UC
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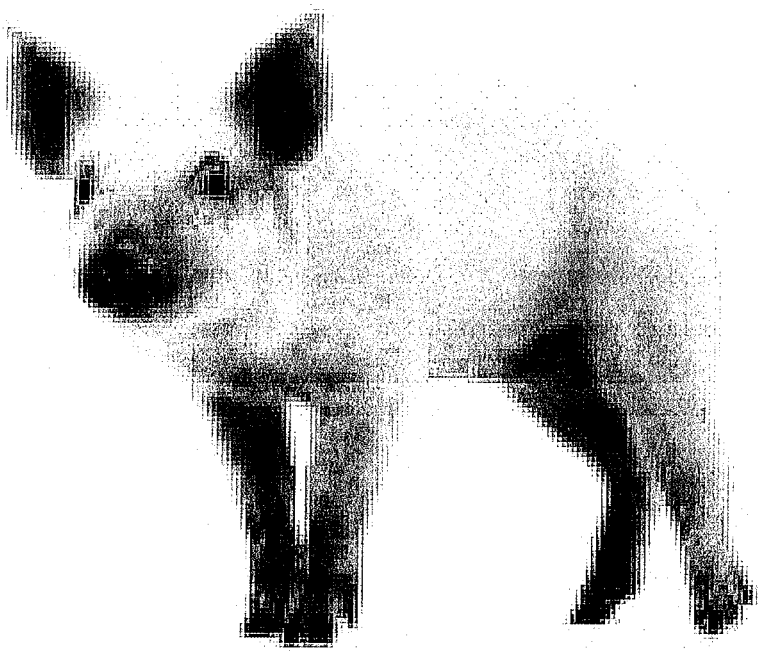
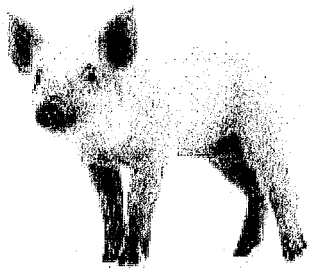
Swine

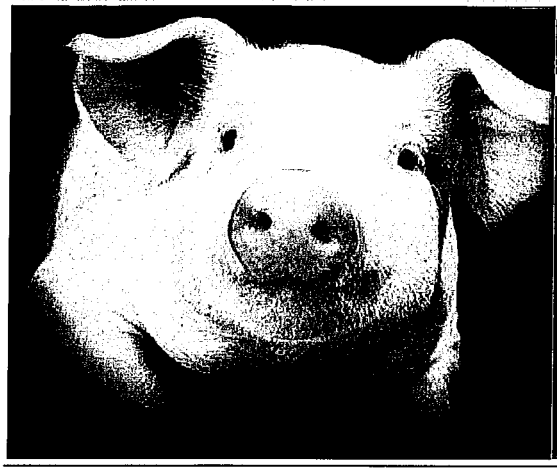




This We Believe:

- The boy and girl are more important than the projects.
- The member should be their own best product.
- No award is worth sacrificing the reputation of a member or leader.
- Competition is a natural human trait and should be recognized as such. It should be given no more emphasis than other fundamentals.
- Learning how to do the project is more important than the project itself.
- Many things are caught rather than taught.
- A blue ribbon member with a red ribbon project is more desirable than a red ribbon member with a blue ribbon project.
- To learn by doing is fundamental in any sound educational program.
- Generally speaking, there is more than one good way of doing most things.
- Every member needs to be noticed, to feel important, to win, and to be praised.
- Our job is to teach members *how* to think, not what to think.

4-H SWINE PROJECT



In 4-H market and breeding swine projects members can learn about selecting and raising large livestock project animal. Youth learn about record keeping, nutrition, health, project management and judging.

- Members learn about the proper care of swine including nutrition, housing, ventilation, medicine, grooming, and ethics.
- Members gain consumer vs. producer awareness
- 4-H members learn time management
- Members learn how to respect others during competitive events
- Members may also explore topics of biosecurity and veterinary medicine.

Starting Out *Beginner*	Learning More *Intermediate*	Exploring Depth *Advanced*
Learn how to identify swine breeds	Explore PQA Pork Quality Assurance	Learn how to give oral and written reasons on swine conformation
Practice safety and sanitation	Learn how to characterize of pork	Explore careers in animal science and the pork industry
Learn showing preparation and ethics	Discover the proper way to cook pork	Design a breeding system
Learn how to select a show pig	Practice packing a show box	Learn how to judge swine breeding projects
Members learn how to write auction buyer letters	Learn how to read labels on swine feed	Demonstrate how to process a new litter of piglets
Learn swine terminology	Understand the many uses of swine by-products	Learn how to properly administer injections

The activities above are ideas to inspire further project development. This is not a complete list.

4-H Thrive!

Help Youth:

Light Their Spark

A spark is something youth are passionate about; it really fires them up and gives them joy and energy. Help youth find what it is about swine that excites them.

Flex Their Brain

The brain grows stronger when we try new things and master new skills. Encourage youth effort and persistence to help them reach higher levels of success.

Reach Their Goals

Help youth use the GPS system to achieve their goals.

Goal Selection: Choose one meaningful, realistic and demanding goal.

Pursue Strategies: Create a step-by-step plan to make daily choices that support your goal.

Shift Gears: Change strategies if you're having difficulties reaching your goal. Seek help from others.

Reflect

Ask project members how they can use their passion for this project to be more confident, competent and caring. Discuss ways they can use their skills to make a contribution in the community, improve their character or establish connections.

Expand Your Experiences!

Science, Engineering, and Technology

- Become a member of a meat judging team
- Develop and create a science display on swine
- Research the nutritional needs of swine compared to other large livestock
- Create an educational video of your swine project to share with others

Healthy Living

- Create a display on how to properly cook pork
- Discuss proper attire when working with large livestock
- Compare the nutrition facts of pork to other food products

Citizenship

- Prepare educational displays for the fair
- Explore ethical standards when handling swine
- Encourage your project group to have an international pork potluck, to learn how pork is used around the world

Leadership

- Recruit younger members into the swine project
- Become involved as a junior or teen leader
- Write articles for your club and county newsletters about supporting 4-H livestock auctions

Connections & Events

Presentation Days – Share what you have learned with others in the swine project.
4-H Food Fairs – Enter an item with pork as the special ingredient.
Local Fairs – Participate in showmanship and market classes.
Visit a farrowing operation and assist with ear notching, needle teeth removal, tail docking and castration.
Attend livestock seminars.

Curriculum

[illegible] (4-H 08065)
Putting the Oink in Pig (4-H 08066)
Going Whole Hog (4-H 08067)
Swine Helpers Guide (4-H 08068)
Swine: From the Animal's Point of View

4-H Record Book

4-H Record Books give members an opportunity to record events and reflect on their experiences. For each project, members document their personal experiences, learning and development.

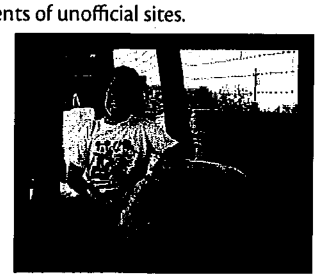
4-H Record Books also teach members record management skills and encourage them to set goals and develop a plan to meet those goals.

To access the 4-H Record Book online visit www.ca4h.org/4hbook.

Resources

- California Pork Producers Association www.calpork.com
- National Swine Registry www.nationalswine.com
- California Department of Food and Agriculture www.cdfa.ca.gov
- Texas 4-H Swine http://www.unce.unr.edu/4h/programs/stem/files/pdf/swineprojecttexas.pdf
- 4-H Swine Activity Page http://www.utextension.utk.edu/4h/projects/activities/Swine-W112.pdf
- Swine Showmanship http://ucanr.edu/sites/Calaveras_4-H_Program/Projects/Swine_Showmanship/

The UC 4-H Youth Development Program does not endorse, warrant, or otherwise take responsibility for the contents of unofficial sites.



University of California Agriculture and Natural Resources

Light Your Spark *Flex Your Brain* *Reach Your Goals* *Light Your Spark* *Flex Your Brain* *Reach Your Goals*

Authors: A. Cannon & S. Watkins

SWINE

Sonoma County 4-H

Name: _____ Date: _____

Guidelines for Project Proficiency Award
Beginner:

	Date Completed	Leader's Initials
LEARN		
1. Principles in selecting and buying feeder pigs. Know market weights and the age an animal should be.	_____	_____
2. Learn and be able to describe desirable conformation in a market hog.	_____	_____
3. To feed, fit, and exhibit market pigs:		
- Different types of feeding (self-hand). Advantages and disadvantages of each.	_____	_____
- Types of feeds: starter, grower & finisher, & their appropriate use in feeding market animals.	_____	_____
- Use in feeding market animals.	_____	_____
- Know how many pounds a day an average hog should gain.	_____	_____
- How to train for show and showmanship techniques.	_____	_____
4. Parts of the pig and terms swine producers use:		
- Barrow, gilt, boar, sow, farrow, castrate, needle teeth, wasty, weaner, ham, parturition, shote or shoat.	_____	_____
5. Housing and equipment needs.		
- The importance of worming and a good brand of wormer to use.	_____	_____
- How to care for your pigs when weather is hot or cold.	_____	_____
6. Efficient management practices.		
- The importance of worming and a good brand of wormer to use.	_____	_____
- Know good preventive measures in swine health care.	_____	_____
- How to control lice and mange mites.	_____	_____
7. Identify six breeds of swine and their characteristics.	_____	_____
8. Gestation period of a gilt or sow.	_____	_____
9. Approved farrowing practices.	_____	_____
10. How to maintain accurate project records.	_____	_____
11. How to fill out a fair entry form.	_____	_____
Activities		
1. Plan the project.	_____	_____
2. Feed and manage one or more pigs for exhibition and/or slaughter.	_____	_____
3. Keep records on cost and labor involved in caring for animals.	_____	_____
4. Balance a swine ration.	_____	_____
5. Visit a purebred breeder's farm.	_____	_____
6. Exhibit project animal -participate in showmanship.	_____	_____
7. Tour retail meat market to study pork cuts.	_____	_____
8. Attend swine shows.	_____	_____
9. Give a demonstration on some phase of swine production at the project or club level.	_____	_____

Project Leader's Signature of Completion: _____ Date: _____

Club Leader's Signature of Completion: _____ Date: _____

SWINE

Sonoma County 4-H

Name: _____ Date: _____

Guidelines for Project Proficiency Award
Intermediate:

	Date Completed	Leader's Initials
LEARN		
1. Principles in swine judging - Important points to consider when selecting breeding gilts, boars and market animals.		
2. Know the difference of registered or grade animals, and the advantages of each.	_____	_____
3. Explain approved farrowing practices:		
- How to set up a farrowing pen.	_____	_____
- How to tell when a gilt is in heat - describe the different signs.	_____	_____
-Know the day of the heat cycle.	_____	_____
-Know the age to breed a gilt and start using a boar.	_____	_____
4. How to remove needle teeth - why?	_____	_____
- Know the reasons for giving iron shots.		
- Observe how to castrate.	_____	_____
- Know how to read an ear notch.		
5. Know the symptoms of these swine diseases and be aware of treatment/vaccination:		
Erysipilas, Atrophic Rhintis, Brucellosis, Pneumonia, Leptospirosis.	_____	_____
6. Learn about composition of feeds.	_____	_____
7. Develop an understanding of markets and their operations.	_____	_____
8. Know the different wholesale and retail cuts of pork. Expected percentage of yield of cuts and carcass.		
9. Know the proper procedure for processing a hog.	_____	_____
10. Approved farrowing practices.	_____	_____
	_____	_____
ACTIVITIES		
1. Keep project records, production and breeding records on your breeding animals.		
2. Take part in livestock judging.	_____	_____
3. Tour a purebred and/or commercial swine farm and learn how they feed, house and breed their animals.	_____	_____
4. Tour an auction yard and observe their sales.	_____	_____
5. Attend swine shows and sales.	_____	_____
6. Complete application for registration, transfer papers and breeding certificates for Swine Registry.	_____	_____
7. Give a demonstration.	_____	_____
8. Give leadership in your project - help another member.	_____	_____
	_____	_____

Project Leader's Signature of Completion: _____ Date: _____

Club Leader's Signature of Completion: _____ Date: _____

SWINE

Sonoma County 4-H

Name: _____ Date: _____

Guidelines for Project Proficiency Award
Advanced:

	Date Completed	Leader's Initials
LEARN		
1. How to select breeding stock of accepted type.	____	____
2. Know hereditary defects (select animals free from the following abnormalities or a family history of such traits). Crytorchidism, ruptures, atresia anus, rectal prolapse, swirls, hennaphrodites, myoclonica congenita (shakes, infantile vulva).	____	____
3. Know the meaning of inbreeding, line breeding, out crossing in a purebred operation.	____	____
4. Know the advantages of crossbreeding.	____	____
5. Learn the use of feed additives.	____	____
6. How to develop a health and vaccination program for your swine herd.	____	____
7. Principles of genetics.	____	____
8. Digestive system of the pig.	____	____
9. Market and outlook information and use in adjusting production and marketing.	____	____
10. Opportunities in feeder pig production.	____	____
11. Economics of feeder pig production.	____	____
12. Efficient procedures and methods of marketing. Marketing feeder pigs.	____	____
13. How to feed and manage the swine herd.	____	____
14. Value of accurate records. Be aware of cost and income.	____	____
ACTIVITIES		
1. Feed, manage and market hogs from a purebred and/or grade swineherd. Develop a breeding program.	____	____
2. Feed and manage a sow and litter.	____	____
3. Keep production records.	____	____
4. Participate in carcass evaluation programs.	____	____
5. Take part in livestock judging.	____	____
6. Explore career opportunities in areas of livestock and meats.	____	____
7. Complete a Junior/Teen leader program in swine.	____	____
8. Give a swine demonstration or train a member for each event.	____	____
9. Give a presentation on swine to a group other than 4-H.	____	____

Project Leader's Signature of Completion: _____ Date: _____

Club Leader's Signature of Completion: _____ Date: _____

MINNESOTA 4-H PROJECT MEETING GUIDES

SWINE

. . . .to develop
project and life skills

4-H Animal Science
Project Meeting Guide, AS-65, '81

SWINE

SELECTING 4-H SWINE MEETING TOPICS

THOMAS D. ZURCHER
Extension Specialist, 4-H Youth Development

IMPORTANCE OF THE TOPIC

This project meeting guide is designed to help you and your 4-H project members identify the topics you will explore at your five or more yearly project meetings. Following each activity is a (1), (2), or (3) to give you an indication of the degree of experience it will usually require for a 4-H'er to be able to demonstrate this skill to others. The higher the number the more experience needed. If your learn-by-doing activities can be sequenced so your members may build on what they already know, a better learning experience will result. You will find a line preceding each topic for you to write in the date of the meeting at which your members will explore that particular topic. Check with your extension agent for the availability of project meeting guides for the topics you and your members choose.

The project meeting guide "Planning the Project Group's Yearly Program" will help your group get off to a good start.

4-H SWINE PROJECT MEETING TOPICS

Selection and Judging

___Identifying Breeds of Swine (1)
___Identifying Parts of Swine (1)
___Selecting Your Project Animal (1)
___Judging a Judging Class (1)
___Constructing the Ideal Project Animal (2)
___Recognizing Abnormalities and Faults of Swine (2)
___Selecting a Feeder Pig (2)
___Presenting Oral Reasons (2)
___Scoring a Judging Class (2)
___Grading Feeder Pigs (3)
___Understanding Principles of Performance Testing (3)
___Determining Backfat Thickness (3)
___Conducting a Judging Contest (3)
___Selecting a Judging Class (3)
___Talking Like a Swine Judge (3)

Management Practices

___Identifying Your Project Animal (1)
___Identifying Project Equipment (1)
___Setting Goals for Profitable Swine Production (2)
___Restraining a Pig (2)
___Determining Space Requirements of Swine (3)
___Calendarizing Livestock Management Practices (3)
___Outlining Temperature Effect on Swine Performance (3)
___Controlling Cannibalism in Swine (3)

Farrowing Time Skills

___Caring for the Newborn Piglet (1)
___Ear Notching a Baby Pig (1)
___Clipping a Baby Pig's Needle Teeth (1)
___Docking a Baby Pig's Tail (1)
___Giving a Baby Pig Iron (1)
___Castrating a Baby Pig (2)
___Weaning a Litter of Pigs (2)
___Preparing the Sow for Farrowing (2)
___Caring for the Sow at Farrowing (2)
___Assisting During Farrowing (2)

Herd Health Practices

___Recognizing the Healthy Pig (2)
___Taking an Animal's Temperature, Pulse, and Breathing Rate (2)
___Identifying Herd Health Supplies (2)
___Stocking the Medicine Cabinet (2)
___Sanitizing Swine Facilities
___Examining a Fecal Sample for Parasites (2)
___Controlling External Parasites (2)
___Controlling Internal Parasites (2)
___Tracing the Roundworm's Life Cycle (3)
___Recognizing Common Animal Health Problems (3)
___Caring for the Newborn (3)
___Administering Medication to Swine (3)

4-H Animal Science
Project Meeting Guide, AS-66, '81

SWINE

IDENTIFYING SWINE BREEDS

RANDY JACOBS
Extension Agent

IMPORTANCE OF THE TOPIC

One of the first and most important decisions a pork producer must make is the selection of the breeds which will be used in the crossbreeding program. It is also important for a 4-H swine member to be able to identify the eight major swine breeds.

Members should be able to recognize the breeds used in producing their crossbred project animals and know why these particular breeds were chosen. 4-H'ers raising purebred swine should know the history and strong traits for their chosen breed.

By taking part in this activity, members will realize the strengths and weaknesses of the swine breeds and will be able to take pride in the breeding program that produced their project animals. In doing this, 4-H'ers will be learning important life skills such as decision making and setting priorities.

These purposes can best be reached if members are involved in learning activities rather than listening to a lecture or watching a demonstration. The importance of this is summed up as follows:

I Hear : I Forget
I See : I Remember
I Do : I Understand

The rest of this activity sheet gives some information and methods that you may use to have a fun, effective, and educational project meeting.

WHAT YOUR 4-H'ERS WILL ACCOMPLISH

1. Develop the life skill of decision making.
2. Identify eight major swine breeds.
3. Tell something about the history, breed characteristics, and strengths of each breed.

MEETING TIPS FOR LEADERS

1. Spend some time preparing for the meeting by reviewing the subjects that will be covered and having any resource material needed on hand. Being prepared can change an ordinary project meeting into a very effective one.
2. To prepare your members for the meeting ask them to look over the sections on breeds and breed comparisons in their 4-H Swine Production Manual.
3. Don't feel that you have to be an "expert" on the subject before you have a project meeting. A good working knowledge of the basic background material is sufficient. Also, allow more experienced members to serve as resource persons.
4. Give the members a chance to ask questions and learn from each other. Some of the most effective learning takes place when 4-H'ers work together on solving a problem or answering a question.
5. Remember that the members are more important than the projects. Our goal should be to produce "blue ribbon" 4-H'ers, not just blue ribbon barrows and gilts. Providing good learning opportunities at your project meetings is a big step towards this goal.

PREPARING YOUR MEMBERS FOR THE ACTIVITY

The more realistic you can make the activity the more interested your members will be. Providing situations in which they are required to make decisions can provide for effective learning.

4-H Animal Science
Project Meeting Guide, AS-67, '81

SWINE

SETTING GOALS FOR PROFITABLE PORK PRODUCTION

RANDY JACOBS
Extension Agent

IMPORTANCE OF THE TOPIC

To be successful in a modern swine operation today, a pork producer must meet minimum standards in certain production traits. To accomplish this, it is necessary to establish goals for an operation in the economically important traits.

Traits such as average daily gain, feed efficiency, litter size born and weaned, and carcass traits should all be considered in setting goals for the swine operation.

4-H swine project members should realize that these traits are important, know how they are measured, and recognize the minimum levels that are acceptable in each trait.

By doing this exercise, 4-H members will learn important life skills such as setting goals and priorities and making intelligent decisions.

Some of the most effective learning takes place when members are directly involved in learning-by-doing activities rather than listening to a lecture or watching a demonstration. The importance of this is summed up as follows:

I Hear : I Forget
I See : I Remember
I Do : I Understand

The activities listed in this guide provide some fun and interesting ways for helping your members learn more about their swine project.

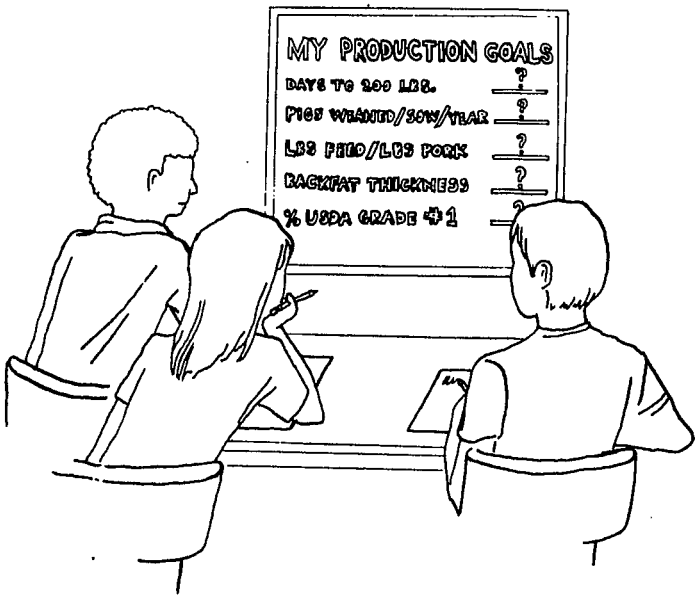
WHAT YOUR 4-H'ERS WILL ACCOMPLISH

By involving your members in learn-by-doing activities they will be able to do the following:

1. Develop the life skill of goal setting.
2. Identify 4-5 economically important traits of swine production.
3. Set minimum standards for each trait.
4. Evaluate two swine operations in relation to economically important traits.

PREPARE FOR THE MEETING

1. Be prepared to conduct your meeting. Some time spent reviewing the project material to be covered and having necessary materials on-hand will help make your project meeting a fun and educational one.
2. Have your members review their 4-H Swine Production Manual before the meeting.
3. Let the older and more experienced 4-H'ers act as resource persons. Many times younger 4-H members are more attentive and learn more when the information is presented by junior leaders.
4. Ask thought-provoking questions of your project group. You'll be surprised when you see the effort most members will put out when inspired to find out more about their project.
5. Praise your members for their efforts. Even a small word of encouragement to a younger member can really make them feel involved and important. Remember that we are in the "people-building" business.
6. Helping your members develop life skills and their swine project skills should be your main goal. Having the champion barrow at the County Fair is fine. But, remember, there is only one champion barrow each year and most 4-H'ers probably will never win this honor.



4-H Animal Science
Project Meeting Guide, AS-68, '81

SWINE

ASSISTING THE SOW AT FARROWING

JERRY HAWTON
Extension Specialist

IMPORTANCE OF THE TOPIC

A small percentage of sows that farrow may have difficulties in the birth process due to pigs lodging in the birth canal. If this occurs and the sow does not farrow a pig over a long period of time it will become necessary to assist the sow, otherwise she may injure herself and often lose the remaining pigs to be born. A 4-H'er who knows what to do will often be able to save pigs.

WHAT YOUR 4-H'ERS WILL ACCOMPLISH

By actively participating in this activity your members will be able to do the following:

1. Demonstrate how to assist a sow in trouble when farrowing her pigs.
2. Further develop the life skills of responding to a crisis situation, making decisions, and gaining self-confidence.

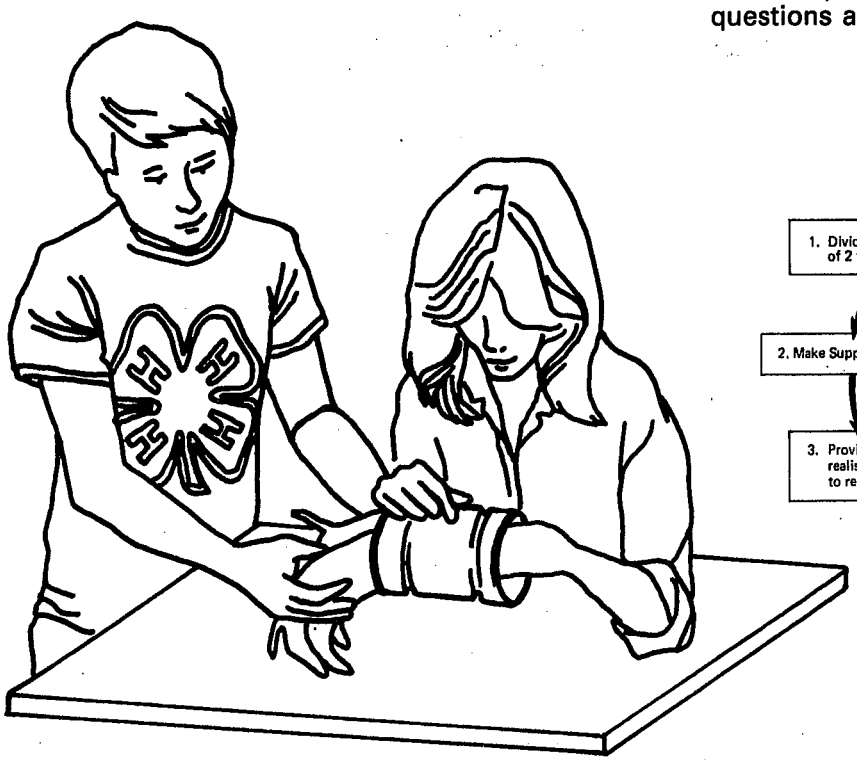
PREPARE FOR THE MEETING

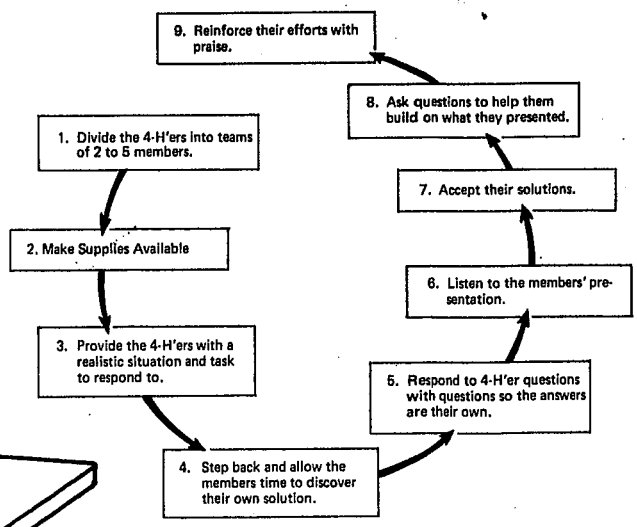
Usually a little time spent planning the meeting, reviewing the resource materials, collecting the supplies required, and involving others in each of these steps will make the meeting more enjoyable for all.

Supplies: mild soap or lubricant, disinfectant, a hand and arm rubber glove, box with an opening to simulate the sow, plus a model pig made from the University of Minnesota 4-H Pig Pattern, and a two pound coffee can to use as an opening to the cardboard box or sac.

FACILITATE THE MEETING

Your members, by pooling their experiences and previous knowledge, will have a good idea how to help a sow in trouble at farrowing time. Give them an opportunity to demonstrate how they would solve the problem before showing or telling them how. The opportunity to develop both life and project skills are enhanced by using an experiential approach. The nine steps of this method plus supporting situation statements and questions are provided for your use.



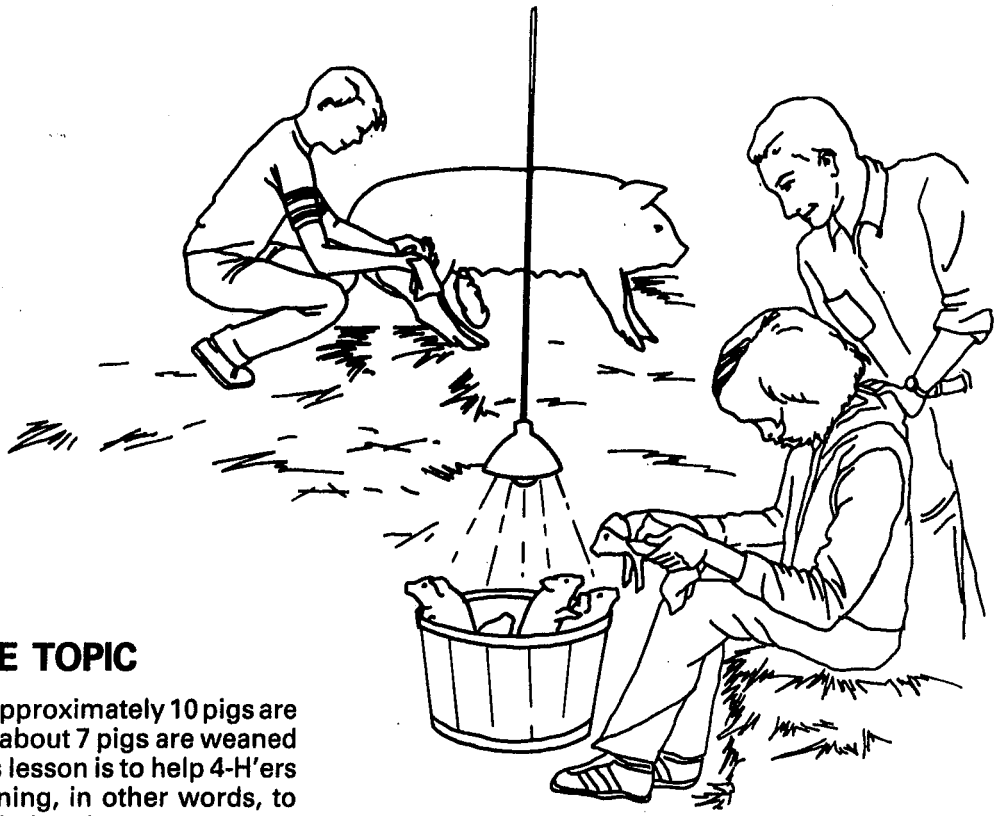


4-H Animal Science
Project Meeting Guide, AS-69, '81

SWINE

CARING FOR THE NEWBORN PIG

JERRY HAWTON
Extension Specialist, Animal Science



IMPORTANCE OF THE TOPIC

On the average in Minnesota approximately 10 pigs are born per litter. However, only about 7 pigs are weaned per litter. The emphasis of this lesson is to help 4-H'ers save more baby pigs to weaning, in other words, to improve the survival rate of baby pigs.

WHAT YOUR 4-H'ERS WILL ACCOMPLISH

By participating in this project meeting, your 4-H'ers will be able to:

1. Demonstrate the techniques of caring for the litter at farrowing.
2. Further develop the life skills of relating to others, utilizing knowledge, and giving attention to life saving details.

PREPARE FOR THE MEETING

Ask your members to read the information in the Swine Production Manual 4-H B-90 on caring for the newborn pig before coming to the meeting. You may also want them to bring some of the supplies so they will be involved early.

Supplies: heat lamp, basket, dry rags, a disinfectant, tincture of iodine, model pig made from the University of Minnesota 4-H Pig Pattern.

FACILITATE THE MEETING

In order for the members to learn both project and life skills you will want to provide a framework and guidance to the members and allow them to discover for themselves how to do the activity.

Set as one of your goals to fully involve your 4-H'ers in a learn-by-doing activity instead of having them listen to a lecture or watch a demonstration. One method which allows this to happen is called "Learning-By-Doing Before Being Told Or Shown How". The situation statement and questions are included for your use as you help your members put together their demonstrations or skits.

SITUATION: Your dad left for town three hours ago. His favorite pig has just started farrowing. You don't expect him to be back for another two or three hours.

YOUR TASK: Demonstrate how you would care for the newborn pigs as they arrive.

4-H Animal Science
Project Meeting Guide, AS-70, '81

SWINE

DOCKING A PIG'S TAIL

JERRY HAWTON
Extension Swine Specialist

IMPORTANCE OF THE TOPIC

Many swine producers today raise their pigs in total confinement. When pigs are raised under these conditions, there is often a high incidence of tail biting which leads to cannibalism and extreme economic loss to the producer. The major management technique used to prevent this tail biting and eventual cannibalism is the removal of the pig's tail at a very young age.

WHAT YOUR 4-H'ERS WILL ACCOMPLISH

As a result of this activity your 4-H'ers will be able to:

1. Demonstrate to the group why, when, and how to dock a baby pig's tail.
2. Develop the life skills of relating to others, expressing themselves, and feeling worthwhile about themselves.

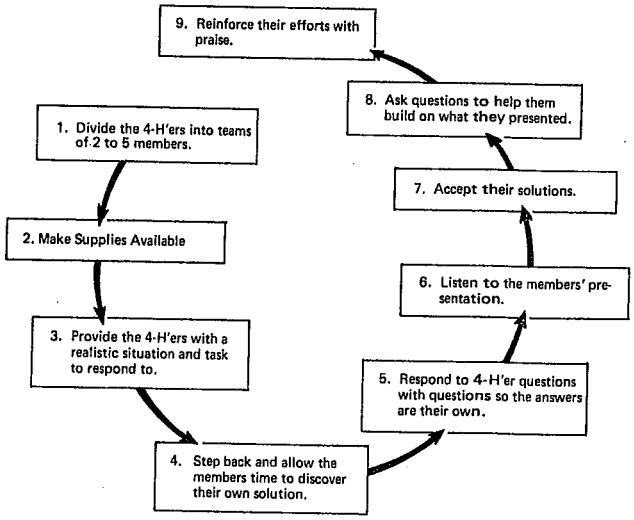
PREPARE FOR THE MEETING

A little time spent planning the meeting, reviewing the resource materials, collecting the supplies required, and involving others in each of these steps will often make the difference between a very hectic meeting and a very exciting one for both you and your members.

Supplies: side cutter or cauterizer, disinfectant and live pig or model pig made from University of Minnesota 4-H Pig Pattern.

FACILITATE THE MEETING

You'll want to fully involve your members in a learn-by-doing activity so they can develop both project and life skills during the project meeting. One way to do this is to put yourself in the role of a helper instead of an "up front" teacher. The nine steps below indicate an experiential method leaders have found useful. The situation statement and questions included in this guide are designed to help you also be successful in your challenging and important position of project leader.



4-H Animal Science
Project Meeting Guide, AS-71, '81

SWINE

CLIPPING A PIG'S NEEDLE TEETH

CINDY GRASS
Extension Agent

IMPORTANCE OF THE TOPIC

Young pigs will have a tendency to fight each other and may cause injury to their littermates and/or the sows udder when nursing. The main technique to prevent these injuries is to remove the pig's needle teeth within 24 hours of birth.

WHAT YOUR 4-H'ERS WILL ACCOMPLISH

As a result of this activity, your 4-H'ers will be able to:

1. Demonstrate to the group why, when, and how to clip baby pigs' needle teeth.
2. Develop the life skills of relating to others, expressing themselves, and feeling worthwhile about themselves.

These purposes can best be reached if members are involved in learning activities rather than listening to a lecture or watching a demonstration. The importance of this is summed up as:

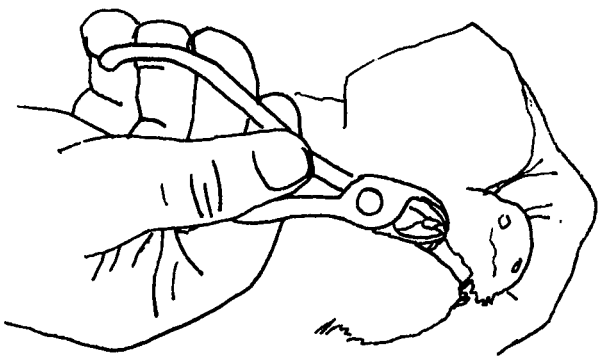
I hear : I forget
I see : I remember
I do : I understand

PREPARE FOR THE MEETING

Spend some time preparing for the meeting by reviewing the subject that will be covered and by having any resource material needed on hand. Extension Folder 409, "Feeding and Managing Baby Pigs", and 4-H B90, "Swine Production Manual" (pp. 16-17), may serve as references. If you are not familiar with this process, you could also talk to an experienced swine producer or use your more experienced members to serve as resources. Gather supplies that you will need which would include a side cutter or a large toenail clipper, disinfectant, and live pig or model pig made from University of Minnesota's 4-H pig pattern.

FACILITATE THE MEETING

You'll want to fully involve your members in a learn-by-doing activity so they can develop both project and life skills during the project meeting. One way to do this is to put yourself in the role of a helper instead of an "up front" teacher. The steps below indicate an experiential method leaders have found useful. The situation statement and questions included in this guide are designed to help you also be successful in your challenging and important position of project leader.



SWINE

EAR NOTCHING PIG LITTER MATES

CINDY GRASS
Extension Agent

IMPORTANCE OF THE TOPIC

Identification of litter mates is important to help swine producers determine if the dam and sire are producing fast gaining meat type hogs. It also allows for a producer to cull if there appear to be problems in a particular litter, and to identify outstanding litters.

WHAT YOUR 4-H'ERS WILL ACCOMPLISH

As a result of this activity, your 4-H'ers will be able to:

1. Demonstrate to the group why, how, and when to ear notch baby pigs.
2. Develop the life skills of relating to others, expressing themselves, and feeling worthwhile about themselves.

These purposes can best be reached if members are involved in learning activities rather than listening to a lecture or watching a demonstration. The importance of this is summed up as:

I hear : I forget
I see : I remember
I do : I understand

PREPARE FOR THE MEETING

Spend some time preparing for the meeting by reviewing the subject that will be covered and gathering any resource materials needed. Animal Science Fact Sheet No. 2, "Methods of Pig Identification", and Extension Folder #409, "Feeding and Managing Baby Pigs", may serve as references. If you are not familiar with the process, you could talk to an experienced swine producer or use your more experienced members to serve as resources. Gather supplies that you will need which would include a copy of Animal Science Fact Sheet No. 2, ear notcher, cardboard or paper ears, and a scissors.

FACILITATE THE MEETING

You'll want to fully involve your members in a learn-by-doing activity so they can develop both project and life skills during the project meeting. One way to do this is to put yourself in the role of a helper instead of an "up front" teacher. The nine steps below indicate an experiential method leaders have found useful. The

4-H Animal Science
Project Meeting Guide, AS-73, '81

SWINE

GIVING IRON TO YOUR PIG

JERRY HAWTON
Extension Specialist, Animal Science

IMPORTANCE OF THE TOPIC

One of the critical periods in a 4-H'ers swine project experience is during the first few days following the farrowing of the sow. Members who learn how to provide supplemental iron to their new litter will have gained a valuable skill.

WHAT YOUR 4-H'ERS WILL ACCOMPLISH

As a result of this activity, 4-H'ers will be able to:
1. Demonstrate how to administer iron to a baby pig.
2. Further develop the life skills of making decisions, expressing themselves, and relating to others.

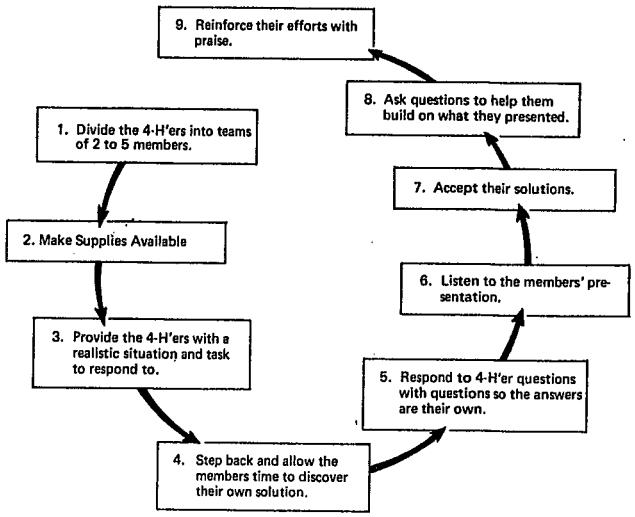
PREPARE FOR THE MEETING

You'll want to gather the necessary resource material and review this meeting guide prior to the meeting. Ask your members to read the information on administering iron in the 4-H Swine Production Manual B-90. Additional information is in Extension Folder 409, "Feeding and Managing Baby Pigs."

Materials: syringe and 18-20 gauge needle; bottle labeled "iron dextran" or real bottle of iron dextran containing 50-100 mg-cc of iron; a real pig or a model pig made from the Univeristy of Minnesota Extension 4-H Model Pig Pattern.

FACILITATE THE MEETING

Your challenge as the project leader of the swine group is to help your members discover for themselves how to administer iron to a baby pig. Instead of demonstrating to the 4-H'ers how you do it and then asking them to repeat what you did, you'll find that important life skills can be learned and greater overall understanding will occur if a more learn-by-doing or experiential method is used. Here is a method which leaders have found to be successful. The remainder of this project meeting guide will directly support this method.



SITUATION: Your parents are on vacation and you have been left in charge of the swine herd. The last litter to farrow is now three days old.

TASK: Demonstrate how you will provide iron to the new pigs.

4-H Animal Science
Project Meeting Guide, AS-74, '81

SWINE

CASTRATING A PIG

JERRY HAWTON
Extension Specialist, Animal Science

IMPORTANCE OF THE TOPIC

A 4-H member should learn the important management practice of castrating pigs. A boar pig produces a sex odor when it reaches maturity. This objectionable odor can then be detected in the meat consumed by the consumer.

WHAT YOUR 4-H'ERS WILL ACCOMPLISH

As a result of participating in the activities outlined in this project meeting guide your members will be able to:

1. Develop life skills of learning-by-doing, working together to solve a situation, and gain a sense of self-worth.
2. Demonstrate how to castrate a pig.

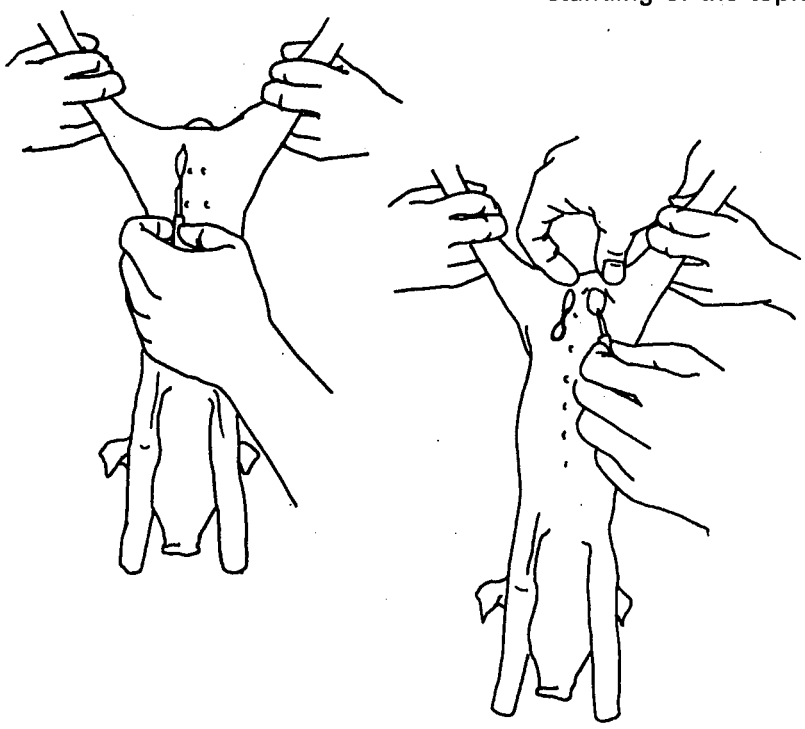
PREPARE FOR THE MEETING

The time spent planning the meeting with your junior leaders or other members, plus reviewing the resource materials and collecting the necessary supplies will be well worth the effort. Although this activity may be done on live pigs, the importance of allowing the members to practice first in a non-threatening atmosphere is important. The model pig made from the University of Minnesota Pig Pattern works well when this activity is practiced on the kitchen table.

Supplies: knife or scalpel, disinfectant.

FACILITATE THE MEETING

Your 4-H'ers will enjoy the opportunity to demonstrate to you how they would castrate a baby pig using the supplies and training aids provided. By giving them the opportunity to learn-by-doing before you tell or show them how, you'll help them develop several important life skills as well as increasing their understanding of the topic.



4-H Animal Science
Project Meeting Guide, AS-75, '81

SWINE

DETERMINING BACKFAT THICKNESS OF SWINE

JERRY HAWTON
Extension Specialist, Animal Science

IMPORTANCE OF THE TOPIC

Being able to determine the backfat thickness on a live hog is an important skill for a 4-H member to learn. When selecting breeding stock it is desirable to select the leanest individuals. A leaner pig has a higher percentage of muscle and will provide a more desirable product for the consumer.

WHAT YOUR 4-H'ERS WILL ACCOMPLISH

By actively participating in the meeting the 4-H'ers will be able to do the following:

1. Demonstrate the use of the probe to determine backfat thickness in the live animal.
2. Develop the life skills of learning-by-doing, gathering information in order to make decisions, and working together as a member of a team.

PREPARE FOR THE MEETING

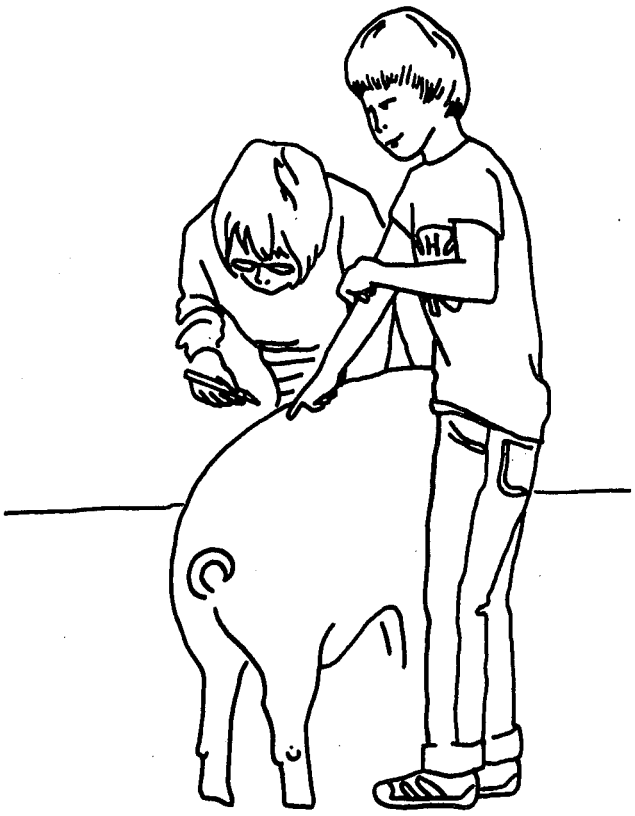
Time spent planning the meeting, reviewing the resource materials, collecting the supplies required, and involving others in each of these steps will help provide an enjoyable experience for you and your 4-H'ers.

Resources: Extension Folder 535, Selection Guidelines For The Seedstock Producers; 4-H B-90, 4-H Swine Production Manual

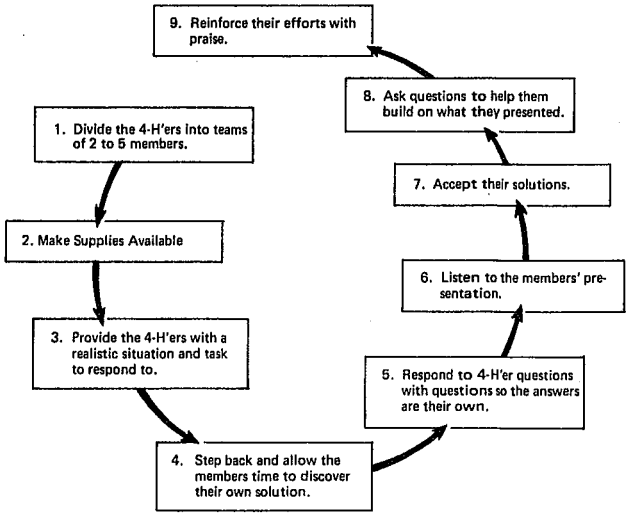
Supplies: Snare or nose snub, sharp knife or a scalpel blade; a narrow 6" metal ruler with one tenth inch gradation specifically used to probe backfat in swine; a disinfectant; a bar of soap or styrofoam to simulate backfat; and a Minnesota 4-H Part Chart or a model pig made from the University of Minnesota 4-H Pig pattern to indicate sites to probe.

FACILITATE THE MEETING

One method leaders have enjoyed utilizing with their 4-H'ers is called "Learning-By-Doing Before Being Told or Shown How". The nine steps of this method as well as examples of situations to present and questions to ask are included in this guide. You'll find that



the more you allow your members to discover for themselves and work together the greater will be their understanding and the higher their feelings of self worth.



4-H Animal Science
Project Meeting Guide, AS-76, '81

SWINE

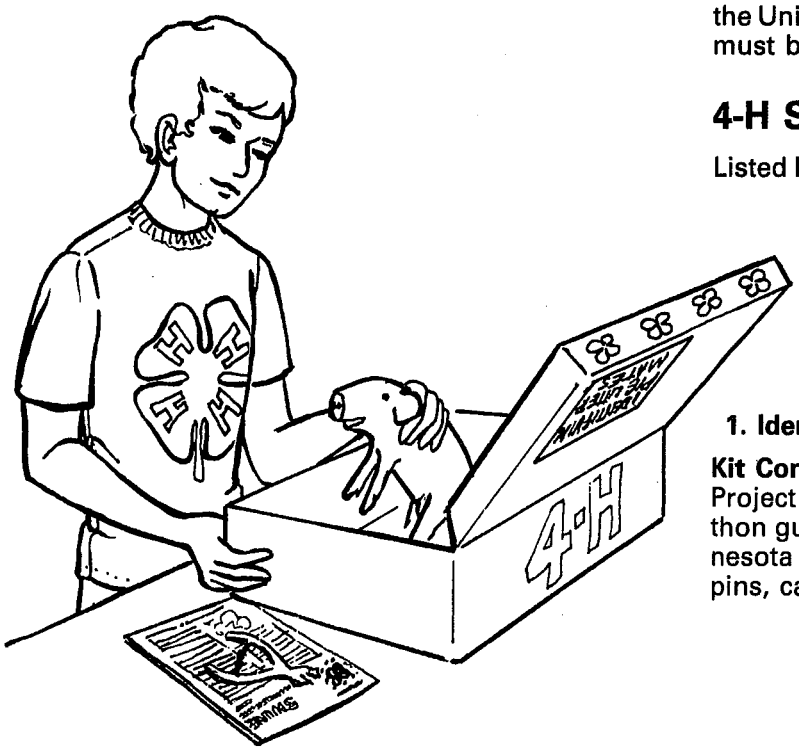
DEVELOPING 4-H SWINE PROJECT MEETING KITS

THOMAS D. ZURCHER
Extension Specialist, 4-H Youth Development

THE PROJECT MEETING KIT IDEA

Learn-by-doing 4-H project meetings in which the members develop both project skills and life skills usually do not just happen without some advance planning. Many times for one reason or another, a 4-H project leader is unable to pull together all the supplies and other resources necessary. At times like these the project meeting kit is very helpful. A leader will usually find in the kit a project meeting guide with ideas on how to involve the 4-H'ers, plus training aids and equipment useful in assisting the 4-H'ers with the activity selected. Project meeting guides on several topics are available from County Extension Offices.

The information in this guide is designed to provide ideas to leaders and 4-H agents who are interested in assembling their own kits for project meetings or county use. The goal is for each county to have a readily available library of resources for leaders who want to use them as they meet with their 4-H'ers five or more times during the 4-H year.



USES OF STATE 4-H PROJECT MEETING KITS

Currently over 60 model kits have been designed by the State 4-H and animal science specialists at the University of Minnesota. These kits are primarily in the animal science area. Counties who are interested in using the kits as models or in county leader workshops or skillathons may do so.

RESERVING KITS

Kits may be reserved by contacting the State 4-H Office. Arrangements must be made for transporting the kits to and from the county. Because of the size and weight of many kits, mailing costs would be prohibitive.

PROJECT MEETING BOXES

A supply of specially made boxes which can be used to package county kits is available for counties to purchase at a cost of $1.50 each. Make checks payable to the University of Minnesota. Arrangements for pick up must be made.

4-H SWINE PROJECT MEETING KITS

Listed below are the kits which have been developed:

1. Identifying Parts of the Pig

Kit Contents:
Project meeting guide, Conducting a 4-H Swine Skillathon guide, situation and task sign, station sign, Minnesota 4-H Swine Parts Chart, parts T-pins sponge for pins, cardboard for chart.

4-H Animal Science
Project Meeting Guide, AS-79, '83

SWINE

SELECTING THE PROPER SWINE RATION

JERRY HAWTON
Extension Swine Specialist
THOMAS D. ZURCHER
Extension 4-H Specialist

IMPORTANCE OF THE TOPIC

Swine of varying ages require different nutrient levels in their ration and differ in their ability to utilize certain feed ingredients. It is essential for the 4-H'er to select the most appropriate swine ration to maximize daily gain, feed efficiency, and reproductive potential, yet still provide the most economical performance.

WHAT YOUR 4-H'ERS WILL ACCOMPLISH

By participating in this meeting, your 4-H'ers will do the following:

1. Identify two to three characteristics of types of rations.
2. Compare two to three distinguishing features among different rations.
3. Choose rations appropriate for each of the phases of production.
4. Develop the life skills of comparing, analyzing, making decisions, and speaking to a group.

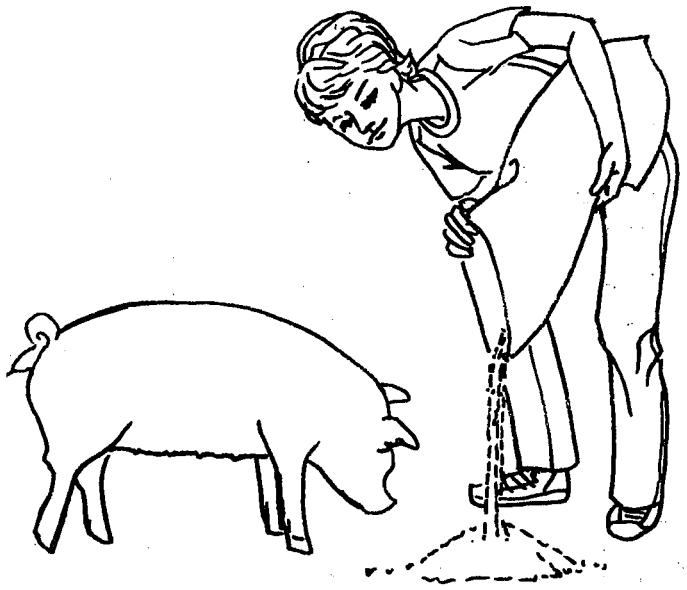
PREPARE FOR THE MEETING

The activities suggested for this session will mean more to your 4-H'ers if they have previously explored the following topics: Identifying and Classifying Feed Ingredients, Understanding Feed Tags, Setting Goals for Profitable Pork Production, and Organizing Swine Management Practices. Guides are available for each of these topics.

As you plan for this meeting, excellent supplementary materials, in addition to the 4-H manuals, are available through your county extension office:

AG-FO-0669 Swine Rations
AG-FO-0699 Feeding and Managing Baby Pigs
AG-FS-0963 Breeding Management of Sows and Gilts
AG-FS-0964 Nutrition of Bred Sows and Gilts
AG-FS-0965 Feeding and Managing Sows at Farrowing and During Lactation

The sets of notecards mentioned in the suggested activities may be filled out ahead of time by you and your junior leader or by the members when they arrive. The more involved 4-H'ers are in learning by doing throughout the session the more apt they are to master the four objectives listed. Have fun.



SUGGESTED ACTIVITIES

Ration Samples—Ask each 4-H'er to bring a sample of a swine ration from home or a mill. Have them explain to the other members how it is used in the herd and what they believe it contains.

Exploring Each Ration—Give each member or pair of members a copy of one of the six rations shown in this guide (table 2). Ask them to explain what ingredients it contains as well as the protein, calcium, and phosphorus levels. If actual samples are available, give them to interested individuals. Follow up by comparing rations and identifying differences among them.

Q. What is the usual composition of a growing ration?
A. Generaliy it is a simplified formulation using corn and soybean meal as the base and supplemented with minerals and vitamins. A commercially prepared protein supplement fortified with minerals and vitamins could be purchased and mixed with corn.

Q. A growing ration is designed for what weight of pig?
A. Pigs weighing from 40 to 100 pounds.

Q. Approximately how much feed will a 40- to 100-pound pig consume per day?
A. A pig will *average* about 3.25 pounds a day (or approximately 5% of its body weight) during its growth period from 40-100 pounds.

Q. What feed conversion ratio would you expect when feeding a growing ration during the period from 40-100 pounds?
A. Approximately 2.5 pounds of feed is required to produce one pound of gain (2.5:1).

Q. In what form is a growing ration usually fed?
A. In a meal (or gound) form.

Q. What feeding method should be used for pigs during the growing period?
A. These pigs should be fed *ad libitum* or, in other words, self fed all they will eat.

Swine Finishing Rations—Questions

Side 1—What are the distinguishing features of a finishing ration?

Side 2—

1. Ground medium to medium coarse (½"-⅝" hammer mill screen)
2. Energy content similar to growing rations but slightly lower than pig starter rations
3. Crude protein level lowest of all swine rations (12-14%)
4. Calcium and phosphorus levels lowest of all swine rations
5. Vitamin and mineral levels similar to growing rations
6. A greater total amount will be fed than any other ration

Q. What is the usual composition of a swine finishing ration?
A. Like growing rations, finishing rations are usually based on corn and soybean meal and fortified with minerals and vitamins. When cheaper, other protein sources such as tankage or meat and bone meal could be used to replace a portion of the soybean meal.

Q. A finishing ration is designed for what weight of pig?
A. Pigs weighing from 100 pounds to slaughter weight, about 220 pounds.

Q. Approximately how much feed will a 100- to 220-pound pig consume per day?
A. A pig will *average* about 5-6 pounds a day (or approximately 4-5% of its body weight) during its growth period from 100-220 pounds.

Q. What feed conversion ratio would you expect when feeding a finishing ration during the period from 100-220 pounds?
A. Approximately 3.5 pounds of feed is required to produce one pound of gain (3.5:1).

Q. What form of finishing ration is usually fed?
A. A meal (ground) form.

Q. What type of feeding method would be used for pigs during the finishing period?
A. Finishing pigs should be self-fed (*ad libitum*—allowed access to feed at all times).

Q. Why does a ration for *finishing* pigs contain a lower protein percentage (13% vs. 16%) than a ration for *growing* pigs?
A. Actually, finishing pigs require more daily protein intake than smaller, growing pigs. *But because they are larger, they consume more pounds of feed daily.* This allows you to lower the protein percentage of the finishing ration, but the pigs still consume more total daily protein.

Swine Breeding and Gestation Rations—Questions

Side 1—What are the distinguishing features of breeding-gestation rations?

Side 2—

1. Energy level similar to growing-finishing rations, but may include higher fiber feeds, such as oats or alfalfa meal, which are lower in energy and more poorly digested by younger pigs
2. Protein level may vary from 12%-16% depending on how much is fed daily
3. High mineral and vitamin levels similar to those in pig starter rations
4. Rations should be hand fed

Q. Should sows and gilts be allowed to self-feed during gestation?
A. No. They usually become overfat, resulting in poorer reproductive performance.

Q. If sows or gilts are overfed following breeding, will they have larger litters?
A. No. There often will be greater embryonic mortality resulting in smaller litters.

Q. Will sows lie on and crush more baby pigs if they are fed 8-9 pounds per day throughout the gestation period?
A. Yes. They frequently become overfat and clumsy when fed too much during gestation and tend to overlie and crush more baby pigs.

TABLE 1—SWINE FEEDING LEVELS AND REQUIREMENTS

	Simple Pig Starter	Complex Pig Starter	Growing Ration	Finishing Ration	Breeding-Gestating Ration	Farrowing-Lactating Ration
Feeding Period:	to 40 lb	to 40 lb	40-100 lb	100 lb-Mkt.		
Protein (%)-amt. per 100 lbs	18-20	18-20	15-16	12-14	12-16	14-16
Calcium (%)	.8-.9	.8-.9	.65	.55	.85-.9	.85-.9
Phosphorus (%)	.65-.7	.65-.7	.55	.45	.65-.7	.65-.7
Metabolizable energy (Kcal/lb)	1450-1500	1450-1500	1400-1450	1400-1450	1300-1400	1350-1450
Daily feed required (lb)	Self-fed	Self-fed	Self-fed	Self-fed	4-5	8-16

TABLE 2—TYPES OF RATIONS

	Simple Pig Starter Weaning Ration	Complex Pig Starter Weaning Ration	Growing Ration	Finishing Ration	Breeding-Gestation Ration	Farrowing-Lactation Ration
Feed Ingredient	% of ration	% of ration	% of ration	% of ration	% of ration	% of ration
Corn	67.15	49	77.9	85.5	61.75	64
Oats					10	10
Soybean Meal (44%)	29.5	30.4	19.5	9.75	15	12.5
Tankage				3.0		
Alfalfa Meal					10	
Wheat Bran						10
Dried Whey		10				
Sugar		5				
Animal Fat		2.5				
Ground Limestone	1.0	.75	.75	.7	.65	1.15
Dicalcium Phosphate	1.75	1.75	1.35	.55	2.0	1.75
Salt	.35	.35	.35	.35	.35	.35
Vitamin-trace mineral mix	.25	.25	.15	.15	.25	.25
Total	100%	100%	100%	100%	100%	100%
Protein, %	19	19	15.5	13.5	15	14
Calcium %	.85	.85	.65	.55	.87	.88
Phosphorus, %	.67	.7	.55	.45	.67	.7
Metabolizable energy (Kcal/lb)	1450	1500	1450	1450	1325	1355

4-H Animal Science
Project Meeting Guide, AS-80, '83

SWINE

ORGANIZING SWINE MANAGEMENT PRACTICES

JERRY HAWTON
Extension Swine Specialist
THOMAS D. ZURCHER
Extension 4-H Specialist

IMPORTANCE OF THE TOPIC

To become an effective manager of a swine enterprise, a 4-H member should be familiar with the overall swine production cycle and the important practices in each part of the cycle. The activities described in the guide form a basis for further exploration of individual management practices associated with each phase of the cycle.

WHAT YOUR 4-H'ERS WILL ACCOMPLISH

By the end of the project meeting your 4-H'ers will be able to do the following:

1. Define the nine steps of the swine production cycle.
2. Put the nine major production phases in order of occurrence.
3. Identify three or more practices that should occur in each of the nine steps.
4. Further develop the life skills of working as a member of a team, speaking before a group of peers and gaining self confidence.

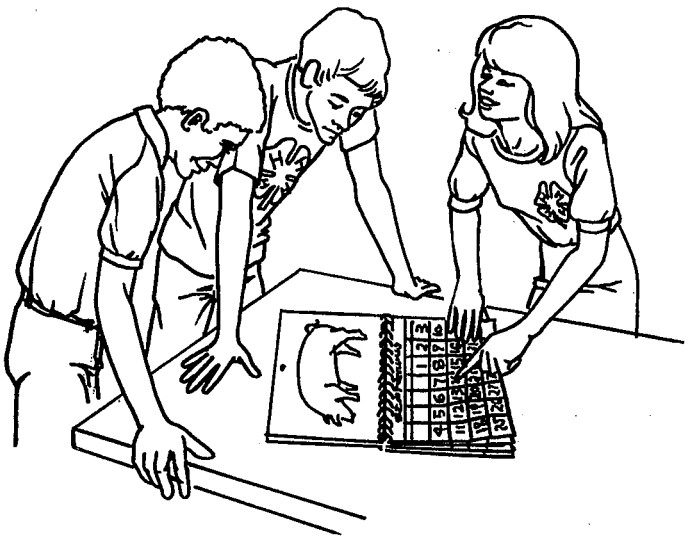
PREPARE FOR THE MEETING

Before this meeting you and your junior leader(s) should prepare three different sets of notecards to help make these activities learn-by-doing experiences for your members. If you have a large group, prepare one set for every three or four members. You may want to color code the three sets. The information to be put on both sides of the cards is included for each set (S-1 = Side 1 and S-2 = Side 2.)

Set 1

Side 1 carries the name of a *Production Phase;* side 2 *defines the Production Phase.*

S-1—Prior to Breeding
S-2—The period when gilts are selected and grown out for the purpose of mating (Also, sows that are thin following weaning are reconditioned prior to re-mating)



S-1—Breeding Period
S-2—The production phase when gilts and sows are mated

S-1—Gestation Period
S-2—The period of time when sows or gilts are pregnant (The 114-day period, following breeding and prior to farrowing, during which the fetal development takes place)

S-1—Preparation for Farrowing
S-2—The time period just before birth when the farrowing facility is prepared for the incoming sow or gilt

S-1—Farrowing Period
S-2—The time when the litter of pigs is born

S-1—Lactation Period
S-2—The period during which the sow nurses her litter

S-1—Weaning Nursery Period
S-2—The time when the litter of pigs is taken away from the sow and until they are 6-8 weeks of age

S-1—Growing Period
S-2—The production phase from the time the pig is 6-8 weeks old until it weighs approximately 100 pounds (During this period, the pig's skeletal and muscle growth rate far exceeds the rate of fat deposition)

S-1—Growing Period
S-2—Sort into groups of about 20-30 head. Provide from 4-5 square feet of floor space per pig if raised in confinement. Approximately 1 feeder hole per 4-5 pigs should be provided.

Provide a 16% protein, high-energy ration free-choice. Adjust feeders regularly to prevent feed wastage.

Vaccinate for erysipelas at 6-8 weeks of age. Pigs could also be dewormed at this time. Observe pigs daily for health problems.

S-1—Finishing Period
S-2—Provide about 7-8 square feet of floor space per pig if raised in a slotted floor confinement facility.

Feed a 13-15% protein high-energy ration—free choice. Do not allow feeders to go empty, and adjust feeders to prevent feed wastage.

Close observation for health problems should be made daily.

When some pigs appear large enough, weigh one or more to see if they have reached market weight. This will prevent selling pigs at a lighter or heavier than desired market weight.

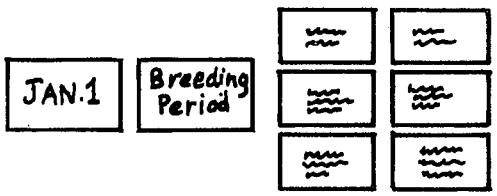
FACILITATE THE MEETING

Both junior and senior members will find these activities challenging. The more you can allow them to "learn-by-doing before being told or shown how" the greater opportunity they will have to develop both their life and project skills. Here are some activities in which you can involve them, using the three sets of prepared notecards.

Defining the Steps—Ask your 4-H'ers to work together and match the definitions with the production phases. Use side 1 of set 2 and side 2 of set 1. Have them check their definitions by turning set 1 cards over.

Calendar Game—Using side 1 of any of the sets and side 2 of set 2, ask your 4-H'ers to arrange the dates chronologically from November 1 to October 10 and then match the production phases with the date. After they discuss their pairings and you ask them questions, have them turn over the date cards to see if they have a match.

Match Management Practices with Production Phases—With the phases in order, ask the 4-H'ers to match the practices with the phases (set 3). Have different individuals explain why they believe the practices belong with a particular step. At least two practices may fit in more than one phase.



Quiz Bowl—All three sets of cards may be used as sources of questions. The questions can be asked from either side of the cards. More than 40 questions can be asked by reading a management practice or date and letting teams say during which production phase it occurs. Additional questions are also included as part of this guide.

Questions to Ask

These questions can be asked either during the exercises or as a summary.

Q. When sows and gilts are thin, why is it important to increase their feed intake prior to breeding?
A. This builds up their body condition and energy reserves. This usually results in improved conception (settling) rate and a larger litter.

Q. Why do most swine producers wait until gilts are nearly 8 months old before breeding them?
A. Because gilts usually ovulate more eggs at 8 months of age than they do at 6 months; therefore, gilts bred at 8 months usually produce larger litters than those bred at 6 months.

Q. Why is it important to record breeding dates?
A. You must know the breeding date to move the sow or gilt into the farrowing house at the proper time. Otherwise the litter may be farrowed outside in bad weather or in a gestation pen with many other sows.

Q. Why should you consider feeding each sow or gilt 1-2 pounds more feed daily during the last 30 days of gestation?
A. Because this is the time of greatest fetal development (growth of the unborn litter). By increasing the feed intake, you insure a strong litter.

Q. Why is it important to wash sows and gilts thoroughly in preparation for farrowing?
A. To reduce the exposure of the eventual litter to dirt, manure, worm eggs, and other contaminating materials carried on the surface of the sow or gilt.

Q. When evening up litter size, why should you transfer older pigs (1-3 days old) to younger litters?
A. Every litter of pigs establishes a certain "teat order" (i.e., the same piglet nurses from the same nipple each time) by about the third day. Consequently, a pig from a 2- to 3-day-old litter would have a better chance of establishing itself in a younger litter where a "teat order" has not yet been established.

Q. Why transfer boar pigs and not gilts when equalizing litter size?
A. Some research suggests young gilts may acquire some of the "mothering" characteristics from their sow. If this is true, it would be easier to keep track of a gilt's potential mothering ability if she were nursed and raised by her biological mother.

SWINE

CONDUCTING A 4-H SWINE SKILLATHON

JERRY HAWTON
Extension Swine Specialist
THOMAS D. ZURCHER
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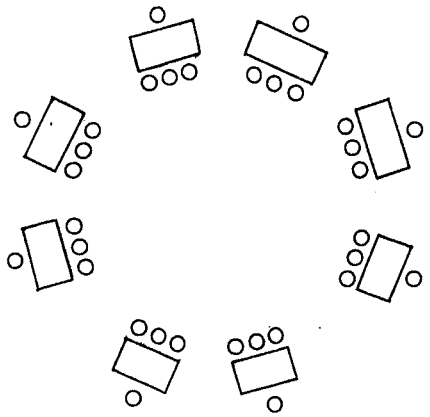
WHAT IS A 4-H SKILLATHON?

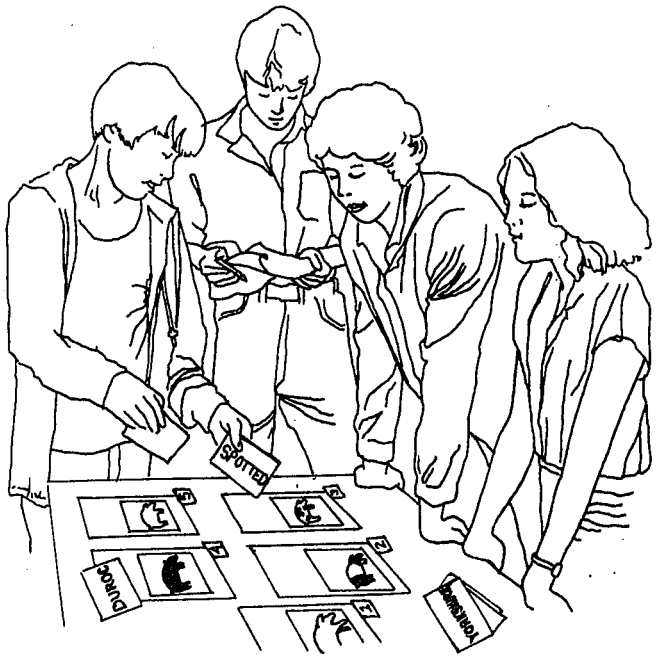
A skillathon is an excellent method of involving your 4-H'ers and their parents in challenging, noncompetitive, learn-by-doing activities. This method of helping 4-H'ers develop both their life skills and project skills is designed as a series of mini-learning stations with a facilitator at each one (see illustration below). The participants rotate from station to station, attempting to perform the specific tasks given at each station. The station facilitator allows all team members to test their own knowledge and abilities before giving them any hints. This technique is referred to in 4-H as experiential learning or learning by doing before being told or shown how.



A skillathon works well not only during project meetings, but also at the 4-H community club. It is an excellent way to involve several project groups in the program at once. By asking various project groups to set up one or two learn-by-doing stations, the entire club can be actively involved at once. In addition, you can use a skillathon to give recognition to the project groups and their leaders.

The skillathon approach has also been successfully used to strengthen the educational value of county and state fairs. Both adults and youths enjoy the challenge posed by each situation and task.

This project meeting guide briefly outlines how to set up and conduct a 4-H swine skillathon. Included are a checklist for the planning committee; advice for the facilitator, suggested supplies, situations, and tasks for each station.



WHAT YOUR 4-'ERS WILL ACCOMPLISH

By participating in a skillathon your 4-H'ers will accomplish the following:

1. Given a situation and a task, they will be able to evaluate their abilities to solve the challenge presented and discover for themselves what they need to know to do the activity.
2. They will learn to work as members of a team.
3. They will practice making decisions and speaking before others.
4. They will receive recognition and praise for their efforts.

CHECKLIST FOR THE SKILLATHON COMMITTEE

_____ Decide on the stations wanted, considering time and resources available.

_____ Make up a realistic situation and task for each station.

3. Caring for Newborn Pigs

SUPPLIES: Basket, model piglets, straw, heat lamp, rags.

DIRECTIONS: Provide the supplies and allow the 4-H'ers to complete their task. Follow up with questions.

SITUATION: Your sow is in the process of farrowing.

TASK: Demonstrate what you will do for each baby pig as it is born.

4. Clipping a Pig's Needle Teeth

SUPPLIES: Minnesota 4-H model pig with needle teeth, side cutters.

DIRECTIONS: Let the 4-H'ers demonstrate the task. Follow up with questions.

SITUATION: You have been asked to clip the needle teeth of the new litter.

TASK: Demonstrate how to clip needle teeth.

5. Docking a Pig's Tail

SUPPLIES: Minnesota 4-H model pig with attached velcro tail, side cutters, tincture of iodine bottle.

DIRECTIONS: Let the 4-H'ers demonstrate the docking procedure. Follow up with questions.

SITUATION: You have had some problems with tail biting in the past so you decide to dock the new litter's tails.

TASK: Demonstrate how to dock a pig's tail.

6. Giving Iron to Your Pig

SUPPLIES: Syringe, 2 sizes of needles, oral iron supplement, bottle of injectable iron.

DIRECTIONS: Let the 4-H'ers show how they would provide iron. Follow up with questions.

SITUATION: Your 4-H project sow has recently farrowed and you want to be sure the piglets do not become anemic.

TASK: Demonstrate how to supply iron to the baby pigs.

7. Castrating a Pig

SUPPLIES: Minnesota 4-H model pig, scalpel, knife, iodine.

DIRECTIONS: Let the 4-H'ers demonstrate how they would castrate a pig. Follow up with questions.

SITUATION: Because you are in 4-H you have been asked by your neighbor to help castrate his baby pigs.

TASK: Demonstrate how to castrate a pig.

8. Identifying and Classifying Feed Ingredients

SUPPLIES: Packet of 9 to 12 ingredients, paper plates with the words PROTEIN, ENERGY, WATER, VITAMINS, and MINERALS written on them.

DIRECTIONS: Let the teams match the chips with the ingredients, check their answers, and then categorize each ingredient according to its primary nutritional use in the ration.

SITUATION: Your 4-H swine group has decided to study the feed ingredients in a swine ration. You volunteer to learn them so that you can help the members.

TASK: Match the chips with the ingredients and place the chips on the plate indicating its nutrient category.

9. Feeding Your Pig

SUPPLIES: Cards with lactating sow with 10 pigs on one side/12 pounds on the other; confined sow during gestation/4 pounds; 200-pound market hog/6 pounds; and 40-pound weaner pig/2½ pounds; scales; notecards; pail dipper; 20 pounds of hog feed.

DIRECTIONS: Have the 4-H'ers look at the side of the card with the name of the class. They should then put the appropriate amount of feed in the pail for the class of pigs, weigh it, make any adjustments, and record their weight on a notecard. This should be done for two or three classes. Have them compare their answers with the suggested answers on the back of the class cards. Follow up with questions.

SITUATION: The person who normally feeds the pigs left a note asking you to see that the 4 different classes of pigs receive the correct amount of feed.

TASK: Weigh out and give the reasons for the amount of feed you believe should be given to each class of pigs.

10. Identifying Pig Litter Mates

SUPPLIES: Ear notcher, poster board ears, ear tags, Animal Science Fact Sheet #2 (AG-FS-0959) "Methods of Pig Identification."

DIRECTIONS: Provide the fact sheet and let 4-H'ers solve their task. Ask that they determine the numbers on ears that you, as station facilitator, have notched. Follow up with questions.

SITUATION: Pig #11 from Litter #19 has just arrived.

TASK: Number the pig using the resources provided.

11. Determining Backfat Thickness

SUPPLIES: Scalpel, backfat probe, styrofoam hog back.

DIRECTIONS: Provide the materials and allow the teams to demonstrate. Follow up with questions.

SITUATION: Your hogs have reached market weight and you wonder how much backfat they have.

TASK: Demonstrate how and where to take the backfat measurements.

SWINE

SELECTING A SWINE HERD MATING SYSTEM

Jerry Hawton
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Thomas D. Zurcher
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IMPORTANCE OF THE TOPIC

Many factors are associated with reproductive efficiency of a herd, including the mating system used, method of handling boars, boar fertility, and conception rate. Poor management or sub-optimal performance for any one factor can greatly reduce profit potential.

WHAT YOUR 4-H'ers WILL ACCOMPLISH

1. Define three mating systems.
2. Identify the weak and strong points of each system.
3. Properly manage boars for improved fertility.
4. Further develop the life skills of comparing, decision making, working as a member of a team, and speaking before a group.

PREPARE FOR THE MEETING

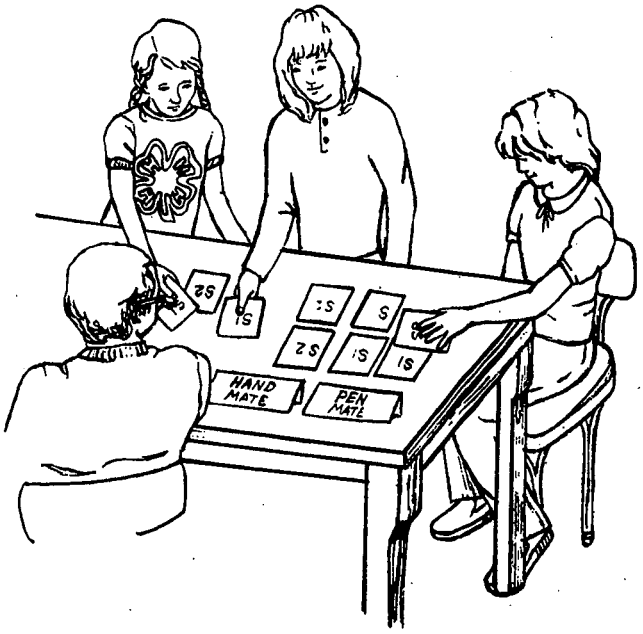
Before this meeting, you and your junior leader(s) will need to prepare two different sets of notecards to be used for various activities. If you have a large group, prepare one set for every three or four members. You may want to color code the two sets to avoid any mix up. The information to be put on both sides of the cards is included for each set (S-1 = side 1; S-2 = side 2) and is outlined following the Activities For The Meeting section.

ACTIVITIES FOR THE MEETING

Exploring Mating Management—This activity is a warm-up exercise. Have your 4-H'ers work in groups and ask each group to make a list of general factors they feel would be included in a mating management program. Have groups discuss and compare their lists, or each group could report individually. They can compare their lists with the one printed in this guide under the "Questions to Ask" section.

Defining the Systems—Ask your members to match the Definitions with the Mating System. Use side 2 of set 1 and side 1 of set 2. Turn set 1 cards over to check answers.

Match Advantages-Disadvantages With Mating System—First, ask your 4-H'ers to tell what they think



some of the advantages or disadvantages of each system might be. Then, have them match side 2 of set 2 with the Mating Systems shown on side 1 of set 1. Turn set 2 cards over to check answers.

Swine Quiz Bowl—Divide the group into teams and ask questions from the guide. See the guide "Conducting a Project Bowl" for additional details. The two sets of notecards can be used as sources of questions. Ask questions from side 2, and turn the card over to side 1 for the answer. Additional questions are also included in this guide.

NOTE CARD INFORMATION

Set 1

Side 1 carries the name of the Mating System; side 2 gives a Definition for the system.

S-1—Hand-Mating
S-2—When sows or gilts come into standing heat, they are placed with the boar and removed after mating is over.

Q. When frozen semen is used to inseminate sows or gilts, what farrowing rate (percentage of the females mated that actually farrow) can be expected?
A. About 50%—less if poor semen handling procedures are used.
Q. What farrowing rate can be expected when fresh semen is used to inseminate sows or gilts?
A. About 80%—or nearly equal to natural hand-mating.
Q. What are the two major factors that determine how often a boar can be used for breeding without affecting his fertility?
A. *The individual* boar, and *age* of the boar.
Q. Can a boar deplete his sperm supply?
A. Yes—especially if he is an aggressive breeder, allowed to breed at will, and less than 1 year of age.
Q. Once a boar has depleted his sperm reserves, for approximately how long could he be sterile?
A. Up to 40 days—it takes about 30 days to produce the sperm and another 10 days for it to fully mature.
Q. What should be done with boars used heavily for breeding (overworked)?
A. Rested for 1-2 weeks.
Q. If boars are used for only short breeding periods (1 week per month), can they be used more frequently (2 times a day) during the breeding period?
A. Yes—especially if they are over one year of age.

SUPPORTING MATERIALS

Additional project meeting guides are available which support this topic: Setting Goals for Profitable Pork Production; Organizing Swine Management Practices; and Conducting a 4-H Swine Skillathon.

Several Extension Folders (FO) and Fact Sheets (FS) are also available from the county extension office: AG-FO-0594, Herd Boar Management; AG-FO-0886, Management of Developing Gilts and Boars for Efficient Reproduction; AG-FO-0811, Artificial Insemination in Swine; and AG-FS-0963, Breeding Management of Sows and Gilts. (University of Minnesota Publications)

ACKNOWLEDGEMENTS

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SWINE

BRINGING NEW BOARS INTO THE HERD

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IMPORTANCE OF THE TOPIC

Selection and care of new boars is a vital part of swine production. The risk of introducing disease into your herd, purchasing genetically inferior animals, or using sub-fertile boars can easily be reduced if the proper steps are taken.

WHAT YOUR 4-H'ers WILL ACCOMPLISH

By participating in this project meeting, your 4-H'ers will do the following:

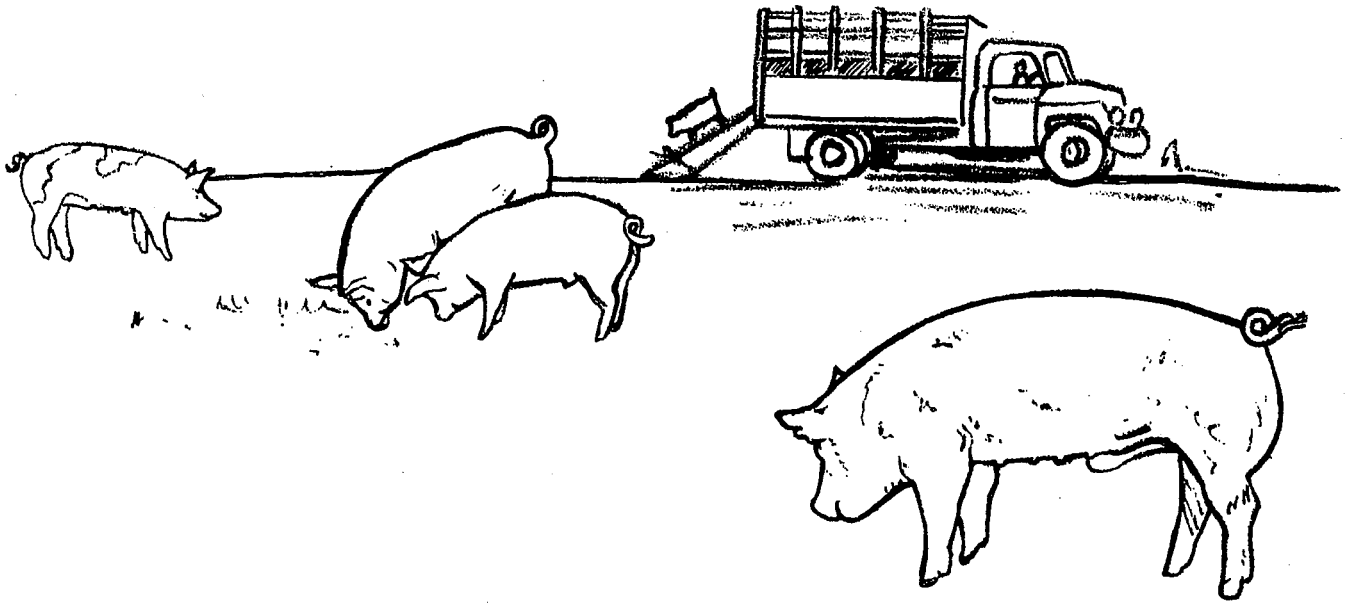
1. Identify numerous factors involved in selecting and handling newly purchased boars.
2. Develop a health-management program for new boars.
3. Continue to develop the life skills of comparing, making decisions, speaking before a group, and working as a member of a team.

PREPARE FOR THE MEETING

Before this meeting, you will need to prepare two different sets of notecards. If you have a large group, prepare one set for every 4 or 5 members. You may want to color code the two sets. The information to be placed on the cards is included for each set, immediately following the Activities For the Meeting Section.

ACTIVITIES FOR THE MEETING

Matching Factors With Area of Importance—Included later in this project guide, under *set 1,* are four "Areas of Importance" when buying and introducing new boars into the herd: Evaluating the Health Status of the Potential Seller's Herd, Selecting Boars, Transporting Newly Purchased Boars, and Managing Newly Purchased Boars. Several factors are listed under each area. Make up set 1 cards by placing the "Area of Importance" name on side 1 and one (or more) factor(s) for that area on side 2. Use up all the factors for each area. Make up one additional card with each "Area of Importance" name on it. Then, mix up all the cards that show the "factors" (side 2), and ask your 4-H'ers to match them with the correct "Area of Importance" cards. When everyone is satisfied, let them check their answers by turning the cards over to side 1.



S-2—Quarantine until negative results return from second test.

S-1—Week 4
S-2—Quarantine and record cycling dates of gilts to be bred on their next heat period.

S-1—Week 5
S-2—Allow fenceline contact and feed boar's manure to gilts. This will help immunize against some diseases.

S-1—Week 6
S-2—Conduct a mating test and a semen evaluation test.

S-1—Week 7
S-2—Begin breeding with the boar.

S-1—Every 3 Months
S-2—Conduct two sprayings at 7- to 10-day intervals for lice and mange.

S-1—Every 6 Months
S-2—Revaccinate for leptospirosis and erysipelas, and deworm.

SUPPORTING MATERIALS

Additional project meeting guides are available which support this topic: Setting Goals for Profitable Pork Production, Organizing Swine Management Practices, and Learning About Swine Breeding Programs.

Two Extension Folders are also available from the county extension office: AG-FO-0594, Herd Boar Management; and AG-FO-0677, Boar Selection Guidelines for Commercial Producers.

ACKNOWLEDGEMENT

Special thanks go to the Minnesota Livestock Breeders' and the Minnesota Pork Producers' Associations, which provided funding for the printing of this project meeting guide.

SWINE

PLANNING A SWINE CROSSBREEDING PROGRAM

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IMPORTANCE OF THE TOPIC

Crossbreeding is a widely used and highly recommended practice in commercial swine production. In fact, over 90 percent of U.S. hog producers raise crossbred hogs for slaughter. Crossbreeding, however, should not be a random crossing of breeds. It is necessary for a producer to establish a breeding program and, more important, to follow it. To become an effective manager of a swine enterprise, a 4-H member should be familiar with breeding systems and understand how they work.

WHAT YOUR 4-H'ers WILL ACCOMPLISH

By participating in this meeting, your 4-H'ers will do the following:

1. Identify the basic principles of crossbreeding and breeding programs.
2. Select the breeds for crossing to make the most genetic improvement.
3. Further develop the life skills of analyzing, making decisions, speaking before a group, and gaining self-confidence.

PREPARE FOR THE MEETING

Before this meeting, you and your junior leader(s) should prepare five different sets of notecards to help make these activities learn-by-doing experiences for members. You may want to color code the five sets. If you have a large group, prepare one set for every three to five members. The information to be put on both sides of the cards is included for each set (S-1 = side 1, and S-2 = side 2). In set 5, only side 1 is used.

Set 1

Side 1 carries the name of the Crossbreeding System; side 2 lists Distinguishing Features of the system.

S-1—Rotational Crossbreeding System
S-2—a) Females are saved for herd replacements and bred to boars of different breeds.
b) Breeds of boars are rotated in succession on each new generation of crossbred females.
c) Usually, boars from only 2 or 3 breeds are used.

S-1—Terminal Crossbreeding System
S-2—a) No replacement females are produced.
b) All female replacements are purchased continuously.
c) All females are mated to genetically unrelated boars.
d) All resulting offspring are sold for slaughter.

S-1—Rota-terminal Crossbreeding System
S-2—a) Combines rotational and terminal systems.
b) Select females (about 20%) in the herd are identified and mated to produce replacement females.
c) All other females (not used to produce replacements) are mated to a terminal sire, and offspring are sold for slaughter only.

Set 2

Side 1 carries the name of the Crossbreeding System; side 2 lists an Advantage or Disadvantage of that system.

S-1—Rotational Crossbreeding System
S-2—Advantage: Herd replacements are produced rather than purchased.

S-1—Rotational Crossbreeding System
S-2—Disadvantage: Heterosis (hybrid vigor) level is less than in other crossbreeding systems.

Matching Advantages and Disadvantages with Breeding System—Use side 2 of set 2 (6 cards) and side 1 of set 1 (3 cards). Have them match the advantages or disadvantages, or both, with the appropriate breeding system. Also have them discuss the reasoning for their answers. Have them check their answers by turning set 2 cards over.

Breed Strength Game—Use cards from set 3. Make up one additional card for each breed name. First, have each member tell what strong points they have seen in the breed(s) of boar(s) used on their farm. Then, ask them to match the major strong points (side 2, set 3) with the breed name. Have them check their answers by turning set 3 cards over.

Matching Selection Traits with Heritability Levels—Use cards from set 4. Make up one additional card for each level of heritability (3 cards—high, medium, low). Have them tell which traits most need improvement on their farm. Then, have them match the selection traits (side 1, set 4) with the heritability level (high, medium, low). Check answers by turning set 4 cards over.

Setting Up a Rotational Crossbreeding System—Have your 4-H'ers tell about the breeding system they are using at home. Next, using the cards from set 5, ask them to work together and assemble the cards in an appropriate order to diagram a 2-breed or 3-breed rotational crossbreeding scheme. Set the diagram up in columns under Year 1, Year 2, etc. Figures 1 and 2 can be used as keys to check their breeding scheme. Additional cards could be made up using different breeds of boars or purebred gilts.

Quiz Bowl—Divide your group into teams and ask questions from the guide (see the "Conducting a Project Bowl" guide for additional details). The first four card sets can be used as sources of questions. Questions could be asked from side 2 of the first three sets and from side 1 of set 4. Turn each card over for the correct answer. Additional questions are also included in this guide.

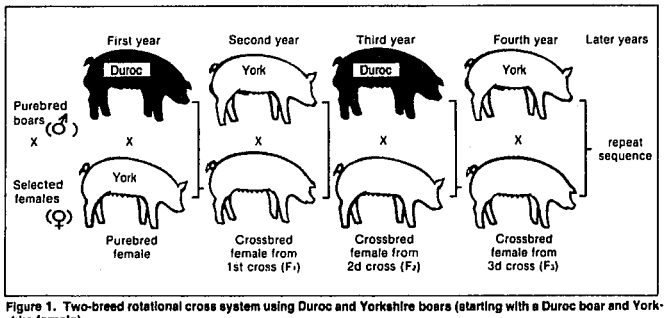

Figure 1. Two-breed rotational cross system using Duroc and Yorkshire boars (starting with a Duroc boar and Yorkshire female)

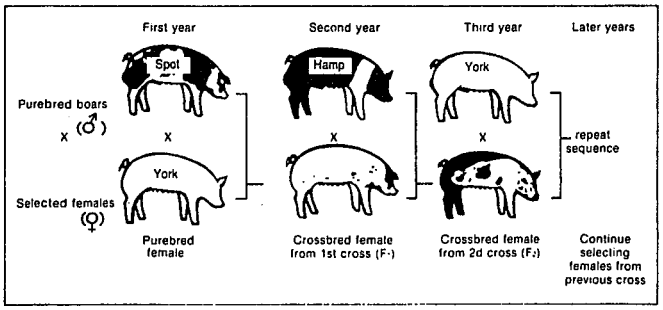

Figure 2. Three-breed rotational cross system using Spot, Hamp, and Yorkshire boars (starting with a Spot boar and York female)

Questions to Ask

These questions can be asked either during the activities, or quiz bowl, or as a summary.

Q. What is meant by a breeding program?
A. A breeding program is a "game plan" or planned series of matings.
Q. Why should crossbreeding be used?
A. To combine the best traits of different breeds and to capitalize on heterosis (hybrid vigor).
Q. What is heterosis (hybrid vigor)?
A. When the crossbred offspring perform above the average of their purebred parents' breeds.
Q. What is heritability?
A. The proportion (%) of total variation (or difference in a herd for a given trait) that is passed on directly from parents to offspring. [Think of heritability as an estimate of the accuracy of selection.]
Q. What is meant when we say that backfat thickness is 50% heritable?
A. It means that 50% of the difference in the herd is due to heredity and the other 50% is due to environment and special genetic effects.
Q. Is heterosis greatest for the lowly heritable traits or the highly heritable traits?
A. Traits with a low level of heritability.
Q. Which of these traits will crossbreeding increase: litter size, survival rate, weaning weight, or growth rate?
A. All of them.
Q. Will crossbreeding improve carcass traits such as muscling and leanness?
A. No.
Q. Name the three basic crossbreeding systems that are commonly used.
A. 1) Rotational, 2) Terminal, 3) Rota-terminal.
Q. Which is more popular—a 2-breed or 3-breed rotational crossing system?
A. 3-breed rotational.
Q. Will a 4- or 5-breed rotational system give more heterosis than a 3-breed system?
A. Yes, but only slightly more. The difficulty of finding good boars from more than three breeds makes it not worthwhile.
Q. What is meant by a "terminal sire"?
A. A boar to be used in a breeding program in which all offspring are marketed (usually selected from a breed known for growth, ruggedness, or muscling).
Q. What factors determine which crossbreeding system is best for an individual producer?
A. Size of operation, breeds available, facilities, management, and record keeping ability are all factors to consider.

SUPPORTING MATERIALS

Additional project meeting guides are available which support this topic: Identifying Breeds of Swine, Identifying Pig Litter Mates, Determining Backfat Thickness, and Setting Goals for Profitable Pork Production.

Two Extension Folders are also available from the county extension office: AG-FO-0661, Crossbreeding Programs for Commercial Pork Production; and AG-FO-0863, Genetic Improvement Through On-Farm

SWINE

MANAGING REPLACEMENT GILTS FOR EARLIER PUBERTY

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IMPORTANCE OF THE TOPIC

Every producer should give high priority to management of replacement gilts. For maximum success, gilts should reach puberty (first heat) at an early age and continue to cycle regularly until bred. The older the potential replacement gilt becomes before cycling, the greater her maintenance cost and the lower the total reproductive efficiency of the herd.

WHAT YOUR 4-H'ers WILL ACCOMPLISH

1. Identify 6-8 factors that can affect age at puberty in gilts.
2. Set up a replacement gilt management program.
3. Further develop the life skills of working together, making decisions, and speaking before others.

SUGGESTED ACTIVITIES

Both junior and senior members will find these activities challenging.

Identify Factors That Affect Puberty—Divide your 4-H'ers into groups. Have each group make up a list of general factors they think can influence cycling in gilts. Side 1 of set 1 will provide a master list of factors to check their answers. Next, ask them to give a general recommendation for each factor (side 1) that would reduce age at puberty. Turn set 1 cards over to side 2 to check their answers.

Setting Up a Gilt Management Program—Have some members briefly describe how they handle replacement gilts at home. Then use side 1 of set 2 cards (mix them up) and spread them out (side 1 up) over a table top. Have your 4-H'ers work as a group, and give them the following situation and task:

Situation: You are determined to reduce age at puberty of your replacement gilts.

Your Task: Select approximately 20 gilt management practices which you believe will help you reach your goal and explain your reasons.

After they have selected the practices, ask them to take turns explaining why they selected each one. After a member has discussed a practice, the card may be turned over and the answer checked. Follow a similar procedure with the remaining cards as well as those not selected. "Yes" and "No" cards with contrasting practices could also be compared and discussed. If time is short, provide only 10 or so of each card.

PREPARE FOR THE MEETING

Before this project meeting, you and your junior leader(s) should prepare two different sets of notecards to make these activities learn-by-doing experiences for your members. If you have a large group, prepare one set for every four or five members. The information to be put on both sides of the cards is included for each set (S-1 = side 1, and S-2 = side 2) and is shown immediately following the Suggested Activities section of this guide.

S-1—Select replacement gilts primarily on underlines, muscling, and leanness.
S-2—No. Growth and soundness should receive equal attention.

S-1—Keep replacement gilts on a self-feeder until they cycle and are bred.
S-2—No—too costly. Gilts may get over-fat.

S-1—At 50 lbs., separate selected gilts from the rest of the market hogs and grow them out in groups of 6-8 head until ready for breeding.
S-2—No—not practical; requires many more pens. It is better to see how gilts perform up to 220 lbs. in a more competitive situation like that in the market pens with 20-30 head.

S-1—In confinement systems—sell off all market hogs, including culled gilts, and leave replacement gilts in their original pens until breeding.
S-2—No. Mixing with unfamiliar gilts and relocation to another building or outside lot will stimulate cycling.

S-1—In confinement systems—Gilt Pool Facility:
-Provide 8 sq. ft. of floor space per gilt.
-Keep group size at 25-30 head per pen.
S-2—No—too many gilts per pen and not enough space. This will delay cycling.

S-1—In outside rearing systems—Gilt Pool facility:
-Keep group size to 15, or less.
-Provide at least 1 acre per 10 head.
S-2—No—not too practical. Group size could be larger (30 head), and less space is necessary.

S-1—Breed gilts on their first heat cycle.
S-2—No. You may get a smaller litter size compared to breeding on the second or third cycle. Gilts ovulate more eggs on the second versus the first cycle, and even more on the third cycle.

S-1—Move gilts from the market pens to the gilt pool and breed them when the first heat cycle is observed.
S-2—No. Gilts may only be 5½ to 6½ months old. There is also a better chance of a larger litter size if at least one heat cycle is skipped.

S-1—Pen boars at one end of the gilt pool facility or across the aisle from replacement gilts.
S-2—No. Direct boar contact (nose to nose) is better for stimulating cycling.

S-1—After gilts are bred, keep them on a high level of feed for at least a month.
S-2—No. This will increrase embryo death. Instead, reduce feed intakes to 4-5 lbs.

S-1—Use purebreds to get gilts that will cycle earlier.
S-2—No. On the average, crossbreds will cycle about 20 days sooner than purebreds.

S-1—Keep the breeding facility warm; above 80° F. is desirable.
S-2—No. This results in delayed puberty and a lower conception rate.

S-1—During summer months (July-September), breed 5-10% more gilts than desired to get a specific number of matings.
S-2—No. More than 10% of the gilts will likely fail to cycle or settle, due to seasonal and temperature effect.

S-1—In confinement facilities (no windows)—provide 0-6 hours of light daily from 50 lbs. to breeding age.
S-2—No. Less than 8 hours of light daily may delay cycling.

S-1—Induce puberty by using an injectable hormone if gilts are not cycling within 4 weeks of being placed in the gilt pool.
S-2—No. A poor conception rate is usually seen, and you are covering up genetic causes of infertility.

S-1—Breed gilts only once to avoid overworking your boars.
S-2—No. Breeding twice (on consecutive days) will improve litter size and conception rate.

S-1—Reduce your veterinarian bill; contact a veterinarian only when an obvious disease is lowering the fertility of the gilt herd.
S-2—No. A preventive health program with herd inspection visits is better than waiting until the damage is already done.

S-1—Once placed in the gilt pool, allow at least 60 days for gilts to show signs of heat before marketing them; give them a chance to cycle.
S-2—No. If gilts are kept beyond 4 weeks until they cycle, selection for lower age at puberty will not be successful.

QUESTIONS TO ASK

These questions can be asked either during the activities, for a quiz bowl, or as a summary.

Q. What is meant by age at puberty (or age at first estrus)?
A. The age when a gilt comes into heat and cycles for the first time.
Q. What is meant by the term "gilt pool"?
A. A continuously assembled source of gilts selected for potential replacements.
Q. Do confinement-reared gilts take longer to reach puberty than gilts raised in outside lots?
A. Yes. They are generally a little older at first estrus.
Q. What are three stresses which may delay puberty in confinement gilts?
A. Limited floor space, large number of gilts per pen, and lack of boar exposure.
Q. Since ovulation rate and litter size generally increase with number of heat periods experienced (up to 3 periods) prior to breeding, how many heat periods should be skipped before breeding?
A. At least one—no benefit beyond three.
Q. Is it worth maintaining non-cycling gilts beyond 8-9 months of age just to have them on hand in case they are needed some day for breeding?
A. No. Eliminate them, and save only those gilts that cycle earlier.
Q. What practice will reduce age at puberty in gilts better than any other?
A. Direct boar exposure.
Q. Which is more effective in stimulating cycling—contact with an older boar (> 1 year) or a younger boar?
A. An older boar.

SWINE
DETECTING HEAT (ESTRUS) IN SWINE

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IMPORTANCE OF THE TOPIC

Generally, sows and gilts will ovulate (release eggs from their ovaries) about 40 hours after they first come into standing heat. It is also known that adequate numbers of live sperm must already be in the female tract for a few hours (10-24 hrs.) before ovulation occurs in order to achieve maximum conception rate and litter size. Therefore, frequent heat checks and proper identification of standing heat are essential if females are to be bred at the optimal time.

WHAT YOUR 4-H'ers WILL ACCOMPLISH

1. Recognize the behavioral signs of sows and gilts in order to properly detect standing heat.
2. Understand the boar's role in stimulating standing heat.
3. Identify reasons and solutions for poor heat detection.
4. Further develop the life skills of analyzing, making decisions, speaking before a group, and working with others.

PREPARE FOR THE MEETING

Before this meeting, you and your junior leader(s) should prepare three different sets of notecards to be used for various activities. The sets of notecards will help make these activities "learn-by-doing" experiences for your members. If you have a large group, prepare one set for every three or four members. You may want to color code the three sets. The information to be put on both sides of the cards is included for each set (S-1 = Side 1, and S-2 = Side 2) and is shown immediately following the Suggested Activities section of this guide.

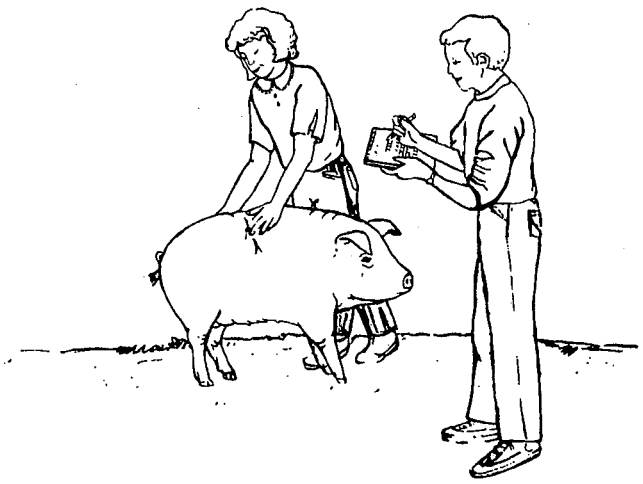
SUGGESTED ACTIVITIES

Determining the Boar's Role—Use this activity as a "warm up." Ask your group, "What actions or behavior do boars display to stimulate standing heat in sows or gilts?" Have them make a list and compare it to the following answers:

1. Produces a pheromone (an odor that stimulates the female) in his saliva.
2. Chomps and salivates.
3. Noses females' sides, flanks and rump.
4. Chants (makes a short series of grunts).

Matching Behavioral Signs With Phase of Heat Cycle—The heat cycle can be broken down into four phases: 1) coming into heat (1-2 days before); 2) standing heat; 3) beginning to go out of heat; and 4) out of heat. Ask your 4-H'ers to tell what they think some of the female behavioral signs or actions are during each phase. Then, take set 1 cards and ask them to match the *Signs* (side 2) with the appropriate *Phases* shown on the additional card set. Check their answers by turning over set 1 cards.

Who's to Blame Game—There are many reasons for failing to detect heat in sows or gilts. They can be divided into three categories: those blamed on 1) the boar, 2) the female, or 3) management. Use cards from set 2 and ask your 4-H'ers to match the *Problems* associated with poor heat detection (side 2) with the categories to *Blame* for the problem (shown on additional card set). Turn over set 2 cards to check their answers.



QUESTIONS TO ASK

These questions can be asked either during the activities, for a quiz bowl, or as a summary.

Q. Do open (non-bred) sows and gilts normally come into heat at 30-day intervals?
A. No—at 18- to 24-day intervals.
Q. What is meant by "standing heat"?
A. The period during which the female will stand to be mounted.
Q. Is the onset of standing heat the best criterion to use to determine when to breed?
A. Yes.
Q. Can the length of time from first standing heat until no longer standing for the boar vary from 12 hours to 4 days?
A. Yes.
Q. At the time sows or gilts *first* come into standing heat to be mounted by the boar, will they also stand for back pressure applied by a person?
A. No. It may be 1-24 hours later before they stand for applied back pressure.
Q. Will the period for standing heat usually last longer for sows or for gilts?
A. Sows.
Q. What female behavior is exhibited beginning about 40 hours before ovulation (release of eggs from the ovaries)?
A. Standing heat.
Q. Could gilts that are cycling for the first time (puberty) have reddened, swollen vulvas for as long as two weeks?
A. Yes.
Q. Is the optimal time for breeding (when breeding should occur) based on the number of times per day a producer checks females for signs of standing heat?
A. Yes.
Q. When should females be bred if once-a-day detection for standing heat is used?
A. As soon as detected and again the next day.
Q. When should females be bred if twice-a-day detection for standing heat is used?
A. At approximately 12 *and* 24 hours after you first detect them in standing heat.
Q. Why is it so important to frequently check sows and gilts for standing heat?
A. To properly time breeding to assure presence of sperm prior to ovulation.
Q. Should heat detection always be done in the presence of a boar (fenceline) to increase your chances of detecting all possible females in heat?
A. Yes.
Q. Up to 50% of all sows and gilts in heat will not show "standing heat" unless what is present?
A. A boar.
Q. Why does a boar chomp and salivate when he is checking for heat?
A. To stimulate the female with the pheromone (odor) present in his saliva.

SUPPORTING MATERIALS

Additional project meeting guides are available which support this topic: Setting Goals for Profitable Pork Production; Organizing Swine Management Practices; and Conducting a 4-H Skillathon.

Several Extension Folders (FO) and Fact Sheets (FS) are also available from the county extension office: AG-FO-0594, Herd Boar Management; AG-FO-0886, Management of Developing Gilts and Boars for Efficient Reproduction; and AG-FS-0963, Breeding Management of Sows and Gilts.

ACKNOWLEDGEMENTS

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I'm a 4-H Project Leader: Now What Do I Do?

How do I know who is in my project?

- Your club organizational leader will provide you with the names, addresses and phone numbers of the members enrolled in the project for which you are the leader.
- If you are working on the county level, contact the UCCE for the list of project members.
- The organizational leader may indicate to you if any of the youth have special needs. At your first project meeting, note any other youth that may have special needs.
- You may wish to consult with the parent or your 4-H Youth Development Agent as to how to work with a special needs child.

How often should I hold project meetings?

It is recommended you hold 4-6 meetings that each last 1½ to 2 hours in length. Some projects require more meetings or a longer meeting time to accomplish your goals. Some projects, such as leathercraft, may lend themselves to individual project work as members progress on their projects. In this case, you should hold several introductory meetings for all members and then set up a schedule of time for them to sign up for individual help.

When do I start?

Get started as soon as possible! Members' interest in a project is most keen when they are signing up for a project and when they get their project books.

How do I cover the cost of project meetings?

- There is a wide variety of means for covering the cost of project meetings. Some methods used include:
- Each member pays for their share of the expenses or provides a portion of the supplies.
- The club agrees to cover expenses using funds from their treasury. Approval in advance is needed for this.
- Members and leaders can solicit donations/supplies from area businesses.
- Sometimes funds from sources outside your club may be available to cover your project meeting costs.

How do I establish a project meeting schedule?

First, determine when you are available to work with project members. Then determine an initial project meeting date by consulting with your project members.

Thanks to 4-H Youth Development Programs, UW-Extension, Cooperative Extension for use of these materials.

Publicize the date using one of the following means:

- County and/or club newsletter
- Club meeting or leader association meetings
- Postcards or phone calls to project members

You may not be able to schedule an initial meeting that everyone can attend. Establish a time to meet with those unable to attend before you hold your second project meeting.

Where do I hold project meetings?

Typically project meetings are held at project leader homes, schools, or community buildings. For more information on facility adaptability and liability concerns contact your 4-H Youth Development Agent.

What safety precautions do we need to consider?

Consider the type of safety issues your particular project involves. Request and secure necessary safety items such as ear protection, eye protection and head protection.

How do I let others in my club or other clubs know I am a project leader?

Prior to enrollment ask for time on your club's meeting agenda to let families in your club know you're a project leader and to share some things the kids could do in the project if they enrolled in it. When the project materials are handed out, take the opportunity to inform or remind members that you are their project leader and set an initial meeting date with the group. If no one in your club is in your project, you may wish to offer your services to a neighboring club. Talk to your club organizational leader or county 4-H Youth Development agent about this opportunity.

How do I prepare for the first meeting?

You may want to establish a 4-H resource box where you keep your project materials and any additional resources you will be using. Take time to become familiar with your project literature and talk to others who were project leaders for this project to find out what activities the members enjoyed.

What should I do at the initial project meeting?

- At the initial project meeting, here are some ideas of what you might want to cover:
- Find out what the members want to learn and accomplish in the project. The project literature is an excellent source of ideas.
- Review the safety practices that members will need to follow.

Thanks to 4-H Youth Development Programs, UW-Extension, Cooperative Extension for use of these materials.

- Do an introductory activity related to the project so the members get to know one another
- Have a small project the members can complete and take home
- Talk about how the project meeting supplies will be paid for. Experienced leaders have found it easiest to charge a small fee to cover the cost of the expenses.
- Assess when members are available for additional meetings. You may wish to ask the parents or members to bring along their calendars of family activities.
- Encourage parents to participate in project meetings, especially the initial meeting.

What does a typical project meeting look like after the initial orientation?

Use the experiential learning model (found in the introductory pages of your Helper's Guide) to plan your project meeting. The project helper's guide will provide suggestions for designing a project meeting. Here are some suggestions for each section of the model:

Do

- Plan an activity to focus the project members on what they'll be doing today. Work on the project for that meeting.

Reflect

- Review the process completed
- Discuss what worked and didn't work.
- Talk about how any problems that arose were solved.
- Assist members in documenting their project work for inclusion in their record books/portfolios.

Apply

- Ask the project member the following questions:
- What else have you seen that is similar to this?
- How can you apply what you learned today to other situations?

What resources are available to help me?

- 4-H Project Literature – You will receive project literature through your 4-H club or the UW-Extension office. Typically there is a helper's guide and member literature for three to four levels.
- Other People in my Club & County – There are a number of people in your county who would be willing to share project ideas and tips with you.

Thanks to 4-H Youth Development Programs, UW-Extension, Cooperative Extension for use of these materials.

These include:

- Project leaders in other clubs
- County Staff
- Older youth who have been involved in the project

- Media Collection & Public Libraries – Additional resources can be obtained from the Cooperative Extension Media Collection. They have videos, skillathons, displays and resource packages available to support a variety of projects. There is a user fee per item you or your club will be responsible for. You can view their catalog at their website http://www.uwex.edu/ces/media/. Check with your local public library to find out what resources they may have or that you can obtain through inter-library loan.
- 4-H Website – Wisconsin 4-H is continually adding more information and activities to their website. Visit this site at www.uwex.edu/ces/4h/onlinepro/. You may wish to check out websites from other state 4-H programs also.
- Volunteer Leaders Conferences – Review each issue of your county's newsletter to learn about training sessions for project leaders offered by your county, district or at statewide events. Sessions focusing on new project literature are typically offered at the State 4-H Volunteer Leader Conference held every other year. Periodically statewide conferences focusing on specific project areas are offered in addition to sessions at the volunteer conferences. You can also exchange ideas with other leaders at statewide Field Day.
- Field Trips – Youth always enjoy the opportunity to see firsthand how things are done and how they work. Consider taking your project group on a field trip or tour of a local business or company to enhance their project experience. An example would be taking your dairy members to a cheese factory or your foods group to a local bakery.
- Local Experts – Bring in a local "expert" to share their ideas and experiences with your group. One example would be asking a Master Gardener to share information on choosing perennial or trimming shrubs at one of your project meetings.
- Magazines – Many leaders have found creative ideas to supplement those in the project literature in magazines they have or those at the public library.

Thanks to 4-H Youth Development Programs, UW-Extension, Cooperative Extension for use of these materials.

How can I incorporate activities not included in the project guide?

We encourage you to use the ideas in the project literature as they have been successfully used with youth. If you have some additional activities you would like to incorporate, consider the following criteria:

- Of interest to kids
- Developmentally appropriate
- Incorporate the experiential learning model
- Youth and adults are involved in determining what will be done
- Enhances the development of member life and project skills
- Research based source of content utilized

What is the relationship between project work and the county fair?

The County Fair is an opportunity for an independent evaluation of life and project skills a member learned through completing a project. County fair entries typically match the activities included in the project literature and may include other activities that are being emphasized in your county. One of your roles is to help maintain the focus of members and parents on the goal of 4-H, which is to develop blue ribbon kids. Talk with members about what they learned about each of their fair entries from the judging process. Help members celebrate their accomplishments regardless of the color of ribbon each project member received at the fair. This may be done through individual encouragement or at a meeting following the fair. While entering and displaying a project at the County Fair is the traditional method of public affirmation, there may be other means of exhibition such as a club tour, open house, community celebrations or others.

Who can I go to if I need someone to help me during the project meetings?

If you are leading beginning level project meetings, ask older members in the project to help you. This is a great leadership experience for them! Parents are another excellent source of help. Don't hesitate to ask them to stay for the meeting and be actively involved in their child's project work.

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