Dairy Project Youth Activity Guide

Name ____________________________

County __________________________
Note to Parents and Project Helper

If you were a project helper for youth involved in completing Dairy 1 or 2, you know what a great experience this role is. As a helper, you are in a perfect position to help youth develop in positive ways as they learn about dairy and themselves. You can nurture and cultivate their interest in this project by guiding their planning, helping them carry out their projects and recognizing them for a job well done.

**Youth Learner Outcomes**

- Become knowledgeable and responsible animal caregivers
- Develop experience-based science skill sets that pertain to health and disease
- Appreciate the variety of opportunities available in animal and dairy careers
- Recognize and practice the skills and abilities necessary for success in dairy and animal careers
- Practice the life skills of communication, acquiring and evaluating data, decision making, planning and organizing, character development and more.

**Your Role**

- Become knowledgeable and responsible animal caregivers
- Develop experience-based science skill sets that pertain to health and disease
- Appreciate the variety of opportunities available in animal and dairy careers
- Recognize and practice the skills and abilities necessary for success in dairy and animal careers
- Practice the life skills of communication, acquiring and evaluating data, decision making, planning and organizing, character development and more.

The Dairy “Skills for Life” Series

*Raising to the Top* is the third in a series of three activity guides for youth that also includes Dairy 1, *Cowabunga!,* Dairy 2, *Moving Ahead* and the Dairy Group Activity Helper’s Guide. These guides are developmentally appropriate for grades 3–5, 6–8 and 9–12 respectively, but may be used by youth in any grade based on their project skills and experience.

All activities include a description of the skills to be practiced, discussion questions, suggestions for additional activities and other helpful information. The Success Indicator listed for each activity is an excellent way to evaluate the youth’s success. Each of the guides includes an Achievement Program to encourage youth to learn more about the Dairy Project while developing important life skills. *Ruminations* is a quick and fun way for youth to assess their knowledge and skill level BEFORE and AFTER they complete the Achievement Program. In the Helper’s Guide you will find another evaluation piece titled “Evaluating the Impact.” Use this before beginning each level and after the youth has completed each level.

Each activity gives youth an opportunity to learn by doing before being told or shown how. Your challenge is to stay in the background while the youth explores and learns from the experience. You can help best by listening as you consider the questions and offer their answers.

**Dairy Helper’s Guide**

The Dairy Helper’s Guide contains more learn-by-doing activities that can be adapted for families, classrooms, after-school activities, child care settings, 4-H groups, other youth groups or camps. You’ll also find information about characteristics of youth, life skill development, teaching experientially, meeting ideas and answers to many of the activities in the youth guides.

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**Experiential Learning Model**

This five-step model is used in each activity in this series.

1. **Experience the activity.**
2. **Describe the experience and then react.**
3. **Process by discussing, testing, and experiencing again.**
4. **Generalize to connect the experience to real-world situations.**
5. **What was learned?**

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**Acknowledgments**

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For more at www.4-hcurriculum.org
Welcome to Rising to the Top

By now you are probably an expert on dairy, or certainly know more than you did when you started this project. Whether you raise one or several project animals, you are in an excellent position to share your experiences with others. Rising to the Top provides several opportunities for you to develop your leadership skills as you strive to complete Level 3 of the Dairy Achievement Program.

What You’ll Do
You’ll find activities to help you develop a business, explore careers and teach others. Here are some of things you’ll do:

- Identify parts of the DHI record
- Debate animal welfare issues
- Inspect a dairy for quality indicators
- Complete a Career Circle
- Perform a CMT and interpret results
- Give a presentation on embryo transfer
- Detect heat in dairy cattle
- Demonstrate how to detect pregnancy in cattle
- Demonstrate how to deliver a calf

Rising to the Top
Dairy 3 Project Guidelines

- Set your goals and record project highlights
- Do a minimum of seven activities of the Rising to the Top Dairy Achievement Program each year and complete Level 3 within three years.
- Practice and develop the life skills of leading others, making decisions, planning and communicating, while you learn to take risks, think creatively, use community resources, explore careers and take responsibility.
- Keep the Project Goals and Highlights page current.
- Share your dairy knowledge and skills with others.
- Have fun!

Rising to the Top
Achievement Program

If you have completed levels 1 and 2, you know each activity contains dairy-related activities that encourage you to practice a certain life skill while doing the activity. In many cases, because this is an activity guide and not a resource manual, you will need to research other sources of information to complete a particular activity. You’ll find an abundance of information on the Internet with literally thousands of sites containing information on dairy cattle and dairy products.

Remember this is your own personal guide. Feel free to use it to record your thoughts and ideas. Most questions will not have a single “right” answer. The questions will help you explore the subject and your own ideas in more depth. Additional activities are included in Dairy Helper’s Guide. Many of these are fun experiences for you to use with other youth as you develop your leadership skills.

Your Project Helper
Choose your own helper. This person might be a project leader or advisor, teacher, family member, neighbor, friend, or anyone who has the interest to work with you to complete Level 3. Meet with your helper to set goals, plan and complete activities in this guide. Discussing each activity with your helper and having this special person date and initial your achievement program will make this project more interesting and fun.

Sharing your goals, ideas and experiences with this person will give you an opportunity to learn about local resources that may help solve problems you are having with your cow or on your farm.

My Project Helper: ____________________________

Phone #: ________________________________

E-mail address: ____________________________

Place a photo of yourself with your project helper in this space.
Rising to the Top
Project Goals and Highlights

My Dairy Project Goals

Name

My Animal’s Name ________ Breed ________

What I want to do and learn in Dairy 3. ________

1. ________

2. ________

3. ________

4. ________

Dairy Project Highlights

Date and list the exciting things you do and learn.

________________________
________________________
________________________
________________________
________________________
________________________

“What Do Your Know?”
Before and After – Dairy 3

Here’s an easy way to tell if you learned something new and developed important project skills. Before you do the activities in this guide, indicate what you know then when you do the activities indicate what you know AFTER you complete them. You may be surprised how much you learned! Share the results with your helper.

Begin each skill with the words – I know how to ________
Then circle 1 (not at all); 2 (somewhat) or 3 (a lot).

<table>
<thead>
<tr>
<th>I know how to…</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score the body condition of four dairy animals</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Identify parts of the DHIA Herd Summary Sheet</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Debate animal welfare issues</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Evaluate the general public’s images of farms</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Inspect a dairy for milk quality indicators</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Calculate a ration for a dairy animal</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Trace the estrous cycle of cattle</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Organize and present a talk or demonstration on embryo transfer</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Explain how to detect pregnancy in dairy cattle</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Conduct a dairy promotional event</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Identify a career that matches your interests and skills</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Prepare a personal résumé</td>
<td>1 2 3</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

Place a photo of yourself with your project animal in this space.
Rising to the Top
Achievement Program

Achievement Program Guidelines

• Do at least seven of the Rising to the Top and Milking It for More Achievement Program activities each year.
• Complete at least 21 of the Rising to the Top and Milking It for More activities within three years to complete this achievement program.
• Have your project helper date and initial the activities as you complete them and discuss them with your helper.

Rising to the Top Activities

<table>
<thead>
<tr>
<th>Date Completed</th>
<th>Helper’s Initials</th>
</tr>
</thead>
</table>

Chapter 1 Selection and Management
- Scoring a Cow’s Body Condition
- Report Card Time
- Debating Animal Welfare Issues
- What’s Your Opinion?
- Inspection Time

Chapter 2 Health and Feeding
- CSJ: Mastitis
- Balancing a Dairy Ration

Chapter 3 Reproduction and Breeding
- The Heat Is On!
- Changes to E.T. Clone Home!
- A Womb With a View
- The LaMooze Method

Chapter 4 Milk, Marketing and Careers
- Promoting Dairy Products
- Exploring Career Options
- Applying for a Job

Milking It for More

Select and do any of the “Milking It for More” activities in Rising to the Top or make up your own. Record the page and number of each one you complete and have your helper initial it.

<table>
<thead>
<tr>
<th>Page</th>
<th>#</th>
<th>Date Completed</th>
<th>Helper’s Initials</th>
</tr>
</thead>
</table>

Write your own activity here.

Date:_________ Helper’s Initials:_________

Write your own activity here.

Date:_________ Helper’s Initials:_________

Write your own activity here.

Date:_________ Helper’s Initials:_________

Explore more at
www.4-hcurriculum.org
National 4-H Curriculum
The goal of Body Condition Scoring is to obtain a simple and reliable measure of the level of body reserves in live animals. Routinely scoring the body condition of dairy animals can help detect potential problems that might cause a decrease in milk production. Body condition scoring of cattle allows cattle producers to assess the level of fat reserves of cows during various production phases. When regularly used, this information can be used to formulate management and feeding decisions.

Taking On the Challenge

Do your best to locate four dairy cows at different stages of lactation. With a friend, family member or your helper, score each of the cows and record your best estimates in the table. Examples of cows with body condition scores of 1 to 5 are shown on page seven. A BODY CONDITION SCORING CHART IS SHOWN ON PAGE 35.

Use the Body Condition Scoring Examples on page 7 and Body Condition Scoring Chart to help you figure the scores for each cow and record in the chart below.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Just Freshening</th>
<th>90–100 days after freshening</th>
<th>Late Lactation</th>
<th>Dry Cow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinous processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spinous to transverse processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transverse processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overhanging shelf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuber coxae</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between pins and hooks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between the hocks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tailhead to pins</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ruminations

Say Cheesel (Share)
• How did you score the four cows?
• What were the main differences you found between a fresh cow and a dry cow?

Chew Your Cud (Process)
• Why is body condition scoring for cows an important management tool?
• What information did you need to analyze to make body scoring decisions?

Chore Time (Generalize)
• What factors affect your animal’s Body Condition Score most?
• What other information do you analyze to make decisions about your animal?

Mooving Along (Apply)
• How would you use the condition score to feed correctly?
• How can this activity help you be a better judge of dairy cattle?

Fresh Facts

Body Condition Scoring

Your interest in how you care for and feed your animal will be reflected in its body condition. Adequate body reserves are necessary to maintain the health, reproductive and productive capacity of all dairy cattle. In the dairy cow fat covering is an indicator of the amount of stored energy. Cows without adequate body reserves are prone to disease, metabolic disorders, impaired reproductive efficiency and reduced milk production. In heifers, lack of body reserves will delay breeding and will lower milk production after calving. On the other hand, excessively fat cows are predisposed to calving difficulties, fatty liver after calving and often death. This condition has been termed Fat Cow Syndrome. A few minutes spent evaluating your project animal(s) may change the amounts or kinds of feed you feed and the management practices you use.

Body condition is an indicator of how well you are doing as a manager. It is meant to be a tool in assessing the nutritional needs of the animal versus its production. Even unfreshened heifers can be given a body condition score.

Scores
1.00 Severe Underconditioning (emaciated)
2.00 Frame Obvious
3.00 Frame and Covering Well Balanced
4.00 Frame Not as Visible as Covering
5.00 Severe Overconditioning

Scoring Procedure
To begin scoring, stand directly behind the cow. Make sure the cow is relaxed before beginning because muscle tightness will result in inaccurate scoring. Observe the degree of depression around the tailhead. Then score the rump by placing your hands on the pin bones and feeling for the amount of fat covering.

Scoring the Cow
The fresh cow will lose body condition for about the first six to eight weeks before it can balance its feed intake with production. When observing the dairy cow, you would like to have her with a score of 3.5 to 4.0 at freshening. She will probably lose condition until she scores a 2.75 or 3.0 at eight weeks after calving. After eight to 10 weeks she should stabilize and start putting on condition. The goal is for her to be a 3.5 condition score again by the time she is dry.

Milking It For More

1. Take pictures of three cows throughout their entire lactation and describe their body changes to your helper.

Written by Arlin Holton and revised by Clark E. Israelson.
**Body Condition Scoring Examples**

**Body Condition Score 1**
- **Rump Area**: Deep cavity around tailhead. No fatty tissue felt between pins. Pelvic bone easily felt. Skin is supple.
- **Loin Area**: Ends of short ribs sharp to touch. Upper surfaces can easily be felt. Deep depression in loin.

**Body Condition Score 2**
- **Rump Area**: Shallow cavity lined with fatty tissue at tailhead. Some fatty tissue felt under pin bone. Pelvis easily felt.
- **Loin Area**: Ends of short ribs feel rounded. Upper surface felt with slight pressure. Depression visible in loin.

**Body Condition Score 3**
- **Rump Area**: No visible cavity around tailhead. Fatty tissue is easily felt over whole rump. Skin appears smooth. Pelvis is felt with slight pressure.
- **Loin Area**: Ends of short ribs can be felt with pressure. There is a thick layer of tissue on top. There is only a slight depression in the loin.

**Body Condition Score 4**
- **Rump Area**: Folds of fatty tissue are visible around tailhead. Patches of fat are present around the pin bones. Pelvis is felt only with firm pressure.
- **Loin Area**: Short ribs can’t be felt even with firm pressure. No depression is visible in loin between backbone and hip bone.

**Body Condition Score 5**
- **Rump Area**: Tailhead is buried in fatty tissue. Skin is distended. No part of pelvis can be felt even with firm pressure.
- **Loin Area**: Folds of fatty tissue over short ribs. Bone structures can’t be felt.

Adapted with permission from the Michigan State University fact sheet, Body Condition Scoring—A Management Tool.


**Report Card Time**

**Taking On The Challenge**

DHIA Records are valuable management tools for dairy producers. By belonging to a Dairy Herd Improvement Association, progressive dairy farmers have access to detailed information on individual cows and the whole herd. There are a variety of options for producers who want DHIA information. The most common process is for a DHIA Supervisor to visit the dairy monthly, collect milk samples, record animal information and then send samples to a lab for evaluation. Updated electronic information is available almost immediately. Some dairy farmers still get a computer printout of information in the mail a few days after testing.

### HERD SUMMARY DHI-202

**Production, Income & Feed Cost Summary**

<table>
<thead>
<tr>
<th>Description</th>
<th>Daily Average milk</th>
<th>Selling Year</th>
<th>Yearly Average</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Cows</strong></td>
<td><strong>92</strong></td>
<td><strong>93.7</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cow in Milk</strong></td>
<td><strong>77</strong></td>
<td><strong>93.2</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Milking Cows</strong></td>
<td><strong>91.1</strong></td>
<td><strong>23,576</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Pct. Percent</strong></td>
<td><strong>2.19</strong></td>
<td><strong>989</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Protein Cows</strong></td>
<td><strong>1.82</strong></td>
<td><strong>71.5</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Protein Percent</strong></td>
<td><strong>3.1</strong></td>
<td><strong>3.0</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cow Age</strong></td>
<td><strong>79.8</strong></td>
<td><strong>66.4</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Other Factors</strong></td>
<td><strong>Lbs Consumed</strong></td>
<td><strong>Lbs Consumed</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dry Cow</strong></td>
<td><strong>Lbs Consumed</strong></td>
<td><strong>Lbs Consumed</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Milked</strong></td>
<td><strong>Lbs Consumed</strong></td>
<td><strong>Lbs Consumed</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Concentrates</strong></td>
<td><strong>Lbs Consumed</strong></td>
<td><strong>Lbs Consumed</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Miscellaneous Information**

- **Lbs of Feed per Day (Dry)**: 15,035
- **Lbs of Feed per Day (Cows)**: 3,865

**Miscellaneous Information**

- **Milk Bled per Cent**: 15.035
- **Milk Bled per Lbs**: 3.865

**Reproductive Summary of Current Breeding Herd**

| Number of Stags | **60** |
| Number of Does | **24** |
| Number of Newborns | **14** |

**Reproductive Summary of Total Herd**

| Number of Days Open | **15** |
| Average Days Open | **9** |
| Average Days Pregnant | **2** |
| Average Days Lactating | **19** |

**Birth Summary**

<table>
<thead>
<tr>
<th>Lactation</th>
<th><strong>Lbs</strong></th>
<th><strong>%</strong></th>
<th><strong>Lbs</strong></th>
<th><strong>%</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td>174</td>
<td>6</td>
<td>121</td>
<td>5</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>66</td>
<td>12</td>
<td>46</td>
<td>12</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td>43</td>
<td>14</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>6</td>
<td>2</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

**Yearly Reproductive Summary**

<table>
<thead>
<tr>
<th>Year</th>
<th>Lbs Consumed</th>
<th>Lbs Consumed</th>
<th>Lbs Consumed</th>
<th>Lbs Consumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>15,035</td>
<td>3,865</td>
<td>4,953</td>
<td>949</td>
</tr>
<tr>
<td>2005</td>
<td>15,035</td>
<td>3,865</td>
<td>4,953</td>
<td>949</td>
</tr>
</tbody>
</table>

**What is the...**

- **Average daily milk production for milking cows**
- **Average days in milk for entire milking herd**
- **Average days dry from previous lactation**
- **Cows expected to calve next February**
- **Annual percent days in milk (whole herd)**
- **Average days in milk for peak milk production**
- **Average days in milk at first breeding**
- **Average days open for whole herd**
- **Average number of services per conception**
- **Monthly calving interval next month**
- **Number of cows leaving the herd**
- **Age of heifers at first calving**
- **Service sire Meri$**
Ruminations

Say Cheese! (Share)
- Where did you find the answers to the questions on page eight?

Chew Your Cud (Process)
- What information is included on DHIA reports?
- What decisions can be made with information on DHIA reports?

Chore Time (Generalize)
- How have you used records to make decisions in other activities in your life?
- What would you have to do enter the DHIA program?

Moving Along (Apply)
- How will you use what you learned in this activity in the future?
- How can you learn more about using DHIA records?

DHIA Records

Many dairy producers keep track of how much milk each cow produces every month of her life. By belonging to the Dairy Herd Improvement Association (DHIA), a DHIA supervisor does this for you. This person will come to the farm every month to record things like the date of birth, each cow or heifer's identification, the breed of the cow, when a cow calved, and many more items that are important to the management of the herd. About one week after the supervisor visits the farm, the dairy producer receives a computer printout of all the records needed to manage the herd.

Ways DHIA Records Increase Profitability
1. Knowing the amount of milk and milk components given by each cow
2. Measuring milk quality and milk urea nitrogen
3. Feeding a cow (or group) a ration balanced to her (their) needs
4. Increasing production level through judicious culling
5. Providing a sound genetic basis for selecting superior sires and foundation females
6. Keeping reproductive performances at an optimum level
7. Providing a day-to-day management guide

Milking It for More

1. Invite a DHIA employee to discuss his or her work with your dairy group.
2. Visit a testing lab or processing center and report what you discover to your helper.
3. Observe a sampling procedure and report to the group.

Adapted by Tracy Behnken from Learning About Dairy
A Resource Guide for the 4-H Dairy Project and revised by Clark E. Israelsen.