

**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, \$5.00
- M** .....Range Plants of Montana, MSU Extension, EB0122, \$10.00
- M** .....Range Plant Labels, 2FM203, Pads of 25 for \$0.50

#### ADDITIONAL PROJECT MATERIALS

- S** .....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, [http://msue.anr.msu.edu/resources/communications\\_toolkit\\_fun\\_skill\\_building\\_activities\\_to\\_do\\_with\\_kids\\_4h1560](http://msue.anr.msu.edu/resources/communications_toolkit_fun_skill_building_activities_to_do_with_kids_4h1560)

**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.