.....Flight Crew Helper's Guide, BU6846, $6.00

Aerospace, Level 3

Learn how to build your own drinking straw and balloon rocket, organize a model rocket launch day, make a paper flight simulator, make a flying wing (glider) and build a controllable glider. Also make a hang glider, build a Nagasaki Hata Fighter Kite and identify parts of a helicopter.

PROJECT REQUIREMENTS

You should complete a minimum of seven activities and three leadership experiences each year. You will need to complete a total of 20 activities to complete this level. You may take three years to complete this level of the aerospace program.

MATERIALS

M .....Reaching New Heights, BU6844, $6.00
L.....Flight Crew Helper's Guide, BU6846, $6.00

Aerospace, Level 4

In this level, you will design, build and launch a model rocket, construct and use an altitude tracker, research how to qualify for a pilot's license and plan the most fuel-efficient flight path for a commercial aircraft. You'll also evaluate and design navigation systems, build a flat-style box kite, design and propose a new Emergency Medical Service (EMS) helicopter service, investigate gravity and complete a career profile.

PROJECT REQUIREMENTS

You should complete a minimum of seven activities and three leadership experiences each year. You will need to complete a total of 20 activities to complete this level. You may take three years to complete this level of the aerospace program.

MATERIALS

M .....Pilot in Command, BU6845, $6.00
L.....Flight Crew Helper's Guide, BU6846, $6.00

Aerospace Independent Study *(see pg 7)*

Flight Crew Helper's Guide, BU6846, $6.00

Many activities are included for hands-on experiential group fun such as aerospace quiz bowls, skillathons and an airport field day.

BICYCLE

Bicycle is divided into two levels. The project will be more worthwhile if several members in the same club are enrolled in this project. You will learn and practice good bicycle safety habits, enjoy bicycling for exercise and learn about the parts of the bicycle and how to maintain it.

Bicycle Level 1

Discover the joy of riding a bicycle. You will learn all about safety and how to avoid hazards. Activities you can complete in this project are: gaining control of your bike, learning how to navigate in traffic, doing basic repairs and more!

PROJECT REQUIREMENTS

To complete the level, you must complete a minimum of seven activities each year. This book can be used for two years. Contact your project leader or 4-H Agent for more details.

MATERIALS

M .....Bicycle for Fun, BU8334, $6.00
L.....Bicycle Helper's Guide, BU8336, $6.00

Bicycle Level 2

In this unit, you will learn how to do specialized repairs and maintenance. You'll also learn advanced maneuvers such as emergency handling, efficient gear shifting, and riding safely in adverse conditions. You should also discover how you can advocate for bicycle-friendly communities and turn your cycling knowledge into a career.

PROJECT REQUIREMENTS

To complete the level, you must complete a minimum of seven activities each year and participate in at least two leadership activities, such as giving a demonstration, organizing a group ride, teaching others about bikes or organizing a bike rodeo.

MATERIALS

M .....Wheels in Motion, BU8335, $6.00
L.....Bicycle Helper's Guide, BU8336, $6.00

ADDITIONAL PROJECT MATERIALS

S.....Don't Get Stuck: Fix It! DVD, BU8399, $10.50

Bicycle Independent Study *(see pg 7)*

Bicycle Helper's Guide, BU8336, $6.00

This Guide is designed to provide engaging and fun group activities for cycling enthusiasts. It contains information and activities related to basic bicycle handling, traffic skills and bicycle events and activities the whole group will enjoy.

ELECTRICITY

"Electric Excitement," is the 4-H Electric Energy series. This project will help de-mystify the magic of electric circuits, magnetism, motors and electronics. From making educated guesses and testing them, to building burglar alarms, learning how to select a really good stereo system and other consumer items, this project will get you actively involved in dozens of hands-on, fun activities.

Electric, Level 1

Are you ready to experience the magic of electricity? In this project, you will learn about the uses of electricity, selecting appropriate materials for your electric project, how to build your own flashlight or switch, test conductivity, investigate circuits, test materials for magnetism, build and test a compass, build an electromagnet, build a galvanometer and build an electric motor.

PROJECT REQUIREMENTS

Each year you should do at least three of the required activities and four of the optional activities. In addition, you should take part in at least two leadership experiences each year (such as giving a demonstration, participating in a judging activity, taking a tour, exhibiting your project, or attending an electric workshop). It may take three years to complete the level.

MATERIALS
M .....The Magic of Electricity, BU6848, $6.00
L.....Electric Excitement Helper's Guide, BU6852, $6.00

Electric, Level 2

In this level, you'll participate in activities such as learning about Ohm's Law using a squirt bottle, using a Volt-Ohm meter, how to read circuit diagrams and how to build a circuit and measure voltages. You'll also build a momentary switch and use it to communicate in Morse code, build a three-way switch, solder connections, build a rocket launcher and build a burglar alarm.

PROJECT REQUIREMENTS

Each year you should do at least three of the required activities and four of the optional activities. In addition, you should take part in at least two leadership experiences each year. It may take three years to complete the level.

MATERIALS
M .....Investigating Electricity, BU6849, $6.00
L.....Electric Excitement Helper's Guide, BU6852, $6.00

Electric, Level 3

In the Wired for Power activities you will put together a basic electrical tool and supply kit, interview an electrical inspector, learn about electrical codes, read an electric meter and electric service panels and decipher the symbols on wires and cables. You'll be able to select the most appropriate light bulb for specific situations, learn how to read an appliance nameplate, measure the electric usage of appliances, test for voltage, determine if outlets are grounded, locate your home wiring system, replace a switch and identify what's on each circuit.

PROJECT REQUIREMENTS

To complete this project each year you should do at least three of the required activities and four of the optional activities listed in the manual. In addition, you should take part in at least two leadership experiences each year. It may take three years to complete the level.

MATERIALS
M .....Wired for Power, BU6850, $6.00
L.....Electric Excitement Helper's Guide, BU6852, $6.00

Electric, Level 4

Level 4 encourages you to move beyond basic electricity and explore electronics. You'll learn about diodes, transistors, LED's, photocells, SCR's, IC's and amplifiers. These items are all components of the family of solid state electronics. They are also referred to as semiconductors because they can sometimes conduct electric currents and sometimes resist the flow of electric current. They are all an essential part of all modern day electronics products found in the home, office and workplace.

PROJECT REQUIREMENTS

To complete this project each year you should do at least three of the required activities and four of the optional activities listed in the manual. In addition, you should take part in at least two leadership experiences each year. It may take three years to complete the level.

MATERIALS
M .....Entering Electronics, BU6851, $6.00
L.....Electric Excitement Helper's Guide, BU6852, $6.00

Electric Independent Study *(see pg 7)*

Electric Excitement Helper's Guide, BU6852, $6.00

Youth learn how to conduct an electric skillathon, quiz bowls, electric Bingo and how to calculate amperage.

ROBOTICS

Robotics introduces science, math, engineering and technology skills while teaching life skills. There are three different kinds of projects available in Robotics. 'Introduction to Modern Microcontrollers' is designed to be used with the SparkFun Inventor's Kit, the EV3 project is designed to be used with the Lego robotics kit and the Junk Drawer project is designed to be used with everyday materials.

Introduction to Modern Microcontrollers

Microcontrollers are the electronic "brains" inside robots and other smart devices we use every day. Program a microcontroller to react, calculate or move a specific way when it measures a response from one or many sensors. This project combines electronics, mechanics, programming and, above all, creativity to learn the basics of microcontrollers. We will first introduce the Arduino microcontroller which is an open-source prototyping platform based on easy-to-use hardware and software. Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. Other microcontrollers like Rasberry Pi, Picax, Beaglebone and Edison will be added as technology emerges.

PROJECT REQUIREMENTS

To complete this project, complete a minimum of seven activities and one challenge per 4-H year; there are a total of 16 activities provided. Youth are encouraged to design challenges and programming to achieve the minimum requirements. This could be completed in one to three years.

NEW MATERIALS
M .....SparkFun Inventor's Kit - V3.3, $99.95 www.sparkfun.com/products/13969
L.....Download guide free, 4HDL16, Extension online store

Robotics with EV3

Use the newest LEGO technology to learn what a robot is, how to build one, and how to program it. Activities are based on the EV# core set available from LEGO Education for about $380. A computer for running programming software and Internet access to watch videos are required. Appropriate for all age levels. Curriculum authored by The Ohio State University.

PROJECT REQUIREMENTS

Complete a minimum of 6 activities (there are 12 activities provided), at least 2 learning experiences and at least 2 leadership/citizenship activities. The project book may take 2 years to complete.

MATERIALS

M .....Robotics 1 – EV3, 4H507, $8.00
L.....No Guide

Junk Drawer Robotics, Level 1

Youth are challenged to build robots from everyday items. Youth explore and learn about robot arms. Concepts covered include pnuematics, arm designs, and three-dimensional space. Big ideas include form and function, scientific habits of mind, and engineering design. None of the levels require or use computers. Youth will use their Robotics Notebook to record learning experiences, robotic designs and data from investigations.

PROJECT REQUIREMENTS

To complete this level you should complete a minimum of seven activities each year. Each level has up to 18 activities listed. The level can be completed over two years.

MATERIALS

M…. Give Robots a Hand, BU8431, $8.45
M…. Junk Drawer Youth Robotics Notebook, BU8435, $7.45 - There is one Robotics Notebook for three levels of the Junk Drawer Robotics curriculum. The notebook encourages youth to think and act like scientists and engineers.
L….. No Guide

Junk Drawer Robotics, Level 2

Youth learn about robots that move with legs, wheels and underwater. Concepts covered include friction, basic electrical power and motors, engineering constraints, gear system and buoyancy.

PROJECT REQUIREMENTS

To complete this level you should complete a minimum of seven activities each year. Each level has up to 18 activities listed. The level can be completed over two years.

Materials

M…. Robots on the Move, BU8432, $8.45
M…. Junk Drawer Youth Robotics Notebook, BU8435, $7.45 - There is one Robotics Notebook for three levels of the Junk Drawer Robotics curriculum. The notebook encourages youth to think and act like scientists and engineers.
L….. No Guide

Junk Drawer Robotics, Level 3

Youth will explore sensors and analog and digital systems. The track introduces simple electronic components; youth will build basic circuits to see how the components work. They will investigate basic elements of programming and instructions for robotic computer control.

Youth are challenged to build robots from everyday items. None of the levels require or use computers. Youth will use their Robotics Notebook to record learning experiences, robotic designs and data from investigations.

PROJECT REQUIREMENTS

To complete this level you should complete a minimum of seven activities each year. Each level has up to 18 activities listed. The level can be completed over two years.

MATERIALS

M…. Mechatronics, BU8433, $10.45
M…. Junk Drawer Youth Robotics Notebook, BU8435, $7.45 - There is one Robotics Notebook for three levels of the Junk Drawer Robotics curriculum. The notebook encourages youth to think and act like scientists and engineers.
L….. No Guide

Robotics Independent Study *(see pg 7)*

SMALL ENGINES

Small Engines is designed to help you learn about small engines and other power equipment, especially equipment used around the home. Youth will learn how gasoline engines operate, acquire skills needed to operate engines and equipment safely and become familiar with safety rules before starting and while operating engines. You will also create a desire for members to develop safe starting procedures and promote safe practices at home.

Small Engines, Level 1

In this introductory level, you learn about the major parts of engines, how to start and maintain engines, safety around motors, how engines are lubricated, the importance of clean air to efficiently functioning engines, cooling systems, how to replace a spark plug and much more.

PROJECT REQUIREMENTS

To complete this level, you must complete at least seven activities and complete your records. You may take up to three years to complete this level of the project.

MATERIALS

M .....Crank It Up! BU8186, $6.00
L.....Small Engines Helper's Guide, BU8189, $6.00

Small Engines, Level 2

In this level, you will prepare yourself for learning about different engine types, internal parts, specialized tools, engine size, compression, seasoning your engine, safety issues, starting your own business and more.

PROJECT REQUIREMENTS

To complete this level, you must complete at least seven activities and complete your records. You may take up to three years to complete this level of the project.

MATERIALS

M .....Warm it Up! BU8187, $6.00
L.....Small Engines Helper's Guide, BU8189, $6.00

Small Engines, Level 3

In this level, learn about tearing down and rebuilding an engine, how to use diagnostic tools, "listen" to engines for specific problems and practice properly maintaining engines. You'll use the Internet to find resources, rules and regulations, select a replacement engine, start your own small engines business and learn about small engine careers.

PROJECT REQUIREMENTS

To complete this level, you must complete at least seven activities and complete your records. You may take up to three years to complete this level of the project.

MATERIALS

M .....Tune It Up! BU8188, $6.00
L.....Small Engines Helper's Guide, BU8189, $6.00

Small Engines Independent Study *(see pg 7)*

Small Engines Helper's Guide, BU8189, $6.00

Find group activities, helpful hints for each activity in the youth guides and additional small engine project meeting ideas.

WELDING

This beginning-level project is designed for members 12 years of age and older by Oct. 1 of the 4-H year. Younger members may take this project under the guidance of a knowledgeable adult. It is recommended for use by 4-H members wanting to build, modify or repair steel-based projects. This project should take between three and six months to complete and may be repeated.

Welding, Level 1

Learn how to find an area to work on your project, how to identify welding tools, welding safety and decide on appropriate projects for the year. You'll also learn how to measure and mark materials, use a square, use a portable power drill, grinder, and more.

MATERIALS

M .....Arcs and Sparks: Shielded Metal Arc Welding, 4H573, $8.00

Welding Independent Study *(see pg 7)*

WOODWORKING

Woodworking is a perfect project choice if you like wood and enjoy using tools and building things. Can you see yourself someday building a table, wood toy or a chair? As a beginning woodworker, you can build practical and useful objects. As your skills grow, you'll be able to make most of the objects in your house or even build a home! No matter what you make, the joy of completing a woodworking project is great. You'll build and construct items using wood and a wide variety of woodworking tools.

PROJECT REQUIREMENTS FOR LEVELS 1-4

Each year you should do at least seven of the required and optional activities listed in the manual. In addition, you should take part in at least two leadership experiences each year. To complete each level of woodworking, you should complete at least 21 total required and optional activities in three years or less.

Woodworking, Level 1

Learn how to find an area to work on your project, how to identify woodworking tools, woodworking safety and decide on appropriate projects for the year. You'll also learn how to measure and mark boards, use a square, use a portable power drill, hand drill or brace, use a hand saw, identify different types of nails and screws, make a sandpaper block, construct a butt joint and use a hammer safely.

MATERIALS

M .....Measuring Up, BU6875, $6.00
L.....Woodworking Helper's Guide, BU6879, $6.00

Woodworking, Level 2

In level 2 you'll be introduced to new tools and ideas. You'll be using power equipment and practicing new woodworking skills. You'll find plans for building a birdhouse, stool and letter holder. In addition, you'll learn about safety, potential careers, identify different woodworking tools, select wood based on grain and recognize the difference between plywood, fiberboard and other types of lumber. You'll develop a project plan and then use a combination square, make a miter cut, make a curved cut using a jig saw, use a chisel, sander and staple gun and connect pieces of wood with glue, then select brushes for painting.

MATERIALS

M .....Making the Cut, BU6876, $6.00
L.....Woodworking Helper's Guide, BU6879, $6.00

Woodworking, Level 3

"Nailing It Together" will introduce you to woodworking skills, tools and equipment you may not have used before. In this project, you'll learn how to stay current with technology, explore career opportunities and make a boomerang, belt buckle, puzzle or bookshelf. You'll use a T-bevel, enlarge scale-drawn plans, make a dado joint, use a powered circular saw and a radial arm saw, use a hand plane and table saw, learn about hinges, hasps and flush plates, understand the difference between various clamps, make a dowel joint and use various types of wood stains.

MATERIALS

M .....Nailing It Together, BU6877, $6.00
L.....Woodworking Helper's Guide, BU6879, $6.00

Woodworking, Level 4

You are now closer to becoming an accomplished woodworker. You'll design a woodworking shop and learn more about potential careers. You will use a router, jointer, portable planer and scraper, make mortise, tenon and dovetail joints and compare adhesives, bleaches and strippers, build a wood vehicle, step stool or door knocker.

MATERIALS

M .....Finishing Up, BU6878, $6.00
L.....Woodworking Helper's Guide, BU6879, $6.00

Woodworking Independent Study *(see pg 7)*

Woodworking Helper's Guide, BU6879, $6.00

Find a variety of group activities that help youth broaden their understanding of basic woodworking concepts. Each chapter contains ideas to reinforce a life skill.

Environmental and Natural Sciences

Natural Sciences cover the study of our natural environment and the outdoors. Through projects in this area, you investigate the great outdoors and participate in activities that prepare you for learning more about the outdoors and natural ecology.

ENTOMOLOGY

Entomology is an interest of yours if you've ever chased butterflies or caught ladybugs to get a closer look at them. You've been attracted to the largest group of organisms on earth – insects – and the 4-H entomology project may be just for you.

Entomology, Level 1

In this level, you'll learn about insects, their behavior and their life history. As you learn about the parts of insects, you'll discover different ways of collecting insects, observe their behavior and differences, learn how insects communicate, how they see, about their habits, how to control them and how they move.

PROJECT REQUIREMENTS

This level may take up to three years to complete. You must complete a minimum of seven activities and participate in two entomology project leadership experiences each year (such as giving a demonstration, participating in a judging activity, taking a tour, exhibiting your project, or attending a workshop).

MATERIALS

M .....Teaming with Insects, Level 1, BU8440, $6.45
L.....Teaming with Insects Facilitator's Guide, BU8443, $6.45

Entomology, Level 2

You'll have fun assembling proper collecting equipment, locating places where insects can be found, collecting insects at night and learning how to pin and label. You'll also discover how insects use color to communicate, understand what insects eat and see how they develop and grow. You'll build an extractor and a separator, learn how to read insect control labels and explore careers in entomology.

PROJECT REQUIREMENTS

You'll need to complete a minimum of seven activities and participate in at least two leadership experiences, for Levels 1-3. The level may take as long as three years to complete.

MATERIALS

M .....Teaming with Insects, Level 2, BU8441, $6.45
L.....Teaming with Insects Facilitator's Guide, BU8443, $6.45

Entomology, Level 3

The activities in Level 3 will challenge you to explore areas of the project you haven't experienced before. You may need additional resources to complete some of the activities. In this level, you'll learn how to raise mealworms with different amounts of food, observe a colony of ants, manipulate bee behavior, organize an insect club, make an identification key that others can use and explore how insects detect different odors. You'll plant a butterfly garden, raise mosquitoes in a rearing chamber and find and prepare a spider's web for display.

PROJECT REQUIREMENTS

Remember, you must complete a minimum of seven activities and two leadership experiences each year (such as giving a demonstration, participating in a judging activity, taking a tour, exhibiting your project or attending a workshop). This level may take as many as three years to complete.

MATERIALS

M .....Teaming with Insects, Level 3, BU8442, $6.45
L.....Teaming with Insects Facilitator's Guide, BU8443, $6.45

Entomology Independent Study *(see pg 7)*

Teaming with Insects Facilitator's Guide, BU8443, $6.45

This Guide provides practical tips, 14 group activities and supplementary information. Youth compare the leaping abilities of humans and insects, rear and release monarch butterflies, explore how insects transmit disease, study insect behavior, learn insect words, participate in a night safari and develop an insect promotion campaign.

ADDITIONAL PROJECT MATERIALS

M .....Cut-out labels for insect collections, 2FM227, $0.25 or download
M .....Blank entomology labels, 2FM228, $0.25 or download
S.....Collecting, Mounting and Displaying Insects in 4-H, 5282, $2.75

BEEKEEPING RESOURCES

- All available to download, 4HDL02, Extension online store:
  .....Understanding the Honey Bee, download only
  .....Working with Honey Bees, download only
  .....4-H Beekeeping Helper's Guide, download only
  .....Advanced Beekeeping Methods, download only
- The New Starting Right with Bees, purchase publication online http://store.beeculture.com/the-new-starting-right-with-bees

FORESTRY

Forestry products abound in Montana — from giant cedars in the west to pines in the southeast. Through the 4-H forestry project, you will discover how important these forests are to our state. You'll also learn about forest ecology and people's reliance on forest products. You'll explore the relationship between trees, people and communities.

Forestry, Level 1

In this introductory level, you will learn about the different types of trees and tree parts, characteristics of different forests, what forests need to grow and thrive, forestry careers and the many different products and benefits people get from forests.

PROJECT REQUIREMENTS

Complete a minimum of six activities each year you are enrolled in this level. Complete the entire level (at least 18 activities) within three years.

MATERIALS
M .....Follow the Path, BU8038, $6.00
L.....Forestry Helper's Guide, BU8041, $6.00

Forestry, Level 2

In this level, you will take a closer look at the inner-workings of trees, explore forest change, learn about forest health concerns and discover the health benefits that trees have for people. You will also continue to learn about the different types of trees and tree parts, characteristics of different forests, what forests need to grow and thrive and the many products and benefits that people get from forests.

PROJECT REQUIREMENTS

Complete at least six activities each year to complete the level. Complete at least 18 of the Reach for the Canopy activities within three years.

MATERIALS
M .....Reach for the Canopy, BU8039, $6.00
L.....Forestry Helper's Guide, BU8041, $6.00

Forestry, Level 3

In this final level of the forestry project, you will learn to examine and distinguish different types of trees, learn about tree fruits, learn how to develop a community forest map, learn about genetics, look at forests on a global scale, learn how to care for trees and think about how to conserve forests.

PROJECT REQUIREMENTS

Complete at least six activities each year to complete the level. Complete at least 18 of the Explore the Deep Woods activities to complete this within three years.

MATERIALS
M .....Explore the Deep Woods, BU8040, $6.00
L.....Forestry Helper's Guide, BU8041, $6.00

Forestry Independent Study *(see pg 7)*

Forestry Helper's Guide, BU 8041, $6.00

This guide provides forest information, group youth activities and practical tips. Using this curriculum, youth develop a life-long appreciation for forests.

OUTDOOR ADVENTURES

Outdoor Adventure helps youth experience the fun and excitement of the outdoors as they progress from day hikes to overnight camping trips to extended backpacking expeditions. The projects feature experiences related to food, shelter, "Leave No Trace" ethics, safety, navigating, equipment and camp management. Youth and adults can learn to preserve and appreciate the out-of-doors as they experience Montana's abundant natural resources. This is a great club project for a group of youth and adults who want to learn more about teamwork and responsibility as they plan their adventures.

Outdoor Adventures, Level 1

Youth will learn about shelter selection, "Leave No Trace" camping skills, outdoor cooking, environmental awareness and appreciation.

PROJECT REQUIREMENTS

Complete at least six activities each year. It is recommended that you complete two activities in Chapter 1 before heading out on your first short 1-2 hour day hike; two activities in Chapter 2 before doing a half-day hike; and two activities including the Leave No Trace Activity in Chapter 3 and 4 before hitting the trail for a full-day hike. Each level may take up to three years to complete.

MATERIALS
M .....Hiking Trails, BU8043, $6.00
L.....Outdoor Adventure Helper's Guide, BU8046, $6.00

Outdoor Adventures, Level 2

In Level 2, youth will experience planning and taking a day-long hiking trip in a more remote area. Youth will also learn about proper clothing needs, what to pack in a daypack, how to read topographic maps and new orienteering skills.

PROJECT REQUIREMENTS

Complete at least six activities each year. Do at least 10 of the Camping Adventures activities and 10 Reach the Peak activities to complete this achievement program and receive a completion certificate. Each level may take up to three years to complete.

MATERIALS
M .....Camping Adventures, BU8044, $6.00
L.....Outdoor Adventures Helper's Guide, BU8046, $6.00

Outdoor Adventures, Level 3

Level 3 focuses on being on the trail overnight. Youth will consider clothing needs and learn how to set up tents and use backcountry stoves safely. They will also learn about basic nutritional needs, menu planning, personal hygiene and basic first aid.

PROJECT REQUIREMENTS

Complete at least six activities each year. Before you go backpacking complete at least two activities in Chapter 1, including Gathering Group Gear, complete Food for Thought in Chapter 2; complete the Leave No Trace in Your Place activity in Chapter 3; and complete all the activities in Chapter 4. Complete at least 20 of the Backpacking Expeditions and Reach the Peak activities within three years to complete this achievement program.

MATERIALS
M .....Backpacking Expeditions, BU8045, $6.00
L.....Outdoor Adventure Helper's Guide, BU8046, $6.00

Outdoor Adventures Independent Study *(see pg 7)*

Outdoor Adventure Helper's Guide, BU8046, $6.00

Facilitates the teaching of the three levels of the Outdoor Adventures curriculum. Activities include risk management, the role of a leader, trip planning, health care planning, menu planning, Leave No Trace, camping ethics, adapting programs to special needs populations and evaluation of programs.

SHOOTING SPORTS

To enroll in 4-H shooting sports, youth must be nine years old on Oct. 1 of the current 4-H year. The only exception is the BB Safety course which is open to those turning 8 years old by Oct. 1 of the current 4-H year and the Western Heritage Project. Note: Western Heritage age divisions – Members who are 9-11 years old by Oct. 1 of the current 4-H year may shoot .22 rifle only. Members age 12-13 years old by Oct. 1 of the current 4-H year may shoot .22 rifle, .22 pistol and shotgun. Members age 14 and older by Oct. 1 of the current 4-H year may shoot pistol, rifle, shotgun and any allowable caliber.

Shooting Sports is a safe, fun and challenging activity that can become a lifelong passion to be shared with the entire family. The safe and responsible use of firearms and archery equipment is the primary focus of the 4-H Shooting Sports program. Members will improve their marksmanship skills, have the opportunity to compete, and learn self-discipline and personal responsibility. All 4-H shooting sports leaders must attend a state training workshop and become certified in their shooting discipline before serving as project leaders. Some counties may have further requirements depending on shooting discipline. It is strongly encouraged, and required in some counties, that a parent, guardian or other responsible adult be willing to attend project meetings with the 4-H member. There is opportunity for practice under the watchful eye of trained leaders who have the final say in safety matters and the behavior of the youth enrolled. Keeping current record books is required of all members. Check with your county Extension office for further requirements.

All 4-H Shooting Sports curriculum is only to be used by a 4-H member enrolled in County Shooting Sports programs led by a 4-H certified Shooting Sports leader. **No Shooting Sports projects that involve firearms, airguns or archery equipment may be taken independently without a certified leader.**

Air Pistol

In this project, youth will learn safety and marksmanship skills when using a pistol. Sight alignment and sight picture will be stressed as will trigger control, proper stance and consistent shooting. Shooting is done off a rest and continues into offhand as skills improve.

PROJECT REQUIREMENTS

Members must turn 9 years old on Oct. 1 of the current 4-H year.

MATERIALS

M .....4-H Pistol Member Record Book, 4H753, $8.00
L.....4-H Pistol Discipline Manual is presented at the state 4-H shooting sports workshops.
L.....4-H Shooting Sports Project: STEM Connections, SC8332, $10.50

Small Bore Pistol (.22)

In this project, youth will learn safety and marksmanship skills when using a pistol. Sight alignment and sight picture will be stressed as will trigger control, proper stance and consistent shooting. Shooting is done off a rest and continues into offhand as skills improve.

PROJECT REQUIREMENTS

Members must turn 9 years old on Oct. 1 of the current 4-H year.

MATERIALS

M .....4-H Pistol Member Record Book, 4H753, $8.00
L.....4-H Pistol Discipline Manual is presented at the state 4-H shooting sports workshops.
L.....4-H Shooting Sports Project: STEM Connections, SC8332, $10.50

Air Rifle

Members learn the fundamentals of rifle shooting remain the same; sight alignment, sight picture, trigger control, breathing and proper stance.

PROJECT REQUIREMENTS

Members must turn 9 years old on Oct. 1 of the current 4-H year. Some counties offering advanced projects may have further age guidelines.

MATERIALS

M .....4-H Rifle Member Record Book, 4H750, $8.00
L.....4-H Rifle Discipline Manual is presented at the state 4-H shooting sports workshops.
L.....4-H Shooting Sports Project: STEM Connections, SC8332, $10.50

Small Bore Rifle (.22)

Members learn the fundamentals of rifle shooting remain the same; sight alignment, sight picture, trigger control, breathing and proper stance.

PROJECT REQUIREMENTS

Members must turn 9 years old on Oct. 1 of the current 4-H year. Some counties offering advanced projects may have further age guidelines.

MATERIALS

M .....4-H Rifle Member Record Book, 4H750, $8.00
L.....4-H Rifle Discipline Manual is presented at the state 4-H shooting sports workshops.
L.....4-H Shooting Sports Project: STEM Connections, SC8332, $10.50

BB Gun Safety

Members learn the fundamentals of rifle shooting remain the same; sight alignment, sight picture, trigger control, breathing and proper stance.

PROJECT REQUIREMENTS

Members must turn 8 years old on Oct. 1 of the current 4-H year. Some counties offering advanced projects may have further age guidelines.

MATERIALS

M .....4-H Rifle Member Record Book, 4H750, $8.00
M .....Daisy BB Gun Curriculum, 4HDL03, download only, Extension store
L.....4-H Rifle Discipline Manual is presented at the state 4-H shooting sports workshops.
L.....4-H Shooting Sports Project: STEM Connections, SC8332, $10.50

Archery

The 4-H archery project teaches proper archery techniques regardless of bow type. Members may shoot a recurve or compound bow and further divisions include additions of sights and other equipment. The county 4-H leader and county Extension Agent will assist youth in type of equipment that is appropriate for the age and stature of the 4-H member.

PROJECT REQUIREMENTS

Members must turn 9 years old on Oct. 1 of the current 4-H year. Check with your County Extension Office for further requirements.

MATERIALS

M .....4-H Archery Member Record Book, 4H751, $8.00
L.....4-H Archery Discipline Manual is presented at the state 4-H shooting sports workshops.
L.....4-H Shooting Sports Project: STEM Connections, SC8332, $10.50

Shotgun

Members of this project will learn basic through advanced skills in trap, skeet and sporting clay shooting depending on the facilities available in their county. As with all 4-H shooting sports projects, safety is a primary emphasis as is self-improvement. Members will also learn the types of shot, gauges, shooting techniques and the rules of competition.

PROJECT REQUIREMENTS

Members must turn 9 years old on Oct. 1 of the current 4-H year. Some counties may have further age guidelines and the county 4-H leader and county Extension Agent will determine the appropriateness of this project for members based on the age and stature of the 4-H member.

MATERIALS

M .....4-H Shotgun Member Record Book, 4H752, $8.00
L.....4-H Shotgun Discipline Manual is presented at the state 4-H shooting sports workshops.
L.....4-H Shooting Sports Project: STEM Connections, SC8332, $10.50

Muzzleloading

The 4-H muzzleloading project will teach differences between black powder or black powder substitutes and smokeless powder. Members will not only improve in marksmanship skills, but will also learn the proper handling techniques necessary for the safe use of muzzleloading firearms. Depending on the county's program, cap and ball revolvers may be included and if used in the 4-H Western Heritage Project, a 4-H certified muzzleloading instructor must be present. Most projects also include inline muzzleloaders as well as traditional muzzleloaders.

PROJECT REQUIREMENTS

Members must turn 9 years old 0n Oct. 1 of the current 4-H year. Some counties may have further age guidelines and the county 4-H leader and county Extension Agent will determine the appropriateness of this project for members based on the age and stature of the 4-H member.

MATERIALS

M .....4-H Muzzleloading Member Record Book, 4H755, $8.00
L.....4-H Muzzleloading Discipline Manual is presented at the state 4-H shooting sports workshops.
L.....4-H Shooting Sports Project: STEM Connections, SC8332, $10.50

Hunting/Wildlife

The 4-H hunting/wildlife project includes sections focused on firearm and bow safety, but also teaches 4-H members conservation, wildlife habitat requirements, tracking, stalking skills, orientation, outdoor survival and more. This project can be expanded into almost any aspect of wildlife management and can be very valuable to anyone spending time in the outdoors.

PROJECT REQUIREMENTS

Members must have turned 9 on Oct. 1 of the current 4-H year.

MATERIALS

M .....4-H Hunting/Wildlife Member Record Book, 4H754, $8.00
L.....4-H Hunting/Wildlife Discipline Manual is presented at the state 4-H shooting sports workshops.
L.....4-H Shooting Sports Project: STEM Connections, SC8332, $10.50

Montana 4-H Western Heritage Project (Western Action Shooting)

This project includes 4-H Western Action Shooting and more. Members will learn the history of 19th century firearms, period correct frontier clothing, hats, boots, holsters and the true lifestyles of those who lived in the Old West from many diverse walks of life. Some members may be interested in becoming Old West re-enactors while others might focus mainly on the shooting aspects of the project – or both. Firearm safety and responsible behavior is stressed throughout the project.

PROJECT REQUIREMENTS

There are age divisions in the 4-H Western Heritage Project. Western Heritage age divisions – Members who are 9-11 years old by Oct. 1 of the current 4-H year may shoot .22 rifle only. Members age 12-13 years old by Oct. 1 of the current 4-H year may shoot .22 rifle, .22 pistol and shotgun. Members age 14 and older by Oct. 1 of the current 4-H year may shoot pistol, rifle, shotgun and any allowable caliber.

All age divisions participate under the immediate guidance of a certified 4-H Western Heritage Project instructor. Some counties may have further age guidelines and the county 4-H leader and county Extension Agent will determine the appropriateness of this project for members based on age and stature of the 4-H member, including use of a project eligibility assessment test. Each member's permission to participate rests with the certified 4-H instructor and the county Extension Agent.

MATERIALS

M..... 4-H Western Heritage Project Member's Manual (Levels 1-3), 5332, $8.50
L..... Montana Western Heritage Project Manual, 5323, $25.50 (full color soft cover edition)
L..... Montana Western Heritage Project Manual, 5323, $25.50 (spiral bound edition)
L.....4-H Cowboy Action Shooting Discipline Manual is presented at the state 4-H shooting sports workshops.

Shooting Sports Independent Study *(see pg 7)*

Any independent study project in 4-H shooting sports that involves firearms or archery gear must be under the supervision of a certified 4-H instructor trained in the appropriate discipline. At home independent study projects may be conducted without an instructor if they are limited to posters, clothing or other educational exhibits that do not include firearms or archery gear.

SPORT FISHING

Sport Fishing is a project made for Montana. After all, a river runs through it! You will learn how to make your own fishing tackle, experience the world of aquatic ecology, and explore the relationship between fish, people and the environment. You'll also learn about casting methods, how to decide on the proper tackle and much more.

Sport Fishing, Level 1

Let the adventure begin! In this level, you will learn about tackle, different casting methods and how your actions affect the fishing environment, as you improve your fishing skills.

PROJECT REQUIREMENTS

Complete a minimum of 6 activities in the "Take the Bait" achievement program. You must also participate in three additional learning activities, such as giving a demonstration, exhibiting at the fair, visiting a tackle shop or other activities to expand your knowledge. It may take up to three years to complete this level.

MATERIALS

M .....Take the Bait, BU7598, $6.00
L.....Sport Fishing Helper's Guide, BU7601, $6.00

Sport Fishing, Level 2

Learn more about fishing, aquatic ecology, knot tying, types of casting methods, characteristics of fish and how to prepare a fish meal for your family. You'll also better understand the importance of fishing regulations.

PROJECT REQUIREMENTS

To complete this project, you must do a minimum of six activities in the manual as well as participate in at least three additional learning experiences. (See project book for examples.) It may take up to three years to complete this level.

MATERIALS

M .....Reel in the Fun, BU7599, $6.00
L.....Sport Fishing Helper's Guide, BU7601, $6.00

Sport Fishing, Level 3

Learn how to determine the age of fish, disassemble and reassemble a fishing reel, make artificial lures and flies, modify fishing equipment, design and craft a lure and collect and identify aquatic insects.

PROJECT REQUIREMENTS

To complete this project, do a minimum of six activities in the manual as well as participate in at least three additional learning experiences. (See project book for examples.) It may take up to three years to complete this level.

MATERIALS

M .....Cast Into the Future, BU7600, $6.00
L.....Sport Fishing Helper's Guide, BU7601, $6.00

Sport Fishing Independent Study *(see pg 7)*

Sport Fishing Helper's Guide, BU7601, $6.00

Youth identify fish characteristics, plan the club year, design a fish print shirt, powder paint a jig head, make a plastic worm, tie knots, complete a boat safety checklist, plan and conduct a fishing trip, play Perch Bingo, organize a sportfishing quiz bowl and conduct a fishing skillathon.

WILDLIFE

Wildlife, Level 1

This project is for young people who enjoy wildlife and for those who want to learn more about wildlife. This book introduces youth to 12 animal species. Members are encouraged to use this manual as a basis for their first year in the project but supplement it with other information about wildlife. Addition manuals are being developed for advanced levels in this project.

MATERIALS

M .....4-H Wildlife Manual, 4H903, $5.50
L.....Not available

ADDITIONAL PROJECT MATERIALS

L.....Montana WHEP Level 3 Manual, 5313
(Available for check out from State 4-H Office)
L.....Wildlife Habitat Judging Manual, 5265, download only, Extension online store
L.....What is Water Quality, 5304, $5.25
S.....Furbearers of Montana, 5257, $1.25
S.....Montana Big-Game Animals, 5217, $1.25
S.....Owls of Montana, 5232, $1.25
S.....Montana's Birds of Prey, 5233, $1.25
S.....Woodland Wildlife, 5305, $2.25
S.....Outdoor Activities, 5272, $2.25
Web..http://fwp.mt.gov/education/ecosystem/home.html

Wildlife Independent Study *(see pg 7)*

Family and Consumer Sciences

Family and Consumer Sciences projects help teach the necessary skills to make informed decisions and wise consumer choices. These projects teach everyday life skills — from clothing consumerism and construction to quilting and from home environments to child care.

CHILD DEVELOPMENT

What can you do to help yourself and others handle emergencies, develop home-alone skills, stay healthy, and relate appropriately to others? All of these issues are covered in the exciting child development curriculum, Kids on the Grow. When you are ready, you may want to take the Babysitting project.

Child Development, Level 1

In this level, you'll do fun activities: make a "Bloomin' Bag", create a special learning place for yourself, make your own clock and become a toy inspector.

PROJECT REQUIREMENTS:

To complete this level, you should do at least seven of the activities. To complete the Achievement Program for this level of the project, you should complete all eight of the required activities and five of the optional activities in three years or less.

MATERIALS

M .....Growing On My Own, BU8075, $6.00
L.....Child Development Helper's Guide, BU8078, $6.00

Child Development, Level 2

In this level, you will learn about self-care, select toys appropriate for different age groups, create a circle of friends, make a family tree, develop family rules, prepare healthy meals and check out your home for safety hazards.

PROJECT REQUIREMENTS

To complete this level, you should do at least seven of the activities. To complete the Achievement Program for this level of the project, you should complete all 14 of the required activities and seven of the optional activities in three years or less.

MATERIALS

M .....Growing With Others, BU8076, $6.00
L.....Child Development Helper's Guide, BU8078, $6.00

Child Development, Level 3

You'll learn about potential careers in the child development field, do a profile of families in your community, participate in an intergenerational community service project, gain experience as a teacher or coach, develop a car-safe campaign and more.

PROJECT REQUIREMENTS

To complete this level, you should do at least seven of the activities. To complete the Achievement Program for this level of the project, you should complete all 14 of the required activities and seven of the optional activities in three years or less.

MATERIALS

M .....Growing in Communities, BU8077, $6.00
L.....Child Development Helper's Guide, BU8078, $6.00

Child Development Independent Study *(see pg 7)*

Child Development Helper's Guide, BU8078, $6.00

This guide features nine engaging group activities, encouraging work with younger kids in after-school programs, day care centers and day camps as well as within their own 4-H club.

BABYSITTING

This project curriculum familiarizes teens with the responsibilities of babysitting and provides the necessary information for them to become capable, caring, trustworthy and competent sitters. They will learn how to keep children safe and happy, talk with parents and adults, make responsible decisions and handle emergencies. Youth will also engage in hands-on activities, learn from guest speakers, do role plays, use their creativity and have fun while learning.

Babysitting

There are five chapter lessons in the babysitting member guide that include safety, First Aid and CPR, child development, nutrition, entertaining children and the business of babysitting. Each lesson contains four to five areas of study/activity. Babysitting curricula is based on character traits including trustworthiness, respect, responsibility, fairness, caring and citizenship. This series should be combined with Certified First Aid and CPR instruction to complete the babysitting course requirements.

PROJECT REQUIREMENTS

A member could work on this book for two years but it is recommended that they finish the book in one year to become a certified babysitter. To be certified, he/she would also need certification from the Red Cross or another group in First Aid and CPR.

MATERIALS

M .....Do I Have What It Takes to be Your Babysitter?, Guide and CD, 5318, $ 7.00
L.....Do I Have What it Takes to be Your Babysitter?, Instructor Guide, 5319, $10.50

Child Development Independent Study *(see pg 7)*

FAMILY ADVENTURES

Family Adventures is a special kind of project in Montana 4-H. Your family, no matter how you define it, will fit this project. So, ask everyone in your family if they will join you. This doesn't mean you cannot do the project unless your whole family takes part, but do try to get everyone you can to participate.

Family Adventures

PROJECT REQUIREMENTS

Fourteen "family adventures" are included in this project. Each family is encouraged to select seven of the adventures in order to complete the project. The adventures include: Cooking Together, Stories, Family Fun Time, Outdoor Adventures, Photo Stories, Fire Safety, Energy Adventures, About the Flag, Shopping Adventures, Family Tree, Family Rituals, Volunteering and Creating your own Adventure. You can always do more if wanted.

MATERIALS

M .....Family Adventures, 5302, $5.50

Family Adventures Independent Study *(see pg 7)*

HOME ENVIRONMENT

Intermediate – Advanced. Design Decisions is used for all 4 levels of project completion. Develop a designer's touch by navigating through four exciting sections. In Level 1, youth will learn and apply basic design concepts to walls, windows and floors. Level 2 explores how to design with style as youth plan, select and care for furniture, fabrics and decorative items for a room. Level 3 is all about accessories and adding personality and interest to a room. Level 4 challenges youth to create a home that is healthy, energy efficient, and conserves natural resources.

Home Environment, Level 1

Youth will learn and apply basic design concepts to walls, windows and floors. Youth interested in a new color scheme, furnishings and accessories for their own rooms or for other projects will love this level. Design Decisions takes youth step-by-step through the design process.

PROJECT REQUIREMENTS

Finish a minimum of one activity in two sections to complete the level. The level may be completed in one year, but can be done in two.

MATERIALS

M .....Design Decisions: The Basic Touch, Level 1, 4H1600, $9.45; CD's available, $6.45

Home Environment, Level 2

Explore how to design with style as you plan, select and care for furniture, fabrics and decorative items for a room.

PROJECT REQUIREMENTS

Finish a minimum of one activity in 3 sections per year to complete the level. Youth may stay involved in this level for up to three years.

MATERIALS

M .....Design Decisions: The Distinctive Touch, Level 2, 4H1600, $9.45; CD's available, $6.45

Home Environment, Level 3

In this level, you will learn about accessories and adding personality and interest to a room.

PROJECT REQUIREMENTS

Complete all four sections of The Finishing Touch, and at least one activity per section.

MATERIALS

M .....Design Decisions: The Finishing Touch, Level 3, 4H1600, $9.45; CD's available, $6.45

Home Environment, Level 4

This level will challenge youth to create a home that is healthy, energy efficient and conserves natural resources. Explore career ideas, community service, safety tips and Internet resources.

PROJECT REQUIREMENTS

Each of six sections has activities that you can complete. Choose up to three sections you are interested in and complete a minimum of one of the activities per section to complete this project level. The Environmental Touch can be taken as a project for three years.

MATERIALS

M .....Design Decisions: The Environmental Touch, Level 4, 4H1600, $9.45; CD's available, $6.45

Home Environment Independent Study *(see pg 7)*

SEWING AND TEXTILES

Sewing introduces you to the diverse world of clothing and sewing and includes 3 levels. This project will help you explore the world of sewing and textiles by completing various sewing projects.

Sewing, Level 1

Members will learn the tools of the sewing trade and how to use them. There are several projects members can complete in the Maker's Guide, improving their skills as they go along.

PROJECT MATERIALS

Utilize the lessons in Fundamentals and complete 3-4 projects per year in the Maker's Guide or similar skill level projects.

MATERIALS

M .....STEAM Clothing: Maker's Guide to Sewing, 4H2240, $13.45
M .....STEAM Clothing 1: Fundamentals, 4H2210, $13.45
M .....The Singer Complete Photo Guide to Sewing, 5338, $20.00

Sewing, Level 2

In this level you will advance your sewing skills to include; sewing in a set-in sleeve and a collar. You will explore various pocket applications, and fitting and design basics.

PROJECT REQUIREMENTS

Utilize the lessons in Level 2 and complete 3-4 projects per year using skills learned at this level.

MATERIALS
M .....STEAM Clothing 2: Simply Sewing, 4H2220, $13.45
M .....The Singer Complete Photo Guide to Sewing, 5338 $20.00
M .....Easy, Easier and Easiest Tailoring, 5285 $7.50

Sewing, Level 3

In this level, practice advanced sewing skills and garment construction techniques. Enroll if you and your leader agree you are ready. Skills include tailoring, linings, interfacing and sewing with challenging fabrics.

PROJECT REQUIREMENTS

Utilize lessons in Unit 3 to complete 1-2 projects per year using skills learned at this level.

MATERIALS
M .....STEAM Clothing 3: A Stitch Further, 4H2230, $13.45
M .....The Singer Complete Photo Guide to Sewing, 5338 $20.00
M .....Easy, Easier and Easiest Tailoring, 5285 $7.50

Sewing/Textiles Independent Study *(see pg 7)*

Knitting

Beginning, Intermediate or Advanced levels

The 4-H knitting project is designed to teach the basic skills of knitting and then allows you to use creativity in producing articles that will enhance your wardrobe. There are three levels: beginning, intermediate and advanced.

PROJECT REQUIREMENTS

Check with your County Extension office for appropriate guidelines for project completion and achievement recognition.

MATERIALS
M .....Knit Together, 4H416, $4.50
M .....Knitting Made Easy, 4HDL17, download only, Extension online store
L.....Knitting Made Easy, CD104E, $8.25

Crochet

Beginning, Intermediate or Advanced levels

The 4-H crochet project is designed to teach you about tools and equipment, choosing materials and working from a plan. The project includes several basic stitches as well as pattern stitches. The three levels in the crochet project are beginning, intermediate, and advanced.

PROJECT REQUIREMENTS
Check with your County Extension office for appropriate guidelines for project completion and achievement recognition.

MATERIALS
M .....Crochet Made Easy, 103, $5.50

Embroidery

Beginning, Intermediate or Advanced levels

The 4-H embroidery project is designed to encourage creativity and to meet the needs of each individual member. There are three levels: beginning, intermediate, and advanced. Embroidery could include, but is not limited to crewel, huck or Swedish weaving and creative stitchery on clothing or other articles.

PROJECT REQUIREMENTS
Check with your County Extension office for appropriate guidelines for project completion and achievement recognition.

MATERIALS
M ..... Embroidery and Needlework, 2B1195, $2.00

Ready-to-Wear Level 1

In Shopping in Style, youth will learn about clothing. Youth will learn what looks best on them and how to build a versatile wardrobe while staying in budget. Youth will be able to identify their clothing needs and learn to "put it all together" and present themselves with confidence.

PROJECT REQUIREMENTS
Complete 7 lessons in the project book per year. It may take 3 years to complete the project.

MATERIALS
M .....Shopping in Style, 4H435 $12.50

Ready-to-Wear Independent Study *(see pg 7)*

QUILTING

This quilting project is designed to teach techniques and skills in making quilted, appliquéd or patch-worked items for home or personal use. Youth choosing to do special projects would complete an Independent Study Project.

Quilting: Beginner

Beginning quilting project available to youth that will teach about, "What is quilting and piecing?" It will help them select their fabrics, learn how to cut and stitch the quilt top as well as finishing the quilt. Some basic patterns will be included in this project for them to start on.

PROJECT REQUIREMENTS

Complete all seven activities in the book, take part in two learning experiences, complete two leadership activities, and write a project summary.

MATERIALS:
M .....You Can Quilt!, 4H499, $8.00

Quilting: Intermediate

Youth can print off the book or learn right from the CD. This project is designed for completion in two years. Since there is not a leader manual specific to this project, use the self-determined project (pg. 7) to set goals. The Quilt Quest Leaders Guide gives guidance to help youth succeed in their Quilt projects and has additional projects and resources.

PROJECT REQUIREMENTS

Youth must finish two projects of their choice each year in the Block 1 book to complete the project. Youth may do more than two projects and could use other patterns included in the project book. This level is designed for completion in two years. Use the self-determined project to set goals.

MATERIALS

M .....Creative Corners Project Block 1 (Quilt Quest), (CD ROM) 4H1320, $8.50
M .....Terrific Triangles Project Block 2, (CD ROM) 4H1330, $8.50
M .....You Decide, 5314, $3.50 or Web
L.....Quilt Quest Leaders Guide, (CD ROM) 4H1310, $10.50

Quilting: Advanced

Terrific Triangles CD includes a wide variety of designs using basic triangles — both half square and quarter square triangles, plus a couple using equilateral triangles. You can print off the book or use right from the CD. Each Block in Quilt Quest increases in skills and mastery of quilting, building upon the previous Project Block.

PROJECT REQUIREMENTS:

Youth must complete two projects of their choice each year in the Terrific Triangles book to complete the project. Youth may do more than two projects and could use other patterns included in the project book. This level is designed for completion in two years. Use the self-determined project (pg. 7) to set goals.

MATERIALS

M .....Creative Corners Project Block 1 (Quilt Quest), (CD ROM) 4H1320, $8.50
M .....Terrific Triangles Project Block 2, (CD ROM) 4H1330, $8.50
M .....You Decide, 5314, $3.50 or Web
L.....Quilt Quest Leaders Guide, (CD ROM) 4H1310, $10.50

ADDITIONAL PROJECT MATERIALS

S.....Beginners Guide to Quilting: 16 Projects to Learn to Quilt, 5340, $22.00
S.....Start Quilting with Alex Anderson, 5339, $15.00

Sewing/Textiles Independent Study *(see pg 7)*

Plant Sciences

Plant Sciences projects are designed to teach how plants and soils are exciting and interesting. You will learn to identify plants, develop skills in caring for and using plants, recognize undesirable and poisonous plants, grow crops properly, harvest and process crops and to use them or market them. You will also learn about the relationships between all phases of natural resource management including wildlife, range, forestry, water and soils and develop an appreciative attitude toward sound management of natural resources and a broad understanding of relationships between agriculture and nature. You will also be able to seek out the scientific principles of plant growth and develop an interest in further work or careers.

CROP SCIENCE

Small Grains: Wheat, Oats, Barley, and Rye

This project is suggested for youth in grades 5 – 12. Level 1 and 2 members can study plant variety and selection, display stages of plant development, test seed germination and methods of seeding, learn about seasonal pests and determine pesticide hazards. Level 3 and 4 members can take soil samples, learn to recognize diseases, pests, and weeds, study production costs and market prices, learn about necessary nutrients and determine field acreages.

PROJECT REQUIREMENTS

To complete the project members should complete at least three exercises in the book and make a project plan.

MATERIALS

M .....Small Grains, MJ0110, $4.25

Crop Science Independent Study *(see pg 7)*

GARDENING

Gardening, Level A

This book is for youth in grades 3-4. Learn how to plan an in-ground or container garden; prepare soil; and when, where, and what to plant. Level A introduces basic plant science, garden friends and foes, tool safety, using the vegetable harvest, and horticulture-related careers. Youth "learn by doing" in 12 fun activities that include germinating seeds, growing a super-sized pumpkin, experiments with plant parts, and visiting a grocery store to explore vegetables.

PROJECT REQUIREMENTS

Complete the activities listed in the book for year one. Six additional activities are listed to be completed in year 2.

MATERIALS

M .....See them Sprout, 4H1037, $7.50
L.....Gardening Helper's Guide, 4H1041W, $7.50

Gardening, Level B

This book is for youth in grades 5-6. Youth learn how to modify garden plans. Topics include seed varieties and cultivars, starting seeds indoors, using transplants, composting, and integrated pest management. Science topics include plant families, how plants respond to light, and how to grow new plants from plant parts. Youth "learn by doing" in 12 fun activities that include building a plant maze, making a worm box, judging vegetables, and composting.

PROJECT REQUIREMENTS

Complete the activities listed in the book for year one. Six additional activities are listed to be completed in year 2.

MATERIALS

M .....Let's Get Growing, 4H1038, $7.50
L.....Gardening Helper's Guide, 4H1041W, $7.50

Gardening, Level C

This book is for youth in grades 7-9. Youth learn different planting methods, how to improve soil, and how to extend the growing season. They explore photosynthesis, hybrid vs. standard forms, herb gardening and preservation, plant companions, storing and saving seeds, how to identify and prevent weeds, insect damage, and animal pests. Youth "learn by doing" in 18 fun activities that include cross-pollinating flowers, making an acid/base indicator, producing a chromatogram, and helping others in garden projects.

PROJECT REQUIREMENTS

Complete the activities listed in the book for year one. Six additional activities are listed to be completed in year 2.

MATERIALS

M .....Take Your Pick, 4H1039, $7.50
L.....Gardening Helper's Guide, 4H1041W, $7.50

Gardening, Level D

This book is for youth in grades 10-12. Youth learn to maximize garden space using different planting methods, then how to harvest, store, preserve, and/or sell vegetables and herbs. They study plant genetics, plant diversity, plants in space, integrated pest management and horticulture-related careers. Youth "learn by doing" in 18 fun activities that include using garden-planning software and apps, investigating effects of pollution, growing hydroponic plants, and conducting a cultivar trial.

PROJECT REQUIREMENTS

Complete the activities listed in the book for year one. Six additional activities are listed to be completed in year 2.

MATERIALS

M .....Growing Profits, 4H1040, $7.50
L.....Gardening Helper's Guide, 4H1041W, $7.50

ADDITIONAL PROJECT MATERIALS

S.....Gardening Exhibitors Guide, 4H970W, $2.00

Gardening Independent Study *(see pg 7)*

Gardening Helper's Guide, 4H1041W, $7.50

The Leader/Helper's Guide provides additional information for adult volunteers to expand on topics in the youth manuals. This guide includes additional activities that are great for after-school or club settings and includes answers to the questions posed in youth books.

RANGE SCIENCE MANAGEMENT

Rangelands are grasslands, shrublands, woodlands, wetlands, and deserts that are grazed by domestic livestock or wild animals. In this project you will learn the importance of rangeland and how rangeland is managed, how to identify common rangeland plants. You will build a plant press and begin your rangeland plant collection.

Range, Level 1

PROJECT REQUIREMENTS

See project sheet on the Range Science CD

MATERIALS

M .....Range Science CD, 5345, $5.00
M .....Range Plants of Montana, MSU Extension, EB0122, $10.00
M .....Range Plant Labels, 2FM203, Pads of 25 for $0.25

ADDITIONAL PROJECT MATERIALS

S.....At Home on the Range, Level 1, 5311, $5.50

Range Science Independent Study *(see pg 7)*

Level 1 is a three year project. Due to outdated curriculum, Montana State 4-H Curriculum Team (MCAT) is in the process of replacing Montana range curriculum. The above is temporary until MCAT has developed a suitable curriculum for the state.

WEED SCIENCE

Weed Science looks at one of the most important environmental problems in Montana. You will develop your knowledge and understanding of agriculture, nature and biodiversity. You'll also develop a broader understanding of the relationship between nature and agriculture and recognize important weeds in Montana. Learn how to make a plant press, how to display and mount weeds, the science of weed control, various biological methods for controlling weeds, the beneficial uses for weeds and which weeds you can cook and eat. You will study how weeds use different dispersal methods for propagation, why weeds are fierce competitors and you'll have the opportunity to instill in others the desire to actively control weeds.

Weed Science, Level 1

Beginners will learn about weeds with fun and hands-on activities. You will begin by making a plant press and collecting at least 25 weeds. You'll also learn about how weeds reduce wildlife habitat, develop alternative uses for weeds, learn about weeds in your garden and explore the roots of weeds.

PROJECT REQUIREMENTS

This level includes seven required activities that you must complete before moving on to Level 2. You can work at your own pace, but you should not take more than two years to finish. During the first year, complete a minimum of four of these activities. If you enroll in this level for a second year, you must complete the other three activities in the second year without repeating previous activities, although you may add to your weed collection.

MATERIALS

M .....Weed Wise, 5292, $2.50
L.....Weed Wrangler Helper's Guide, 5298, $2.50

Weed Science, Level 2

You will learn why weeds live where they do and about poisonous plants. You'll also create a map showing the location of two weed species, germination mechanisms and study two different kinds of weed seeds, learn how weeds affect your vegetable garden, how weeds are, "on the move," and the different dispersal methods of weeds. You'll study biological controls of noxious weeds and find out which wild plants are good to eat, ways to cook them and other beneficial uses of weeds.

PROJECT REQUIREMENTS

This level includes nine required activities that you must complete before moving on to Level 3. You can work at your own pace, but you should not take more than two years to finish. During the first year, you should complete a minimum of five of these activities. If you enroll in this level for a second year, you must complete the other four activities in the second year without repeating any of the previous activities.

MATERIALS

M .....Weeds on the Move, 5293, $2.50
L.....Weed Wrangler Helper's Guide, 5298, $2.50

Weed Science, Level 3

You will learn how weeds impact biodiversity and forage production, how to develop a weed awareness workshop, about joining a weed association and understand how to certify a grower's hay as, "weed-free." You will also learn about careers related to weeds, about plant taxonomy (classification systems), find out about the hazards associated with herbicides and how herbicides work.

PROJECT REQUIREMENTS

This level includes nine required activities to complete the level. You can work at your own pace, but should not take more than two years to finish. During the first year, you should complete a minimum of five of these activities. If you enroll in this level for a second year, you must complete the other four activities in the second year without repeating any of the previous activities.

MATERIALS

M .....Weed-n-Seed, 5294, $2.50
L.....Weed Wrangler Helper's Guide, 5298, $2.50

ADDITIONAL PROJECT MATERIALS

S.....Weeds of the West (available in each county Extension office as a reference)
S.....Plant Identification Learning Kit (available in each county Extension office)
S.....Montana Noxious Weed Education Folder, 5343, $2.00
S.....Alien Invasive Pest Species Folder, 5344, $2.00

Weed Science Independent Study *(see pg 7)*

Communications and Expressive Arts

These projects help you develop your skills in communications and the arts. From photography and public speaking to outdoor adventures, these projects will enhance your abilities to communicate effectively with others in a variety of media and form positive relationships. Some of these projects can evolve into careers. Most can become lifelong hobbies that enrich one's life.

COMMUNICATIONS

Welcome to Express Yourself! Effective communication drives all aspects of life. This series gives youth skills to increase communication with those around them in all settings: school, family and giving presentations at all levels. If you have a Speakers Bureau or Toastmasters in your community, they might provide additional opportunities for youth to learn.

Communications, Level 1

Discover how to put together a communication puzzle through nonverbal, verbal and written activities that stretch and strengthen personal communication skills.

PROJECT REQUIREMENTS

Complete seven activities each year. Youth can stay in the level up to two years.

MATERIALS

M .....Picking Up the Pieces, BU8156, $5.50
L.....Communication Helper's Guide, BU8159, $5.50
S.....Resource Handbook: Communications Toolkit, MI1560, $25.50 (no download available)

Communications, Level 2

Stimulating activities provide opportunities for youth to practice and gain confidence in communicating in a variety of situations. Watch them unfold as strong communicators while they present oral reasons, plan and present speeches.

PROJECT REQUIREMENTS

Complete seven of 15 activities the first year with eight the second year to complete this project. You can stay in the level up to two years.

MATERIALS

M .....Putting It Together, BU8157, $5.50
L.....Communication Helper's Guide, BU8159, $5.50
S.....Resource Handbook: Communications Toolkit, MI1560, $25.50

Communications, Level 3

Youth enrich and polish their communication skills and develop a public presence by speaking in public, exploring communication careers by job shadowing. In addition, they write cover letters and resumes.

PROJECT REQUIREMENTS

Complete seven of 14 activities the first year with seven the second year to complete this project. You can stay in the level up to two years.

MATERIALS

M .....The Perfect Fit, BU8158, $5.50
L.....Communications Helper's Guide, BU8159, $5.50
L.....Resource Handbook: Communications Toolkit, MI1560, $25.50

Communications Independent Study *(see pg 7)*

Communication Helper's Guide, BU8159, $5.50

Youth reinforce communication concepts as they develop skillathons, play communication games, trace the history of communication technology, plan demonstrations and create advertisements.

NEW Clover Communications

Get the new, comprehensive guidelines, tips, techniques and scoring rubrics for demonstrations/illustrated talks, prepared speeches, impromptu speeches, career communications, commercials and promo packages. This booklet gives detailed instructions for volunteers, leaders, parents and 4-H members in a variety of communications areas. Even seasoned pros can learn from reviewing this manual.

MATERIALS

M .....Clover Communications, 5342, $7.50 or Extension online store

NEW Clover Communication Resources

Grab and Go Lessons & Contest Entry Examples

Several MSU Extension Agents captured favorite lessons that are quick and easy to follow. Club leaders, camp counselors, and teen leaders will be able to grab a lesson, have a quick review of supplies and be able to present communications activities with ease. Access the packet and examples at: https://montana.box.com/v/4-HCommunicationsResources

COWBOY POETRY

Cowboy Poetry is designed to teach you how to write your own, original poetry. You will learn about the basic rhyme patterns used in most poetry, some of the classic cowboy poems from the old masters, the basics of meter and rhythm and "free verse." This project is designed to provide another way to practice public presentation skills, develop a greater appreciation for local history and everyday life and give opportunities to write an oral history of family and experiences in 4-H. This project is self-paced to learn at your own pace. There are no "levels" in this project and you can re-enroll as often as you would like.

PROJECT REQUIREMENTS

To complete this project, you should be able to set goals and record project highlights in Montana 4-H record forms, write at least three original poems composed of at least four-line stanzas and demonstrate a specific rhyme pattern in original verse. The member manual also lists a number of other activities to do in this project to make your experiences rewarding—from performing at local events to locating cowboy poetry in your local library and on the Internet.

Cowboy Poetry

MATERIALS

M .....Spurrin' the Words, Member Manual, 5308, $6.50
L.....Spurring the Words, Leader's Guide, 5309, $6.50

LEATHERCRAFT

Leathercraft should be of interest to boys and girls in rural or urban areas. It complements other projects using leather products, such as the livestock, horse and clothing projects. Use your creativity to create projects and learn new skills. You will appreciate the natural beauty and usefulness of leather, learn the principles of good design, learn to be creative, original and strive for quality craftsmanship.

Leathercraft, Level 1

PROJECT REQUIREMENTS

Select and tool two or more articles, practice simple lacing, finishing and assembly of leather articles, keep accurate records of costs and skills gained and share information with others.

MATERIALS

M .....4-H Introduction to Leathercraft and Creative Stamping, Unit 1, CO2001C, $3.50
L.....4-H Leaders Guide, Adventures in Leathercraft, CO2000, $3.50

Leathercraft, Level 2

PROJECT REQUIREMENTS

You will use basic leather carving tools, practice elementary sketching and design, select, carve and tool two or more articles; share information with others and keep accurate records of costs and experiences.

MATERIALS

M .....Beginning Leather Carving, Unit 2, CO2002C, $3.50
L.....4-H Leaders Guide, Adventures in Leathercraft, CO2000, $3.50

Leathercraft, Level 3

PROJECT REQUIREMENTS

You will select, carve and tool two or more articles, including one or more of the following: inverted carving techniques, beginning dyeing, lining, simple molding and shaping or hand stitching. You will also share information learned and keep accurate records of project costs and experiences.

Leathercraft, Level 4

PROJECT REQUIREMENTS

You will learn how to figure carve and emboss. You will also perfect skills from previous levels, share information and keep accurate records of project costs and experiences.

Leathercraft, Level 5

PROJECT REQUIREMENTS

You will learn about solid color dyeing and shading, peer teaching, leading a class and keeping accurate records of project costs and experiences.

Leathercraft, Level 6

PROJECT REQUIREMENTS

You will learn more about carving, dyeing and shading. You will also select one or more pictures, scenes or portraits to carve, frame or mount the picture and share information with others. You will keep accurate records of project costs and experiences.

Leathercraft, Level 7

PROJECT REQUIREMENTS

You will make or rebuild a saddle, study references on saddle making and share information with others while keeping accurate records of project costs and experiences.

MATERIALS FOR LEVELS 3 - 7

M .....4-H Leathercraft Members Manual Levels 3-7, CO2003C, $3.50
L.....4-H Leaders Guide, Adventures in Leathercraft, CO2000, $3.50

Leathercraft Creations

Units 8-10 focus on the creative use of leather. This project should be carried for more than one year per level, depending on your desired skills and interests.

PROJECT REQUIREMENTS – UNIT 8

You will develop a pattern using stamping tools, create balance in design and color and apply color to stamped designs. You will also tool two or more articles using creative design.

PROJECT REQUIREMENTS – UNIT 9

You will make two or more articles using non-tooled and non-sewn techniques like lacing, braiding, expanding, and sculpting.

PROJECT REQUIREMENTS – UNIT 10

You will learn about selecting the type of leather and patterns for leather projects. You will make two or more items using sewing techniques.

MATERIALS FOR UNITS 8 - 10

M .....4-H Leathercraft Members Manual Levels 8-10, CO2008, $2.50
L.....4-H Leaders Guide, Adventures in Leathercraft, CO2000, $3.50

Leathercraft Independent Study *(see pg 7)*

PHOTOGRAPHY

Photography provides an interesting activity or project for youth of all ages. Photography introduces you to a useful hobby and a career field; giving you educational guidance as you develop skills in taking and using pictures. You will also gain an appreciation of photography as an art, science and communication tool that will help you to observe and appreciate your surroundings. Photography is an excellent way to record events, ideas and situations in picture form for later use.

Photography, Level 1

Focus on equipment basics, learn picture-taking techniques, the concept of lighting and flash, photo composition, approaches, sequencing and evaluating photographs. Learn how to take photos you want to keep and share with others.

PROJECT REQUIREMENTS

To complete this level, explore each of the four Project Areas (equipment, lighting, composition and skill building), take part in two organized project experiences and two leadership/citizenship activities.

MATERIALS

M .....Focus on Photography, PHOTO1, $7.45
L.....Not available

Photography, Level 2

In Level 2, you will explore depth of field, aperture and shutter speeds, hard and soft lighting, silhouettes and flash techniques. You'll also learn how to evaluate composition using the Rule of Thirds, Golden Triangle and Golden Rectangle and understand positive and negative space. Other topics include taking candid pictures, adjusting shutter speeds, panning techniques, close-ups and panoramas.

PROJECT REQUIREMENTS

To complete this level, you should explore each of the four Project Areas (equipment, lighting, composition and skill building), take part in two organized project experiences and two leadership/citizenship activities.

MATERIALS

M .....Controlling the Image, PHOTO2, $7.45
L.....Not available

Photography, Level 3

Level 3 takes you to wide-angle and telephoto lenses, filters and special film, light meters and different light sources. Learn to shoot reflections, use framing and viewpoints, still-life, formal and informal portraits, symmetry, patterns, texture, color composition and pictures with purpose.

PROJECT REQUIREMENTS

To complete this level, you should explore each of the four Project Areas (equipment, lighting, composition and skill building), take part in two organized project experiences and two leadership/citizenship activities.

MATERIALS

M .....Mastering Photography, PHOTO3, $7.45
L.....Not available

Videography, Level 4

This is a digital storytelling project using video cameras. Youth will learn how to use video cameras, a tripod, video tips and how to capture and transfer video footage. Youth will plan and carry out a video project in the form of a family vacation movie, a PSA or a documentary. It is advisable to understand the basics of photography before beginning in this project.

PROJECT REQUIREMENTS

Create a short practice video on a subject of your choice and a longer video that has a script and uses storyboard techniques. This video will demonstrate digital storytelling and follow the rubric requirements in the book.

MATERIALS

M .....Movie Magic, 5325, $8.50

Photography Independent Study *(see pg 7)*

THEATRE ARTS

There are three books in the project. They are written for the group facilitator who will lead a group of youth in Theater Arts discovery. This curriculum will help youth understand the power of non-verbal communication, improvisation, pantomime, script writing, cultural and historical influence, stage design, and costume design. Life skills and workforce development are woven throughout the curriculum, as youth master more sophisticated theater techniques and ideas.

Theatre Arts, Level 1

Youth will recognize non-verbal communication, practice improvisation, learn cultural and historical influences and create stage designs.

PROJECT REQUIREMENTS

Review the guidelines in the front of the book. This level may take more than one year.

MATERIALS

M/L....Imagination in Action, Beginner, BU8445, $7.45

Theatre Arts, Level 2

Youth will use non-verbal communication, write scripts, create costume design and explore careers in theater.

PROJECT REQUIREMENTS

Review the guidelines in the front of the book. This level may take more than one year.

MATERIALS

M/L....Imagination in Action, Intermediate, BU8446, $7.45

Theatre Arts, Level 3

Youth will plan and perform plays, develop characters in scripts, create costumes to enhance characters and job shadow theater professionals.

PROJECT REQUIREMENTS

Review the guidelines in the front of the book. This level may take more than one year.

MATERIALS

M/L....Imagination in Action, Advanced, BU8447, $7.45

Theatre Arts Independent Study *(see pg 7)*

VISUAL ARTS

Youth will enjoy many artistic experiences and develop skills for a lifetime through activities focusing on elements and principles of art. The project books can be used by members and helpers. This helper's guide can also be used with groups of children in any setting in, out and after school. Many of the activities can be adapted to work with any grade.

Arts and Crafts

PROJECT REQUIREMENTS

This project book is for K-6 grade only and will work well with Cloverbuds. There are six chapters that focus on different media with a variety of art experiences including cutting and pasting, sculpture,

printmaking, fibercasts and more. Youth will need to complete two experiences in two media areas per year to complete the project. This project could take three years to complete.

MATERIALS

M/L....A Palette of Fun with Arts and Crafts, 4HDL05, download only, Extension online store

Drawing, Fiber and Sculpture

Drawing, fiber and sculpting activities are included in this project to develop the member's artistic skills and talents. All of the activities focus on exploring the elements and principles of design and encourage development of skills.

MATERIALS

M/L....Sketchbook Crossroads, BU8140, $8.00

Painting, Printing and Graphic Design

The three media, painting, printing and graphic designs are the areas members choose from to develop their artistic skills and talents. All of the activities focus on teaching the elements and principles of design.

MATERIALS

M/L....Portfolio Pathways, BU8141, $8.00

Visual Arts Independent Study *(see pg 7)*

Scrapbooking, Level 1

Scrapbooking is an excellent way to capture and preserve all your favorite 4-H activities. This introductory project is design for youth of all ages with limited experience in scrapbooking. Youth are required to complete the activities outlines in the project book.

MATERIALS

M .....Scrapbooking: A 4-H Guide to Preserving Memories, 4H497, $8.00

Scrapbooking Independent Study *(see pg 7)*

Leadership and Personal Development

CITIZENSHIP

Navigating Citizenship, Levels 1 and 2

The 4-H Citizenship Curriculum incorporates several different successful models of civic engagement to educate members about three specific areas: Montana Government, United States Federal Government and Montana Tribal Government. You will learn how to get involved, who's who and how each of us fits into the overall government process. Discover how to become an active citizen when you participate in this project.

PROJECT REQUIREMENTS

There are two units in this project and it can be taken over a three year period. In Level 1, middle school youth will complete three activities in the Montana Government section and write a bill. They can choose to attend and present their bill at the 4-H Citizenship Seminar held in Helena every two years (must apply through your county). In Level 2, high school youth complete five activities related to Federal or Tribal Governments and have a choice of applying for the Citizenship Washington Focus trip in Washington D.C. if they are at least 15 years old. In addition, youth will want to take a service learning project.

MATERIALS

M .....Navigating Citizenship, 806, $8.00
M .....Agents of Change, Level 1 for Middle School Youth, BU8182, $6.00
M .....Raise Your Voice, Level 2 for High School Youth, BU8183, $6.00
L.....Service Learning Helper's Guide, BU8184, $6.00

Global Citizenship

As you discover the world with this 4-H project, you will learn what it means to be a global citizen, find out about other cultures and about cultural exchange programs.

PROJECT REQUIREMENTS

This project can be completed throughout your 4-H career. Level 1: Complete a cultural study and seven activities. Level 2: Complete three activities and ask your family to host an international exchange delegate (ages 10+); prepare for and reflect on your experience. Level 3: Complete three activities and travel with 4-H to another state or country as an exchange delegate (for high school youth, age 14+); prepare for and reflect on your experience.

MATERIALS

M .....Passport to The World, 807, $8.00
L.....No leader book

Interstate Exchange/Hosting

Interstate Exchanges give you the opportunity to travel and learn about other states within the United States. You must either host a youth from another state or county or stay in another state or county with a youth. This project will allow you to taste other foods and participate in events and activities with 4-H'ers in other states. You will learn about geography, meet other people, have lots of fun traveling and site seeing. The guide below will lead you through the process, help you think about traveling and safety and give you lots of great ideas to implement as you travel.

PROJECT REQUIREMENTS

You must complete a project journal including the areas outlined in the youth guide and plan a project report using a form of media such as TV, radio or newsletter. Guidelines for eligibility in the exchange program are set by counties.

MATERIALS

M .....4-H Interstate Exchange Youth Guide, 5328, $5.50
L.....4-H Interstate Exchange Recommended Best Practices, 5329, download only, Extension online store

Citizenship Independent Study *(see pg 7)*

LEADERSHIP

Leadership

Leadership is an active process, a set of knowledge, attitudes and skills in working with others toward a common goal. Leadership is an opportunity to develop leadership skills and give of yourself to help others. This project is designed to teach teens to be a better leader through educational experiences, service and practice. After enrolling in the Leadership project, you should cooperatively decide on an area of focus with your leader and county agent. You will develop an individualized learning and action plan for leadership development. You will organize the necessary resources, implement your leadership plan, evaluate your outcomes and make changes to improve it. You will truly "learn by doing" as you enhance your leadership competencies.

PROJECT REQUIREMENTS

Must be 13 years of age on Oct. 1 of the current 4-H year, have completed at least one year in 4-H and be enrolled in at least one other 4-H project. All 4-H Ambassadors must enroll in this project. Yearly project completion consists of selecting and completing one activity that focuses on further developing each of the six leadership skills (six activities minimum) and planning, implementing and evaluating a plan of action. In level 1 it is recommended that you select one activity per chapter.

MATERIALS

M .....Learning to Lead: Leadership Level I, 5330, $4.50, or download, Extension online store
M .....Leading to Learn: Leadership Level II, 5331, $4.50, or download, Extension online store
M .....Leadership Project Plan and Ambassador Plan of Action, 4HDL11, download only, Extension online store

SERVICE LEARNING

Service Learning, Levels 1 and 2

Learn how to research and identify a topic, create an action plan, carry it out and then celebrate your successes. Recruit others from your club and make it a group project. You'll be able to apply your skills and knowledge to a real problem in your community or in the world.

PROJECT REQUIREMENTS

To complete Level 1 for middle school youth or 2 for high school youth, you will need to do at least seven of the activities from the project books, completing the project within three years. In addition, you need to keep your planning guide current by setting project goals and recording highlights as you go along.

MATERIALS

M .....Agents of Change, Level 1 for Middle School Youth, BU8182, $6.00
M .....Raise Your Voice, Level 2 for High School Youth, BU8183, $6.00
L.....Service Learning Helper's Guide, BU8184, $6.00

Service Learning Independent Study *(see pg 7)*

Service Learning Helper's Guide, BU8184, $6.00

Find group service learning activities like community mapping, identifying group roles and journaling. It offers advice for mentors seeking to guide youth through enriching learning experiences. Reflective journaling helps leaders explore their personal leadership styles and the value of service.

Health

CAKE DECORATING

Cake Decorating, Level 1

Members will learn to bake and frost single-layer cakes and learn simple decorating procedures.

Cake Decorating, Level 2

Members will learn to bake two-layer cakes and make flat surface flowers, simple nail flowers, roses, a variety of borders and special effects like Cornelli lace, lattice work, basket weave and others.

Cake Decorating, Level 3

Members will learn to bake stacked and tiered cakes, master all flat surface flowers, and learn to make flowers using a lily nail.

Cake Decorating, Level 4

Members design various patterns using techniques learned in level 1-3, experiment with scratch recipes and decorate cakes with their own designs.

MATERIALS FOR LEVELS 1-4

M ..... 4-H Cake Decorating, 5341, $7.00 or download, Extension online store

Cake Decorating Independent Study *(see pg 7)*

FOODS AND NUTRITION

Foods and Nutrition will help you appreciate the part food plays in relationships with family and friends. You will also gain a better understanding of the principles of nutrition as they relate to personal appearance, physical fitness and health. As you prepare foods you will become skilled in the planning, purchasing, preparing, and serving of nutritious, appealing and satisfying meals and snacks.

Cooking 101

This book is for young people who are just learning to cook and bake. The project covers kitchen and food safety, basic food preparation and nutrition. It includes MyPlate, microwave cooking, meal time and measuring basics. There are recipes for snacks, side dishes, main dishes, quick breads and desserts. A great project to start with Foods!

PROJECT REQUIREMENTS:

It may take you up to two years to complete the level. By the time you have completed the project, you will be preparing meals for family and friends. You have over 40 different recipes to choose from and several learning activities to complete. Prepare two to three dishes from each of the recipe sections: snacks, side dishes, breads and desserts. (10-15 dishes total) Complete two learning activities: Explore MyPlate Activity, Demonstrate your knowledge of safety basics, Experiment: Test for Safety of Microwave Dishes, Experiment: How much Flour will a Measuring Cup Holds? and/or Demonstrate your knowledge of Cooking Basics: Give a demonstration to your leader or at your club. Complete at least one community service activity.

MATERIALS

M .....4-H Cooking 101, 01512Y, $10.45
L.....4-H Cooking Helper's Guide, 01516F, $6.45

Cooking 201

Each level builds upon skills learned in 4-H Cooking 101. The project book is organized into sections by MyPlate Food Groups. At the beginning of each section, background information is provided to help learn more about the science behind food preparation, the nutritional contribution of each food group and basic information about preparing foods. Recipes included for each food group. For example, as part of exploring the Milk Group, youth learn how to make white sauce. This skill is also used in the Meat and Beans Group to make Chicken Rice Casserole; in the Vegetable Group, several recipes use white sauce as a base.

PROJECT REQUIREMENTS

It may take you two or three years to complete the level. By the time you have completed the project, you will be preparing meals for your family and friends. You have over 40 different recipes to choose from and several learning activities to complete as part of the project.

Prepare two to three dishes from each recipe section: Fruits, Vegetables, Grains, Meat and Beans, Milk, and Desserts (10 to 15 dishes total). Give two to three informal demonstrations on food or kitchen safety to your helper, leader or club. Demonstrate knowledge on Cooking "How To" Basics. Complete at least one community service project such as, baking food for a fund-raising bake sale.

MATERIALS

M .....4-H Cooking 201, 01513Y, $10.45
L.....4-H Cooking Helper's Guide, 01516F, $6.45

Cooking 301

The 4-H Cooking 301 project builds on the skills young people learned in 4-H Cooking 101 and 4-H Cooking 201. The project book is organized into sections by the MyPlate Food Groups. At the beginning of each section, background information is provided to help youth learn more about the science behind food preparation, the nutritional contribution of each food group and basic information about preparing foods in the food groups. Recipes are included for each food group. This curricula includes outdoor cooking, party planning, slow cookers, yeast breads and much more!

PROJECT REQUIREMENTS

Prepare two to three dishes from each of the recipe sections: Fruit Group, Vegetable Group, Grain Group, Meat and Beans Group, Milk Group and Desserts (10 to 15 dishes total), Demonstrate your knowledge on cooking or baking techniques by giving a "How To" demonstrations to your helper, leader, or club. Suggested topic areas include yeast breads, short cakes, grilled foods and party planning. Complete one or two food science experiments. Complete at least one community service project such as, planning and hosting a holiday party for the elderly or baking cupcakes for a homeless shelter.

MATERIALS

M .....Cooking 301, 01514Y, $10.45
L.....4-H Cooking Helper's Guide, 01516F, $6.45

Cooking 401

This project book is organized into sections by MyPlate Food Groups. Each section provides background information to help the young person learn more about the science behind food preparation. This is especially important in understanding how to produce quality products and to troubleshoot what went wrong when mistakes happen. Recipes are included for each food group.

PROJECT REQUIREMENTS

Prepare 2-3 dishes from each of the recipe sections: Fruit Group and Vegetable Group, Grains Group, Protein Foods Group, Dairy Group and Desserts. Demonstrate your knowledge on cooking or baking techniques. Give 3-5 "how to" demonstrations to your project leader, helper or club. Suggested topics include flatbreads, pastry, candy, celebration meal planning or meat preparation. Complete 1-2 food science experiments. Complete at least one community service project.

MATERIALS

M .....Cooking 401, 01515Y, $10.45
L.....4-H Cooking Helper's Guide, 01516F, $6.45

Party Planner

This project offers an opportunity for youth to develop knowledge and understanding of nutrition, menu planning, safe food handling skills, kitchen equipment safety, consumer skills, fitness, meal and time management and careers related to food and nutrition. The manual can help you have as much fun planning as attending parties and other events.

PROJECT REQUIREMENTS

Party Planner is an intermediate-level food and nutrition project in which 4-H members focus on preparing food for groups. Youth who complete this project learn how to plan, budget and safely prepare foods for large groups. This project, which includes eight activities and eight recipes, can easily be completed in one year.

MATERIALS

M .....Party Planner: A 4-H Guide to Quantity Cooking, 4H477, $8.00
S.....MyPlate, www.choosemyplate.gov/

Baking 101

Baking 1 is to help first-year baking members learn baking basics — nutrition, measuring and kitchen safety. The project is organized to cover one topic or food at each club meeting. Learn the basics of baking by making quick breads and cookies.

PROJECT REQUIREMENTS

Complete this project with a minimum of seven activities each year.

MATERIALS

M … Baking 101, 4HDL07, download only, Extension online store

Baking 102

In Baking 2, you will learn how to make more advanced quick breads and cookies. You also will review basic measuring techniques and baking terms, and demonstrate the proper way to use baking equipment and utensils when making the recipes.

PROJECT REQUIREMENTS

To complete this project you should complete a minimum of seven activities each year.

MATERIALS

M…. Baking 102, 4HDL08, download only, Extension online store

Baking 103

Baking 3 is an introduction to yeast breads. It is very different from Baking 1 and 2, teaching different techniques. Yeast bread baking develops your creativity. The project is organized so one subject can be covered at each meeting.

PROJECT REQUIREMENTS

Complete this project with a minimum of seven activities each year.

MATERIALS

M… Baking 103, 4HDL09, download only, Extension online store

Baking 104

Baking 4 teaches about cakes, pies and pastries. Learn about baking cakes, pastry recipes and techniques and trouble shooting.

PROJECT REQUIREMENTS

Complete this project with a minimum of seven activities each year.

MATERIALS

M…. Baking 104, 4HDL10, download only, Extension online store

Food Preservation

This intermediate-level project is designed to help you home preserve produce – from your garden, a store, or a farmer's market – so that you can enjoy nutritious fruits and vegetables all year. The pressure canning method is not covered in this project. Members will explore different home preservation methods, understand how a food's pH determines which home food preservation method to use, gather the proper equipment for water bath canning, track when produce becomes ripe, learn how to home preserve produce using the freezing method and home preserve applesauce using the water bath canning method.

PROJECT REQUIREMENTS

To complete the project members should complete seven activities, at least two learning experiences and be involved in at least two leadership/citizenship activities.

MATERIALS

M …. Canning and Freezing, 4H670, $8.00

Food Independent Study *(see pg 7)*

Other Projects

CLOVERBUDS

Montana 4-H includes a special program for youth five to seven years old called Cloverbuds. Youngsters in the Cloverbud project work with other children on selected 4-H activities from a structured curriculum that is fun, hands-on and discovery-oriented. Youth of this age group enroll ONLY in this project and all activities are non-competitive. Youth can explore horse and other animal projects, but can't enroll in them. Through Cloverbuds, children can develop age-appropriate skills and abilities. Guidelines for this project are different from those of the traditional 4-H program. The agent and volunteer manual provide necessary information and guidelines for conducting a Cloverbud program.

Cloverbuds

New project books are available for Cloverbuds. Each 4-H Activity Book is designed to be used for 1 year. You can rotate through the books in the 3 years a member may be a Cloverbud. The Cloverbud Activity Book is designed to introduce Cloverbuds to many different 4-H areas. The booklets provide activities in Animal Sciences/Animal Life, Expressive Arts, Family, Home, Health, Science and Natural Resources. The record sheet is included in the project book.

Next year a Montana Supplement with more project ideas will be available.

MATERIALS

M .....4-H Cloverbud Activity Book A, 4HDL13, Extension online store
M .....4-H Cloverbud Activity Book B, 4HDL14, Extension online store
M .....4-H Cloverbud Activity Book C, 4HDL15, Extension online store
L.....Cloverbud Completion Certificate, 4-H website
L.....Cloverbud Leader and Agents Guide, 5274, 4-H website

EXPLORING 4-H

Exploring 4-H is for beginning members in second through fourth grade, providing a "treasure hunt" for youth to explore the joys of 4-H by discovering their interests, potential 4-H projects, and finding 4-H where they live. Activities are organized into eight categories that can help youth explore 4-H activities.

Exploring 4-H

MATERIALS

M .....Exploring the Treasures of 4-H: Fun, Friends and Learning, Level 1, BU8171, $6.00
L.....Exploring the Treasures of 4-H Helper's Guide, BU8172, $10.50

Support Material

Montana 4-H offers a number of publications and other materials that support the efforts of leaders and members.

http://montana4h.org/#resource:Forms
http://montana4h.org/#resource:Support_Materials

4-H MEMBER RECORDS

- For the Record: Guide to Completing Your Records, 4-H website
- My 4-H Year Member Record, 4-H website
- Non-Animal Project Record, 2FM0264, download only, Extension online store
- Animal Project Record, 2FM0265, download only, Extension online store

4-H CLUB MATERIALS

- Montana 4-H President and Vice President's Book, 5244, $4.50 or Extension online store
- Montana 4-H Historian Book, 4-H website
- Montana 4-H Secretary's Book, 5327, $4.50 or Extension online store
- Montana 4-H Treasurer's Book, 5242, $4.50 or Extension online store
- Montana 4-H News Reporter's Book, 5243, $2.50 or Extension online store
- Montana 4-H Youth Officer Training, 5335, $4.75
- 4-H Parliamentary Procedure, 4HDL12, download only, Extension online store

4-H LEADER MATERIALS

- Clover Selection Guide, 5173, Free (limited supply), Extension online store
- Getting Started as a 4-H Project Leader, L90530, $3.50
- Montana 4-H Councils and Committees Guide, 5281, $4.50 or Extension online store
- Montana 4-H Leaders' Handbook, 5271, $4.50 or Extension online store
- New 4-H Family Handbook, 5280, $3.50 or Extension online store
- Starting a 4-H Club in Montana, 5278, $2.50 or Extension online store
- Montana 4-H Youth Officer Training, 5335, $4.75

Certificates and Planning Materials

- Certificate of Achievement, 4-H website
- Certificate of Achievement (1-8 Years), 4-H website
- Cloverbud Completion Certificate, 4-H website
- Meeting Agenda, 4-H website
- Membership ID Card, 4-H website
- Volunteer Leader Certificate, 5128, $.25 each or download 4-H website
- Yearly 4-H Club Planning, 4-H website

JUDGING

- Livestock Quality Assurance for Youth Producers, 5300, $8.00
- 4-H Livestock Sales, 5310, $2.50
- 4-H Horse Judging Manual, NM200R48, $3.50
- Beef, Sheep and Swine Selection and Evaluation, 4H103R, $11.50
- Montana Judging Card (Sheet of 6 cards), 4-H website

Additional Resources/ Enrichment

The curriculum listed under each 4-H project has been used in afterschool, in school and special interest group projects very successfully.

The additional curriculum listed below has been effectively used across the state for afterschool programs, project days, day camps and school programs.

All of these publications can be purchased from the resource listed. They are not all available at MSU Extension Publications.

GEARED FOR AGE 5 – 7

Growing Up Wild, Age 3-7, $25.20, available through www.projectwild.org/GrowingUpWILD/about.htm. Growing Up Wild is an early childhood education program that builds on children's sense of wonder about nature and invites them to explore wildlife and the world around them.

Yeah 4-H!, K-2, 3-5 and 6-8 Grades, $50, https://agrilifebookstore.org/publications_search. This afterschool curriculum includes activities in foods, meteorology, pets, agriculture, citizenship, etc.

GEARED FOR AGE 8 – 19

NEW **Bioscience Montana–Neuroscience: Getting to Know Your Inner Self (Unit 1)**, Bioscience is the study of living organisms. There are three units in this project and when you finish, you will be able to design experments. In the neuroscience unit, learn the anatomy of the brain and nervous system, explore the visual system, and examine how you learn and store information as memories. Available in the MSU Extension store, search item # 5347.

kNOweeds K-12 Invasive Plant Curriculum, available for download: missoulaeduplace.org/weeds-curriculum.html This curriculum is designed to be a supplemental curriculum for teachers who want to integrate the topic of invasive weeds into their existing courses.

Plants Grow Children, Grade K-5, available for download: http://county.wsu.edu/benton-franklin/gardening/children/Pages/default.aspx The Plants Grow Children program includes age-appropriate lessons targeted to each grade level, from kindergarten through fifth grade. The units are: The Miracle of the Seed for kindergarten; the Mini-Greenhouse for first grade; the Amazing Potato for second grade; Tree-mendous Trees for third grade: Composting with Worms for fourth grade; and Everyday Insects for fifth grade.

Project Learning Tree, K-12, Contact Cindy Peterson, MSU Extension Forestry to get trained. Project Learning Tree is an award-winning environmental education program designed for teachers and other educators, parents, and community leaders working with youth from preschool through grade 12.

Acres of Adventures, 2 book set $14.50, available through www.4-hmall.org. Each book in this two volume series features 40 child-tested activities that can be administered in a 30-minute period with additional ideas for extending the activity time.

4-H Discover Clubs – Utah State University. These books provide a series of activities to do with youth. Each book has about 7 activities. Areas available to download include planet energy, archaeology, beading, family history, sewing, fitness, dog, and many more. https://utah4h.org/discover/

Junior Master Gardener, Level 1, Grades 3-5 www.jmgkids.us Teacher/Leader guide, $42.00. Youth's Handbook, $15
The JMG teacher/leader guide provides teachers with the tools to teach the world of gardening with eight chapters of novel, "hands-on" activities for grades 3–5.

Junior Master Gardener, Level 2, Grades 6-8
Operation Thistle–Plant Growth & Development, $38.
Operation W.A.T.E.R., Soils and Water Plant Growth & Development, $38

Junior Master Gardener: Health and Nutrition from the Garden, $32. Children are motivated to eat the fruits of their labor in their study of "Health and Nutrition from the Garden."

Junior Master Gardener: Literature in the Garden, $38
Cultivate a connection to children's literature gardening with this award-winning curriculum.

Junior Master Gardener: Wildlife Gardener, $38
The combined resources of the National Wildlife Federation and the Junior Master Gardener Program along with the valuable input from pilot teachers and students across the country have helped to shape Wildlife Gardener into an integrated, engaging, and one-of-a-kind experience for kids.

Keeping Fit & Healthy, Set of 3: $11.50, www.4-hmall.org

Keeping Fit: Youth will enjoy using the self-assessment tool to identify personal talent areas smarts, explore hygiene, nutrition and physical activities, and share what they discover with a new appreciation of personal interests and talents.

Staying Healthy: Youth design a personal fitness plan and track it using their own fitness file. Through interviews and personal experiences youth discover benefits to being fit as they practice making decisions, speaking with others and managing themselves.

First Aid in Action: Youth practice first aid skills to treat cuts, scrapes, nosebleeds and bee stings. They learn how to respond to someone who is choking or has broken a bone; assemble a first aid kit; and interview members of the medical profession.

Power of the Wind

Youth will learn how the energy of the wind is transferred to machines to do work for us. Youth will also learn to think as an engineer and design and improve projects. Youth will use engineering skills to perfect their own designs. Some of the activities include a wind powered boat, making a Beaufort scale, observing and measuring wind and creating and testing a pinwheel.

MATERIALS

M ..... The Power of the Wind Youth Guide, BU8383, $6.00
L..... The Power of the Wind Facilitator Guide, BU8384, $6.00

Up For the Challenge Lifetime Fitness, Healthy Decisions

This curriculum was created to address a growing concern about nutrition and health decisions that families make. Many youth prepare their own food or are acquiring food outside the home. Up for the Challenge provides learning specific to a child's individual needs. Lessons include fitness, nutrition and health for kindergarten through high school grades.

MATERIALS

M .....Ready, Set, Goal! My Journey to Lifetime Fitness, Youth Guide, 5337, $6.50
L.....Lifetime Fitness, Healthy Decisions, Leaders Guide, 5317, $18.00

ADDITIONAL PROJECT MATERIALS

S.....Fast Foods Project Leaders Manual, NE4H5000, $13.00
S.....Fast Foods CD ROM, NE4H5000, $3.50

What's on Your Plate: Exploring Food Science, 4-h.org/resource-library/curriculum/food-science
What's On Your Plate is a comprehensive food science curriculum with hands-on experiments - some of which learners can eat as they discover the science behind food preparation. Youth will conduct food experiments, collect and analyze data and explore career opportunities. The youth science journal leads learners through the experiments and provides them with use-at-home information.

LEVEL 1, Unit 1 uncovers the "Secrets of Baking" with activities to understand science of baked goods – gluten, leavening and proper mixing. The first activity is "Great Globs of Gluten".

LEVEL 2, Unit 2 "The Power of Protein Chemistry" explores the many ways eggs are used in foods and how milk turns into cheese.

LEVEL 3, Unit 3 dives into "The Inner Mysteries of Fruits and Vegetables". Activities include how to prepare fruits and vegetables so they look and taste appealing in color and texture. There are experiments that help youth discover process osmosis and diffusion when cooking fruit.

Level 4, Unit 4 the "Be a Food Scientist" lets learners look at a day in the life of a food scientist, as well as practice being one as they create a new beverage and learn about crystallization.

Wonderwise: Women in Science, Grades 4-6, $29.95/each kit, http://wonderwise.unl.edu. Curriculum available in the following areas: African Plant Explorer, Sea Otter Biologist, Urban Ecologist, Pollen Detective, Genetic Counselor, Rain Forest Ecologist, Vet Detective, Parasite Sleuth, Space Geologist

What's In Your World? Classroom Library, $40.00, Activity Tool Kit, $45.00, Student Booklet, $5.00

MSU Extension Publications, www.msuextension.org/store, offers a wide array of informative resources to help both teachers and students learn about noxious weed identification, management, and impacts.

The U.S. Department of Agriculture (USDA), Montana State University and Montana State University Extension prohibit discrimination in all of their programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital and family status.

MONTANA 4-H FOUNDATION

— A sponsor of the Clover Project Selection Guide —

Funding Our Future

Over 4,000 youth and adult volunteers in Montana donate approximately 200,000 hours annually in planning and conducting exciting educational activities. Economic impact of this volunteer commitment equals 2.8 million dollars and is equivalent to 104 full time staff positions!

1 in 8 school-aged children in Montana are 4-Hers.

Montana 4-H youth are supported by over 3,800 trained volunteers.

More than 18,700 youth participate in 4-H in Montana, making it the largest out-of-school youth program in Montana and the nation (7 million).

*Numbers are based on averages from the last five years

Today, as it did 100 years ago, 4-H emphasizes traditional values such as personal growth and life-skill development through hands on learning.

CELEBRATING OVER 100 YEARS OF MONTANA 4-H!

Are You a Donor?

Testimonials prove that 4-H lasts a lifetime and gifts to 4-H really do fund the future. There is no limit to what 4-H can do for an individual and a community. There are countless ways for you to give back to 4-H … donors show their support each year through annual fund gifts, memorials and tributes, and estate gifts through one's will. (EIN# 23-7051460)

Helping Montana Youth

The Montana 4-H Foundation has supported Montana 4-H for over 48 years, originally established by the Montana 4-H Local Leaders Association. As a non-profit, educational organization, the Montana 4-H Foundation makes its mission to help 4-H youth by raising private funds, managing financial resources and maintaining a vital partnership with MSU Extension and the 4-H Center for Youth Development to fund educational opportunities for youth, volunteer leaders and staff.

Where Does Your Donation Go?

In 2017, more than $250,000 will be given by the Foundation to Montana 4-H through program support, grants and scholarships. Support of alumni and friends is essential to continue this level of commitment into the future.

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Visit the Montana 4-H website

www.montana4h.org

Project updates, programs and events, up-to-date 4-H calendar and more...

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